



COMPARTMENT REVIEW PRESENTATION

GAYLORD FOREST MANAGEMENT UNIT

COMPARTMENT: 45

ENTRY YEAR: 2012

ACREAGE: 2,614

COUNTY: Antrim

Revision Date: 05/20/2010

Stand Examiner: Ken Phillips

Legal Description: T31N R05W, Sections 1-3, 10-12

Management Goals: To provide for the protection, integrated management and responsible use of a healthy, productive, and undiminished forest resource base for the social, recreational, environmental, and economic benefit of the State of Michigan.

Soil and Topography: This compartment is very hilly with many abrupt changes in topography that will limit equipment operability. The dominant upland soil type is Kalkaska sandy loam. Tawas muck is typically associated with the wetlands along the south branch of the Boyne River.

Ownership Patterns, Development, and Land Use in and Around the Compartment: No private property In-holdings occur within the compartment, however, many private parcels do adjoin exterior compartment boundaries. An active railroad corridor owned by the MDOT and leased to the Great Lakes Railroad Company, bisects the eastern portion of the compartment. This railroad corridor restricts vehicular access for management activities to a small portion of the compartment. Two overhead electric line easements also cross through the compartment and numerous Antrim gas wells are in production within the compartment.

Unique, Natural Features: A recent search of the Michigan Natural Features Inventory database only returned a notation indicating the possible presence of the Spike-lipped crater (*Appalachina sayanus*). It is highly probable, however, that Red-shouldered hawk (*Buteo lineatus*) could also be found within this compartment.

Archeological, Historical, and Cultural Features: Large portions of Section 10 were historically grazed under the permission of Department use permits. Unauthorized grazing continued, however, long after the last permit expired in 1998. With the assistance of Law Enforcement Division, efforts began in 2009 to halt the grazing and to have the cattle fences removed from State-owned land. Nearly a mile of fence has been removed, however, over 3,800 feet of 4-strand barbed wire fence line still remains in place around stand #46.

Special Management Designations or Considerations: None

Watershed and Fisheries Considerations: This compartment contains a portion of the South Branch Boyne River, a designated trout stream. Short segments of small tributaries to this watercourse were also encountered. A 300-foot no clear-cut buffer should be maintained adjacent to this river to discourage beaver activity and dams.

Wildlife Habitat Considerations: This compartment mostly upland areas consisting of mostly northern hardwoods with smaller component of aspen scattered through out. Stands 1, 6, 20, 49, 61, 63, 65, 78, 79, 103, and 106 are going to be treated and will provide structural diversity though out this compartment. Stand 52 is going to be clear cut to provide early sucesional habitat. This area contains various upland game species including white-tailed deer, wild turkey, and ruffed grouse. This area receives moderate hunting pressure, especially during heavy beech nut years.

Mineral Resource and Development Concerns and/or Restrictions: Surface sediments consist of coarse textured glacial till and glacial outwash sand and gravel and postglacial alluvium. The glacial drift thickness varies between 200 and 500 feet. Beneath the glacial drift are the Ellsworth and Antrim Shales. These shales are quarried for cement products, elsewhere in the State. Several gravel pits are located on the uplands, one within the compartment in the NE/4 of Section 2. All State lands located on the uplands have good gravel potential. Oil and gas potential in the area is primarily for the Antrim Shale gas play. The compartment appears to be nearly complete for Antrim development.

Vehicle Access: Access is good throughout the compartment, due in large part to the recent Antrim gas development.

Survey Needs: No survey work should be required in order to carry out prescribed treatments.

Recreational Facilities and Opportunities: The nationally recognized North Country Trail (NCT) crosses through this compartment. As currently routed, this trail follows the right-of-ways of Dobleski Road, US-31 and Giem Road for over 2 miles. An interest has been expressed regarding the potential re-routing of this trail across sections 1 and 12 in order to avoid this lengthy road segment. While this route would be more desirable for trail users, it is entirely dependent on gaining permission to cross a small corner of private land east of Dobleski Road. In addition to the NCT, a short segment of snowmobile trail #76 passes through the far eastern edge of the compartment.

Fire Protection: This compartment is composed of low risk fuel types. If a fire were to occur, access to many off road areas within the compartment would be extremely challenging due to topography.

Additional Compartment Information:

- **The following 3 reports from the IFMAP Inventory System are attached:**
 - ◆ **Cover Type by Age Class**
 - ◆ **Proposed Treatments – No Limiting Factors**
 - ◆ **Proposed Treatments – With Limiting Factors**

- **The following information is displayed, where pertinent, on the attached compartment maps:**
 - ◆ **Base feature information, stand numbers, cover types**
 - ◆ **Proposed treatments**
 - ◆ **Proposed road access system**
 - ◆ **Suggested potential and current SCA's**

Cover Type & Treatment Map

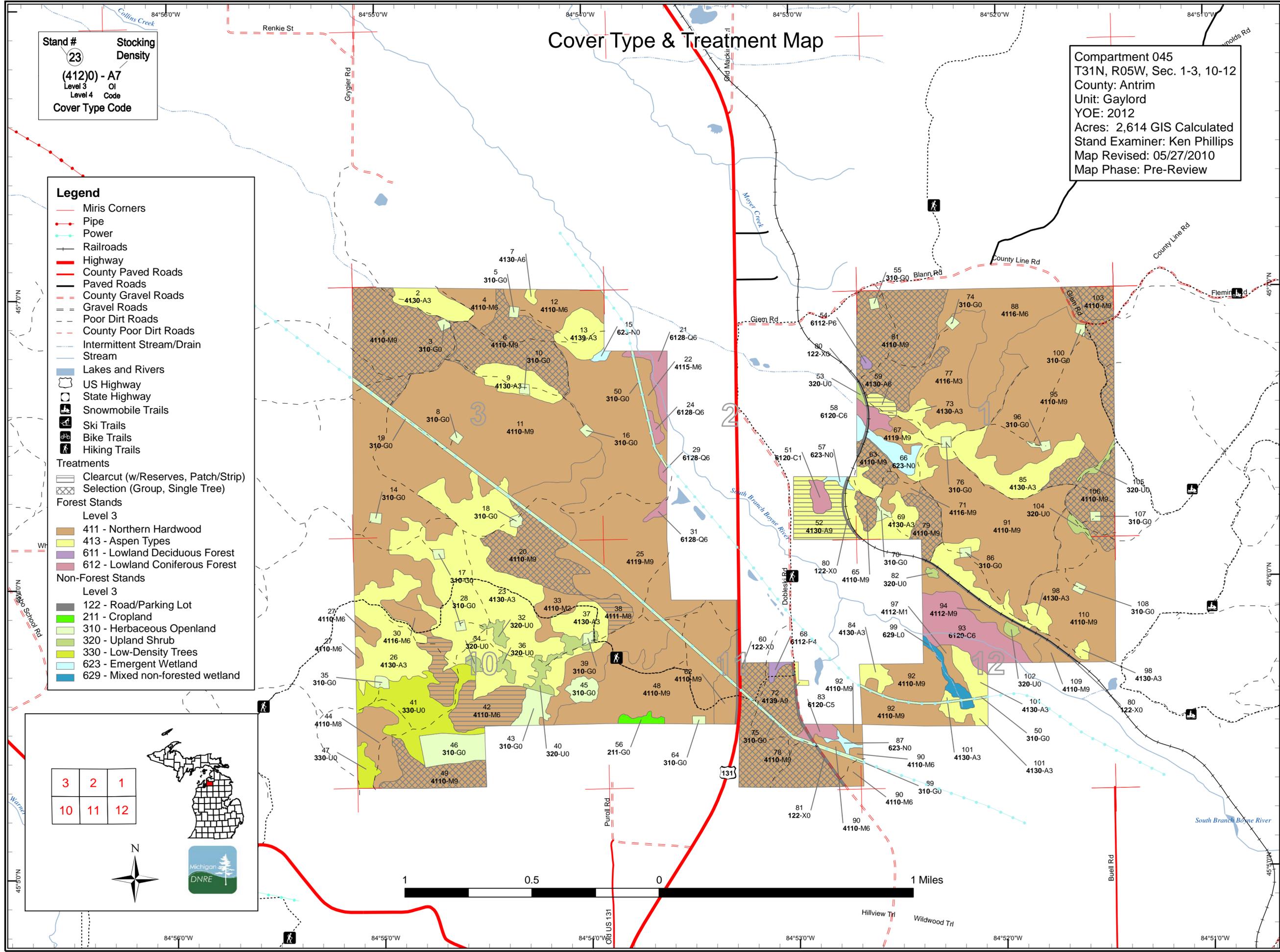
Compartment 045
 T31N, R05W, Sec. 1-3, 10-12
 County: Antrim
 Unit: Gaylord
 YOE: 2012
 Acres: 2,614 GIS Calculated
 Stand Examiner: Ken Phillips
 Map Revised: 05/27/2010
 Map Phase: Pre-Review

Stand #
(4120) - A7
 Level 3 OI
 Level 4 Code
 Cover Type Code

- Legend**
- Miris Corners
 - Pipe
 - Power
 - Railroads
 - Highway
 - County Paved Roads
 - Paved Roads
 - County Gravel Roads
 - Gravel Roads
 - Poor Dirt Roads
 - County Poor Dirt Roads
 - Intermittent Stream/Drain
 - Stream
 - Lakes and Rivers
 - US Highway
 - State Highway
 - Snowmobile Trails
 - Ski Trails
 - Bike Trails
 - Hiking Trails
- Treatments**
- Clearcut (w/Reserves, Patch/Strip)
 - Selection (Group, Single Tree)
- Forest Stands**
- Level 3
- 411 - Northern Hardwood
 - 413 - Aspen Types
 - 611 - Lowland Deciduous Forest
 - 612 - Lowland Coniferous Forest
- Non-Forest Stands**
- Level 3
- 122 - Road/Parking Lot
 - 211 - Cropland
 - 310 - Herbaceous Openland
 - 320 - Upland Shrub
 - 330 - Low-Density Trees
 - 623 - Emergent Wetland
 - 629 - Mixed non-forested wetland

3	2	1
10	11	12

N

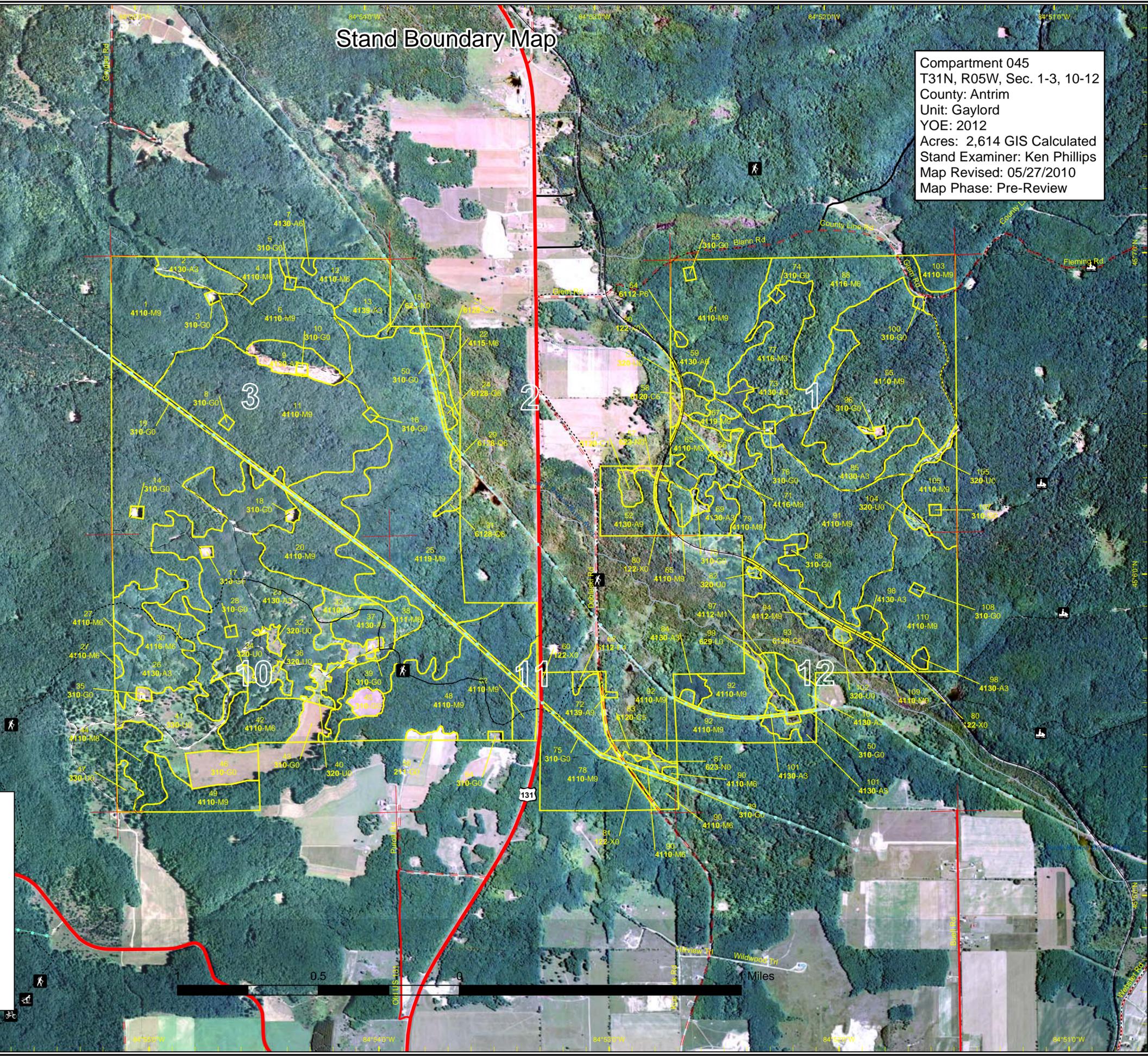


Stand Boundary Map

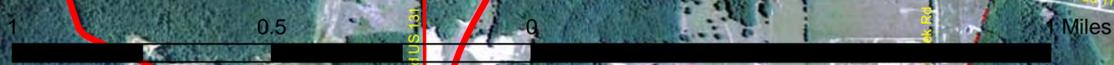
Stand #
(412)0 - A7
 Level 3 OI
 Level 4 Code
 Cover Type Code

Compartment 045
 T31N, R05W, Sec. 1-3, 10-12
 County: Antrim
 Unit: Gaylord
 YOE: 2012
 Acres: 2,614 GIS Calculated
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- Legend**
- Miris Corners
 - Pipe
 - Power
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 - Poor Dirt Roads
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3	2	1
10	11	12



Dedicated & Proposed Special Conservation Area Map

Stand #
 (412)0 - A7
 Level 3
 Level 4
 Cover Type Code

Stocking
 Density
 OI
 Code

Compartment 045
 T31N, R05W, Sec. 1-3, 10-12
 County: Antrim
 Unit: Gaylord
 YOE: 2012
 Acres: 2,614 GIS Calculated
 Stand Examiner: Ken Phillips
 Map Revised: 05/27/2010
 Map Phase: Pre-Review

Legend

- Miris Corners
- Stand Boundaries
- Forest Stands
 - Level 3
 - 411 - Northern Hardwood
 - 413 - Aspen Types
 - 611 - Lowland Deciduous Forest
 - 612 - Lowland Coniferous Forest
- Non-Forest Stands
 - Level 3
 - 122 - Road/Parking Lot
 - 211 - Cropland
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 - 320 - Upland Shrub
 - 330 - Low-Density Trees
 - 623 - Emergent Wetland
 - 629 - Mixed non-forested wetland
- Dedicated Special Conservation Areas
 - Dedicated Management Areas
 - Cold Water Streams

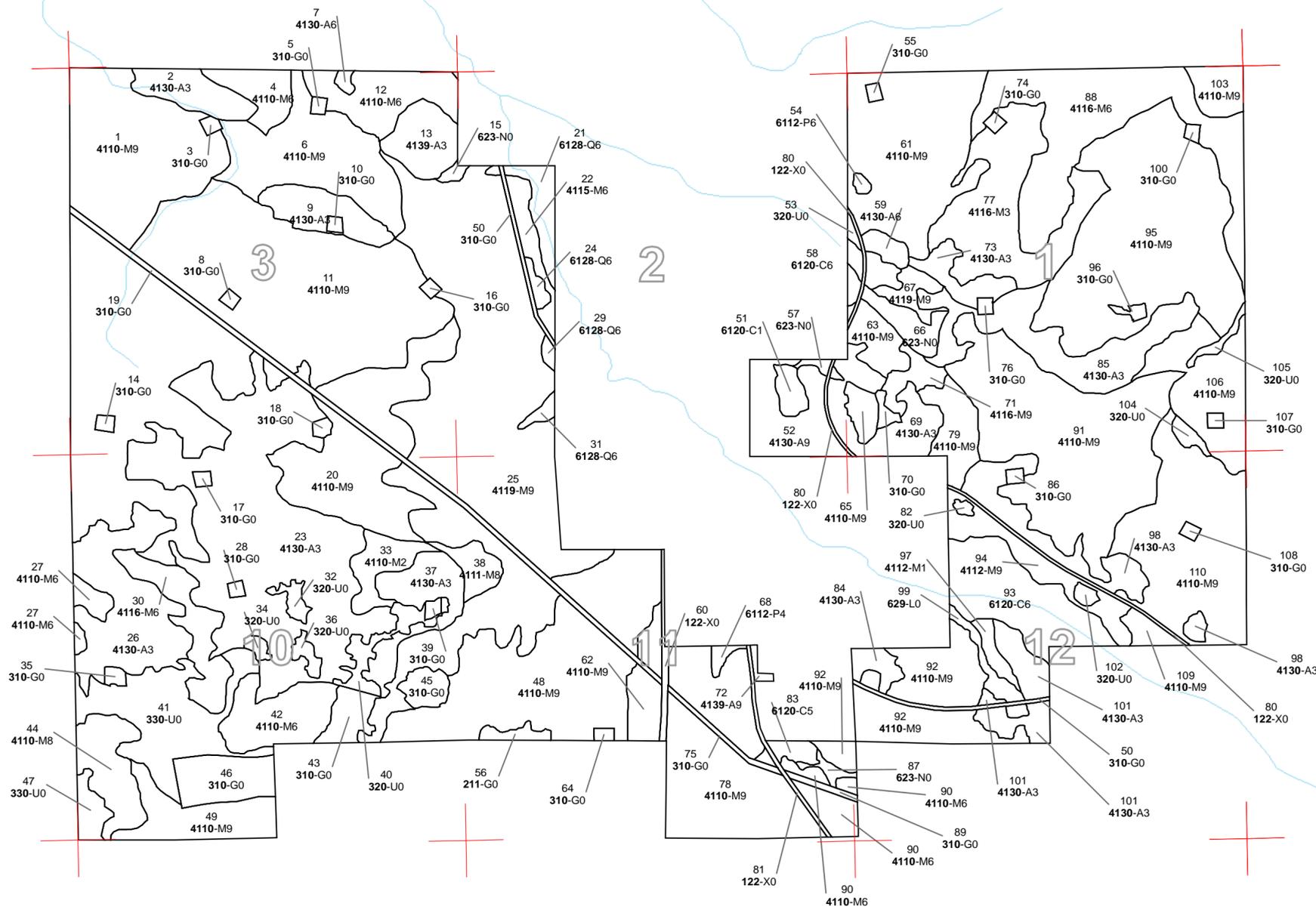
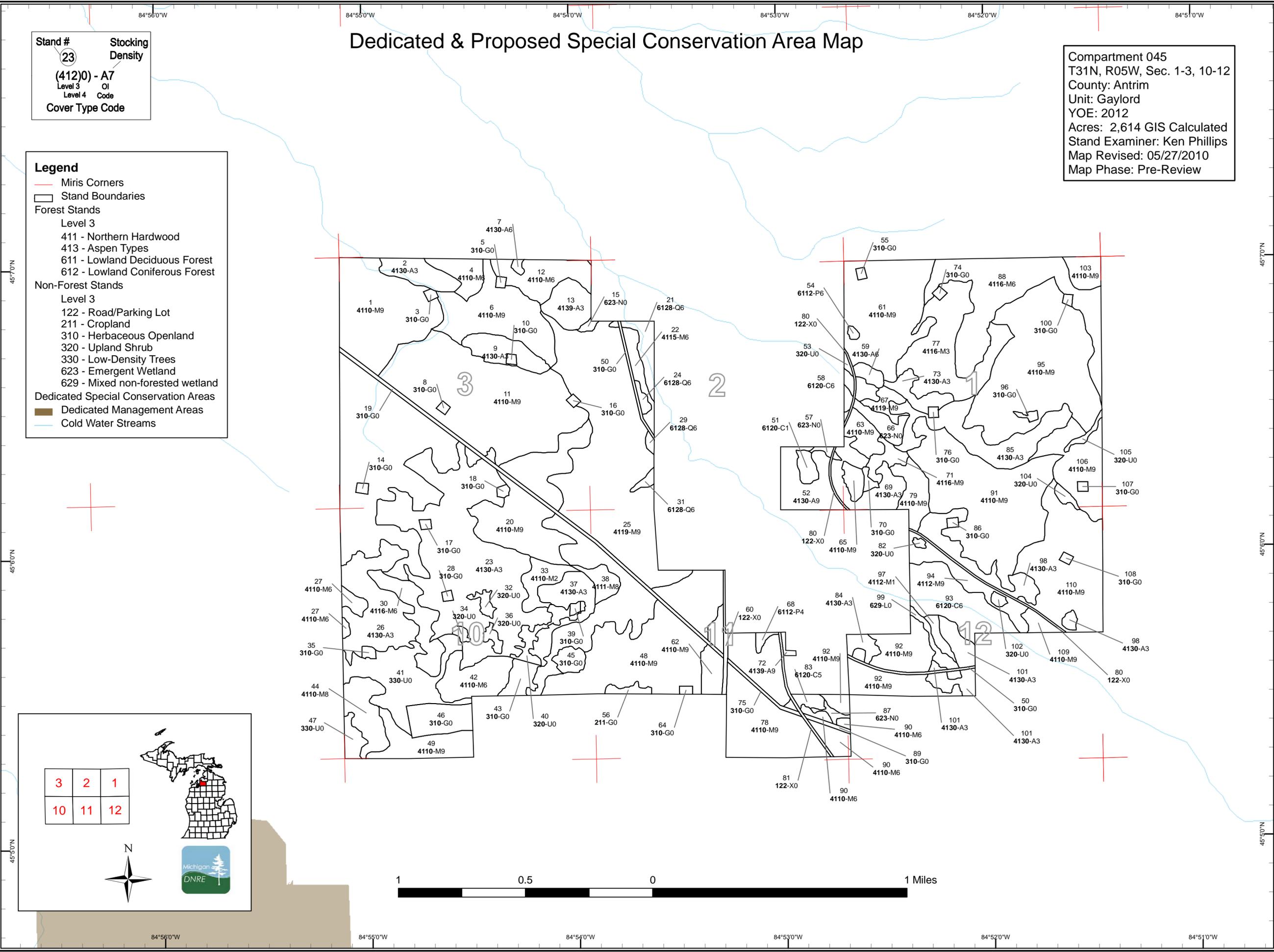
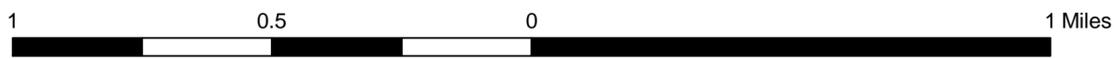



Table 1 – Total Acres by Cover Type and Age Class
(Level 3 Cover Type)



	Age Class														Total	
	Non-Forested	1-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100-109	110-119	120 +		Uneven Age
Aspen Types	0	18	164	243	0	1	0	5	1	26	0	0	0	0	0	459
Cropland	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Emergent Wetland	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17
Herbaceous Openland	86	0	0	0	0	0	0	0	0	0	0	0	0	0	0	86
Low-Density Trees	54	0	0	0	0	0	0	0	0	0	0	0	0	0	0	54
Lowland Coniferous Forest	0	0	0	5	0	0	0	0	5	55	12	0	0	0	0	76
Lowland Deciduous Forest	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3
Mixed non-forested wetland	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
Northern Hardwood	0	0	0	80	0	0	0	0	548	1218	22	0	0	0	0	1868
Road/Parking Lot	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14
Upland Shrub	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27
Total	207	18	164	328	0	1	0	8	554	1299	34	0	0	0	0	2614



Table 2 – Proposed Treatment Summaries

Gaylord Mgt. Unit
Year of Entry 2012

Compartment 045
Total Compartment Acres: 2614

Acres by Treatment Type

Commercial Harvest - 549	Site Prep - 0	Tree Planting - 0	Prescribed Burn - 0	Other - 0
Habitat Cut - 0	Opening Maintenance - 0	Tree Seeding - 0	Pesticide - 0	

Cover Type by Harvest Method

	<i>Clearcut</i>	<i>Selection</i>	<i>Seed Tree</i>	<i>Shelterwood</i>	<i>Thinning</i>	<i>Other - Specify</i>	<i>Total Acres</i>
Aspen	31	0	0	0	0	0	31
Northern Hardwood	49	470	0	0	0	0	518
Total	80	470	0	0	0	0	549



Stand	Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
1	52045001-Selection	79.1	4110 - Sugar Maple Association	High Density Log	85	Harvest	Single Tree Selection	Sugar Maple Association	Cmpt. Review Proposal
<p><u>Prescription</u> Selectively mark this stand down to an average of 80 - 90 square feet of basal area. Beech bark disease is in this compartment so only smooth barked beech should be left as crop trees. An area of retention needs to be left in the northeast portion of this stand in order to protect an area of seeps and springs. The retention area should extend across the trail road to the boundary of stand #2.</p> <p><u>Specs:</u></p> <p><u>Other</u> Access to this stand is good but terrain will make some slopes challenging for equipment.</p> <p><u>Comments:</u></p> <p><u>Next Steps:</u></p>									
6	52045006-Cut	56.4	4110 - Sugar Maple Association	High Density Log	75	Harvest	Single Tree Selection	Sugar Maple Association	Cmpt. Review Proposal
<p><u>Prescription</u> Selectively thin using crop tree selection marking methods. Due to BBD may want to remove most if not all rough barked beech.</p> <p><u>Specs:</u></p> <p><u>Other</u> Suggest marketing this stand along with the adjacent stand #1 to the west.</p> <p><u>Comments:</u></p> <p><u>Next Steps:</u></p>									
20	52045020-Cut	45.0	4110 - Sugar Maple Association	High Density Log	75	Harvest	Single Tree Selection	Sugar Maple Association	Cmpt. Review Proposal
<p><u>Prescription</u> Only the portion of this stand south of the powerline is to be treated. When marking try to remove rough barked beech since BBD is in this stand already.</p> <p><u>Specs:</u></p> <p><u>Other</u> The wellsite access road along the west edge will provide the best access to this sale.</p> <p><u>Comments:</u></p> <p><u>Next Steps:</u></p>									
30	52045030-Cut	14.3	4116 - Mixed N. Hardwood - Aspen	High Density Pole	85	Harvest	Clearcut	Mixed N. Hardwood - Aspen	Cmpt. Review Proposal
<p><u>Prescription</u> Final harvest with no reserves. The northern portion of the stand contains primarily hardwood and was therefore excluded from this treatment area.</p> <p><u>Specs:</u></p> <p><u>Other</u> This stand is generally a mix of low quality hardwoods and older aspen. It was decided at the pre-review that it would be best to cut this stand and re-establish a new copice origin stand of mixed hardwood/aspen regeneration.</p> <p><u>Comments:</u></p> <p><u>Next Steps:</u></p>									
38	52045038-Cut	8.5	4111 - S.Maple, Hard Mast Association	Medium Density Log	80	Harvest	Clearcut	S.Maple, Hard Mast Association	Cmpt. Review Proposal
<p><u>Prescription</u> Final harvest leaving no residual or reserves. There is no need to protect the advanced understory since the intent of the treatment is to establish a new even-aged copice origin stand.</p> <p><u>Specs:</u></p> <p><u>Other</u> My assumption is that this stand was partially harvested when adjacent stands were clearcut. At the pre-review it was suggested that due to the low quality of the stand we might be better off final harvesting now in order to re-establish a new copice origin stand of regeneration.</p> <p><u>Comments:</u></p> <p><u>Next Steps:</u></p>									
42	52045042-Cut	26.0	4110 - Sugar Maple Association	High Density Pole	80	Harvest	Clearcut	Sugar Maple Association	Cmpt. Review Proposal
<p><u>Prescription</u> Final harvest leaving no residual or reserves. There is no need to protect the advanced understory since the intent of the treatment is to establish a new even-aged copice origin stand.</p> <p><u>Specs:</u></p> <p><u>Other</u> This is low quality hardwood that was historically grazed. There is a heavy advanced hardwood sappling understory. At the pre-review it was suggested that we might be better off final harvesting now in order to re-establish a new stand.</p> <p><u>Comments:</u></p> <p><u>Next Steps:</u></p>									

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Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
49 52045049-Cut	25.7	4110 - Sugar Maple Association	High Density Log	75	Harvest	Single Tree Selection	Sugar Maple Association	Cmpt. Review Proposal

Prescription When marking leave all hemlock and at least some of the larger diameter aspen.

Specs:

Other The eastern half of this stand is currently being grazed. The grazing should have ceased by the time this stand will be marked. The survey corner in the southeast corner of the stand is in as is the corner 1/2 mile to the west.

Comments:

Next

Steps:

59 52045059-Cut	4.7	4130 - Aspen	High Density Pole	65	Harvest	Clearcut	Aspen	Cmpt. Review Proposal
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Prescription When the adjacent stand of hardwood is thinned (stand #61) this stand should be clearcut. Scattered large diameter hardwoods occur throughout the stand but in order to favor the aspen, all trees should be removed. Recommend leaving no retention in this small stand of aspen except for any hemlock that may be encountered.

Specs:

Other The aspen in this stand is of varying ages and size classes.

Comments:

Next

Steps:

61 52045061-Cut	81.2	4110 - Sugar Maple Association	High Density Log	75	Harvest	Single Tree Selection	Sugar Maple Association	Cmpt. Review Proposal
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Prescription Apply single crop tree selection harvest methods in the majority of this stand. Along the edges of stand #54, however, there is a narrow concentration of aspen that surrounds the lowland comprising that stand. I would recommend clearcutting that area of aspen on the upland slopes leading down into stand #54. The eastern "arm" jutting into Stand #77 could be left for retention purposes if desired as it lies on a fairly steep side hill.

Specs:

Other This is a hilly stand. Some slopes may be challenging for operations.

Comments:

Next

Steps:

63 52045063-Cut	11.8	4110 - Sugar Maple Association	High Density Log	85	Harvest	Single Tree Selection	Sugar Maple Association	Cmpt. Review Proposal
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Prescription Managed using crop tree selection along with adjacent stands #65 and #79. All three stands are essentially the same.

Specs:

Other Stand #71 is an area of poorer quality hardwood with a lower basal area and a lot of aspen mixed throughout.

Comments:

Next

Steps:

65 52045065-Cut	5.9	4110 - Sugar Maple Association	High Density Log	85	Harvest	Single Tree Selection	Sugar Maple Association	Cmpt. Review Proposal
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Prescription Managed using crop tree selection along with adjacent stands #63 and #79. All three stands are essentially the same.

Specs:

Other

Comments:

Next

Steps:



Stand	Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
78	52045078-Cut	80.4	4110 - Sugar Maple Association	High Density Log	80	Harvest	Single Tree Selection	Sugar Maple Association	Cmpt. Review Proposal
<p><u>Prescription</u> This stand is under contract to be harvested during 2010. This is an old timber sale contract that resulted from a prescription developed during the 2000 field inventory.</p> <p><u>Specs:</u></p> <p><u>Other Comments:</u></p> <p><u>Next Steps:</u></p>									
79	52045079-Cut	15.7	4110 - Sugar Maple Association	High Density Log	85	Harvest	Single Tree Selection	Sugar Maple Association	Cmpt. Review Proposal
<p><u>Prescription</u> Managed using crop tree selection along with adjacent stands #63 and #65. All three stands are essentially the same.</p> <p><u>Specs:</u></p> <p><u>Other Comments:</u> Stand #71 is an area of poorer quality hardwood with a lower basal area and a lot of aspen mixed throughout.</p> <p><u>Next Steps:</u></p>									
88	52045088_Selection	20.3	4116 - Mixed N. Hardwood - Aspen	High Density Pole	70	Harvest	Single Tree Selection	Sugar Maple Association	Cmpt. Review Proposal
<p><u>Prescription</u> For logistical purposes it will be advantageous to treat this portion of stand #88 now together with stand #4 in the adjacent compartment #33.</p> <p><u>Specs:</u> Mark according to the same stand prescriptions for that larger stand. Areas that are heavy to aspen may need to be passed over when marking so that the aspen can slowly fall out of the stand to be replaced by hardwood regeneration. The longterm goal would be to meld the stands from both compartments into one.</p> <p><u>Other Comments:</u> This is generally a low quality stand with areas that are actually quite heavy to aspen. I would not normally have prescribed this except for the fact that the stand to the east was already scheduled for treatment. Using the trail as a sale boundary makes more sense than putting in an artificial line on the compartment boundary.</p> <p><u>Next Steps:</u></p>									
103	52045103-Selection	10.3	4110 - Sugar Maple Association	High Density Log	80	Harvest	Single Tree Selection	Sugar Maple Association	Cmpt. Review Proposal
<p><u>Prescription</u> This is a nice stand of hardwood that should be managed using a crop tree selection harvest. There is only an average of 107 sq. ft. of BA but for logistical reasons this stand should be treated now along with stand #88 in this compartment as well as with stand #4 in the adjacent compartment #33.</p> <p><u>Specs:</u></p> <p><u>Other Comments:</u> The survey corner in the northeast corner of the stand is in. The stand adjacent to the north was recently thinned.</p> <p><u>Next Steps:</u></p>									
106	52045106-Cut	37.8	4110 - Sugar Maple Association	High Density Log	80	Harvest	Single Tree Selection	Sugar Maple Association	Cmpt. Review Proposal
<p><u>Prescription</u> This is a nice stand that should be selectively thinned. Overall basal area is 124 sq. ft. The northwest lobe of the stand is not quite as nice as the remainder of the stand.</p> <p><u>Specs:</u></p> <p><u>Other Comments:</u> In the future this should be managed along with the adjacent stand to the east.</p> <p><u>Next Steps:</u></p>									

**Total Treatment
Acreage Proposed: 523.0**

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Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
52 52045052-Cut	26.4	4130 - Aspen	High Density Log	80	Harvest	Clearcut	Aspen	Cmpt. Review Proposal

Prescription Final harvest if we can obtain permission from an adjacent private landowner for access. I would recommend a winter only harvest due to potentially wet ground conditions. A small stream flows east/west across the north edge of the stand. An area buffering the stream should be left as retention. A retention area should also be left in the southwest corner of the stand where there is a concentration of cedar.

Other Comment: Property corners were all found during inventory.

Next Steps:

Limiting Factor and No Treatment Reason 2A: Adjacent landowner denies access
Need to cross a strip of private land east of Dobleski Road.

Total Treatment Acreage Proposed: 26.4

Stand	Gaylord Mgt. Unit			5 – Forested Stands		Compartment: 045	General Comments:
	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Year of Entry: 2012	
1	4110 - Sugar Maple Association	High Density Log	79.1	85	111-140		It does not appear that this stand has ever been thinned. The average basal area for the stand is 138 square feet. The timber is very nice quality growing on quite steep terrain except for the southern portion of the stand along the powerline which is essentially flat. A spring originates from the northern portion of this stand forming a stream that flows to the north.
2	4130 - Aspen	High Density Sapling	16.2	12			This stand was final harvested in 1998 leaving no residual. The stand lies on a fairly steep south facing side hill. The aspen regeneration has come back quite well although there are some areas where hardwood sapplings and stump sprouts predominate. The aspen is 20 - 30 feet tall.
4	4110 - Sugar Maple Association	High Density Pole	13.0	80	81-110		This stand was thinned in 2008 as part of a much larger sale in the adjacent compartment to the north. This is a small diameter pole stand of only moderate quality.
6	4110 - Sugar Maple Association	High Density Log	56.4	75	111-140		This stand does not appear to have been thinned in the past. Basal area for the stand averages 125 sq. ft. The terrain here is rolling but certainly operable. The quality of the stand is only moderate, certainly not as nice as the stand adjacent to the west.
7	4130 - Aspen	High Density Pole	1.4	42	1-50		This stand is part of a largest clearcut area that extended south into this compartment from the north. The sale area was harvested in 1968. The aspen regeneration has now advanced to pole sized material. The hardwood regeneration though is lagging behind and is still sub-merchantable.
9	4130 - Aspen	High Density Sapling	18.1	5			Stand was final harvested in 2005. No residual was left. The resulting regeneration is coming in pretty well but the aspen is still only about 10 feet tall and the hardwood is around 5 feet.
11	4110 - Sugar Maple Association	High Density Log	295.4	80	81-110		This stand was selectively thinned during 2005 - 2007. The current basal area was 87 sq. ft. For the most part this is a small diameter log stand of moderate quality. Beech in the stand tend to be larger diameter and beech scale is evident. The terrain is fairly hilly with some small portions of the marked areas being left uncut due to steep slopes.
12	4110 - Sugar Maple Association	High Density Pole	26.4	80	51-80		This stand was cut in 1988 along with the adjacent stand to the southeast. It appears that only the aspen was removed from this portion of the harvest area leaving all of the northern hardwoods as residual. In most areas of the stand this residual is uniformly scattered but some heavy pockets do exist most notably in the far northeast corner of the stand. The average residual basal area is 53 square feet making the residual timber the featured canopy. The regeneration is coming in pretty well with hardwood and aspen being equally represented.
13	4139 - Aspen, Mixed Deciduous	High Density Sapling	17.9	22	1-50		This stand was cut in 1988 along with the stand immediately adjacent to the northwest. Some hardwood residual was left in this stand but nowhere near the amount as in the adjacent stand. As a result the sappling regeneration is the feature canopy in this stand. Most of the aspen regeneration is averaging 30-50 feet tall. Hardwood regeneration is mixed throughout.



Stand	Gaylord Mgt. Unit			5 – Forested Stands		Compartment: 045	General Comments:
	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Year of Entry: 2012	
20	4110 - Sugar Maple Association	High Density Log	74.0	75	111-140		This stand averages 117 square feet of basal area. It is not very high quality hardwoods. Large diameter aspen are scattered throughout the stand especially north of the powerline.
21	6128 - Lowland Coniferous, Mixed Deciduous	High Density Pole	11.1	85	81-110		This stand lies on both sides of the Boyne River. This stand is not really too wet at this time but I would imagine it does flood periodically.
22	4115 - Y.Birch, Hemlock NH	High Density Pole	9.6	80	81-110		This is a transitional stand. It is definitely on a site that has a high water table. There are seeps lacing through this stand down toward the Boyne River. For the most part though the species mix is made up of upland hardwood species and the site itself is generally dry.
23	4130 - Aspen	High Density Sapling	166.5	21	1-50		This stand was cut in 1989. Some of the aspen regeneration has already reached pulpwood size class. The average basal area of this component of the regeneration is 40 square feet. The sapling stage though is still dominate for this current inventory. In ten years this will become a poletimber stand. This is a large stand with a considerable amount of variability. Some areas have a high amount of hardwood regeneration in addition to the aspen. The hardwood is considerably smaller in diameter as compared to the aspen.
24	6128 - Lowland Coniferous, Mixed Deciduous	High Density Pole	2.4	90	111-140		This stand lies in a slight depression at the base of a raised utility corridor. Several seeps originate in this stand that eventually lead down to the Boyne River.
25	4119 - Mixed Northern Hardwoods	High Density Log	232.0	85	111-140		Average basal area of this stand is 116 sq. ft. Stand generally lies on east facing slopes that are quite steep. There is a lot of red maple represented in this stand. The terrain was judged to be too steep for harvest consideration.
26	4130 - Aspen	High Density Sapling	52.2	16			This was harvested in 1994. The regeneration is very nice with the aspen averaging 20-30 feet tall.
27	4110 - Sugar Maple Association	High Density Pole	5.6	80	81-110		This stand is composed of two small portions of a large hardwood sale that extended into this compartment from the west. The harvest was completed in 2003.
29	6128 - Lowland Coniferous, Mixed Deciduous	High Density Pole	1.4	90	111-140		This stand lies in a slight depression at the base of a slope. Several seeps originate in this stand.
30	4116 - Mixed N. Hardwood - Aspen	High Density Pole	23.4	85	81-110		This is low quality northern hardwood with a significant aspen component. The aspen is over-mature and much of it is already standing dead. The northern 5 acres of this stand was marked and sold as part of the adjacent hardwood thinning but it was never cut.
31	6128 - Lowland Coniferous, Mixed Deciduous	High Density Pole	2.2	90	111-140		This stand lies in a slight depression at the base of a slope. Several seeps originate in this stand.





Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
33	4110 - Sugar Maple Association	Medium Density	13.2	21		This area was cut in 1989 at the same time the larger adjacent stand to the west was. This portion of the harvest area occupies a high ridgetop and has come back primarily to hardwood regeneration. Very little aspen regeneration is found in this stand and the hardwood regeneration is even often spotty. Overall stocking is definitely lower than the adjacent aspen regeneration.
37	4130 - Aspen	High Density Sapling	23.0	21	1-50	This stand was cut in 1989. Some of the aspen regeneration has already reached pulpwood size class. The average basal area of this component of the regeneration is 40 square feet. The sapling stage though is still dominate for this current inventory. In ten years this will become a poletimber stand.
38	4111 - S.Maple, Hard Mast Association	Medium Density Log	8.5	80	51-80	This is a low quality stand that occupies a steep ridge. The hardwood overstory only averages 60 square feet but the understory is well developed. My assumption is that this was partially harvested in 1989 when the adjacent clearcut to the west was cut.
42	4110 - Sugar Maple Association	High Density Pole	26.0	80	81-110	Very low quality stand. My assumption is that it once was historically grazed and in recent years the cattle were excluded allowing the understory to flourish.
44	4110 - Sugar Maple Association	Medium Density Log	22.4	70	51-80	This is not a heavily stocked stand. Looks like it may have been grazed at one time. Now hardwood sapplings are slowly coming in under the open grown hardwood canopy. Average basal area of the stand is 62 square feet.
48	4110 - Sugar Maple Association	High Density Log	112.1	75	81-110	This stand was selectively thinned in the summer of 2009. The residual basal area is s100 square feet which is higher than typical following a thinning.
49	4110 - Sugar Maple Association	High Density Log	25.7	75	111-140	This is a pretty nice quality stand occupying a north facing side slope. The east portion of the stand is currently being used by the adjacent landowner to the south for cattle grazing. The grazing should cease once the pasture fences are removed from State land during the summer of 2010. Aspen is more common in the western portions of the stand. Average basal area is 127 sq. ft.
51	6120 - Lowland Cedar	Low Density Sapling	5.3	25		This appears to be an old beaver flooding that is now becoming reforested. There are still a lot of open areas with cattails but the cedar and fir are definitely re-occupying this stand. The stand edges also have lowland aspen sapplings.
52	4130 - Aspen	High Density Log	26.4	80	81-110	While portions of this stand near the railroad are on high ground, the majority is on ground that appears to have a high water table. The stand though is not wet by any means. A narrow stream flows through the northern edge of this stand. North of this stream the stand is primarily cedar. Cedar also is also prevalent in the southwest corner of the stand.
54	6112 - Lowland Aspen	High Density Pole	1.2	65	51-80	This is a small pocket of lowland that most likely is only wet during the spring and fall. The presence of black ash though does indicate that this stand is probably not one that we should harvest.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
58	6120 - Lowland Cedar	High Density Pole	5.9	90	141-170	This is a wet stand that is interlaced with springs and seeps. This is not a dense stand of pure cedar. Rather there is quite a bit of hardwood species mixed in as well. Lots of deer activity.
59	4130 - Aspen	High Density Pole	4.6	65	111-140	Small stand of mature aspen that blends into the northern hardwood stand adjacent to the north. Some large diameter hardwoods are mixed in with this stand. There are a variety of aspen size classes represented in this stand.
61	4110 - Sugar Maple Association	High Density Log	81.2	75	111-140	This is a pretty nice quality stand with an average basal area of 139 square feet. Aspen is found as individual stems throughout the stand but there is also a very distinct area of aspen that surrounds a pocket of lowland in the southwest portion of this stand. This area of aspen was too small to meet mapping standards so it is simply combined with this hardwood stand. Some areas are hilly but no slopes are too steep to limit management consideration.
62	4110 - Sugar Maple Association	High Density Log	14.5	90	111-140	This is a very nice stand of larger diameter logs. The stand occupies some steep slopes making it inaccessible from the west. Access off of US-31 is not really a viable option which is why this stand has never been managed before.
63	4110 - Sugar Maple Association	High Density Log	11.8	85	141-170	Nice quality stand on gently rolling topography. This stand is very similar in character to two other small nearby stands. All three of these stands really are ready to be thinned.
65	4110 - Sugar Maple Association	High Density Log	5.9	85	141-170	Nice quality stand on gently rolling topography. This stand is very similar in character to two other small nearby stands. All three of these stands really are ready to be thinned.
67	4119 - Mixed Northern Hardwoods	High Density Log	6.9	85	81-110	This is a small stand of lower quality northern hardwoods. This is growing on a slightly wetter soil so red maple and yellow birch are common.
68	6112 - Lowland Aspen	Low Density Pole	2.1	65	1-50	This is a wet stand with lots of smaller diameter yellow birch and black ash. The aspen component is much larger in diameter.
69	4130 - Aspen	High Density Sapling	24.6	16		Stand was cut in 1994. This is pretty nice regeneration. Some of the aspen is up to 40 feet tall and the diameters are just starting to approach merchantable size class.
71	4116 - Mixed N. Hardwood - Aspen	High Density Log	7.8	90	81-110	This stand is poorer quality than stands adjacent on either side. Most of the maple are large diameter, low quality clumps giving the appearance that they were once open grown. Aspen is a fairly common associated species in this stand.
72	4139 - Aspen, Mixed Deciduous	High Density Log	1.3	75	81-110	The northern portion of this stand lies on a steep slope leading down to Doblesky Road. A longstanding cabin trespass was found in the southern end of the stand. This is a stand of large diameter aspen that in any other situation should be managed but has been ignored due to its irregular shape and size.

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Gaylord Mgt. Unit

5 – Forested Stands

Compartment: 045

Inventory Method: IFMAP

Year of Entry: 2012



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
73	4130 - Aspen	High Density Sapling	11.0	25	1-50	This stand was harvested in 1985 along with the stand immediately adjacent to the north. This stand, however, has no hardwood residual like that stand to the north. The regeneration in this stand is rapidly approaching merchantable size class. In fact there was 23 square feet of merchantable aspen recorded for the stand already. In ten years this will be a pole stand.
77	4116 - Mixed N. Hardwood - Aspen	High Density Sapling	62.0	25	1-50	This stand was cut in 1985. It appears that all of the aspen was cut but that a portion (if not all) of the hardwoods were left as residual. The resulting stand is extremely variable both in the character of the understory and in the amount of residual basal area. Aspen is regenerating quite well in clones but large areas of the stand are dominated by hardwood regeneration.
78	4110 - Sugar Maple Association	High Density Log	80.4	80	111-140	Nice quality stand growing on rolling but not excessively steep terrain. I do not believe that this stand has ever been thinned before. The North Country Pathway goes through this stand.
79	4110 - Sugar Maple Association	High Density Log	15.7	85	141-170	Nice quality stand on gently rolling topography. This stand is very similar in character to two other small nearby stands. All three of these stands really are ready to be thinned.
83	6120 - Lowland Cedar	Medium Density Pole	4.6	70	51-80	A fairly wet swamp conifer stand. The portion east of Dobleski Road is bisected by small seeps and springs. Open areas of cattails are interspersed throughout the stand.
84	4130 - Aspen	High Density Sapling	5.9	26	1-50	This stand was cut in 1984 and is coming back very well to aspen regeneration. Many stems are already in the 5+ inch size class but overall this should still be considered a sapling stand for ten more years.
85	4130 - Aspen	High Density Sapling	45.5	16		Stand was cut in 1994. This is pretty nice regeneration. Some of the aspen is up to 40 feet tall and the diameters are just starting to approach merchantable size class. Some of the drier south facing slopes have a heavy hardwood regeneration component as well as an occasional residual beech tree.
88	4116 - Mixed N. Hardwood - Aspen	High Density Pole	83.7	70	81-110	This is a low quality poletimber hardwood stand. Only isolated patches of quality timber exists. A large portion of the stand occupies ridgetops or side hills. Aspen is commonly represented in the stand.
90	4110 - Sugar Maple Association	High Density Pole	11.6	75	81-110	This is a stand of only moderate quality hardwood lying on a northeast facing side hill. Beaver activity along the adjacent wetlands is slowly removing the aspen component from the stand. Seasonal drainages bisect this stand.
91	4110 - Sugar Maple Association	High Density Log	121.9	80	81-110	This stand was very lightly thinned in 1996. Based on the absence of cut stumps large portions of the stand seemed to have very little material removed. This is only a moderate quality stand of hardwood that occupies some challenging terrain.
92	4110 - Sugar Maple Association	High Density Log	51.2	80	141-170	A very nice quality stand situated on rolling topography. I do not believe that it has ever been thinned.

Stand	Gaylord Mgt. Unit			5 – Forested Stands		Compartment: 045	General Comments:
	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Year of Entry: 2012	
93	6120 - Lowland Cedar	High Density Pole	43.4	85	81-110		A fairly thick stand of swamp conifers lying on both sides of the Boyne River. Areas along the river have been impacted by beaver activity. Edges of this stand adjacent to uplands have red maple and aspen interspersed.
94	4112 - Maple, Beech, Cherry Association	High Density Log	19.9	80	141-170		This is a transitional stand that leads down to the lowlands along the Boyne River. This stand is operationally landlocked by the active railroad. The overall quality of the timber is only moderate.
95	4110 - Sugar Maple Association	High Density Log	131.9	80	51-80		This stand was thinned in 2004. The end result looks pretty good overall. There are some nice small diameter log crop trees in this stand. Some of the south facing slopes though are supporting much lower quality timber. Some areas of the stand have quite a few orange marked trees that did not get cut. This was most notable in the southern portion of the stand.
97	4112 - Maple, Beech, Cherry Association	Low Density Sapling	4.6	26			This stand was cut in 1984 along with the adjacent stand of aspen regeneration to the east. This portion of the harvest area lies on a west facing side hill that leads down to a small stream. This area was hit hard by beaver activity leaving a sparse stand of primarily hardwood regeneration. If aspen did come back following the harvest it was removed by the beavers. There is some scattered 5+ inch fir in this stand. I believe they were left as residual during the harvest.
98	4130 - Aspen	High Density Sapling	26.0	16			Stand was cut in 1994. This is pretty nice regeneration. Some of the aspen is up to 40 feet tall and the diameters are just starting to approach merchantable size class.
101	4130 - Aspen	High Density Sapling	18.8	26	1-50		Stand was clearcut in 1984. The majority of the stand is coming back very well to aspen. Some areas though are heavier to northern hardwood regeneration. Edges have also been impacted heavily by beaver activity. Most notable is the west facing slope north of the utility line. This area was so altered by beaver that it was identified as a stand by itself. This stand is very close to becoming a pole sized stand. Many stems are actually already in the 5+ inch size class.
103	4110 - Sugar Maple Association	High Density Log	10.3	80	81-110		This is a nice quality stand that occupies upper slopes of a ridge. The quality diminishes dramatically at the base of the ridge. This stand should be managed with the adjacent stand to the north. Unfortunately that stand was just recently thinned. The average stand basal area for this stand is 107 sq. ft.
106	4110 - Sugar Maple Association	High Density Log	37.8	80	111-140		Average basal area of this stand is 124 sq. ft. This is a nice quality stand that is heavily weighted toward sugar maple. Topography is pretty flat. The understory is generally light but the diameters are well advanced.
109	4110 - Sugar Maple Association	High Density Log	5.2	80	81-110		This is a very unique stand for this compartment. Diameters are quite large. This stand is much drier as compared to the stand adjacent to the northwest. This stand is operationally landlocked by the active railroad. Hemlock is found in the understory of this stand which is very uncommon for this compartment.



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Gaylord Mgt. Unit

5 – Forested Stands

Compartment: 045

Inventory Method: IFMAP

Year of Entry: 2012



**Level 4
Cover Type**

**Size
Density**

Acres

**Stand
Age**

**BA
Range**

**General
Comments:**

110	4110 - Sugar Maple Association	High Density Log	81.2	75	111-140	Average stand basal area is 114 sq. ft. Overall this is not high quality hardwoods but small pockets of nice wood do exist. The terrain becomes steeper the further you go toward the south. There is a fairly well developed hardwood understory in this stand.
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Stand	Cover Type	Acres	Gen Cmts:
3	310 - Herbaceous Openland	1.1	State Warner A2-3 Antrim well pad.
5	310 - Herbaceous Openland	1.0	State Warner A3-3 Antrim well pad.
8	310 - Herbaceous Openland	1.0	State Warner C2-3 Antrim well pad.
10	310 - Herbaceous Openland	1.0	State Warner B3-3 Antrim well pad.
14	310 - Herbaceous Openland	1.2	State Warner D1-3 Antrim well pad.
15	623 - Emergent Wetland	1.5	Several areas of springs and seeps. Some timber is present but for the most part this is an area of cattails and associated lowland grasses.
16	310 - Herbaceous Openland	1.0	State Warner C4-3 Antrim well pad.
17	310 - Herbaceous Openland	1.1	State Warner A2-1- Antrim well pad.
18	310 - Herbaceous Openland	1.3	State Warner D3-3 Antrim well pad.
19	310 - Herbaceous Openland	16.2	Overhead powerline. Most of this is extremely hilly and cannot be considered for access purposes.
28	310 - Herbaceous Openland	1.0	State Warner B2-10 Antrim well pad.
32	320 - Upland Shrub	3.3	This is a part of a 1989 final harvest areaa that has not regenerated back to a forested stand. Now it is primarily cherry shrubs with only scattered aspen sapplings.
34	320 - Upland Shrub	1.8	This is a part of a 1989 final harvest areaa that has not regenerated back to a forested stand. Now it is primarily cherry shrubs with only scattered aspen sapplings.
35	310 - Herbaceous Openland	1.6	State Warner C1-10 Antrim production well pad. The C1-10 SWD shares this site. There is a small building on this well pad.
36	320 - Upland Shrub	2.9	This is a part of a 1989 final harvest areaa that has not regenerated back to a forested stand. Now it is primarily cherry shrubs with only scattered aspen sapplings.
39	310 - Herbaceous Openland	1.2	State Warner B4-10 Antrim well pad.
40	320 - Upland Shrub	9.8	This is a part of a 1989 final harvest areaa that has not regenerated back to a forested stand. Now it is primarily cherry shrubs with only scattered aspen sapplings.



Stand	Cover Type	Acres	Gen Cmts:
41	3301 - Low Density Deciduous Tree	47.8	This stand is different from the typically cherry brush stand because many of the cherry are actually of merchantable size. The basal area of these trees is still very low though. There are also scattered merchantable hardwood trees in this stand as well especially in the far northeastern lobe of the stand.
43	310 - Herbaceous Openland	9.1	This was fenced pasture land until the summer of 2009 when the responsible party was required to remove the fence and cease grazing.
45	310 - Herbaceous Openland	6.6	This was fenced pasture land until the summer of 2009 when the responsible party was required to remove the fence and cease grazing.
46	310 - Herbaceous Openland	18.6	This is fenced pasture that is being grazed by the adjacent landowner to the south. The landowner has been contacted and will be required to remove the fence and cease the grazing.
47	3301 - Low Density Deciduous Tree	6.6	Light stocking of open grown wolfy hardwood trees. Hardwood and aspen sapplings are slowly coming in to what must have once been a very open stand.
50	310 - Herbaceous Openland	6.3	Overhead powerline right-of-way. Most of this is upland but some small areas are wet.
53	320 - Upland Shrub	1.0	This is a fairly open stand with scattered cherry shrubs. There are also a few cedar scattered along the southern edge of the stand.
55	310 - Herbaceous Openland	1.0	State Warner A1-1 Antrim well pad.
56	2112 - Row Crops	3.5	This area has traditionally been farmed by the adjacent owners to the south. They were notified of the trespass in 2009 I will inspect this spring to determine if the area has been cultivated.
57	623 - Emergent Wetland	1.7	This stand lies on both sides of the railroad grade. Looks like these are old beaver floodings. Primarily cattails with some open water.
60	122 - Road/Parking Lot	3.7	US-131 Highway right-of-way.
64	310 - Herbaceous Openland	1.0	State Warner & Puroll C2-11 Antrim well pad. This is a shared well pad with only half of the pad being on State land.
66	623 - Emergent Wetland	11.2	This looks like it was an old beaver flooding. There are a lot of dead standing snags. There are also scattered live trees but the majority of this stand is non-forested. Lots of cattails and lowland grass species.
70	310 - Herbaceous Openland	2.0	State warner D1-1 Antrim well pad. Also included the adjacent natural opening to the north with this stand.
74	310 - Herbaceous Openland	1.1	State Warner A2-1 Antrim well pad.



Stand	Cover Type	Acres	Gen Cmts:
75	310 - Herbaceous Openland	2.8	Overhead powerline. Portions are low wetland but that area is less than an acre in size.
76	310 - Herbaceous Openland	1.1	State Warner C2-1 Antrim well pad.
80	122 - Road/Parking Lot	6.5	An active railroad owned by the State of Michigan Dept. of Transportation and leased to the railroad company.
81	122 - Road/Parking Lot	3.4	Dobleski Road cleared right-of-way.
82	320 - Upland Shrub	1.0	Scattered cherry brush. Some widely scattered hardwoods of merchantable size but overall this is still a shrub stand.
86	310 - Herbaceous Openland	1.1	State Warner A2-12 Antrim well pad.
87	623 - Emergent Wetland	2.4	This stand has been flooded repeatedly due to beaver activity. Several old dams still exist.
89	310 - Herbaceous Openland	1.9	Overhead powerline. Portions are low wetland but that area is less than an acre in size.
96	310 - Herbaceous Openland	1.4	State Warner C3-1 Antrim well pad. The stand also includes the immediately adjacent natural opening since splitting it out as a separate stand would have resulted in a stand less than 1 acre in size.
99	629 - Mixed non-forested wetland	6.5	This stand occupies the area immediately surrounding a small stream that has been damed repeatedly over the years by beaver. Lots of dead standing timber.
100	310 - Herbaceous Openland	1.0	State Warner A4-1 Antrim well pad.
102	320 - Upland Shrub	1.7	Scattered cherry brush. Some widely scattered hardwoods of merchantable size but overall this is still a shrub stand.
104	320 - Upland Shrub	2.7	Scattered cheery shrub brush. A few hardwood trees are mixed in.
105	320 - Upland Shrub	2.4	Widely scattered cherry brush.
107	310 - Herbaceous Openland	1.0	State Warner D4-1 Antrim well pad.
108	310 - Herbaceous Openland	1.0	State Warner A4-12 Antrim well pad.



7 – 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.

Inventory Method: IFMAP

Stand	SCA Type	SCA Name	Acres	Comments
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8 – DEDICATED CONSERVATION AREA DETAILS

* This is a list of Dedicated Biodiversity Areas for this compartment along with a 1/4 mile buffer surrounding the compartment. Refer to Dedicated Conservation Area Map for areas that the below listed Conservation Areas are located.

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.