



**GLADWIN FOREST MANAGEMENT UNIT
COMPARTMENT REVIEW PRESENTATION**

COMPARTMENT # 14 ENTRY YEAR: 2010

Compartment Acreage: 2628 County: Clare

DRAFT

Revision Date: October 2, 2008; October 20, 2008

Stand Examiner: Tim Gallagher

Legal Description: T19N – R06W: Sections: 3 – 10, 16, 17

RMU (if applicable): N/A

Management Goals:

Continue to manage aspen, oak and red pine stands to maintain a variety of age classes to enhance deer and grouse habitat. The compartment has a large acreage of mature red pine stands, which are in need of treatment. Several of these stands have had partial harvests in the past 10 to 20 years. Several of the red pine stands that have been thinned in the past 10 to 20 years have a very dense oak and/or mixed hardwood understory. The understory is the direct result of the harvests in the past, in these stands we are going to manage for the oak and/or mixed hardwood understory by removing the red pine. Many of the red pine stands are now being managed for oak and/or mixed hardwood. However, there are three red pine stands scheduled for final harvest and replanting to red pine. There is approximately 260 acres within the Muskegon River Floodplain where forest management activities are not recommended due to extremely wet mucky soils.

The state land in this compartment is spread out over ten sections. The state and private lands are intermixed resulting in miles of private property lines. Overall the compartment is on average ground with site indices between 55 and 70. There are numerous old railroad grades criss-crossing the area, remnants from the logging era.

Soil and Topography:

The area varies from well drained Grayling sands in the outwash plains to poorly drained mucky Lupton-Markey soils as you enter the Muskegon River Floodplain, the Dishwash Creek Corridor and Whisky Creek Corridor. The terrain varies from nearly level to the steep banks that lead down into the floodplain of the Muskegon River.

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

The state land occurs in large contiguous blocks and isolated government lots along the Muskegon River. Private holdings are mostly comprised of large (40 acres or greater) forested single holdings with absentee landowners. Limited forest management activity occurs on the private holdings. There are numerous permanent residences scattered through out the entire compartment as well. The town of Temple is located directly adjacent to the southeast corner of the compartment. The location of this town concentrates use on the land and along the Muskegon River.

Unique, Natural Features:

This area has a variety of rare species that could be or are present including; Kirtland Warbler, Slippershell, Elktoe, Round Pigtoe Mussels, Eastern Box Turtle, Goshawk, Bald Eagle, Osprey, Great Blue Heron, Wood Turtle and Blanding's Turtle. There is also potential for Beak Grass, Broad-leafed Puccoon in stands along the Muskegon River. It has been documented by MNFI that high-quality floodplain forests exists within and to the north and south of the compartment all along the Muskegon River

Archeological, Historical, and Cultural Features:

There are two documented sites within the compartment.

Special Management Designations or Considerations:

A portion of the Muskegon River Floodplain has been nominated as an Ecological Research Area (ERA) as part of the Muskegon River Green Creek Floodplain Forest North. A plan for this ERA is currently being written. The ERA is one stand (Stand 114 – 50 acres) and is totally surrounded by water. Stand 114 has been coded as stand condition eight to reflect the designation as an ERA.

Watershed and Fisheries Considerations:

Dishwash Creek and Whisky Creek flow into the Muskegon River within this compartment. All three of these water-ways are within the compartment. Dishwash Creek and Whisky Creek are both listed as type 1 trout streams in the 2008 Trout and Salmon Guide and should be treated as cold water fisheries. The Muskegon River, a warm water fishery and a major Michigan watershed has a natural corridor (floodplain) of lowland swamp hardwood along most of the water course and should be considered a sensitive area for timber harvest purposes. Upland/High bank areas along the river should also be considered sensitive. The Muskegon River Floodplain and associated bottomlands are seasonally flooded. There are also many scattered low areas that are seasonally flooded and support populations of waterfowl and many non-game species.

Wildlife Habitat Considerations:

No major concerns noted. Continue to manage for traditional wildlife species.

Mineral Resource and Development Concerns and/or Restrictions:

Parts of the compartment lie within the Cranberry Gas Storage Field. Numerous gas wells, pipelines and access roads are scattered over parts of the compartment. Many of the pipelines, access roads, and gas well sites are under long term lease agreements with Consumers Energy.

Surface sediments consist of glacial outwash sand and gravel and postglacial alluvium and fine-textured till. The glacial drift thickness varies between 400 and 600 feet. Beneath the glacial drift are the Pennsylvanian Saginaw and Grand River Formations. The Saginaw Formation is used for clay/shale in other areas of the State. Gravel pits are not located in the area, but there could be some potential. Most of the Compartment has been leased for gas storage for the Winterfield Field. Only one oil and gas lease is active.

Vehicle Access:

Access to most of the compartment is good via the county road system and state two tracks that are in place. There are access limitations to State Land along the Muskegon River.

Survey Needs:

None needed.

Recreational Facilities and Opportunities:

No official facilities. The area receives moderate hunting pressure most of which is deer hunters. Light fishing pressure occurs on Dishwash Creek and Whisky Creek. The Muskegon River receives moderate fishing pressure. Moderate dispersed camping occurs mainly during the firearm deer hunting season. Canoe traffic on the Muskegon River can be heavy on weekends during the summer. A private campground and canoe livery is located directly adjacent to the south east corner of the compartment along the Muskegon River on the north side of M-61.

Fire Protection:

A potential fire control problem exists due to the rural /urban interface within this compartment.

Additional Compartment Information:

Stand 114 has been nominated as an Ecological Research Area (ERA) as part of the Muskegon River Green Creek Floodplain Forest North. Expanding this ERA to include additional high quality floodplain forest along the Muskegon River should be considered.

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Michigan Department of Natural Resources - Operations Inventory System
Individual Compartment Report

AUSABLE STATE FOREST

GLADWIN FOREST MGT UNIT

CLARE COUNTY

COMPARTMENT: 14

Table 3

(acres shown in boxes)

STAND AGE CLASS

COVER TYPE	Not Coded	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	150-159	All Aged	Total
Aspen		30	83	141		149	11			8									422
Grass	152			21															173
Jack Pine		203	40			52			25										320
Lowlnd Brush	95																		95
Oak		94	21						6	33									154
Red Pine				23			267	440	151										881
Swamp Hrdwds			21	27			17		29	15	14		147					273	543
Water	40																		40
Total	287	327	165	212		201	295	440	211	56	14		147					273	2628

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Michigan Department of Natural Resources - Operations Inventory System
Individual Compartment Report

AUSABLE STATE FOREST

GLADWIN FOREST MGT UNIT

CLARE COUNTY

COMPARTMENT: 14

Table 3A

(acres shown in boxes)

MANAGEMENT OBJECTIVE TYPE

COVER TYPE	A	S	V	C	G	H	J	I	L	P	N	Q	X	O	B	R	K	Y	F	E	T	D	U	M	Z	W	Total
A Aspen	422																										422
G Grass					173																						173
J Jack Pine	25						295																				320
L LowInd Brush									95																		95
O Oak														154													154
R Red Pine	23													28	806									24			881
E Swamp Hrdwds																				543							543
Z Water																									40		40
Total	470				173		295		95					182	806					543				24	40		2628

AUSABLE STATE FOREST

GLADWIN FOREST MGT UNIT

CLARE COUNTY

COMPARTMENT: 14

Table 10 - COMPARTMENT VOLUME SUMMARY - ALL STANDS

COMPARTMENT SUMMARY			
TOTAL VOLUME		CUT VOLUME	
Hardwood	6906 Cds	Hardwood	1703 Cds
Hardwood	3348 Mbf	Hardwood	449 Mbf
Softwood	15953 Cds	Softwood	5547 Cds
Softwood	4904 Mbf	Softwood	1460 Mbf
Sum TotVol	39363 Cds	Sum CutVol	11068 Cds
Total Cmpt Acres		Acres Proposed For Cut.....	436
2628			

GLADWIN FOREST MGT UNIT

Proposed Treatments
With NO Limiting Factors

Compartment: 14

Entry Year: 2010

Stand	Cover Type	Acres	Age	Site Index	Mgt Obj	Condition	Method Cut	Harvest Priority	Cultural Need	fdf Status
1	A6	8	83	68	aspen (upland)	mature	final harvest	1	natural regeneration	
comnts Fmd : Final harvest 2" spec manage for aspen regeneration. Scattered low areas harvest on dry or frozen ground to prevent rutting on heavy soils. Apply retention along L type along Dishwash Creek and leaving scattered super canopy oak and white pine. Visual management should be considered, home directly adjacent to stand. A mix of aspen, maple and oak regeneration is expected.										
3	R9	7	53	70	red pine	immature	thinning	1		prescribed for fdf treatment
comnts Fmd : Third row thinned 5/9/2000. Reduce BA/AC to 120 by individual tree marking.										
11	R6	13	53	70	northern hardwood	immature	final harvest	1	natural regeneration	stand with fdf potential
comnts Fmd : Thinned in 1985. Parts of stand were not thinned. Most of stand has a dense hardwood understory, red maple and aspen. This is really a hardwood site. Final harvest 2" spec and convert from red pine to a mixed hardwood site. The understory will take a beating during harvest operations and should be cut as opposed to being smashed and driven over. Apply retention along west end of stand along L type along Dishwash Creek. Harvest up to Arnold Lake Road and Kirby Ave. A mix of aspen, red maple and oak regeneration is expected.										
15	R9	11	53	65	northern hardwood	immature	final harvest	1	natural regeneration	
comnts Fmd : Third row thinned in 1985. Most of stand has a dense hardwood understory, red maple and aspen. This is really a hardwood site. Final harvest 2" spec and convert from red pine to a mixed hardwood site. The understory will take a beating during harvest operations and should be cut as opposed to being smashed and driven over. Apply retention at north east corner of stand. Harvest up to Arnold Lake Road. There are scattered low wet pockets within stand. A mix of aspen, red maple and oak regeneration is expected. Variable stand, patches of red pine and patches of hardwood all mixed together. Harvest entire area, do not try to paint out red pine patches.										
30	A6	11	52	80	aspen (upland)	immature	final harvest	1	natural regeneration	
comnts Fmd : Final harvest 2" spec manage for aspen regeneration. Stand is expected to regenerate to aspen with a mix of red maple and oak. Stand is mostly upland with a mix of scattered wet pockets. Apply retention along stand 29 (L type)										
31	R9	15	53	70	red pine	immature	thinning	1		prescribed for fdf treatment
comnts Fmd : Third row thinned 1986. Thinned again in 2001. Red maple understory in places. Reduce residual BA/AC down to 120 sq. ft. by individual tree marking. Leave all scattered hardwood (red maple and aspen less than 10 BA/AC). If clearcut this stand would convert to a mixed hardwood stand, red maple and aspen.										
34	R9	8	53	70	red pine	immature	thinning	1		prescribed for fdf treatment
comnts Fmd : Third row thinned in 1985. Reduce residual red pine down to 120 sq. ft.										
46	R9	6	61	70	oak	immature	final harvest	1	natural regeneration	stand with fdf potential
comnts Fmd : All species except red pine removed in 1993. Heavy logging damage to residual red pine. Well established O3 understory 6' to 20' tall. Remove red pine overstory and convert to oak. Apply retention by leaving scattered red pine in all DBH classes.										
59	R6	13	53	50	red pine	immature	thinning	1		stand with fdf potential
comnts Fmd : Stand has not yet been thinned. Remove a third of the volume by removing every third row. Access road off Stockwell Road is seasonally very wet. Apply retention be leaving all scattered mixed hardwood within the stand. (Scattered aspen and oak)										
62	R6	54	53	60	red pine	immature	thinning	1		stand with fdf potential
comnts Fmd : Stand has not yet been thinned. Remove a third of the volume by removing every third row. Apply retention be leaving all scattered mixed hardwood within the stand. (Scattered aspen and oak)										
79	R6	52	61	55	red pine	immature	final harvest	1	planting	
comnts Fmd : Final harvest and replant to red pine. This is a intermixed plantaion of both red pine and jack pine. Strips of pure jack pine and strips of pure red pine. Red pine is out growing the jack pine by far. Apply retention by leaving buffer along creek.										
80	J6	25	69	60	aspen (upland)	immature	final harvest	1	natural regeneration	
comnts Fmd : Final harvest 2" spec and convert to aspen/oak stand. Stand is expected to regenerate to a mix of aspen, oak and red maple. Leave all red pine 10" DBH and up. Most of the red pine is located in a pocket at the south end of stand. Highly variable stand aspen, jack pine, red pine, red maple and mixed oak. Records of forest fire in the past most likley caused the variation in stand. Apply retention along west end of stand along stand 403 and leaving scattered red pine.										
84	R9	23	61	65	aspen (upland)	immature	final harvest	1	natural regeneration	
comnts Fmd : Final harvest 2" spec and convert to aspen/oak stand. Stand is expected to regenerate to a mix of aspen, oak and red maple. Highly variable stand aspen, jack pine, red pine, red maple and mixed oak. Aspen is in strips and these strips are seasonally wet, harvest on dry and/or frozen ground. Apply retention along north end of stand along creek and camp site. Protect campsite from any logging activity.										

GLADWIN FOREST MGT UNIT

**Proposed Treatments
With NO Limiting Factors**

Compartment: 14

Entry Year: 2010

Stand	Cover Type	Acres	Age	Site Index	Mgt Obj	Condition	Method Cut	Harvest Priority	Cultural Need	FDF Status	
86	R9	22	61	50	oak	immature	selection	1	natural regeneration		
comnts Fmd : Harvest all jack pine and aspen. Mark to remove red pine in dense red pine areas down to 60 to 70 BA. This is a mixed stand red pine, jack pine, scattered aspen and oak. Red pine density varies. Converting to a oak stand. The residual red pine will act as a nurse crop for oak regeneration. Apply retention at north end of stand along creek.											
89	R9	19	61	60	red pine	immature	final harvest	1	planting		
comnts Fmd : Final harvest 2" spec and replant red pine. All jack pine removed in 1992. Apply retention along natural buffer (drop off) at south end of stand along creek.											
95	O6	33	78	48	oak	mature	final harvest	1	natural regeneration		
comnts Fmd : Final harvest 2" spec manage for oak regeneration. Leave all scattered red pine and white pine, very little red pine and white pine within stand. May need to interplant red pine to maintain full stocking. Apply retention along east end of stand along drop off down to the floodplain.											
105	R6	85	70	50	red pine	immature	final harvest	1	planting		
comnts Fmd : Final harvest 2" spec and replant red pine. Mixed planting of red pine and jack pine northern pin oak mixed in as well. Red pine out performing all other species. Planted in 1938. This stand was split from the timber north of Stocwell Road. Apply retention by leaving uncut islands.											
107	A6	31	46	65	aspen (upland)	immature	final harvest	1	natural regeneration		
comnts Fmd : Final harvest 2" spec manage for aspen regeneration. Stand is expected to regenerate to aspen. Scattered low wet areas within stand. Adjacent stand 108 (L type) meanders all around this stand. Apply retention around stand 108.											
Total Acres.....		436									

**Proposed Treatments
With Limiting Factors**

Compartment: 14

Entry Year: 2010

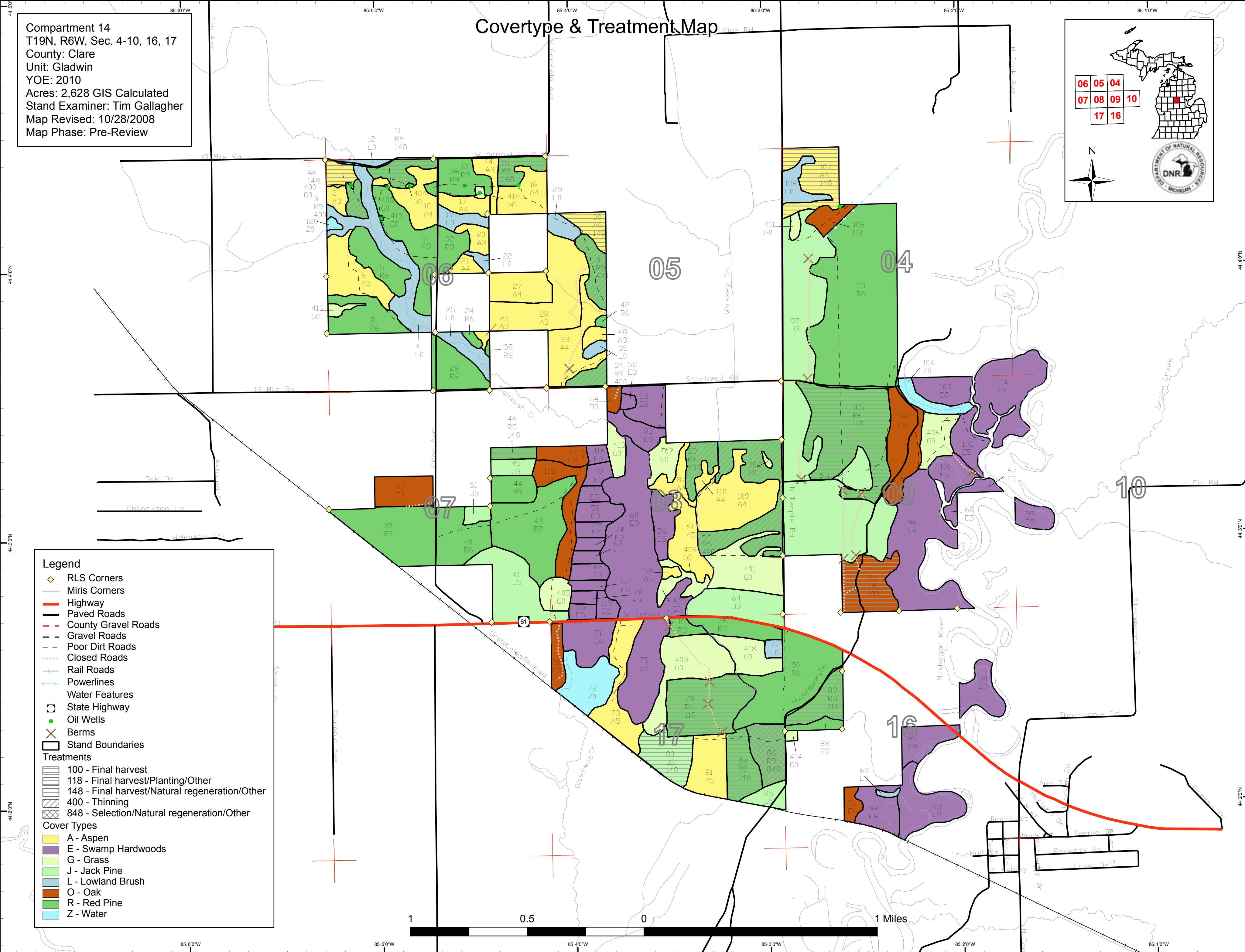
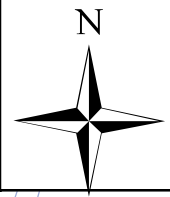
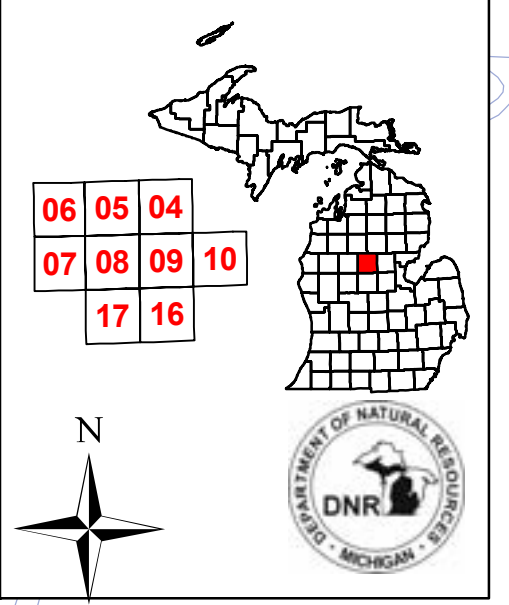
Stand	Cover Type	Acres	Age	Site Index	Mgt Obj	Condition	Method Cut	Harvest Priority	Cultural Need	FD Status
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TREATMENT LIMITING FACTORS:

Total Acres..... 0

Covertypes & Treatment Map

Compartment 14
 T19N, R6W, Sec. 4-10, 16, 17
 County: Clare
 Unit: Gladwin
 YOE: 2010
 Acres: 2,628 GIS Calculated
 Stand Examiner: Tim Gallagher
 Map Revised: 10/28/2008
 Map Phase: Pre-Review



Legend

- ◆ RLS Corners
- Miris Corners
- Highway
- Paved Roads
- County Gravel Roads
- Gravel Roads
- Poor Dirt Roads
- Closed Roads
- Rail Roads
- Powerlines
- Water Features
- State Highway
- Oil Wells
- Berms
- Stand Boundaries

Treatments

- 100 - Final harvest
- 118 - Final harvest/Planting/Other
- 148 - Final harvest/Natural regeneration/Other
- 400 - Thinning
- 848 - Selection/Natural regeneration/Other

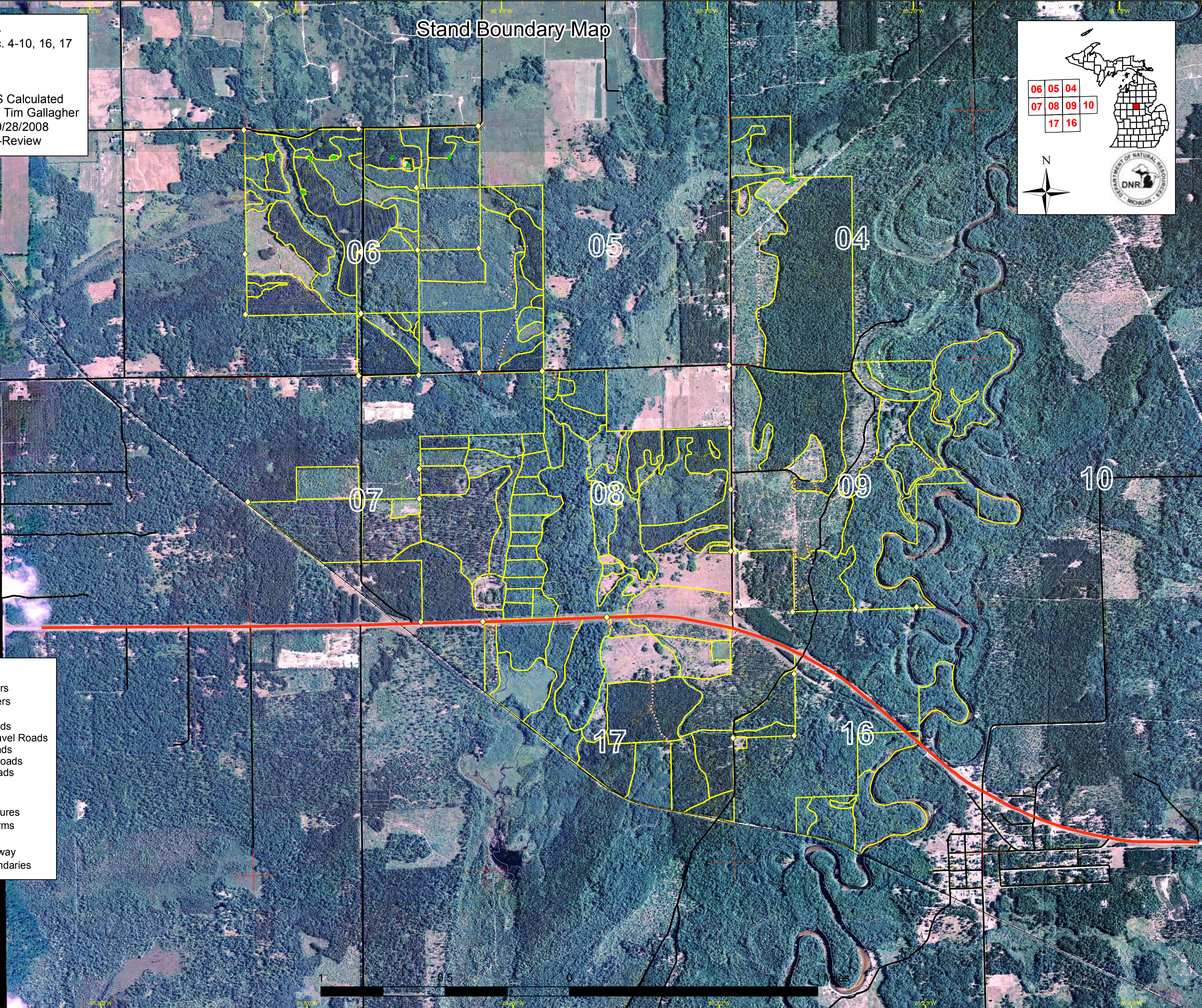
Cover Types

- A - Aspen
- E - Swamp Hardwoods
- G - Grass
- J - Jack Pine
- L - Lowland Brush
- O - Oak
- R - Red Pine
- Z - Water



Compartment 14
 T19N, R6W, Sec. 4-10, 16, 17
 County: Clare
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Stand Boundary Map



- Legend**
- ◇ RLS Corners
 - ◇ Miris Corners
 - Highway
 - Paved Roads
 - - County Gravel Roads
 - - Gravel Roads
 - - Poor Dirt Roads
 - - Closed Roads
 - + Rail Roads
 - Powerlines
 - Water Features
 - × gla014_berms
 - Oil Wells
 - State Highway
 - Stand Boundaries



44.40°N
 44.30°N
 44.20°N
 44.10°N
 85.70°W
 85.60°W
 85.50°W
 85.40°W
 85.30°W
 85.20°W
 85.10°W



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
ERA	Ecological Reference Areas	Ecological Reference Areas (ERAs) are high quality examples of natural communities that have been identified as Element Occurrences (EOs) by the Michigan Natural Features Inventory (MNFI) within the context of their natural community classification system. Element Occurrences with viability ranks of A (Excellent) or B (Good) and a Global (G) or State (S) element (rarity) ranking of endangered (1), threatened (2), or rare (3) serve as an initial base of ERAs. They may be located upon any ownership in the State. The system is comprised of individual or associations of natural community types that are managed for restoration and maintenance of natural ecological processes and values. The public may submit recommendations for lands as ERAs using the DNR Conservation Area Recommendation Form.
SCA	Archaeological Site	An aquatic or terrestrial area of the State that contains physical remains of human occupation. These are sites of cultural and historical significance that may occur upon terrestrial areas and Great Lakes bottomlands. They include thousands of Native American settlements and burial sites, as well as French and British outposts, nineteenth century logging camps, mines and homesteads. Beneath the waters of the Great Lakes, there are shipwrecks and other remains documenting the maritime trade. Such sites may be identified by Natural heritage data from the State Historic Preservation Office. Proposed treatments in this compartment will be implemented in such a manner as to maintain the integrity of these sites. Due to the sensitive nature of this information, no further detail about location is available.
SCA	Cold Water Stream	A coldwater stream has temperature and dissolved oxygen conditions that allow naturally-reproduced or stocked trout populations and those of other coldwater fish species (e.g., slimy sculpin) to persist from year to year. Coldwater streams in Michigan typically provide these conditions due to substantial contributions of groundwater to their stream flows. Such streams are established by Director's action and designated as trout resources by Fisheries Order 210.
SCA	Potential Old Growth Areas	This category contains stands were identified for a broad range of reasons and were coded in the OI database as stand condition 8 as potential old growth (POG). Approximately 310,000 acres have been identified through the Operations Inventory (OI)/Compartment Review process. For stands in Year of Entry 2008 and forward, potential old growth is managed for the identified objective until it is: 1) vetted through the Biodiversity Conservation Planning Process (BCPP) and given a specific designation and objective (as an ERA, HCVA, or other type of SCA) and is released from the potential old growth designation; or 2) it is released from the potential old growth designation via the Compartment Review process.