



# Compartment Review Presentation

## Traverse City Forest Management Unit

Compartment 61175

Entry Year 2018

Acreage: 2,601

County Kalkaska

Management Area: Boardman Plains

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**Revision Date:** 2016-05-04

**Stand Examiner:** Steve Crigier

**Legal Description:**

T28N, R6W, Sec's 5, 6, 7 & 8

T28N, R7W, Sec's 1, 2, 3, 4, 5 & 12

**Identified Planning Goals:**

Vegetation management in the Boardman Plains management area (MA) (Figure 4.1) 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. Expected trends within this 10-year planning period are: increased recreational pressure, especially on the Muncie Lakes pathway, North Country and other established trails; increased oil and gas development; an increased wildland/urban interface; a need to restore oak/pine barrens communities; invasive plant control; and the conversion of poor oaks sites to mixed pine/oak sites.

**Soil and topography:**

Mainly Kalkaska Loamy Sand with some Mancelona Gravely Sandy Loam and Emmet Sandy Loam. Flat to extremely hilly. Scattered small pothole lakes in eastern part.

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

This compartment is along the Antrim-Kalkaska County line and is less than four miles from Mancelona. Little solid state ownership. Two large plats next to state ownership are largely undeveloped. Mostly abandon farm land & forested land surround state land.

**Unique Natural Features:**

None Known.

**Archeological, Historical, and Cultural Features:**

None known.

**Special Management Designations or Considerations:**

Apply Best Management Practices around Vernal Ponds.

**Watershed and Fisheries Considerations:**

This compartment is within the Rapid River watershed. The headwaters to the Rapid are located in stand 87; existing buffers appear to be appropriate for the proposed treatments. Reasonable buffers (as outlined in Water Quality Management Practices on Forest Land) should be adhered to around all streams in this compartment. The Rapid River and its tributaries are Type 1 designated trout streams.

**Wildlife Habitat Considerations:**

Nearly all of Compartment 175 is pitted outwash plain with excessively drained sandy soils. The topography is varied, from level to undulating hills and ridges. Northern hardwoods, red pine and white pine plantations, and aspen dominate the landscape, with scattered upland brush and grass openings. A small projection of steep, broken moraine ridges with few kettle lakes and well drained loamy sand soils forms a steep hilly landscape in the northeastern corner of the Compartment. Northern hardwoods and red pine plantations are the dominate cover types.

Wildlife priorities when managing northern hardwood stands focus on age, structural, and species diversity. Promotion of

yellow birch, hemlock, and other less common components of the northern hardwood association increases species diversity. Selective harvest favoring retention of den trees, mast-producing species, and coarse woody debris (CWD) creates a matrix of food and shelter favoring the white-footed mouse, northern flying squirrel, American marten, broad-winged hawk, hairy woodpecker, and Eastern hog-nosed snake. Management of aspen in aspen stands, as inclusions in northern hardwood and mixed pine stands, and as a transition species near non-forested stands promotes age and structural diversity, maintaining significant CWD, and retention of scattered islands of mature aspen, snags, and fruiting trees and shrubs. Aspen, interspersed with northern hardwood, mixed pine, and forest openings can provide for the life requisites of white-tailed deer, coyote, wild turkey, ruffed grouse, northern flicker, and blue racer.

Openings provide habitat components not found in neighboring forested stands and support a variety of wildlife species. Openings will be maintained manually, mechanically, or through prescribed burning when beneficial. Some openings may be planted with trees based on ownership patterns, habitat condition, and related factors. Acreages converted from non-forested to forested management objectives will be recorded and opportunities to consolidate these acres into new openings in similar landscapes will be pursued in order to maintain the status quo of non-forested habitat. Management of degraded sites will include planting to an appropriate forested type, shrubs, grasses, or herbaceous cover.

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

Surface sediments consist of glacial outwash sand and gravel and postglacial alluvium and minor end moraines of coarse-textured till. The glacial drift thickness varies between 400 and 600 feet. Beneath the glacial drift is the Mississippian Coldwater Shale. The Coldwater does not have an economic use. Gravel pit are located in Section 3 and 10 and potential is good. This area is located along the north edge of the Niagaran reef trend with a few plugged wells on the east end. The Antrim Shale gas play is being developed in the west half of the Compartment. All State minerals appear to be currently leased for oil and gas development.

### **Vehicle Access:**

Good road access throughout the compartment.

### **Survey Needs:**

Survey work will need to be done throughout the compartment to establish property lines for the prescribed treatments.

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

There are no designated recreational trails within this compartment. (T.N. 1/28/16)

### **Fire Protection:**

Fire Protection for this compartment is provided by MDNR, Rapid River Township Fire Department and Coldsprings Township Fire Department.

### **Additional Compartment Information:**

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

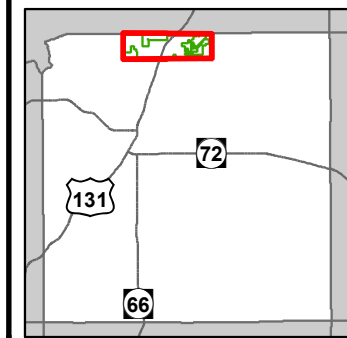
- Total Acres by Cover Type and Age Class**
- Cover Type by Harvest Method**
- Proposed Treatments – No Limiting Factors**
- Proposed Treatments – With Limiting Factors**
- Stand Details (Forested and Nonforested)**
- Dedicated and Proposed Special Conservation Areas**
- Site Condition Details**

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

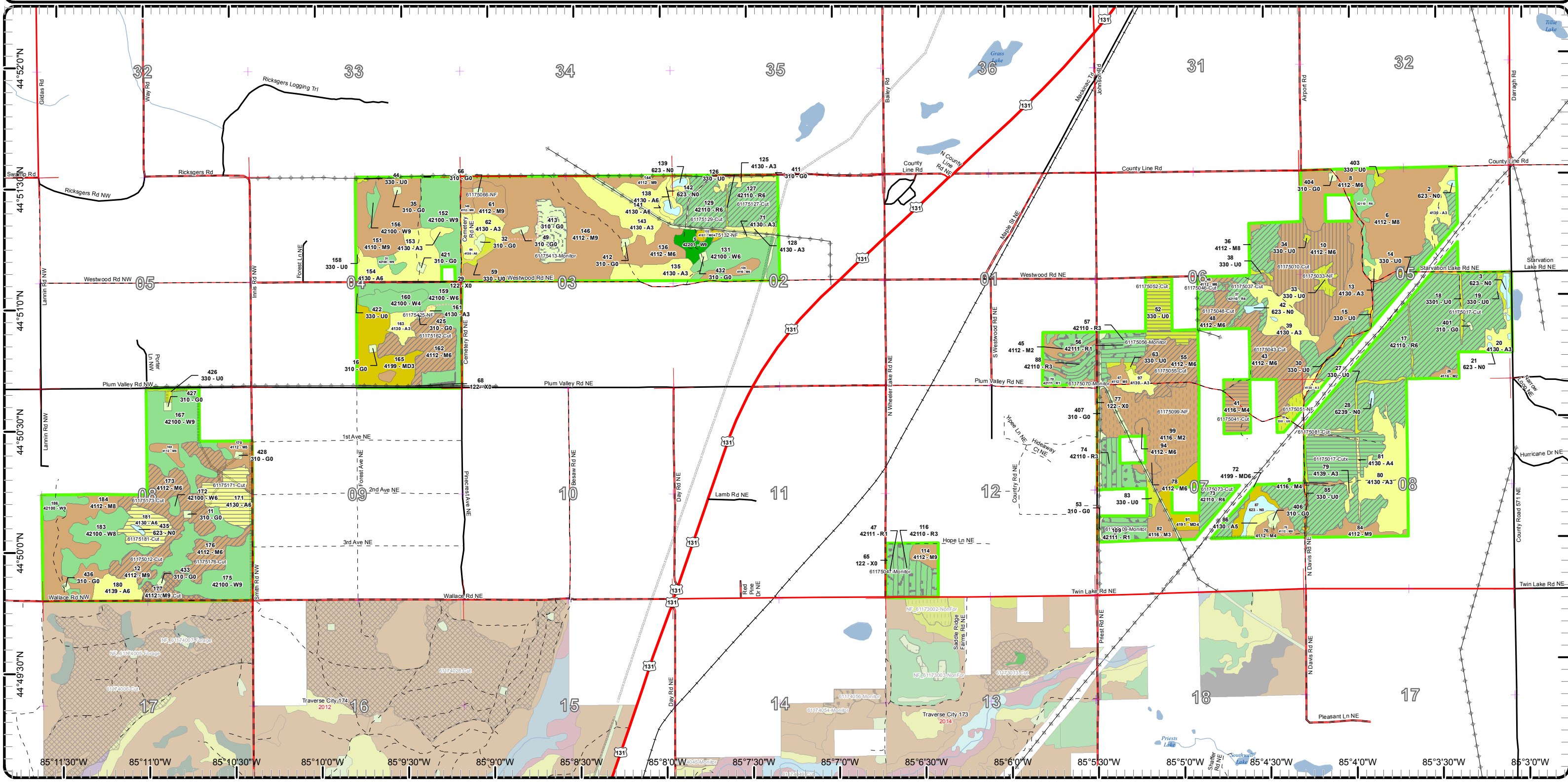
- Base feature information, stand boundaries, cover types, and numbers**
- Proposed treatments**
- Site condition boundaries**
- Details on the road access system**

# Cover Type & Treatments Map

Compartment: 175  
 T28N R06W Sec. 05-08  
 County: Kalkaska  
 Unit: Traverse City  
 Mgmt Area: Boardman Plains  
 YOE: 2018  
 Acres: 2601 GIS Calculated  
 Examiner: Steve Crigier  
 Map Revised: 6/1/2016  
 Map Phase: Web - Post



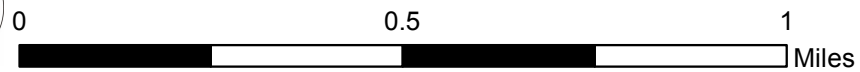
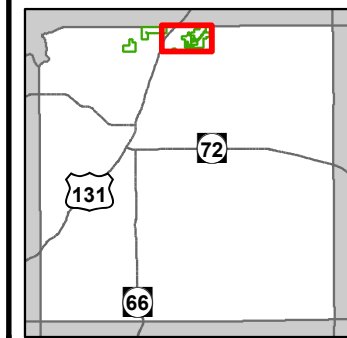
- Miris Corners
- + Remonumented Section Corners
- Highway
- County Paved Roads
- Paved Roads
- County Gravel Roads
- Poor Dirt Roads
- County Poor Dirt Roads
- - - Trail (Non-Recreation)
- - - Closed Roads
- Railroads
- Rivers
- Pipeline
- Powerline
- Compartment Boundary
- Selection (Group, Single Tree)
- Clearcut (w/Reserves)
- Monitoring
- Opening Maintenance
- Regeneration Survey
- Thinning (Crown, Low, Systematic)
- Shelter Wood (w/Reserves)
- 411 - Northern Hardwood
- 413 - Aspen Types
- 419 - Mixed Upland Deciduous
- 421 - Planted Pines
- 422 - Natural Pines
- 122 - Roads/Parking Lot
- 310 - Herbaceous Openland
- 330 - Low Density Trees
- 623 - Emergent Wetland
- Lakes



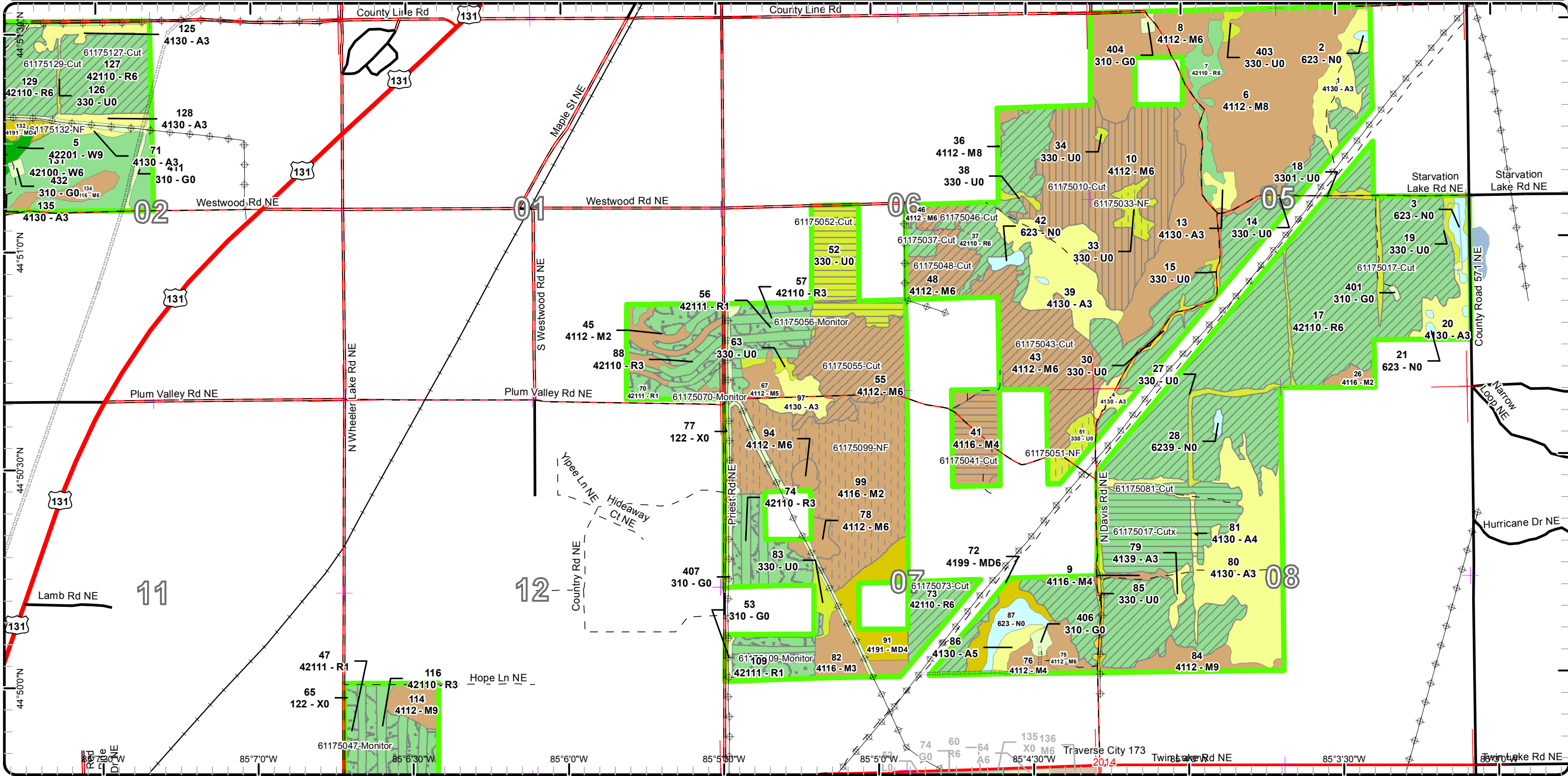


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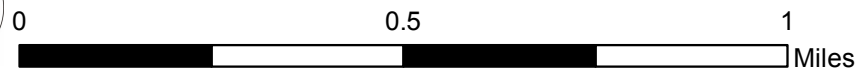
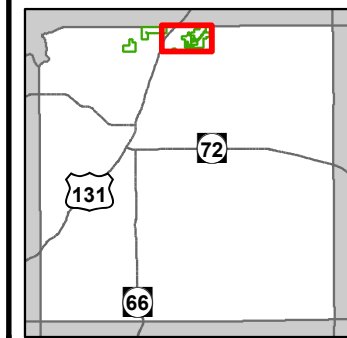
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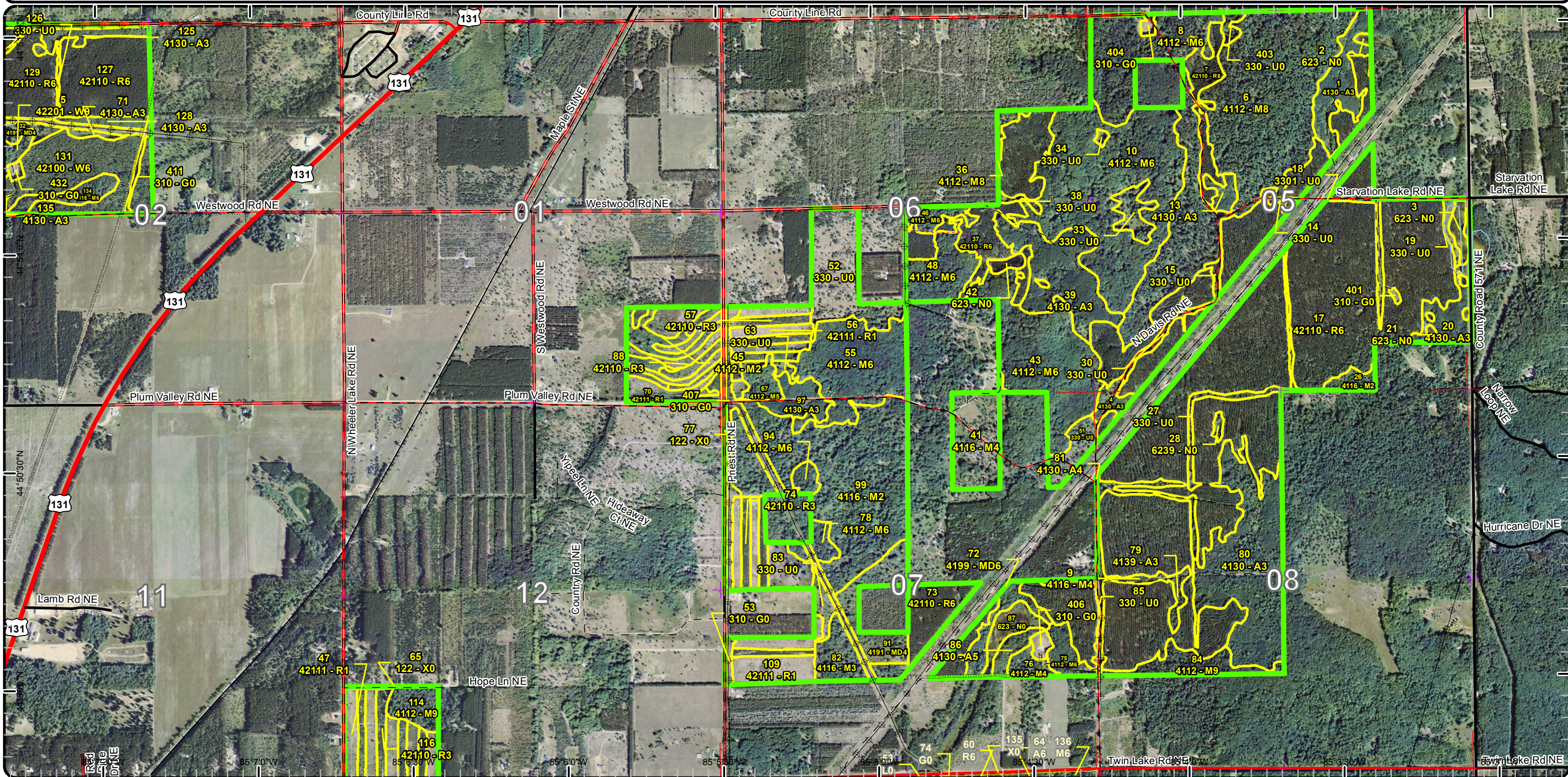


# Stand Boundary Map

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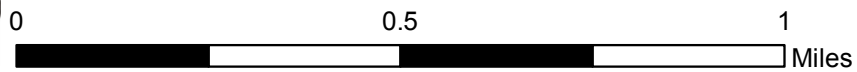
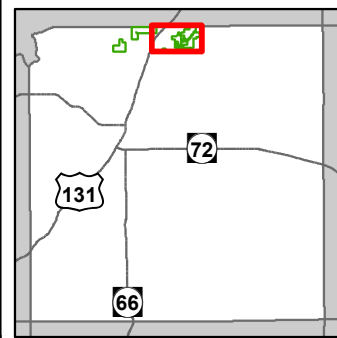
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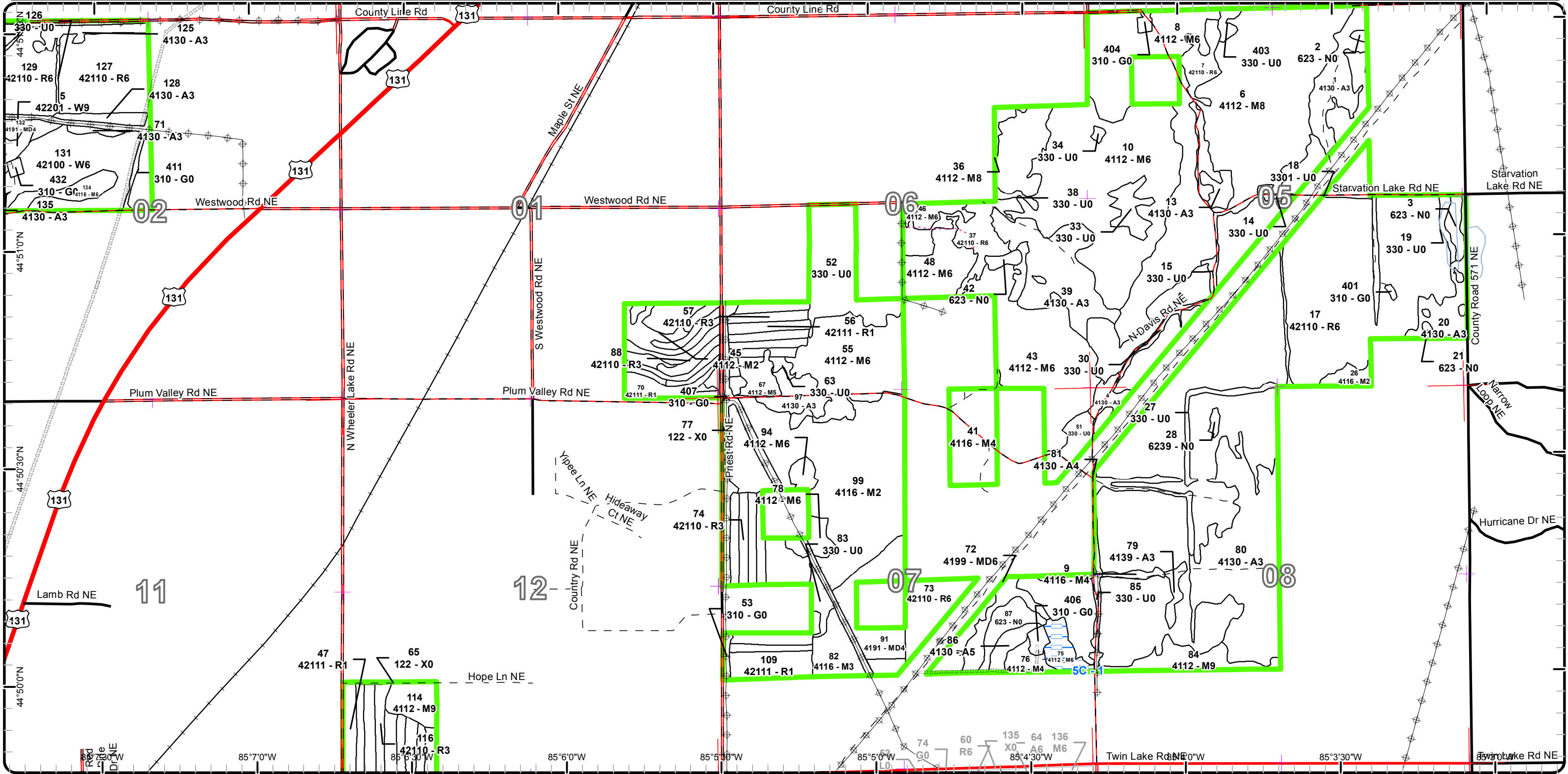


# Special Conservation Areas & Site Conditions Map

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- 5C: Delay treatment for age/size class diversity or exceptional site quality
- Stand Boundaries
- Special Conservation Areas

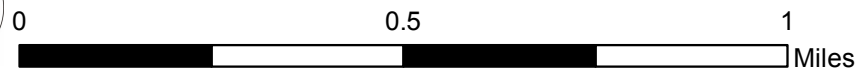
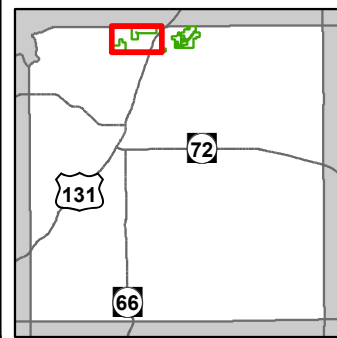




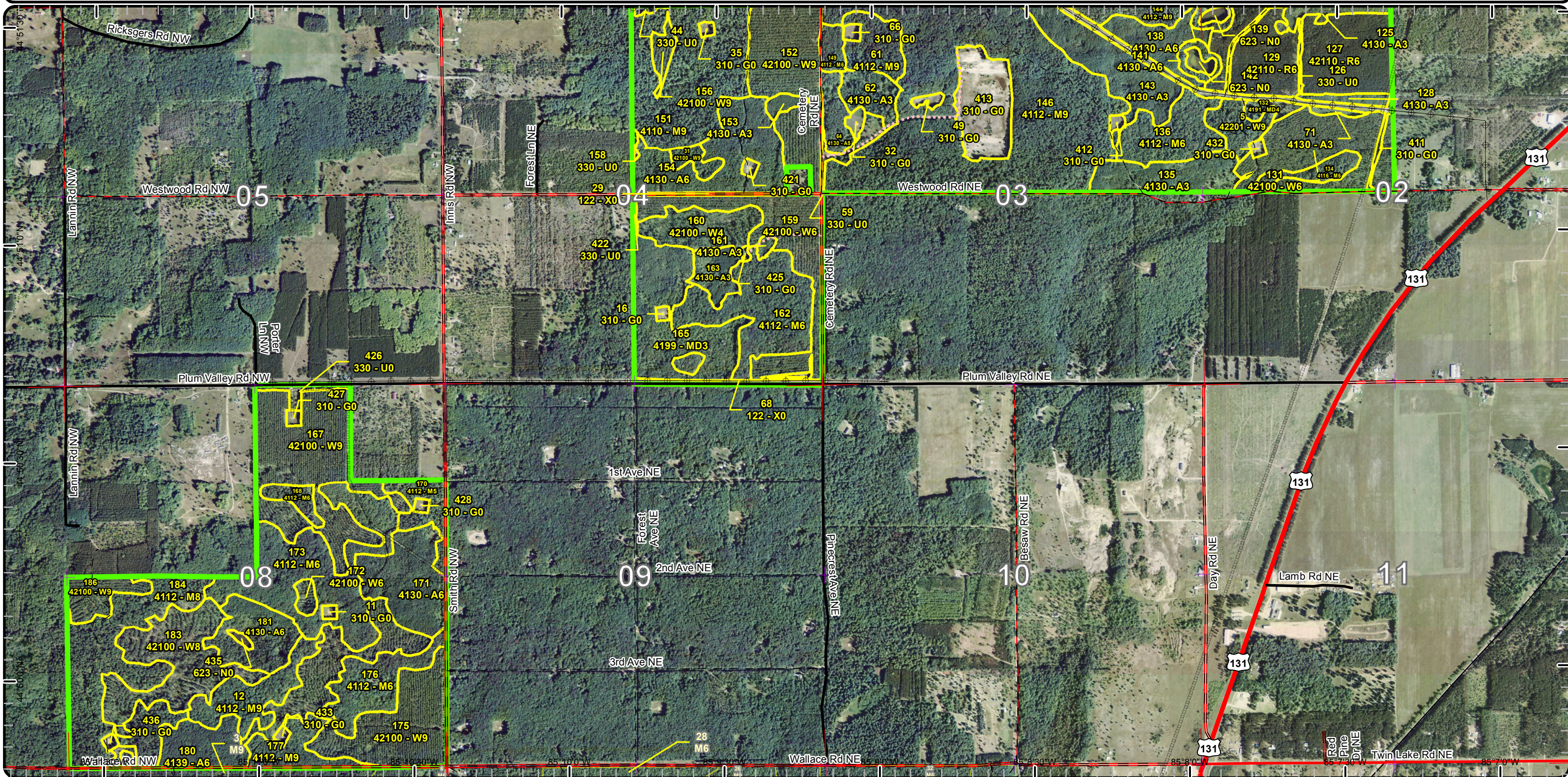


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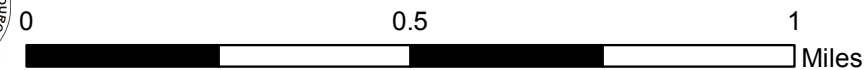
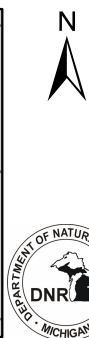
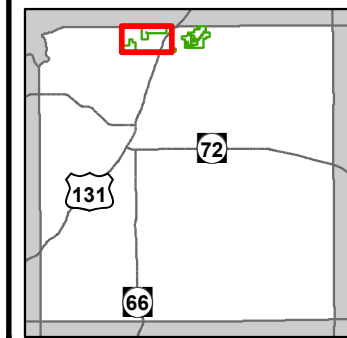
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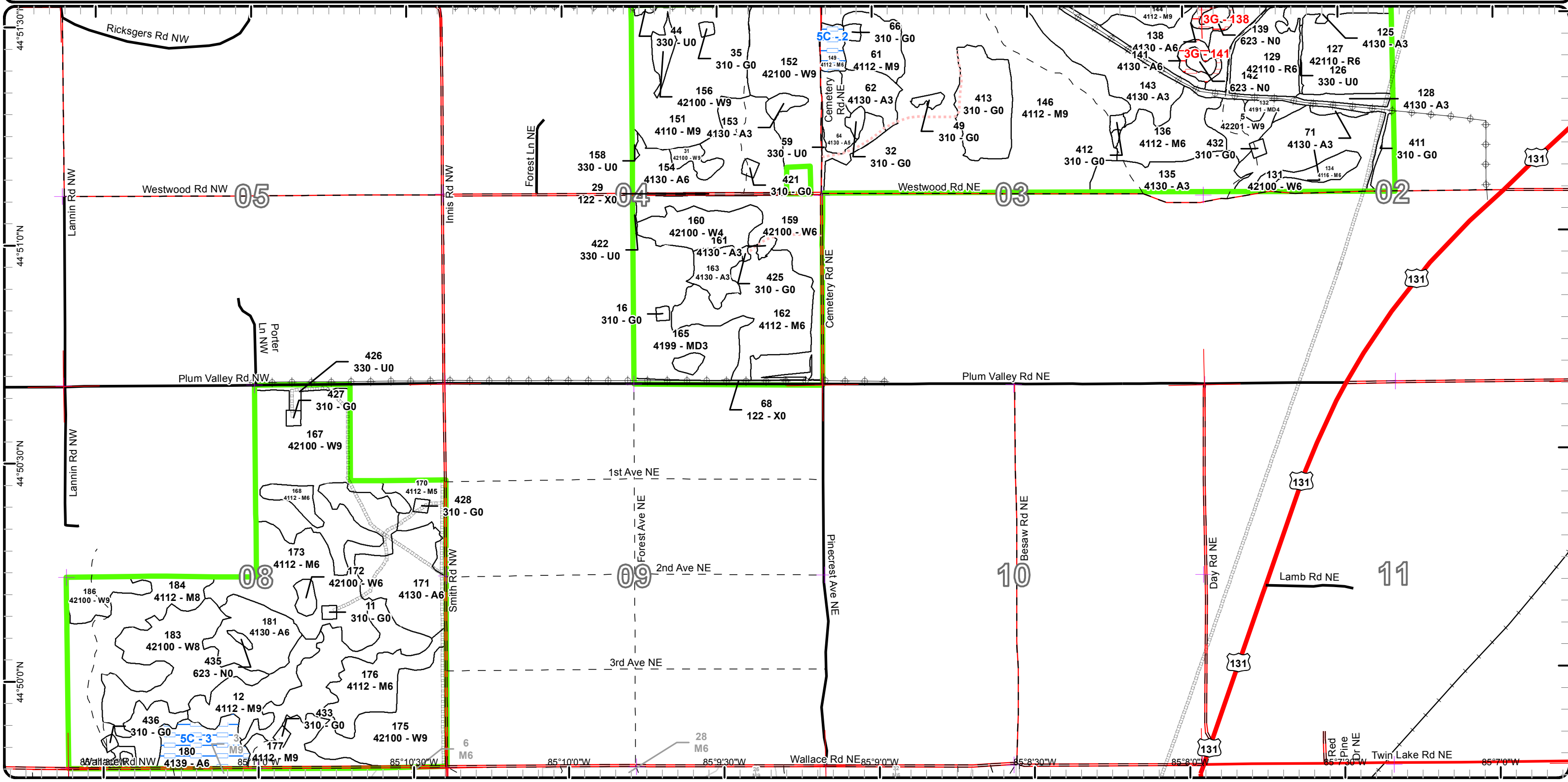


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- - - Unavailable
- 5C: Delay treatment for age/size class diversity or exceptional site quality
- 3G: Other Influence zones - See comments
- Stand Boundaries
- Special Conservation Areas



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	4	113	106	73	17	21	6	0	0	0	0	0	0	0	0	0	24	364
Herbaceous Openland	74	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	74
Low-Density Trees	86	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	86
Marsh	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21
Mixed Upland Deciduous	0	0	0	42	0	0	0	0	0	0	0	0	0	0	0	0	0	28	70
Northern Hardwood	0	0	11	4	0	0	0	0	523	0	0	0	0	0	0	0	0	498	1036
Red Pine	0	81	39	0	0	0	478	0	0	0	0	0	0	0	0	0	0	0	598
Urban	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13
White Pine	0	0	0	0	0	0	327	0	10	0	0	0	0	0	0	0	0	0	337
<b>Total</b>	<b>194</b>	<b>85</b>	<b>163</b>	<b>152</b>	<b>73</b>	<b>17</b>	<b>826</b>	<b>6</b>	<b>533</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>550</b>	<b>2599</b>





## Report 2 – Treatment Summary

Traverse City Mgt. Unit  
Year of Entry:

Acres of Harvest

Compartment 175  
Total Compartment Acres: 2,601

Commercial Harvest - 912  
Harvests with Site Condition - 0  
Next Step Harvest - 0  
Habitat Cut - 0

### Cover Type by Harvest Method

	Clearcut	Selection	Patch Clearcut	Seed Tree	Shelterwood	Thinning	Overstory Removal	Salvage	Other	Total Acres
Aspen	56	0	0	0	0	0	0	0	0	56
Low-Density Trees	28	0	0	0	0	0	0	0	0	28
Northern Hardwood	18	14	0	0	85	247	0	0	0	364
Red Pine	45	0	0	0	0	419	0	0	0	464
<b>Total</b>	<b>147</b>	<b>14</b>	<b>0</b>	<b>0</b>	<b>85</b>	<b>666</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>912</b>

### Proposed and Next Step Treatments by Method

	Harvest	Site Prep	Planting	Seeding	Burning	Pesticide	Monitoring	Other	Non-Forest Mgt.	Total Acres
Current	912	0	0	0	0	104	0	105		1121
Next Step	0	183	91	0	0	337	45	0		656
<b>Total</b>	<b>912</b>	<b>183</b>	<b>91</b>	<b>0</b>	<b>0</b>	<b>441</b>	<b>45</b>	<b>105</b>		<b>1777</b>



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Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
10 61175010-Cut	85.1	4112 - Maple, Beech, Cherry Association	Poletimber Well	72	111-140	Harvest	Shelterwood	411 - Northern Hardwood	Two-Aged	Proposal

**Habitat Cut: No**

**Site Condition:**

Prescription A light shelterwood style cut or a heavy select cut. I think will give us the best shot for getting some maple regen. Also, cut all the aspen and most of the beech out before that fiber is lost. This could be a green (leave) tree cut or could mark it in orange. There is already a lot of ironwood in the understory so somehow we need to try to remove as much of that as we can during the harvest. Target residual will be variable but should be around 30-50.

Next Step Monitoring, Natural Regen (Re-Inventory)

Treatments:

Acceptable maple, aspen, basswood, cherry

Regen:

Other Stand is of poor to medium quality timber. Eastern part is a bit nicer wood. Several small U0/frost pockets in stand and rolling terrain. Western fringe of the stand has a good amount of aspen and it is starting to decline. BBD is present in the beech. Lots of ironwood already present in the understory.  
Comment: BAs 80, 100, 130, 150, 90, 140.

Proposed Start Date: 10/01/2017

12 61175012-Cut	20.3	4112 - Maple, Beech, Cherry Association	Sawtimber Well	79	111-140	Harvest	Crown Thinning	411 - Northern Hardwood	Uneven-Aged	Proposal
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**Habitat Cut: No**

**Site Condition:**

Prescription Give the stand a thinning, with an emphasis on regen gaps. Remove the aspen and mark the rest. Residual BA should be variable due to the species mix and quality of the timber.  
Specs: Regen concern with the amount of ironwood already present. See if we can set the ironwood back through the timber harvest.

Next Step

Treatments:

Acceptable aspen and mixed hardwoods.

Regen:

Other Aspen blow down along the west edge. Stocking is variable as well as the size of timber. BAs 150, 130, 90. Some areas of just small ironwood.  
Comment: Poor to medium quality.

Proposed Start Date: 10/01/2017

17 61175017-Cut	303.4	42110 - Planted Red Pine	Poletimber Well	54	141-170	Harvest	Crown Thinning	42110 - Planted Red Pine	Even-Aged	Proposal
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**Habitat Cut: No**

**Site Condition:**

Prescription Due to the high stocking and tight canopies thin the stand to a BA ~120. Due the usual, removed trees with poor form. Some area will be quick marking other areas still have BA up around 170-180.

Next Step

Treatments:

Acceptable

Regen:

Other We will need to get the forest health tech to take a look at some of the dead/dying pockets. Confirmed Armillaria on 1/22/16. Some area they used a cut 2 leave 4 or 3 pattern (mostly the southern blocks).  
Comment:

Proposed Start Date: 10/01/2017

17 61175017-Cut	44.6	42110 - Planted Red Pine	Poletimber Well	54	141-170	Harvest	Clearcut	42110 - Planted Red Pine	Even-Aged	Proposal
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**Habitat Cut: No**

**Site Condition:**

Prescription Clear cut the stand with no retention to obtain a clean site and to reduce conflicts with herbicide release if needed. Trench and plant red pine. Have the stumps cut low and will want to have this block chip harvested. Also cut any Hardwoods or aspen in the stand.  
Specs:

Next Step SitePrep, Trenching; Planting, Initial Plant; Other, Other; Monitoring, Artificial Regen(1yr); Monitoring, Artificial Regen(3yr)

Treatments:

Acceptable red pine

Regen:

Other This block of red pine had lower BAs and more hardwood developing in the understory than the rest of pine nearby. It will likely need a site prep herbicide or a release or both.  
Comment:

Proposed Start Date: 10/01/2017



S t a n d	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
33	61175033-NF	6.2	330 - Low-Density Trees	Nonstocked		Unspecified	NonForestMgt	Herbaceous/Crop/Grass Planting	320 - Upland Shrub		Proposal

**Habitat Cut: No**

**Site Condition:**

Prescription Remove exotics as needed by herbiciding, or other methods. Seed in annual crop for soil building for several years then convert to appropriate perennial planting, native or pasture mix, for site location and seasonal (i.e. summer vs. winter forage) wildlife uses. May want/need to work around existing beneficial vegetation (i.e. blackberry). Maintain as needed with mowing, seeding of native grasses and forbs, fertilizing, burning, or removal of woody encroachment.  
Specs: Could plant some native shrubs as well.

Next Step  
Treatments:

Acceptable  
Regen:

Other  
Comment:

Proposed Start Date: 10/01/2017

37	61175037-Cut	36.1	42110 - Planted Red Pine	Poletimber Well	50	141-170	Harvest	Crown Thinning	42110 - Planted Red Pine	Even-Aged	Proposal
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**Habitat Cut: No**

**Site Condition:**

Prescription Thin stand down to ~120 BA.  
Specs:

Next Step  
Treatments:

Acceptable  
Regen:

Other Canopies are still pretty tight, BAs 190, 170, 160, 140, 190, 160, 170. Good amount of live crown and trees are 4-5 sticks tall. Stand is on some hilly terrain. Buffer vernal pond. Old blue line is still visible in spots.  
Comment:

Proposed Start Date: 10/01/2017

41	61175041-Cut	18.4	4116 - Mixed N. Hardwood - Aspen	Poletimber Poor	30	Immature	Harvest	Clearcut	42110 - Planted Red Pine	Even-Aged	Proposal
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**Habitat Cut: No**

**Site Condition:**

Prescription Clear cut with no retention to get a clean site for planting and site prep. Specify that the stand needs to be chip harvested and that the stumps will be cut low to the ground. Then will likely need to be roller chopped or herbicided, trenched and planted to red pine.  
Specs:

Next Step SitePrep, Roller Chopping; SitePrep, Other - Specify; SitePrep, Trenching; Planting, Initial Plant; Monitoring, Artificial Regen(1yr)  
Treatments:

Acceptable red pine  
Regen:

Other Stand contains an abandoned well pad that should be planted. Will likely need a survey to establish an accurate boundary.  
Comment:

Proposed Start Date: 10/01/2017

43	61175043-Cut	48.6	4112 - Maple, Beech, Cherry Association	Poletimber Well	72	111-140	Harvest	Crown Thinning	411 - Northern Hardwood	Uneven-Aged	Proposal
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**Habitat Cut: No**

**Site Condition:**

Prescription Thin the stand to 70-80BA. Cut most of the aspen and beech and also weed out all the ironwood possible. There is a decent amount of high risk trees that will be an easy target to harvest. Try to make some regen gaps.  
Specs: There is a regen concern with this stand as the understory is already full of ironwood. See if we can put in the contract to cut and or run over most of the ironwood.

Next Step  
Treatments:

Acceptable maple, aspen, basswood, cherry.  
Regen:

Other Medium quality timber on rolling terrain. East edge, bottom of the hill, there is mostly clumpy red maple. More Sugar maple and beech on the ridge.  
Comment: Aspen on the western edge with more open grown timber and pockets of ironwood (I3). Some BBD present. BAs 100, 130, 130, 100, 100

Proposed Start Date: 10/01/2017





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Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
46	61175046-Cut	5.2	4112 - Maple, Beech, Cherry Association	Poletimber Well	72	111-140	Harvest	Crown Thinning	411 - Northern Hardwood	Uneven-Aged	Proposal

**Habitat Cut: No**

**Site Condition:**

Prescription Thin stand down to 70-80BA. Cut all the aspen and most of the Beech. See if we can get the logger cut or somehow destroy the ironwood in the understory.  
Specs:

Next Step  
Treatments:

Acceptable maple, basswood, aspen,  
Regen:

Other County road ends at the NW corner of the stand then turns to a private drive. Access might have to be from the south.  
Comment:

Proposed Start Date: 10/01/2017

47	61175047-Monitor	18.8	42111 - Planted Red Pine, Mixed Deciduous	Sapling Poor	3	Immature	Monitoring	Artificial Regen(3yr)	42110 - Planted Red Pine	Even-Aged	Proposal
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**Habitat Cut: No**

**Site Condition:**

Prescription 3 year regen survey, and monitor the effectiveness of the herbicide applied in 2015.  
Specs:

Next Step  
Treatments:

Acceptable red pine  
Regen:

Other  
Comment:

Proposed Start Date: 10/01/2017

48	61175048-Cut	15.7	4112 - Maple, Beech, Cherry Association	Poletimber Well	72	111-140	Harvest	Crown Thinning	411 - Northern Hardwood	Uneven-Aged	Proposal
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**Habitat Cut: No**

**Site Condition:**

Prescription Thin the stand to 70-80BA. Cut most of the aspen and beech and also weed out all the ironwood possible. There is a decent amount of high risk trees that will be an easy target to harvest. Try to make some regen gaps.  
Specs: There is a regen concern with this stand as the understory is already full of ironwood. See if we can put in the contract to cut and or run over most of the ironwood.

Next Step  
Treatments:

Acceptable maple, basswood, cherry, aspen.  
Regen:

Other Very clumpy red maple, poor to medium quality. Some M3 pockets of sugar maple in the understory! Decent amount of red maple logs in areas.  
Comment: Some decent pockets of timber. BAs 100, 150, 120.

Proposed Start Date: 10/01/2017



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Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
51 61175051-NF	7.9	330 - Low-Density Trees	Nonstocked		Unspecified	NonForestMgt	Herbaceous/Crop/Grass Planting	320 - Upland Shrub		Proposal

**Habitat Cut: No**

**Site Condition:**

Prescription Remove exotics as needed by herbiciding, or other methods. Seed in annual crop for soil building for several years then convert to appropriate perennial planting, native or pasture mix, for site location and seasonal (i.e. summer vs. winter forage) wildlife uses. May want/need to work around existing beneficial vegetation (i.e. blackberry). Maintain as needed with mowing, seeding of native grasses and forbs, fertilizing, burning, or removal of woody encroachment.  
Specs: Could also plant native shrubs.

Next Step  
Treatments:

Acceptable  
Regen:

Other  
Comment:

Proposed Start Date: 10/01/2017

52 61175052-Cut	27.9	330 - Low-Density Trees	Nonstocked		Unspecified	Harvest	Clearcut	42110 - Planted Red Pine	Even-Aged	Proposal
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**Habitat Cut: No**

**Site Condition:**

Prescription Clear cut with no retention to get a clean site for planting and site prep. Specify that the stand needs to be chip harvested and that the stumps will be cut low to the ground. Then will likely need to be roller chopped or herbicided, trenched and planted to red pine. Leave a 1 acre opening (unplanted area) with in the stand for wildlife habitat.  
Specs:

Next Step SitePrep, Roller Chopping; SitePrep, Other - Specify; SitePrep, Trenching; Planting, Initial Plant; Monitoring, Artificial Regen(1yr)  
Treatments:

Acceptable red pine.  
Regen:

Other Will likely need to get a survey request in for this sale.  
Comment:

Proposed Start Date: 10/01/2017

55 61175055-Cut	38.8	4112 - Maple, Beech, Cherry Association	Poletimber Well	72	111-140	Harvest	Crown Thinning	411 - Northern Hardwood	Uneven-Aged	Proposal
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**Habitat Cut: No**

**Site Condition:**

Prescription Thin the stand down to ~80 BA. This will be more of a TSI cut although if there is an opportunity to put some regen gaps in, to get some maple  
Specs: (hopefully) started, would be great. Try to remove all the ironwood and most of the beech.

Next Step  
Treatments:

Acceptable maple, cherry, basswood,  
Regen:

Other Decent quality hardwood stand. Some areas just north of Plum Valley Rd seem a bit immature and lower stocked but the majority of the stand is well stocked. BAs 130, 70, 140, 140, 110.  
Comment: I have not located the property corners yet.

Proposed Start Date: 10/01/2017

56 61175056-Monitor	11.0	42111 - Planted Red Pine, Mixed Deciduous	Sapling Poor	3	Immature	Monitoring	Artificial Regen(3yr)	42110 - Planted Red Pine	Even-Aged	Proposal
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**Habitat Cut: No**

**Site Condition:**

Prescription 3 year regen check and monitor the effectiveness of herbicide (2015).  
Specs:

Next Step  
Treatments:

Acceptable red pine  
Regen:

Other  
Comment:

Proposed Start Date: 10/01/2017



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Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
66 61175066-NF	1.2	310 - Herbaceous Openland	Nonstocked	0	Unspecified	NonForestMgt	Herbaceous/Crop/Grass Planting	310 - Herbaceous Openland		Proposal

**Habitat Cut: No**

**Site Condition:**

Prescription Remove exotics as needed by herbiciding, or other methods. Seed in annual crop for soil building for several years then convert to appropriate perennial planting, native or pasture mix, for site location and seasonal (i.e. summer vs. winter forage) wildlife uses. May want/need to work around existing beneficial vegetation (i.e. blackberry). Maintain as needed with mowing, seeding of native grasses and forbs, fertilizing, burning, or removal of woody encroachment.

Next Step  
Treatments:

Acceptable  
Regen:

Other  
Comment:

Proposed Start Date: 10/01/2017

70 61175070-Monitor	21.4	42111 - Planted Red Pine, Mixed Deciduous	Sapling Poor	3	Immature	Monitoring	Artificial Regen(3yr)	42110 - Planted Red Pine	Even-Aged	Proposal
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**Habitat Cut: No**

**Site Condition:**

Prescription 3 year regen check and monitor the effectiveness of herbicide (2015).

Specs:

Next Step  
Treatments:

Acceptable red pine  
Regen:

Other  
Comment:

Proposed Start Date: 10/01/2017

73 61175073-Cut	19.3	42110 - Planted Red Pine	Poletimber Well	54	141-170	Harvest	Crown Thinning	4211 - Planted Red Pine	Even-Aged	Proposal
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**Habitat Cut: No**

**Site Condition:**

Prescription Thin stand down to about 120 BA.

Specs:

Next Step  
Treatments:

Acceptable  
Regen:

Other East side of power line has a bit lower BA. Old blue line is still visible. Try to sell with the stand 17 thinning.  
Comment:

Proposed Start Date: 10/01/2017

81 61175081-Cut	5.4	4130 - Aspen	Poletimber Poor	35	1-50	Harvest	Clearcut	413 - Aspen	Even-Aged	Proposal
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**Habitat Cut: No**

**Site Condition:**

Prescription Clear cut stand with the red pine clear cut in st 17. Maybe mark a few cherry or maple to leave.

Specs:

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

Acceptable aspen, red maple.  
Regen:

Other This is a poor quality stand and are old fire breaks that have filled in. Parts of this stand might be able to be planted to red pine with the adjacent RP  
Comment: FTP.

Proposed Start Date: 10/01/2017



S t a n d	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
99	61175099-NF	86.1	4116 - Mixed N. Hardwood - Aspen	Sapling Medium	25	Immature	NonForestMgt	Brush Cutting	330 - Low-Density Trees		Proposal

**Habitat Cut: No**

**Site Condition:**

Prescription This stand was an upland brush stand with patches of pole sized well stocked hardwood during the last inventory cycle. In order to maintain this area in a matrix of forested and non-forested patches, brush hog (or hydro axe) around select leave trees and patches of mature trees. Leave scattered mast producing trees and shrubs and/or conifers for wildlife food and cover. Could augment area by planting native shrubs.

Next Step  
Treatments:

Acceptable  
Regen:

Other Maintain as needed with mowing, seeding of native grasses and forbs, fertilizing, burning, or removal of woody encroachment.  
Comment:

Proposed Start Date: 10/01/2017

109	61175109-Monitor	28.1	42111 - Planted Red Pine, Mixed Deciduous	Sapling Poor	3	Immature	Monitoring	Artificial Regen(3yr)	42110 - Planted Red Pine	Even-Aged	Proposal
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**Habitat Cut: No**

**Site Condition:**

Prescription 3 year regen check and monitor the effectiveness of herbicide (2015).  
Specs:

Next Step  
Treatments:

Acceptable red pine  
Regen:

Other  
Comment:

Proposed Start Date: 10/01/2017

127	61175127-Cut	31.7	42110 - Planted Red Pine	Poletimber Well	52	141-170	Harvest	Crown Thinning	42110 - Planted Red Pine	Even-Aged	Proposal
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**Habitat Cut: No**

**Site Condition:**

Prescription Thin Stand down to ~120 BA.  
Specs:

Next Step  
Treatments:

Acceptable  
Regen:

Other Stand was thinned in 1999. Decent plantation, starting to push the log sized trees (5-6 stick trees). Canopy has tightened up. NW 1/4 of the stand has a heavy hardwood understory, otherwise fairly clean understory. Some scattered cherry. BAs 170, 140, 200.  
Comment:

Proposed Start Date: 10/01/2017

129	61175129-Cut	28.8	42110 - Planted Red Pine	Poletimber Well	52	141-170	Harvest	Crown Thinning	42110 - Planted Red Pine	Even-Aged	Proposal
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**Habitat Cut: No**

**Site Condition:**

Prescription Thin stand down to ~120BA.  
Specs:

Next Step  
Treatments:

Acceptable  
Regen:

Other Stand was row thinned in 1999. Canopies are still pretty tight. Good quality plantation 5-6 trees. West part of stand slope down to the vernal ponds and is steep in areas. Clean understory. BAs 140, 190, 190.  
Comment:

Proposed Start Date: 10/01/2017



S t a n d	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
132	61175132-NF	3.5	4191 - Mixed Upland Deciduous with Conifer	Poletimber Poor	35	Unspecified	NonForestMgt	Herbaceous/Crop/Grass Planting	320 - Upland Shrub		Proposal

**Habitat Cut: No**

**Site Condition:**

Prescription Remove exotics as needed by herbiciding, or other methods. Seed in annual crop for soil building for several years then convert to appropriate perennial planting, native or pasture mix, for site location and seasonal (i.e. summer vs. winter forage) wildlife uses. May want/need to work around existing beneficial vegetation (i.e. blackberry). Maintain as needed with mowing, seeding of native grasses and forbs, fertilizing, burning, or removal of woody encroachment.

Specs:

Next Step  
Treatments:

Acceptable  
Regen:

Other  
Comment:

Proposed Start Date: 10/01/2017

162	61175162-Cut	41.2	4112 - Maple, Beech, Cherry Association	Poletimber Well	75	111-140	Harvest	Crown Thinning	411 - Northern Hardwood	Uneven-Aged	Proposal
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**Habitat Cut: No**

**Site Condition:**

Prescription Crown thin/select cut by removing high risk and poor form trees. Target BA around 70. Try to leave hemlock pockets undamaged.

Specs: Regen concern with a lot of beech and ironwood already present in the understory.

Next Step  
Treatments:

Acceptable maple, cherry, basswood, aspen.  
Regen:

Other Some scattered hemlock and white pine. Medium to poor quality trees. Red maple is clumpy. Some areas have more log trees but mostly pole  
Comment: timber.

Proposed Start Date: 10/01/2017

171	61175171-Cut	29.9	4130 - Aspen	Poletimber Well	38	51-80	Harvest	Clearcut with Retention	413 - Aspen	Even-Aged	Proposal
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**Habitat Cut: No**

**Site Condition:**

Prescription It is a bit early but due to the storm damage I think it would be best to clearcut this stand now, maybe even move up the YOE to 16. Try to protect as much of the advanced maple regen as possible and maybe mark some scattered maple or cherry to leave for retention.

Specs:

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

Acceptable aspen, mixed hardwoods.  
Regen:

Other Some pockets of wind throw, likely from the 8/2/15 storm. heavy damage seems to be in the central part of the east line. Decent maple in  
Comment: understory. Smaller diameters in the northern part of the stand.  
WLD: Please include a drumming log spec.

Proposed Start Date: 10/01/2017

173	61175173-Cut	55.7	4112 - Maple, Beech, Cherry Association	Poletimber Well	70	111-140	Harvest	Crown Thinning	411 - Northern Hardwood	Uneven-Aged	Proposal
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**Habitat Cut: No**

**Site Condition:**

Prescription Thin the stand down to 80 BA or so. Remove high risk trees and open up around crop trees. Remove the aspen, (mostly found in the north finger).

Specs: Make a few regen gap where there is an opportunity.

Next Step  
Treatments:

Acceptable aspen and mixed hardwoods  
Regen:

Other Clumps red maple of medium-poor quality. Uniform stocking, and has some scattered log timber. BAs 130, 130, 130, 150. Already a lot of  
Comment: ironwood in the understory :(

Proposed Start Date: 10/01/2017





S t a n d	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
176	61175176-Cut	21.1	4112 - Maple, Beech, Cherry Association	Poletimber Well	70	111-140	Harvest	Crown Thinning	411 - Northern Hardwood	Uneven-Aged	Proposal

**Habitat Cut: No**

**Site Condition:**

Prescription Thin stand down to 70BA or so. Try to create a few regen gaps. Cut most of the beech and any aspen. Try to get logger to cut or run over as much of the ironwood in the understory as possible.

Next Step  
Treatments:

Acceptable aspen and mixed hardwoods.  
Regen:

Other Small U0 in the middle of the stand. Some scattered white pine. Medium-poor quality trees. Stocking is variable. BAs 140, 90, 140. Beech and ironwood in the understory already.

Proposed Start Date: 10/01/2017

177	61175177-Cut	14.3	4112 - Maple, Beech, Cherry Association	Sawtimber Well	79	111-140	Harvest	Single Tree Selection	411 - Northern Hardwood	Uneven-Aged	Proposal
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**Habitat Cut: No**

**Site Condition:**

Prescription Select cut stand down to a BA of about 80. Try to address the issue of all the ironwood in the understory.

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

Acceptable maple, aspen, cherry, basswood.  
Regen:

Other Looks like stand was thinned before ~ 15 years ago. Understory is full of ironwood and beech. BAs 120, 120, and 150. Northeast part of the stand is more clumpy soft maple and it doesn't look like that has been thinned before. Overall decent quality timber.

Proposed Start Date: 10/01/2017

181	61175181-Cut	20.7	4130 - Aspen	Poletimber Well	53	51-80	Harvest	Clearcut with Retention	413 - Aspen	Even-Aged	Proposal
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**Habitat Cut: No**

**Site Condition:**

Prescription Clear cut stand but leave retention along the N0 or on hills that are too steep to operate on. Access will likely be from stand 11. Maybe mark a few cherry trees to leave for wildlife.

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

Acceptable aspen, red maple.  
Regen:

Other Stand is on some hilly ground with a few potholes. Medium to poor quality trees. Hardwoods in the understory. There is a patch of younger looking bigtooth at the north end.  
Comment: WLD: Please include a drumming log spec.

Proposed Start Date: 10/01/2017

413	61175413-Monitor	24.5	310 - Herbaceous Openland	Nonstocked		Unspecified	Monitoring	Other - Specify	3102 - Grass		Proposal
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**Habitat Cut: No**

**Site Condition:**

Prescription Remove trees from the landfill cap and address the pond that is forming in the NE corner. More road and trail closures to prevent ORV damage.  
Specs: DEQ has been working with us on these issues.

Next Step  
Treatments:

Acceptable  
Regen:

Other Old Kalkaska-Antrim Landfill closed in about 1984-85.  
Comment: Illegal ORV use has damaged the cap and some of the vents on the landfill site. A pond on top of the cap has formed in the NE corner. Also trees are growing on the landfill cap that need to be removed.

Proposed Start Date: 10/01/2017



S t a n d	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
425	61175425-NF	0.5	310 - Herbaceous Openland	Nonstocked		Unspecified	NonForestMgt	Herbaceous/Crop/Grass Planting	310 - Herbaceous Openland		Proposal

**Habitat Cut: No**

**Site Condition:**

Prescription Remove exotics as needed by herbiciding, or other methods. Seed in annual crop for soil building for several years then convert to appropriate perennial planting, native or pasture mix, for site location and seasonal (i.e. summer vs. winter forage) wildlife uses. May want/need to work around existing beneficial vegetation (i.e. blackberry). Maintain as needed with mowing, seeding of native grasses and forbs, fertilizing, burning, or removal of woody encroachment.

Next Step  
Treatments:

Acceptable  
Regen:

Other  
Comment:

Proposed Start Date: 10/01/2017

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**Total Treatment Acreage Proposed: 1121.3**

## Report 4 – Site Conditions

Traverse City Mgt. Unit

Steve Crigier : Examiner

Compartment: 175

Year of Entry: 2018

### Availability for Management

Total Acres	Acres Available	Acres Avail		Dominant Site Conditions	5C	3G
		With Condition	Not Available			
365	342	17	6	Aspen	17	6
73	73	0	0	Herbaceous Openland		
86	86	0	0	Low-Density Trees		
21	21	0	0	Marsh		
70	70	0	0	Mixed Upland Deciduous		
1035	1023	12	0	Northern Hardwood	12	
597	597	0	0	Red Pine		
13	13	0	0	Urban		
338	338	0	0	White Pine		
2,600	2,565	29	6	Total Forested Acres	29	6
	99%	1%	0%	Relative Percent		

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

Site No.	Dominant Site Cond Availability	Dominant Site Condition	Acres	Other Site Condition	Other Site Condition	Other Site Condition	Other Site Condition
1	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	7	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
2	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	5	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
3	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	17	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							

**Report 4 – Site Conditions**

Traverse City Mgt. Unit

Steve Crigier : Examiner

Compartment: 175

Year of Entry: 2018

138	Unavailable	3G: Other Influence zones - See comments	2	3J: Water quality / BMPs (stream, river, or lake)	2F: Too steep	Unspecified	Unspecified
<b>Comments:</b>							
141	Unavailable	3G: Other Influence zones - See comments	4	3J: Water quality / BMPs (stream, river, or lake)	2F: Too steep	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
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Comments

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Mgt. Unit

Compartment:

Year of Entry



## 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

<b>Conservation Area</b>	<b>Type</b>	<b>Description</b>
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	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
1	4130 - Aspen	Sapling Well	16.6	16	Immature	OPIC - FMD: 1/25/2006 TS# 161-98-1 A3 looks good, see records for sale # (Grieve)
4	4130 - Aspen	Sapling Well	4.1	16	Immature	trees are about 15' tall.
5	42201 - Natural White Pine, Mixed Deciduous	Sawtimber Well	10.1	71	141-170	Mixed stand of white pine, hardwoods and pockets of aspen. Limby white pine and aspen looks to be at its potential. Hardwood understory.
6	4112 - Maple, Beech, Cherry Association	Sawtimber Medium	122.0	72	51-80	Stand was thinned County Line Hardwoods #2 61-088-09-01. Stand already has a lot of softmaple and aspen sprouts along with some beech regen (10/02/12sc). Hilly terrain, with several frost pockets (pothole depressions). Overstory is medium-poor quality. Some A3 pockets and scattered maple regen, quite a bit of beech and ironwood too though. Some scattered wind damage. Likely from 8/2/2015 storm.
7	42110 - Planted Red Pine	Poletimber Well	12.6	54	111-140	OPIC - FMD: 12/16/2010 Stand row thinned 'Steel Line Pine' (Crugier). Trees are ~5 stick and decent quality. Maple in the understory!! North part of stand is in some steep country.
8	4112 - Maple, Beech, Cherry Association	Poletimber Well	34.1	72	51-80	OPIC - FMD: 8/15/11 Stand was thinned to 80sqft/ac 'County Line Hwds'. Good red maple regen and even some spots of sugar maple regen. BAs 50, 80, 70. Overstory is OK quality trees, stand is on some rolling/steep terrain.
9	4116 - Mixed N. Hardwood - Aspen	Poletimber Poor	2.9	35	1-50	Old fire break is filling in with a mix of hardwoods and aspen.
10	4112 - Maple, Beech, Cherry Association	Poletimber Well	85.1	72	111-140	Stand is of poor to medium quality timber. Eastern part is a bit nicer wood. Several small U0/frost pockets in stand and rolling terrain. Western fringe of the stand has a good amount of aspen and it is starting to decline. BBD is present in the beech. Lots of ironwood already present in the understory. BAs 80, 100, 130, 150, 90, 140.
12	4112 - Maple, Beech, Cherry Association	Sawtimber Well	20.3	79	111-140	Aspen blow down along the west edge. Stocking is variable as well as the size of timber. BAs 150, 130, 90. Some areas of just small ironwood. Poor to medium quality.
13	4130 - Aspen	Sapling Well	3.6	16	Immature	OPIC - FMD: 1/25/2006 TS# 161-98-1 Trees are about 20-25' tall, well stocked.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
17	42110 - Planted Red Pine	Poletimber Well	349.7	54	141-170	OPIC - FMD: 1/11/2011 Stand row thinned 'Steel Line Pine', 'Davis Rd Rd' in 2009 and 'North Steel line Pine' 2010(Crigier). Stand has some scattered wind throw damage. Canopies are already closed up, especially in the northern portions of the stand. Some scattered pockets of mortality and trees with thin tops? Some of the southern blocks had a cut 2 leave 4 pattern. Some A5 pockets in the southern portion of the stand. BAs (150,170, 160, 150, 140, 100, 170, 180, 110, 170, 110, 190, 160, 160) = Avg 151. Southern block is more open and has more hardwood understory, average BA of 120. The Southern most block (Davis Rd Red) had a cut 2 leave 3 pattern. BAs 130, 180, 240, 241
20	4130 - Aspen	Sapling Well	10.3	27	Immature	OPIC - FMD: 1/25/2006 TS # 042-88-1 Trees are about 30' tall, and well stocked. Parts of stand is starting to convert to pole timber
26	4116 - Mixed N. Hardwood - Aspen	Sapling Medium	3.9	27	Immature	OPIC - FMD: 1/23/2006 TS # 042-88-1 M2 Looks OK (Grieve)
31	42100 - Planted White Pine	Sawtimber Well	4.4	58	111-140	Open grown plantation white pine, with a decent mix of aspen and red maple.
36	4112 - Maple, Beech, Cherry Association	Sawtimber Medium	2.1	79	51-80	Clumpy, open grown trees.
37	42110 - Planted Red Pine	Poletimber Well	36.1	50	141-170	OPIC - FMD: 12/14/2010 Stand was row thinned 'Too Much Blue' (Crigier). Canopies are still pretty tight, BAs 190, 170, 160, 140, 190, 160, 170. Good amount of live crown and trees are 4-5 sticks tall. Stand is on some hilly terrain.
39	4130 - Aspen	Sapling Well	30.8	27	Immature	OPIC - FMD: 1/25/2006 TS # 042-88-1 Starting to develop into pole size trees. Mostly QA. Rolling terrain, trees ~ 30' tall.
41	4116 - Mixed N. Hardwood - Aspen	Poletimber Poor	20.8	30	Immature	U0 filling in. I think we should maybe sell this parcel. Stand also contains an abandoned well pad.
43	4112 - Maple, Beech, Cherry Association	Poletimber Well	48.6	72	111-140	Medium quality timber on rolling terrain. East edge, bottom of the hill, there is mostly clumpy red maple. More Sugar maple and beech on the ridge. Aspen on the western edge with more open grown timber and pockets of ironwood (I3). Some BBD present. BAs 100, 130, 130, 100, 100.
45	4112 - Maple, Beech, Cherry Association	Sapling Medium	11.2	17	Immature	This stand(s) look like they are a failed part of the plantation. Mostly red maple and cherry with some scattered red pine underneath.
46	4112 - Maple, Beech, Cherry Association	Poletimber Well	5.2	72	111-140	Medium quality stand. South edge is more open growth. Some nice crop trees scattered throughout. East end is clumpy red maple.
47	42111 - Planted Red Pine, Mixed Deciduous	Sapling Poor	18.8	3	Immature	OPIC - FMD: 3/17/2011 stand clearcut (Wheeler-Priest Pine (sc). Planted in 13 and sprayed in 15.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
48	4112 - Maple, Beech, Cherry Association	Poletimber Well	15.7	72	111-140	Very clumpy red maple, poor to medium quality. Some M3 pockets of sugar maple in the understory! Decent amount of red maple logs in areas. Some decent pockets of timber. BAs 100, 150, 120.
55	4112 - Maple, Beech, Cherry Association	Poletimber Well	38.8	72	111-140	Decent quality hardwood stand. Some areas just north of Plum Valley Rd seem a bit immature and lower stocked but the majority of the stand is well stocked. BAs 130, 70, 140, 140, 110.
56	42111 - Planted Red Pine, Mixed Deciduous	Sapling Poor	11.0	3	Immature	OPIC - FMD: 3/17/2011 stand clearcut, planted in 2013 and herbicided in 2015. Trees are about 2' tall. Not as much cherry competition as compared to the other nearby sites.
57	42110 - Planted Red Pine	Sapling Well	9.4	17	Immature	OPIC - FMD: 1/20/2006 R3 planted in jack pine M1 understory. J3 J2 in a lot of places. R3 should take over in the next ten years or so. JP seems to be winning the battle. JP ~15' tall, RP ~ 8'
61	4112 - Maple, Beech, Cherry Association	Sawtimber Well	13.3	79	81-110	Was previously thinned in 2000. Decent timber, heavy to logs. Quite a bit of beech and ironwood in the understory but a few pockets of maple regen.
62	4130 - Aspen	Sapling Well	11.0	16	1-50	Stand was cut in 2000 with the hardwoods to the north and removed the aspen. Stand is mostly an A3 with scattered white pine and hardwood pole timber. Aspen is doing well and is about 20' tall.
64	4130 - Aspen	Poletimber Medium	8.5	39	51-80	Looks like a U0 filling in with aspen. Poor quality aspen.
67	4112 - Maple, Beech, Cherry Association	Poletimber Medium	5.3	72	51-80	Some scattered JP? Limby red maple.
70	42111 - Planted Red Pine, Mixed Deciduous	Sapling Poor	21.4	3	Immature	OPIC - FMD: 3/17/2011 stand clearcut (Wheeler-Priest Pine), Stand planted in 2013 and herbicide in 2015. decent amount of cherry
71	4130 - Aspen	Sapling Well	1.5	6	Immature	Regen 8-10' tall. Stand was cut with the white pine sale to the south. Stand is in a bit of a valley.
72	4199 - Other Mixed Upland Deciduous	Poletimber Well	8.0	68	51-80	Stand is a mix of maple and aspen and is working as a buffer for the vernal pond. Heavier to aspen in the northern part of the stand.
73	42110 - Planted Red Pine	Poletimber Well	19.3	54	141-170	Sale # 45-08 Davis Rd Red completed 8-19-2009 dkjEast part has more hardwood in the understory. Decent plantation. BAs 130, 190, 150.
74	42110 - Planted Red Pine	Sapling Well	9.6	15	Immature	Planted red pine with a lot of jack pine volunteers. Red pine is about 8' tall and jack pine is ~12'.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
75	4112 - Maple, Beech, Cherry Association	Poletimber Well	6.7	72	111-140	Clumpy red maple, with a few scattered crop trees. Medium to poor quality.
76	4112 - Maple, Beech, Cherry Association	Poletimber Poor	4.5	62	81-110	There is a small M6 pocket just west of the well pad. Clumpy red maple with a decent amount of aspen. Aspen is poor quality. Stand is a M5/A5 mix.
78	4112 - Maple, Beech, Cherry Association	Poletimber Well	4.9	70	81-110	Clumpy red maple, aspen along the edges. Lots of ironwood. Variable stocking.
79	4139 - Aspen, Mixed Deciduous	Sapling Well	2.9	7	Immature	Stand was cut with the adjacent red pine in 2009. Trees are ~ 15' tall and is well stocked. Some scattered red maple pole timber.
80	4130 - Aspen	Sapling Well	57.2	17	Immature	OPIC - FMD: 1/26/2006 This cut was done leaving the sugar maple. Sometimes it is pure A3, other times it may even be as much as an M5. But mostly A3. In addition, MSU planted some experimental white pine in some parts of this stand. Mostly to the south side. (Grieve) 1999 TS# 151-98-1 MSU research area. (Grieve) Aspen is about 25-30' tall. Northern part of the stand seems to have more of the pole/log sized hardwood, M5/7 over A3.
81	4130 - Aspen	Poletimber Poor	5.4	35	1-50	Aspen filling in the old fire lanes. Aspen is already struggling, and there is scattered red maple log trees.
82	4116 - Mixed N. Hardwood - Aspen	Sapling Well	12.5	20	Immature	red maple and cherry about 20'-25' tall. Parts of the stand is converting to pole timber, some m4/m5 pockets.
84	4112 - Maple, Beech, Cherry Association	Sawtimber Well	11.7	79	81-110	Stand was thinned in 2010. Some wind damage from 8/2/2015. Sugar maple regen in spots. Decent quality timber. North edge is more open with heavier aspen regeneration M8 over A3.
86	4130 - Aspen	Poletimber Medium	4.3	38	81-110	Aspen is poor quality.
88	42110 - Planted Red Pine	Sapling Well	7.7	17	Immature	OPIC - FMD: 1/20/2006 R3 planted in jack pine M1 understory. J3 J2 in a lot of places. R3 should take over in the next ten years or so. 1999 REPLANT TO RED PINE TS# 152-98-1 (Lemmiem)  Jack pine is overtop the planted red pine. Some areas look as though the plantation has failed and are M3 pockets.
91	4191 - Mixed Upland Deciduous with Conifer	Poletimber Poor	16.6	30	1-50	OPIC - FMD: 1/26/2006 Scattered everything. (Grieve) U0 filling in with aspen and hardwoods. Some Scotch pine sneaking in from the private property.
94	4112 - Maple, Beech, Cherry Association	Poletimber Well	3.2	72	81-110	Clumpy timber. Some sugar maple on the edges of the stand in the understory. Some pocket of big tooth.
97	4130 - Aspen	Sapling Well	8.5	17	Immature	OPIC - FMD: TS#161-98-1 (Grieve) Trees are about 15' tall and is well stocked.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
99	4116 - Mixed N. Hardwood - Aspen	Sapling Medium	86.1	25	Immature	Stand is a real mix of aspen and hardwood species and also of age and size classes. There is scattered aspen and hardwood pole timber but also lots of M3 and A3 pockets. Red maple that is becoming establish looks to be decent quality and in the eastern 1/2 is pretty well stocked.
109	42111 - Planted Red Pine, Mixed Deciduous	Sapling Poor	29.6	3	Immature	Stand was planted in 2013 and sprayed in the fall of 2015. Trees are about 2' tall.
114	4112 - Maple, Beech, Cherry Association	Sawtimber Well	8.4	79	81-110	12/16/2010 Stand thinned with Wheeler-Davis Hwds, used road (shared with private) on north side of stand and DNR had to make some repairs to the road after the harvest to make it suitable for the private owners to use (Crugier). Good quality timber, some individual wind throw, heavy ironwood understory.
116	42110 - Planted Red Pine	Sapling Well	11.8	17	Immature	OPIC - FMD: 1/20/2006 R3 planted in jack pine M1 understory. J3 J2 in a lot of places. R3 should take over in the next ten years or so. Lots of JP~15' tall. RP is only ~8' tall and looks like it is being out competed.
125	4130 - Aspen	Sapling Well	6.0	18	Immature	Stand was cut in 98, trees are about 20' tall. Decent TPA.
127	42110 - Planted Red Pine	Poletimber Well	31.7	52	141-170	Stand was thinned in 1999. Decent plantation, starting to push the log sized trees (5-6 stick trees). Canopy has tightened up. NW 1/4 of the stand has a heavy hardwood understory, otherwise fairly clean understory. Some scattered cherry. BAs 170, 140, 200.
128	4130 - Aspen	Sapling Well	3.8	18	Immature	Stand was cut in 99. Trees are about 20' tall and is well stocked.
129	42110 - Planted Red Pine	Poletimber Well	28.8	52	141-170	Stand was row thinned in 1999. Canopies are still pretty tight. Good quality plantation 5-6 trees. West part of stand slope down to the vernal ponds and is steep in areas. Clean understory. BAs 140, 190, 190.
131	42100 - Planted White Pine	Poletimber Well	40.0	50	81-110	OPIC - FMD: 8/15/11 Stand 3rd row thinned 'One Ridge Pine'. Poor quality white pine, understory is filling in with hardwoods and aspen. South part of the stand has a decent ridge running through it.
132	4191 - Mixed Upland Deciduous with Conifer	Poletimber Poor	3.5	35	Unspecified	Stand is an opening that is filling in. A5 pockets and scattered poor quality hardwoods. Also, some scattered white pine.
134	4116 - Mixed N. Hardwood - Aspen	Poletimber Well	7.1	72	81-110	OPIC - FMD: 2/3/2006 Some of this stand was planted to white pine but was crowded out. (Grieve) Medium to poor quality hardwoods on a ridge.
135	4130 - Aspen	Sapling Well	21.2	28	Immature	Trees are about 30' tall and is starting to convert to a pole stand.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
136	4112 - Maple, Beech, Cherry Association	Poletimber Well	22.6	71	81-110	Poor to medium quality hardwoods. Some scattered aspen which is starting to deteriorate. Areas of low stocking with pole/sap ironwood in the gaps. Clumpy red maple and some scattered white pine.
138	4130 - Aspen	Poletimber Well	2.4	64	51-80	Tree buffer around ponds. No cut.
141	4130 - Aspen	Poletimber Well	3.6	64	51-80	Tree buffer around ponds. No cut.
143	4130 - Aspen	Sapling Well	44.2	28	Immature	Stand is starting to convert to more of a pole stand. Trees are about 30' tall and is well stocked. Rolling terrain. More of a mix of hardwood species along the stand edges.
144	4112 - Maple, Beech, Cherry Association	Sawtimber Well	9.2	79	51-80	Stand was thinned in 2014. Decent quality hardwoods. Some scattered hemlock. Understory has a decent amount of ironwood and beech.
146	4112 - Maple, Beech, Cherry Association	Sawtimber Well	152.3	79	81-110	Stand was thinned in 2011-2012. Scattered white pine logs, mostly in the southern part of the stand. Quite a bit of ironwood filling in the canopy but there are pockets of maple, cherry and aspen regen. East end of stand has a higher component of sugar maple. NE part of stand is more of a pole size stand. Some scattered hemlock pockets. BAs 80, 90, 90, 90, 130.
149	4112 - Maple, Beech, Cherry Association	Poletimber Well	5.0	70	111-140	Mostly red maple, stand was not thinned with the adjacent cut? Some scattered white pine.
151	4110 - Sugar Maple Association	Sawtimber Well	60.0	79	51-80	12/16/2010 Stand was thinned down to 80sqft/ac 'Grandall Hwds' (Crigier). BAs 100, 60, 50, 60. Some scattered white pine logs and good quality hardwoods in the overstory. Understory is a mix, mostly ironwood and beech but there are some nice pockets of red and sugar maple regen.
152	42100 - Planted White Pine	Sawtimber Well	42.5	56	111-140	5/29/12 Stand was thinned, cut 2 leave 4 row spacing was very tight Cemetery pine 61-018-09-01 (crigier). West edge has a decent amount of sugar maple in the understory! Poor quality white pine (~5-6 stick) with some scattered cherry and other hardwoods.
153	4130 - Aspen	Sapling Well	2.7	17	Immature	1999 TS# 169-98-1 (Grieve) Regen about 20-30' tall and is well stocked. More of a mix of hardwoods on the edge of the stand.
154	4130 - Aspen	Poletimber Well	38.2	39	51-80	Aspen is about 5 sticks tall. Trees along Westwood Rd, appear to be a bit older, maybe just larger. Some pockets of bigtooth. Scattered white pine and cherry.
156	42100 - Planted White Pine	Sawtimber Well	4.2	56	111-140	Cut 2 left 4, Cemetery Pine 61-018-09-01 (crigier). Poor quality white pine over story. Understory is filling in with hardwoods.





	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
159	42100 - Planted White Pine	Poletimber Well	38.4	56	111-140	5/29/12 Stand thinned, cut 2 leave 4, row spacing is tight in spots. Cemetery Pine 61-018-09-01(Crigier) East 1/2 has a clean understory. Timber overall is of poor quality white pine. Some areas have a decent amount hardwoods in the understory.
160	42100 - Planted White Pine	Poletimber Poor	18.3	56	1-50	5/29/12 Stand had hardwood and aspen removed, all the WP was left. Stand should sprout well. Cemetery Pine 61-018-09-01(Crigier) Scattered white pine pole timber with heavy aspen and hardwood in the understory. Regen is about 10' tall and is well stocked.
161	4130 - Aspen	Sapling Well	1.4	17	Immature	1999 TS# 169-98-1 (Grieve) Trees about 20' tall and is well stocked.
162	4112 - Maple, Beech, Cherry Association	Poletimber Well	43.2	75	111-140	Some scattered hemlock and white pine. Medium to poor quality trees. Red maple is clumpy. Some areas have more log trees but mostly pole timber.
163	4130 - Aspen	Sapling Well	9.1	17	Immature	1999 TS# 169-98-1 (Grieve) Trees are about 20' tall, lots of TPA, well stocked.
165	4199 - Other Mixed Upland Deciduous	Sapling Well	42.3	26	Immature	OPIC - FMD: 2/7/2006 This stand was cut 18 years ago more or less. TS# 35-88-1 Some parts of this stand are more to hardwoods than aspen. (Grieve)Trees are about 20' tall and lots of TPA. Some pockets of hemlock. West and northwest part of stand seems to have more aspen.
167	42100 - Planted White Pine	Sawtimber Well	58.4	56	111-140	OPIC - FMD: 8/15/11 Stand was thinned cut 2 leave 3 'Plum Smith Pine & Hwds'. Some scattered hardwoods in the overstory. Lower BAs in the southern part of the stand where the plantation is a bit more irregular.
168	4112 - Maple, Beech, Cherry Association	Poletimber Well	5.3	70	81-110	OPIC - FMD: 8/15/11 Stand was thinned to 80sqft/ac 'plum Smith Pine & Hwds'. Lots of ironwood and beech in the understory.
170	4112 - Maple, Beech, Cherry Association	Poletimber Medium	11.1	70	51-80	OPIC - FMD: 8/15/11 Stand was thinned to 80sqft/ac 'Plum Smith Pine & Hwds'. Stocking is a bit variable (50, 60, 80). Residual timber is of pretty good form. Understory looks like a lot of beech and ironwood. Some scattered hemlock.
171	4130 - Aspen	Poletimber Well	29.9	38	51-80	Some pockets of wind throw, likely from the 8/2/15 storm. heavy damage seems to be in the central part of the east line. Decent maple in understory. Smaller diameters in the northern part of the stand.
172	42100 - Planted White Pine	Poletimber Well	2.8	56	81-110	OPIC - FMD: 8/15/11 Stand was thinned take 2 and leave 3 'Plum Smith Pine & Hwds'. This stand is in a pot hole. Understory filling in with hardwoods.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
173	4112 - Maple, Beech, Cherry Association	Poletimber Well	55.7	70	111-140	Clumps red maple of medium-poor quality. Uniform stocking, and has some scattered log timber. BAs 130, 130, 130, 150. Already a lot of ironwood in the understory :(
175	42100 - Planted White Pine	Sawtimber Well	65.5	56	111-140	OPIC - FMD: 8/15/11 Stand was thinned took 2 and left 3 'Plum Smith Pine & Hwd'. Some scattered Hardwoods in the overstory. Understory is filling in with mixed hardwoods, some sugar maple :) Lower BA in the western portion of the stand where the plantation get more irregular.
176	4112 - Maple, Beech, Cherry Association	Poletimber Well	21.1	70	111-140	Small U0 in the middle of the stand. Some scattered white pine. Medium-poor quality trees. Stocking is variable. BAs 140, 90, 140. Beech and ironwood in the understory already.
177	4112 - Maple, Beech, Cherry Association	Sawtimber Well	14.3	79	111-140	Looks like stand was thinned before ~ 15 years ago. Understory is full of ironwood and beech. BAs 120, 120, and 150. Northeast part of the stand is more clumpy soft maple and it doesn't look like that has been thinned before. Overall decent quality timber.
180	4139 - Aspen, Mixed Deciduous	Poletimber Well	17.3	42	111-140	OPIC - FMD: 2/7/2006 This looks like a very old clear cut. Look at in 20 years. Some very good crop trees. (Grieve) Some of the aspen is now 5-6 sticks tall. Mixed stand some spots it is more of an aspen stand other are more of a hardwood stand. Some scattered white pine log trees. Some sugar maple in the understory!
181	4130 - Aspen	Poletimber Well	20.7	53	51-80	Stand is on some hilly ground with a few potholes. Medium to poor quality trees. Hardwoods in the understory. There is a patch of younger looking bigtooth at the north end.
183	42100 - Planted White Pine	Sawtimber Medium	42.3	53	51-80	Stand was thinned with a cut 2 row and leave 4 rows pattern 'Wallace Mix' 61-077-09-01. Some of the rows had to be cut with the terrain, also all hardwood except for small cherry and elm (10/2/12sc). Stand is filling in with hardwoods in the understory. Medium to poor quality pine, on some hilly terrain. Most of the plantation is down in a bowl.
184	4112 - Maple, Beech, Cherry Association	Sawtimber Medium	60.9	75	51-80	Stand was thinned with 'Wallace Mix' 61-077-09-01. All of the aspen was removed and some illegal 2 tracks were blocked along the north line (10/2/12sc). Stand received heavy wind damage on 8/2/15. Stand was salvaged in December of 15. Crew was working on a sale just to the south in C174 that did the clean up work. This left the residual timber patchy. Most of the damage was west of the 2 tract and also east of of the well pad. Good looking residual timber, but understory has a lot of beech and ironwood.
186	42100 - Planted White Pine	Sawtimber Well	10.9	56	111-140	Stand was thinned using a cut 2 rows and leave 4 pattern 'Wallace Mix' 61-077-09-01 (10/2/12sc). Stand is in some hilly terrain, understory is filling in with some hardwoods. Mostly 5 stick trees, medium-poor quality.



Stand	Cover Type	Acres	Managed Site	General Comments:
2	623 - Emergent Wetland	0.7	No	OPIC - FMD: 1/23/2006 Ponds some years, others not. This year and the last few years has been a marsh with some water in them at sometimes. (Grieve) 1999 WATER & PONDS (Lemmien-Hagan)
3	623 - Emergent Wetland	3.4	No	OPIC - FMD: 1/23/2006 Ponds some years, others not. This year and the last few years has been a marsh with some water in them at sometimes. (Grieve) 1999 WATER & PONDS (Lemmien-Hagan)
11	310 - Herbaceous Openland	0.9	No	well pad managed by chevron
14	330 - Low-Density Trees	0.8	No	OPIC - FMD: 1/23/2006 Just changing from G to U. Scattered cherry brush. (Grieve)
15	330 - Low-Density Trees	1.4	No	OPIC - FMD: 1/23/2006 Just changing from G to U. Scattered cherry brush. (Grieve)
16	310 - Herbaceous Openland	0.8	No	Chevron well pad
18	3301 - Low Density Deciduous Trees	4.5	No	OPIC - FMD: 1/23/2006 Just changing from G to U. Scattered cherry brush. (Grieve) there is an M3 pockets along starvation lake road.
19	330 - Low-Density Trees	3.4	No	OPIC - FMD: 1/23/2006 Just changing from G to U. Scattered cherry brush. (Grieve)
21	623 - Emergent Wetland	1.5	No	OPIC - FMD: 1/23/2006 Ponds some years, others not. This year and the last few years has been a marsh with some water in them at sometimes. (Grieve) 1999 WATER & PONDS (Lemmien-Hagan)
27	330 - Low-Density Trees	6.1	No	OPIC - FMD: 1/23/2006 Just changing from G to U. Scattered cherry brush. (Grieve)
28	6239 - Mixed Emergent Wetland	1.0	No	OPIC - FMD: 1/23/2006 Ponds some years, others not. This year and the last few years has been a marsh with some water in them at sometimes. (Grieve)
29	122 - Road/Parking Lot	1.9	No	OPIC - FMD: 2/3/2006 Just turning from A3 to A6. Look at in twenty years. Looks good. (Grieve)
30	330 - Low-Density Trees	2.9	No	OPIC - FMD: 1/23/2006 Just changing from G to U. Scattered cherry brush. (Grieve)
32	310 - Herbaceous Openland	1.7	No	Well pad managed by Chevron
33	330 - Low-Density Trees	6.2	No	OPIC - FMD: 1/25/2006 Scattered tress of many species moving in from the side. Last time around this was a grass stand.. (Grieve)
34	330 - Low-Density Trees	0.7	No	OPIC - FMD: 1/25/2006 Scattered tress of many species moving in from the side. Last time around this was a grass stand.. (Grieve)



Stand	Cover Type	Acres	Managed Site	General Comments:
35	310 - Herbaceous Openland	0.9	No	
38	330 - Low-Density Trees	1.4	No	OPIC - FMD: 1/25/2006 Scattered tress of many species moving in from the side. Last time around this was a grass stand.. (Grieve)
42	623 - Emergent Wetland	2.2	No	OPIC - FMD: 1/23/2006 Ponds some years, others not. This year and the last few years has been a marsh with some water in them at sometimes. (Grieve) 1999 WATER & PONDS (Lemmien-Hagan)
44	330 - Low-Density Trees	1.0	No	OPIC - FMD: 2/6/2006 Ready for a selection cut. Take all the ash, this stand is 4 miles or so from the quarantine area. SW part of stand is weak & has some old aspen. Remove all the aspen as it is in bad shape or close to it. Encourage under representative species (Grieve). 12/16/2010 Stand was thinned down to 80sqft/ac 'Grandall Hwds' (Crigier).
49	310 - Herbaceous Openland	1.4	No	
51	330 - Low-Density Trees	7.9	No	OPIC - FMD: 1/26/2006 Scattered everything. (Grieve)
52	330 - Low-Density Trees	28.2	No	OPIC - FMD: 1/25/2006 Scotch pine is seeding in heavy. we are in the process of acquiring the 10 acres in between the two pieces.
53	310 - Herbaceous Openland	1.6	No	OPIC - FMD: 3/15/2006 Pipeline and/or power lines. (Grieve)
59	330 - Low-Density Trees	5.0	No	
63	330 - Low-Density Trees	2.1	No	OPIC - FMD: 1/23/2006 Smaller than last time. (Grieve)
65	122 - Road/Parking Lot	2.0	No	roads
66	310 - Herbaceous Openland	1.2	No	Well pad, not in use
68	122 - Road/Parking Lot	5.2	No	
77	122 - Road/Parking Lot	3.8	No	OPIC - FMD: 1998 ROADS (Lemmien-Hagan)
83	330 - Low-Density Trees	3.6	No	OPIC - FMD: 1/26/2006 Scattered everything. (Grieve)
85	330 - Low-Density Trees	3.9	No	Road and powerline ROW



Stand	Cover Type	Acres	Managed Site	General Comments:
87	623 - Emergent Wetland	7.3	No	OPIC - FMD: 1/23/2006 Ponds some years, others not. This year and the last few years has been a marsh with some water in them at sometimes.
126	330 - Low-Density Trees	0.8	No	OPIC - FMD: 3/15/2006 Old grass stand turning into U-type between red pine stands. (Grieve)
139	623 - Emergent Wetland	1.6	No	OPIC - FMD: 1/23/2006 Ponds some years, others not. This year and the last few years has been a marsh with some water in them at sometimes. (Grieve) 1999 WATER & PONDS (Lemmi-Hagan)
142	623 - Emergent Wetland	2.3	No	OPIC - FMD: 1/23/2006 Ponds some years, others not. This year and the last few years has been a marsh with some water in them at sometimes. (Grieve) 1999 WATER & PONDS (Lemmi-Hagan)
158	330 - Low-Density Trees	0.7	No	OPIC - FMD: 2/6/2006 Was Grass. But is now being taken over by Scotch pine. Should be killed off. Good Wildlife project or small but not economic prescribed fire. Unfortunately, with Scotch pine on private to the west, this will just seed back in. (Grieve)
401	310 - Herbaceous Openland	0.5	No	OPIC - FMD: 1/23/2006 Grass pot hole in middle of red pine plantation. (Grieve)
403	330 - Low-Density Trees	2.1	No	OPIC - FMD: 1/23/2006 Pot Hole, Some hardwoods moving in. (Grieve)
404	310 - Herbaceous Openland	1.2	No	OPIC - FMD: 1/23/2006 Pot Hole, Some hardwoods moving in. (Grieve)
406	310 - Herbaceous Openland	2.0	No	OPIC - FMD: 1/26/2006 Abandon well site. Knapweed, plant to spruce if Wildlife wants, otherwise plant to red pine. Someone is using this stand to practice barrel racing. (Grieve)
407	310 - Herbaceous Openland	15.0	No	OPIC - FMD: 3/15/2006 Pipeline and/or power lines. (Grieve)
411	310 - Herbaceous Openland	15.8	No	OPIC - FMD: 2/10/2006 Grass in pipeline or power line R/W. (Grieve)
412	310 - Herbaceous Openland	1.0	No	OPIC - FMD: 2/10/2006 Antrim gas well drilled in the early 2000's. (Grieve) Well pad managed by Chevron.
413	310 - Herbaceous Openland	24.5	Yes	Old Kalkaska-Antrim Landfill closed in about 1984-85. Illegal ORV use has damaged the cap and some of the vents on the landfill site. A pond on top of the cap has formed in the NE corner. Also trees are growing on the landfill cap that need to be removed.
421	310 - Herbaceous Openland	1.0	No	OPIC - FMD: 2/10/2006 Antrim gas well drilled in the early 2000's. (Grieve) Well pad managed by Chevron
422	330 - Low-Density Trees	0.7	No	OPIC - FMD: 3/15/2006 Grass between pvt 7 pine plantation. (Grieve)



Stand	Cover Type	Acres	Managed Site	General Comments:
425	310 - Herbaceous Openland	0.5	Yes	OPIC - FMD: 2/7/2006 still a grass stand (Grieve)
426	330 - Low-Density Trees	3.3	No	OPIC - FMD: 2/10/2006 Grass in pipeline along Plum Valley Road & and an old homestead area. (Grieve)
427	310 - Herbaceous Openland	1.0	No	OPIC - FMD: 2/10/2006 Antrim gas well drilled in the early 2000's. (Grieve) Managed by Chevron.
428	310 - Herbaceous Openland	0.9	No	OPIC - FMD: 2/10/2006 Antrim gas well drilled in the early 2000's. (Grieve) Managed by Chevron
432	310 - Herbaceous Openland	1.0	No	OPIC - FMD: 2/10/2006 Antrim gas well drilled in the early 2000's. (Grieve) Well pad managed by Chevron.
433	310 - Herbaceous Openland	0.9	No	OPIC - FMD: 2/10/2006 Antrim gas well drilled in the early 2000's. (Grieve) Well pad managed by Chevron.
435	623 - Emergent Wetland	0.9	Yes	Has had some ORV damage. We tried to block it off in 2012 with Wallace Mix.
436	310 - Herbaceous Openland	0.8	No	OPIC - FMD: 2/10/2006 Antrim gas well drilled in the early 2000's. (Grieve) Well pad managed by Chevron.