



GRAYLING FOREST MANAGEMENT UNIT COMPARTMENT REVIEW PRESENTATION

COMPARTMENT # 276 ENTRY YEAR: 2013

GIS Compartment Acreage: 919 County: Crawford

Revision Date: August 2011

Stand Examiner: Craig Farrer

Legal Description: T27N R01W Section 17 and 18.

Management Goals: This compartment is under the long-term lease agreement with the Michigan National Guard. Thus the primary objective for this compartment is to allow for military training. Another major objective is to maintain a healthy habitat for the endangered species *Dendroica kirtlandii* (Kirtland's warbler), taking into account species diversity and visual management. In May 1986 the Michigan Department of Natural Resources and the Michigan Department of Military Affairs held a meeting in an effort to find ways to support the recovery of the Kirtland's warbler while maintaining necessary training opportunities. A cooperative agreement was signed and adopted which will discourage new regeneration of jack pine where there is potential for warbler use on all lands inside the Tank Range west of Bald Hill Road. Since all but 12 acres of compartment 286 is east of Bald Hill Road this agreement should not effect the establishment of Kirtland Warbler habitat as proposed in the management guide.

Soils and Topography: Mostly Grayling sand in the north and west portion. Throughout the rest of the compartment, there is a mix of Graycalm, Roselawn sands, and Wakeley soils. The terrain is flat with a few gently rolling hills.

Ownership Patterns, Development, and Land Use in and Around the Compartment: The entire compartment is contiguous state ownership except the E1/2 NE1/4 and the NE1/4 SE1/4 of section 17 is privately owned. This area is under the 1935 long-term lease agreement (Act 154 P. A. 1935) with the Michigan National Guard, Michigan Department of Military Affairs. The agreement provides for use by the military during their encampment, with no permanent buildings or improvements to be erected. Military needs take precedence over resource management needs on long-term lease lands.

Unique, Natural Features (include only non-site specific and non-sensitive information): Kirtland's Warbler Habitat.

Archeological, Historical, and Cultural Features (include only non-site specific and non-sensitive information): None

Special Management Designations or Considerations: A cooperative agreement with the military for the management of the Kirtland's Warbler.

Watershed and Fisheries Considerations: There are not waterways located directly in the compartment. The North Branch of the Au Sable River runs through the adjacent section to the east in compartment 285.

Wildlife Habitat Considerations: Refer to the *Kirtland's Warbler* management plan. Snowshoe hare habitat should also be considered as a management objective if it does not interfere with the Kirtland Warbler management plan.

Mineral Resource and Development Concerns and/or Restrictions: Surface sediments consist of ice-contact and glacial outwash sand and gravel and postglacial alluvium. The glacial drift thickness varies between 200 and 600 feet. Beneath the glacial drift is the Coldwater Shale. There is not an economic use for the Coldwater Shale. The nearest gravel pits are located on Bald Hill in Section 24 and potential appears to be good. This is part of the State Military leased land. There has been no drilling and there are no leases in this compartment. The closest production is the Connors Marsh Field, one and one-half miles to the southeast, which produces gas from the Ordovician Prairie du Chien.

Vehicle Access: Access is obtained from the county roads of Bald Hill Road and High Banks Road. The compartment also contains numerous trail roads. All new roads created through the management plan are to be closed.

Survey Needs: None needed.

Recreational Facilities and Opportunities: Dispersed recreational opportunities including rabbit hunting occurs throughout the compartment.

Fire Protection: Current road system is adequate, and no nearby water source.

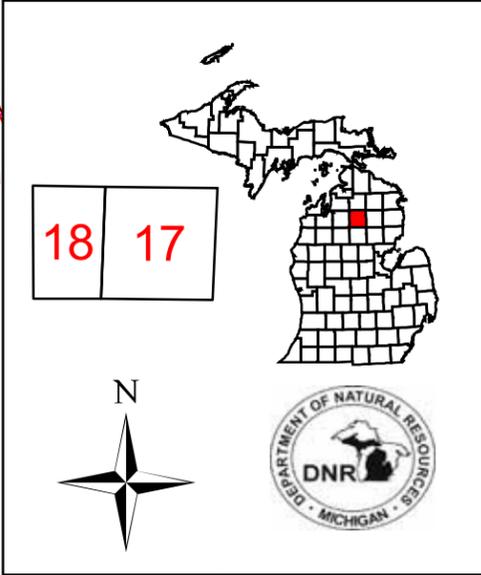
Additional Compartment Information:

- **The following reports are available:**
 - ◆ **Total Acres by Cover Type and Age Class**
 - ◆ **Proposed Treatment Summaries**
 - ◆ **Dedicated Conservation Area Details**
 - ◆ **Listing of Forested Stands**
 - ◆ **Listing of Non-Forested Stands**
 - ◆ **Proposed Treatments with No Limiting Factor**
 - ◆ **Proposed Treatments with Limiting Factors**

- **The following information is displayed, where pertinent, on the attached compartment maps:**
 - ◆ **Base feature information, stand numbers, cover types, recreation trails and facilities**
 - ◆ **Proposed treatments**
 - ◆ **Dedicated & Proposed Special Conservation Areas**

Cover Type & Treatment Map

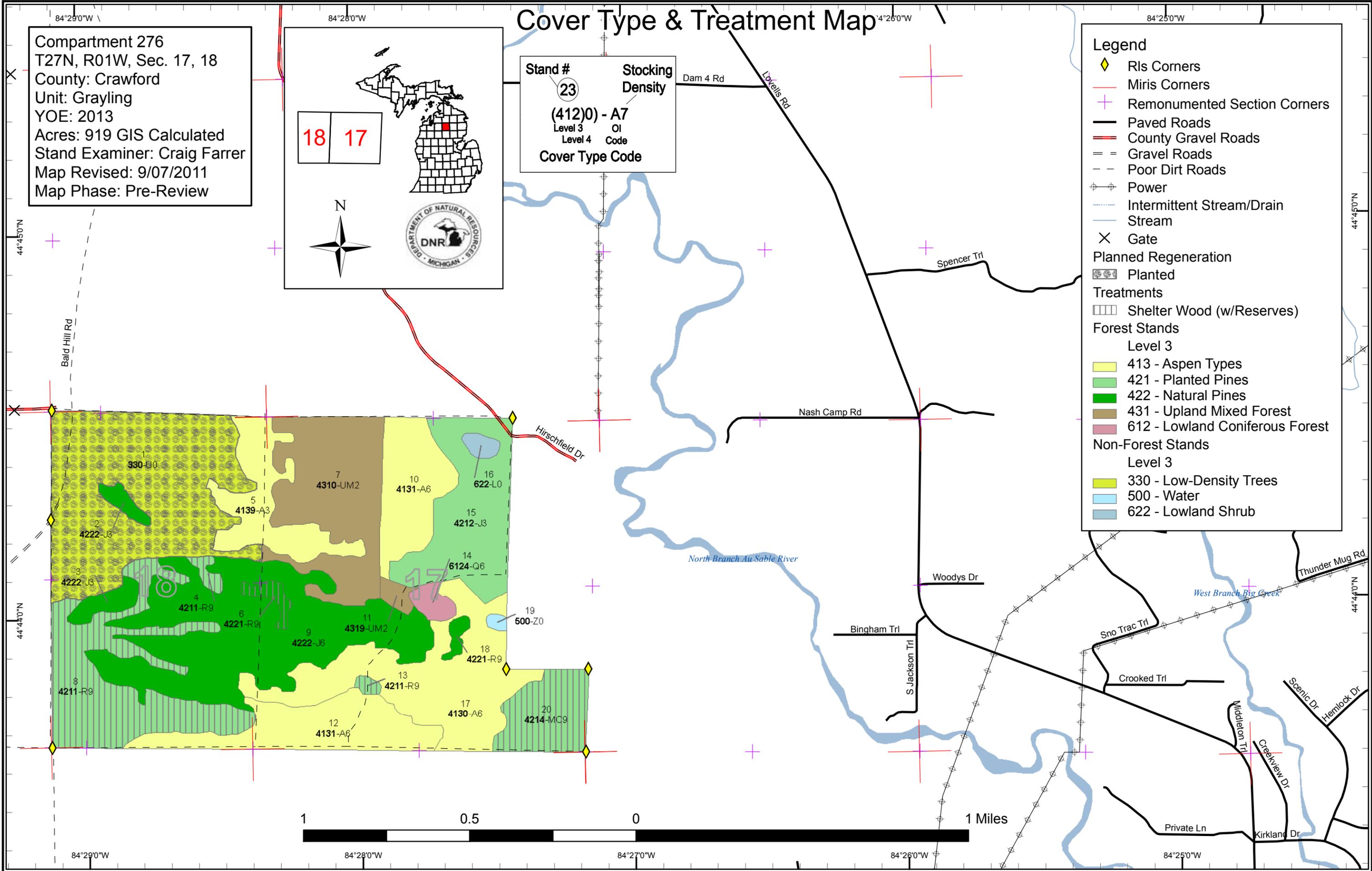
Compartment 276
 T27N, R01W, Sec. 17, 18
 County: Crawford
 Unit: Grayling
 YOE: 2013
 Acres: 919 GIS Calculated
 Stand Examiner: Craig Farrer
 Map Revised: 9/07/2011
 Map Phase: Pre-Review



Stand #
 23
Stocking Density
 (4120) - A7
 Level 3 OI
 Level 4 Code
Cover Type Code

Legend

- ◆ RIs Corners
- Miris Corners
- ✚ Remonumented Section Corners
- Paved Roads
- County Gravel Roads
- == Gravel Roads
- - Poor Dirt Roads
- ⊕ Power
- Intermittent Stream/Drain
- Stream
- ✕ Gate
- Planned Regeneration**
- ▨ Planted
- Treatments**
- ▨ Shelter Wood (w/Reserves)
- Forest Stands**
- Level 3
- 413 - Aspen Types
- 421 - Planted Pines
- 422 - Natural Pines
- 431 - Upland Mixed Forest
- 612 - Lowland Coniferous Forest
- Non-Forest Stands**
- Level 3
- 330 - Low-Density Trees
- 500 - Water
- 622 - Lowland Shrub



84°29'0"W 84°28'0"W 84°27'0"W 84°26'0"W 84°25'0"W
 44°45'0"N 44°44'0"N 44°43'0"N

Stand Boundary Map

Compartment 276
 T27N, R01W, Sec. 17, 18
 County: Crawford
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 DNR
 DEPARTMENT OF NATURAL RESOURCES
 MICHIGAN

Stand #
 23
Stocking Density
 (412)0 - A7
 Level 3 OI
 Level 4 Code
Cover Type Code

Legend

- ◆ RIs Corners
- Miris Corners
- ✚ Remonumented Section Corners
- Paved Roads
- County Gravel Roads
- == Gravel Roads
- - Poor Dirt Roads
- ⊕ Power
- ✕ Gate
- Stand Boundaries

Forest Stands

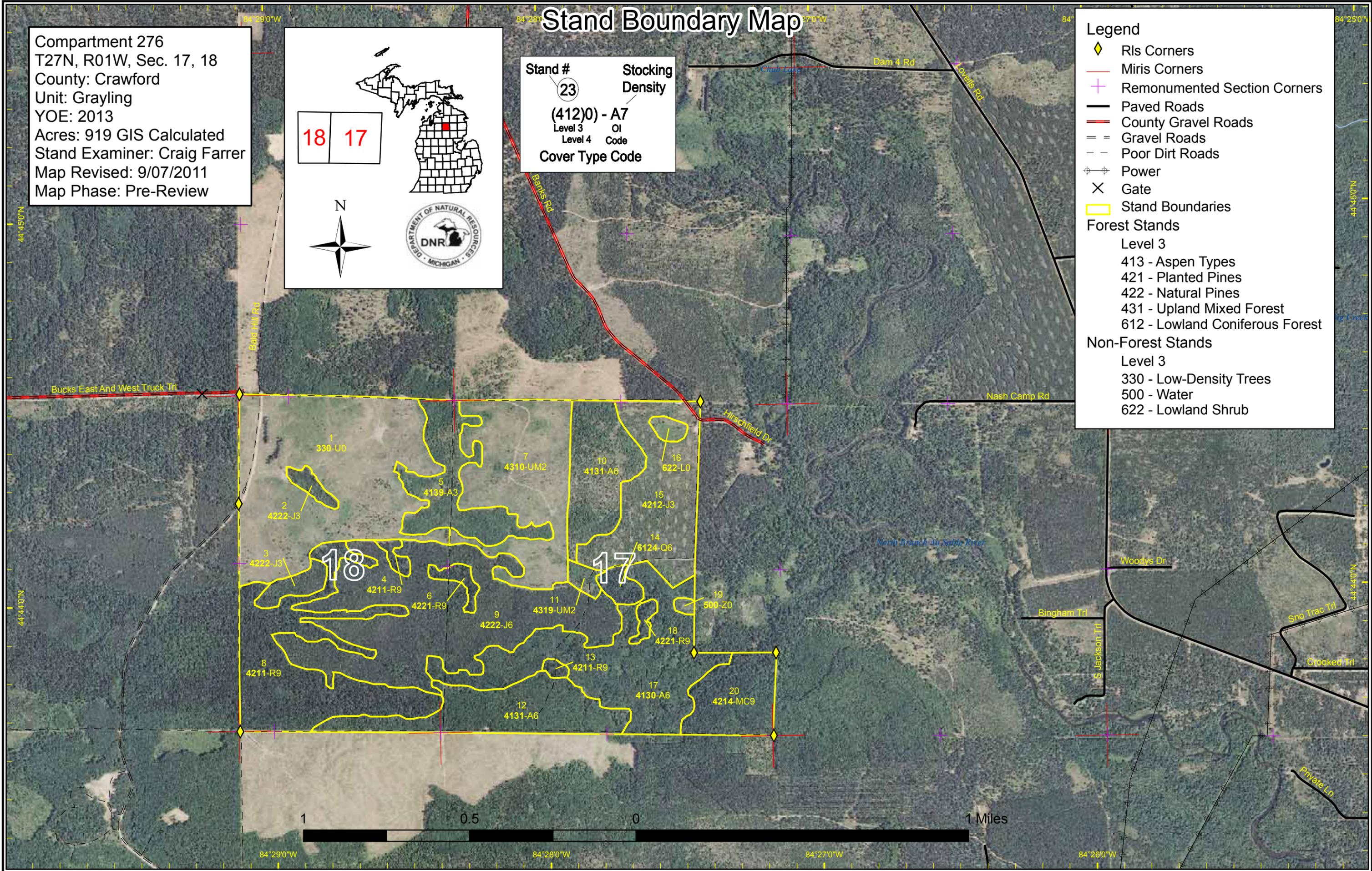
Level 3

- 413 - Aspen Types
- 421 - Planted Pines
- 422 - Natural Pines
- 431 - Upland Mixed Forest
- 612 - Lowland Coniferous Forest

Non-Forest Stands

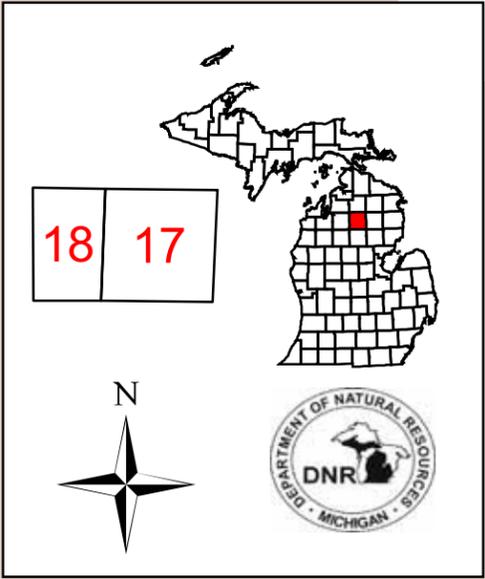
Level 3

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Dedicated & Proposed Special Conservation Area Map

Compartment 276
 T27N, R01W, Sec. 17, 18
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Stand #
 23
Stocking Density
 (4120) - A7
 Level 3 OI
 Level 4 Code
Cover Type Code

Legend

- Miris Corners
- Stand Boundaries
- Dedicated Special Conservation Areas
- Cold Water Streams
- Research, Development, and Military Lands
- Boat Access Sites
- Kirtland Warbler Habitat
- Natural Rivers Zoning District
- Natural Rivers Vegetative Buffer

Forest Stands

Level 3

- 413 - Aspen Types
- 421 - Planted Pines
- 422 - Natural Pines
- 431 - Upland Mixed Forest
- 612 - Lowland Coniferous Forest

Non-Forest Stands

Level 3

- 330 - Low-Density Trees
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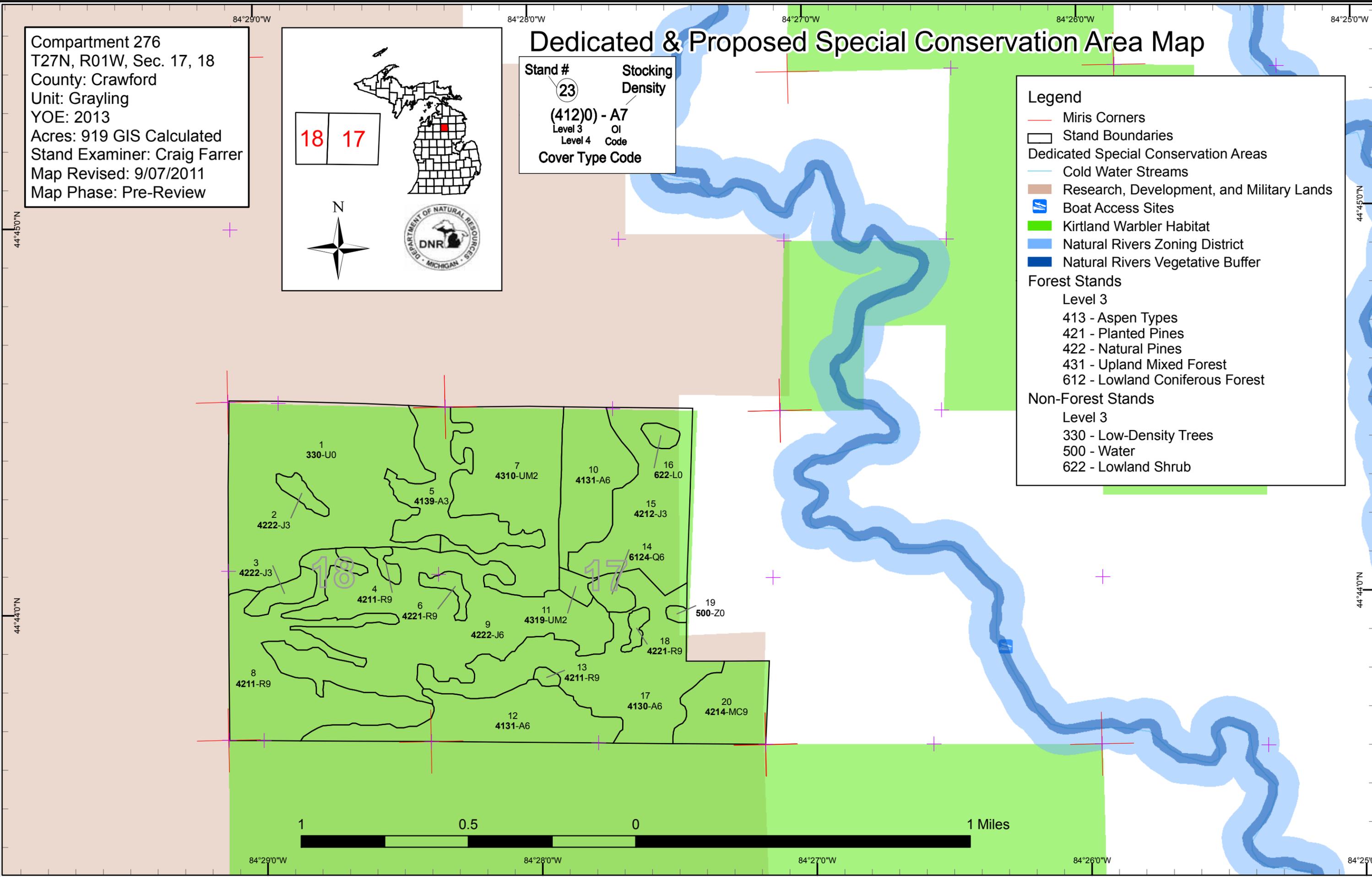
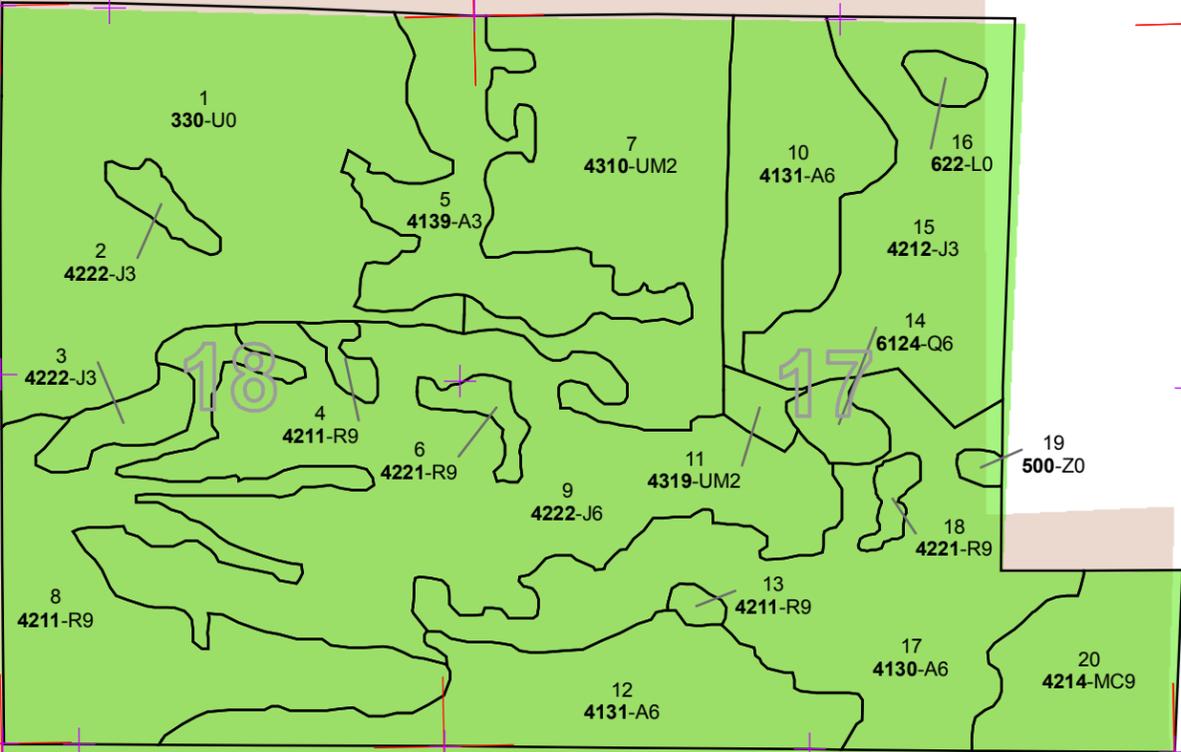


Table 1 – Total Acres by Cover Type and Age Class



	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	0	0	47	210	0	0	0	0	0	0	0	0	0	0	0	257
Jack Pine	0	0	75	14	158	0	0	0	0	0	0	0	0	0	0	247
Low-Density Trees	163	0	0	0	0	0	0	0	0	0	0	0	0	0	0	163
Lowland Conifers	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	7
Lowland Shrub	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Planted Mixed Pines	0	0	0	0	0	0	0	36	0	0	0	0	0	0	0	36
Red Pine	0	0	0	0	0	0	0	9	92	0	6	0	0	0	0	107
Upland Mixed Forest	0	91	5	0	0	0	0	0	0	0	0	0	0	0	0	96
Water	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	169	91	127	225	158	0	0	45	92	7	6	0	0	0	0	919



Table 2 – Proposed Treatment Summaries

Grayling Mgt. Unit
Year of Entry 2013

Compartment 276
Total Compartment Acres: 919.4

Acres by Treatment Type

Commercial Harvest - 140	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

		Clearcut	Selection	Seed Tree	Shelterwood	Thinning	Other - Specify	Total Acres
Planted Mixed Pines	0	0	0	36	0	0		36
Red Pine	0	0	0	103	0	0		103
Total	0	0	0	140	0	0		140



S t a n d	Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
4	72276004-Cut	3.5	42110 - Planted Red Pine	High Density Log	64	Harvest	Shelterwood	42110 - Planted Red Pine	Cmpt. Review Proposal
<p><u>Prescription</u> Recommend shelterwood cut. Leave 60 BA of Red Pine. military leased land. Also in KW management, but needs to be checked with Wildlife on <u>Specs:</u> this. Take about half of stand now and than in another 10 years taking the rest with the adjacent Jack Pine stand might put this with the KW schedule.</p> <p><u>Other</u> <u>Comments:</u></p> <p><u>Next</u> <u>Steps:</u></p>									
6	72276006-Cut	5.3	42210 - Natural Red Pine	High Density Log	64	Harvest	Shelterwood	42210 - Natural Red Pine	Cmpt. Review Proposal
<p><u>Prescription</u> Recommend shelterwood cut. Leave 60 BA of Red Pine. Military leased land. See note of stand 8 concerning KW management. <u>Specs:</u></p> <p><u>Other</u> <u>Comments:</u></p> <p><u>Next</u> <u>Steps:</u></p>									
8	72276008-Cut	92.2	42110 - Planted Red Pine	High Density Log	71	Harvest	Shelterwood	42110 - Planted Red Pine	Cmpt. Review Proposal
<p><u>Prescription</u> Recommend shelterwood cut. Leave 60 BA of Red pine. Military leased land. KW management area check with Wildlife. Take about half of the <u>Specs:</u> stand now and than in 10 years along with the adjacent Jack Pine stand may put this in the KW schedule.</p> <p><u>Other</u> <u>Comments:</u></p> <p><u>Next</u> <u>Steps:</u></p>									
13	72276013-Cut	2.1	42110 - Planted Red Pine	High Density Log	98	Harvest	Shelterwood	42110 - Planted Red Pine	Cmpt. Review Proposal
<p><u>Prescription</u> Recommend shelterwood cut. Leave 60 BA of Red Pine. military spec. See stand 8 on notes for KW management. <u>Specs:</u></p> <p><u>Other</u> <u>Comments:</u></p> <p><u>Next</u> <u>Steps:</u></p>									
20	72276020-Cut	36.4	42141 - Planted Mixed Pine, Mixed Deciduous	High Density Log	66	Harvest	Shelterwood	42141 - Planted Mixed Pine, Mixed Deciduous	Cmpt. Review Proposal
<p><u>Prescription</u> Recommend Shelterwood cut. Reduce pine down to 60 BA and remove all Aspen and red maple. military leased land and possibly part of KW <u>Specs:</u> management Unit. Check with wildlife.</p> <p><u>Other</u> <u>Comments:</u></p> <p><u>Next</u> <u>Steps:</u></p>									

**Total Treatment
Acreage Proposed: 139.6**

Table 4 -- Treatments Prescribed with a Limiting Factor



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Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
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Prescription Specs:

Other Comment:

Next Steps:

Limiting Factor and No Treatment Reason

Total Treatment Acreage Proposed: 0

Out of YOE -- Treatments
Prescribed with No Limiting Factor

Year of Entry: 2013



Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
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Prescription
Specs:

Other
Comments:

Next
Steps:

**Total Treatment
Acreage Proposed: 0**



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
2	42220 - Natural Jack Pine	High Density Sapling	5.2	28	1-50	Small Immature Jack pine stand mixed with immature Aspen. Some scattered Red pine saw and pole timber. Stand created by spot fire from Bald Hill fire.
3	42220 - Natural Jack Pine	High Density Sapling	9.3	28	1-50	Small immature Jack pine stand mixed with scattered Red pine poles and sawtimber. Stand created by Bald Hill Fire. Scattered immature Oak throughout stand as well, but stand is predominately Jack pine.
4	42110 - Planted Red Pine	High Density Log	3.5	64	81-110	Planted Red pine stand mixed with Oak and some Jack pine. Stand escaped Bald Hill fire. Jack pine regen encroaching on edge of stand.
5	4139 - Aspen, Mixed Deciduous	High Density Sapling	47.3	16		Immature Quaking aspen stand mixed with Oak. Some scattered pine as well. Scattered pine consists of Redpine and some Jack pine.
6	42210 - Natural Red Pine	High Density Log	5.3	64	111-140	Pocket of Red pine saw/pole timber that escaped Bald Hill fire.
7	4310 - Pine, Oak Mix	Medium Density	91.3	6		Immature Jack pine plantation mixed with Oak and some Aspen and Red maple.
8	42110 - Planted Red Pine	High Density Log	92.2	71	81-110	Planted Red pine stand mixed with Oak and some Aspen. Oak and Red maple in the understory. More Oak than Red maple. Stand is part of KW management and was to be scheduled in 2010 for harvest, but was not.
9	42220 - Natural Jack Pine	High Density Pole	157.6	36	1-50	Large natural immature Jack pine stand. Stand was part of the Bald Hill Fire. Will find pockets of Red pine pole and saw timber as well as mixed Aspen Oak sapling/pole stands that escaped the fire or regenerated after the fire.
10	4131 - Aspen, Oak	High Density Pole	46.6	23		Immature Aspen stand mixed with Oak. Oak is a mix. Some scattered Jack pine and Red pine seedlings and saplings.
11	4319 - Mixed Upland Forest	Medium Density	4.8	18		A portion of the stand is planted Jack pine from stand to the north. Remaining portion of stand is natural Jack pine/aspen and upland brush with scattered cherry.
12	4131 - Aspen, Oak	High Density Pole	60.5	25	51-80	Immature Aspen stand mixed with Oak. Some Red Maple scattered throughout stand too. Bigtooth aspen, Red and White Oak predominant species. Stand just reaching pole size with still a lot of saplings. Some small pockets of Jack pine regen scattered throughout stand.
13	42110 - Planted Red Pine	High Density Log	2.1	98	171-200	Pocket of Red pine saw timber mixed with some deciduous species. This pocket of Red pine can be expanded on in acreage. This pocket escaped the Bald Hill Fire.
14	6124 - Lowland Spruce-Fir	High Density Pole	6.9	84	81-110	

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Grayling Mgt. Unit

5 – Forested Stands

Compartment: 276

Year of Entry: 2013



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
15	42120 - Planted Jack Pine	High Density Sapling	74.8	16		Jack pine plantation planed in weave with mixed Oaks and some cherry. Average height 7 feet and average dbh 2 inches.
17	4130 - Aspen	High Density Pole	103.0	25	1-50	Small pole size Quaking Aspen stand mixed with other deciduous spieces. Will find a few small pockets of Red pine throughout the stand. East side of stand contains balsam fir understory.
18	42210 - Natural Red Pine	High Density Log	3.5	98	200+	
20	42141 - Planted Mixed Pine, Mixed Deciduous	High Density Log	36.4	66	81-110	Red pine stand mixed with Oak/aspen patches. South end of stand near private property has a balsam fir understory.



Stand	Cover Type	Acres	Managed Site	Management Priority (Objective)	General Comments:
1	3303 - Mixed Low Density Trees	163.2	Planted	Jack Pine	Jack pine plantation with oher deciduous spieces and shrubs. Jack pine seedlings not above three feet(one to two feet). A coule of pocket of pine left for visual long Bald Hill Road.
16	6229 - Mixed lowland shrub	4.0	No	Unspecified	Lowland grasses/sedges with shrubs. A couple of scattered Jack pine saplings. Shrubs consist of primarily willow.
19	50 - Water	1.7	No	Unspecified	Small pocket of water.



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.

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
HCVA	Designated Critical Habitat	Critical habitat areas are established via a consultative and cooperative process between the DNR and the U.S. Fish and Wildlife service for the recovery of threatened and endangered species, as governed by Part 365, Endangered Species Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, and the Federal Endangered Species Act of 1973. This is an active program, with proposed species plans in various stages of review. As of now only two exist, Kirtland Warbler Habitat and Piping Plover Habitat.
HCVA	Natural Rivers	There are two Natural Rivers datasets which are derived from spatial buffers set from an established and approved distance from the river centerlines. The Natural Rivers Zoning District is a 400 foot buffer for most Natural Rivers. The Vegetative Buffer ranges from 25 to 100 feet. To view specific Zoning Districts and Vegetative Buffers for each Natural River see the table located on the I:\Documentation\GDSE data folder.
SCA	Research and Military Areas	These areas provide facilities and lands specifically dedicated for research, or other purposes. They include the 5,847 acre Forest Fire Experiment Station, the 12,000 acre Houghton Lake Wildlife Research Area, the Beaver Islands Archipelago Wildlife Research Area (that includes most of Garden Island, all of High and Hog Islands, all state owned land on Beaver, South Fox and North Fox Islands), the Cusino Wildlife Research Area, the 3,000 acre Hunt Creek Fisheries Research Station, the 125 acre Wyman Nursery, and over 144,000 acres of Military Lands.