



GRAYLING FOREST MANAGEMENT UNIT COMPARTMENT REVIEW RESENTATION

COMPARTMENT # 181 ENTRY YEAR: 2010

GIS Compartment Acreage: 1967 County: Crawford

Revision Date: September 12, 2008

Stand Examiner: Joan Charlebois

Legal Description: T26N R4W Sections 4, 5 & 6
Grayling Township – Southwest Part

Management Goals: This compartment is comprised of Military Board ownership. A majority of that ownership is made up of Hanson Reserve Lands which contain the following deed restrictions: 1) The lands are to be used as a permanent encampment and maneuvering ground for the military, 2) to serve as a game preserve for the breeding and protection of game, and 3) to serve as a forest reserve. The management goal is to maintain forest health, productivity, sustainability, species diversification, and structural diversity throughout the compartment while meeting deed restrictions and not interfering with military training.

Soils and Topography: The compartment's east half has gently-rolling to steep terrain, with slopes ranging from 6 to 45%, and more low ground near the tank trail. The compartment's west half has relatively flat terrain, with occasional low ridges and a shallow depth to water table. Grayling, Graycalm-Grayling, and Crosswell sands of varying slope predominate in the upland areas while a variety of organic soil types (primarily mucks) with seasonal high water tables are represented in the lowlands.

Ownership Patterns, Development, and Land Use in and Around the Compartment: This compartment is comprised of Military Board Lands. On these lands, military training has precedence over resource management activities. The DNR will coordinate all prescribed activities with the National Guard to ensure that such activities are compatible with military training needs. Most of the Military Board ownership is within the Hanson Military Reserve. Hanson Reserve Lands were given to the National Guard, Department of Military Affairs (DMA) by Rasmus Hanson in 1913, with several deed restrictions as outlined under the management goals. These restrictions have tasked the DNR with managing the natural resources on these lands, as long as management activities do not conflict with military needs. In addition, hunting is prohibited on the Hanson Reserve Lands. Camp Shawano (a youth incarceration facility) is located to the north, and there is residential private property interface along the Kalkaska County line and north of Lake Margrethe.

Unique, Natural Features: Portions of two candidate Ecological Reference Areas (ERA's) have been identified within the compartment. These natural communities include a mesic sand prairie complex and an intermittent wetland. Several unique plant and animal species are associated with these ERA's.

Archeological, Historical, and Cultural Features: The area's history of logging, settlement and long-term military use is evident.

Special Management Designations or Considerations: Hanson Reserve Lands, as designated through original deed restrictions. Through lease agreement with the Military, Camp Shawano developed a recreation field within the compartment, near their compound.

Watershed and Fisheries Considerations: In the 1960's, Fisheries Division constructed an earthen berm with a 6-foot tall concrete water control structure in order to make a pike marsh. Water flowing south of the structure enters an engineered channel that appears to empty into M-72's north ditch, which then drains through a culvert into Lake Margrethe.

Wildlife Habitat Considerations: Plans will be developed for the candidate Ecological Reference Areas in order to maintain and enhance the quality of the habitat they provide for associated unique species.

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 400 and 600 feet. Beneath the glacial drift are the Coldwater Shale and Marshall Sandstone formations. The Marshall was previously used as a building stone. Gravel pits are located in Section 4 and there is potential on the uplands. The former Dollar Lake Sand Pit has been the focus of ongoing stabilization efforts, including contouring and seeding the west side and blocking vehicle access. The compartment, part of Camp Grayling, is not leased for oil and gas development.

Vehicle Access: M-72, a state highway, cuts diagonally through the compartment. County roads include Howes Lake and McIntyre Landing Roads. A tank trail runs the length of the compartment.

Survey Needs: None

Recreational Facilities and Opportunities: The compartment has no developed recreational facilities except for the Camp Shawano-leased ball field. Hunting is specifically prohibited per Hanson Reserve Lands deed restrictions, but hunting is allowed on the non-Reserve portions of the compartment.

Fire Protection: There are relatively large jack pine stands within the compartment. Lower ground with seasonal high water tables will limit suppression equipment operation in some of those stands. Howes Lake to the north and Lake Margrethe to the south are potential water sources.

LOTS Compartment Acreage: ____ 1929 ____

- **The following 5 reports from the Operations Inventory System (OIPC) are attached:**
 - ◆ **Cover Type by Age Class**
 - ◆ **Cover Type by Management Objective**
 - ◆ **Compartment Volume Summary**
 - ◆ **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 old growth**

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

AUSABLE STATE FOREST

GRAYLING FOREST MGT UNIT

CRAWFORD COUNTY

COMPARTMENT: 181

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	35																										35
S Black Spruce		19																									19
V Bog or Marsh			84																								84
G Grass					22																						22
J Jack Pine							1026																				1026
I Local Name								3																			3
N Marsh											12																12
Q Mx Swmp Cnfr												184															184
X Non Stocked													26														26
O Oak							27							360													387
R Red Pine																113											113
W White Pine																										56	56
Total	35	19	84		22		1053	3			12	184	26	360		113										56	1967

AUSABLE STATE FOREST

GRAYLING FOREST MGT UNIT

CRAWFORD COUNTY

COMPARTMENT: **181**

Table 10 - COMPARTMENT VOLUME SUMMARY - ALL STANDS

COMPARTMENT SUMMARY			
TOTAL VOLUME		CUT VOLUME	
Hardwood	718 Cds	Softwood	2989 Cds
Hardwood	900 Mbf	Softwood	511 Mbf
Softwood	5921 Cds	Sum CutVol	4011 Cds
Softwood	2039 Mbf		
Sum TotVol	12517 Cds		
Total Cmpt Acres		Acres Proposed For Cut.....	365
	1967		

GRAYLING FOREST MGT UNIT

**Proposed Treatments
With NO Limiting Factors**

Compartment: 181 Entry Year: 2010

Stand	Cover Type	Acres	Age	Site Index	Mgt Obj	Condition	Method Cut	Harvest Priority	Cultural Need	fdf Status	
2	J6	90	62	55	jack pine	high risk	final harvest	1	planting		
<p>comnts Fmd : Multiple-aged JP stand: JP saw (fair amount of cull due to limbiness and likely interior rot) and poles in their 70's, smaller poles in their 30's and 40's, and JP saps. Variable stocking in those age classes across the stand; the overmature JP tends to be in pockets, with younger poles adjacent, alternating with a pocket of regen, and so on. Mortality has been progressing in the overmature JP component; JP snags are common and there is no lack of coarse woody debris on the ground. Less than 10 BA of very poor health/quality NPO, and far less than O1 in saps. JP regen averaged less than J1. Harvest all merchantable JP, leave any oak, and protect the regen. Retention: Leave two 1-acre islands along the N line and one 1-acre island along the W line. Trench and plant to JP. Stand year of origin is a weighted average of the old and young components, SI is also an average of those. An 80-foot wide strip of JP along the south edge of Arrowhead Road has been part of compt 180 to the north, although previous cuts in both compts were taken to the road. Incorporate this narrow strip into compt 181. Note that the SWSW sec 31 T27N R4W is private and so there is also a narrow strip of private property on the south side of Arrowhead Road.</p>											
19	O7	27	85	47	jack pine	sparse		0	planting		
<p>comnts Fmd : Was a J5, harvested in spring of 2002 under 720330001, all merch JP & RP. All oak were left. Stand is variable, with pockets of J2/J5 in large saps/small poles, scattered WP saps/small poles, open areas with J0-J2 seedlings, and actively-declining oak (mostly along the stand's edges). The lowest ground has k. angustifolia, yet it was dry in April. FTP C72-580 was submitted in Jan 08 (replacing earlier FTP #C72-467) for trenching and planting JP in under-stocked areas. Oak SI from adjacent stand 28. Previous JP SI was 1961-49. A 1.5 acre triangle of J5 between Howes Lake Road, Camp Shawano & the ball field (stand 27) was excluded from the 2002 harvest boundary but will be maintained within the original stand boundary.</p>											
30	J1	27	6	47	jack pine	sparse		0	planting		
<p>comnts Fmd : Cut in spring 2002 under 720330001. Scattered and in small patches: short one-log WP, and WP & JP large sap/small pole resid from the cut. Pocket of NPO on dryer ground on the east side. There are patches of JP seedlings intermixed with non-stocked areas. Difficult to ave out to J1, but felt it was more descriptive of what's out there than labelling it as a G or L type. FTP C72-580 was submitted in Jan 08 (replacing C72-467) for trenching and planting JP in the understocked areas. Groundcover is k. angustifolia & leatherleaf. While there was some standing water in mid-April, this appears to be the result of seasonal fluctuation in the water table, and is likely to dry out May-October unless the summer is unusually wet. Ditches along the tank trail may have standing water through most of the year. Used previous SI.</p>											
Total Acres.....		144									

Stand	Cover Type	Acres	Age	Site Index	Mgt Obj	Condition	Method Cut	Harvest Priority	Cultural Need	FDf Status
5	J5	63	51	50	jack pine	two aged	final harvest	1		
TREATMENT LIMITING FACTORS: Threatened, endangered, and special concern species/communities										
comnts Fmd : Similar to stand 2 in range of age classes, but differs in proportion within each age class and spatial distribution. Less of the overmature saw component, more large saps and 1-2 stick poles (30-50 years old), and the oldest component is primarily in localized bands - - there is not as much mixing of the older and younger age classes. Not so much coarse woody debris and snags. PVCd groundcover persists to the S & E, but k. angustifolia and leatherleaf begin to show up there. Roughly 1/3 of the stand is within a tentative buffer for the mesic sand prairie ERA; if compatible with the ERA management plan, cut all JP greater than 2 sticks tall. Limit harvesting to when the ground is snow-covered to minimize surface disturbance. Retention will consist of the 2-stick and under JP. Do not replant; lower than typical stocking is acceptable and preferable in this area. Set up as one harvest with stand 54, applying the same specs. A narrow strip along the south edge of Arrowhead Road has been part of compt 180 to the north, although previous cuts in both compts were taken to the road. Incorporate this narrow strip into compt 181. Note that the SWSW sec 31 T27N R4W is private and so there is also a narrow strip of private property on the south side of Arrowhead Road.										
9	J5	107	77	49	jack pine	old growth (potential or actual)	final harvest	1		
TREATMENT LIMITING FACTORS: Threatened, endangered, and special concern species/communities										
comnts Fmd : Overmature JP poles and saw - - relatively uniform in age/size - - over k. angustifolia and leatherleaf. Root-tipped trees, snags and DWD are common. On the lowest ground, there are S5, S2 and uncolonized leatherleaf inclusions. A low ridge of dry ground on the E side has terrible health NPO and some WP along with the JP. The stand contains a fragment of mesic sand prairie, and roughly half of the stand is within a tentative buffer for that ERA. If compatible with the ERA management plan, harvest the merchantable JP and do not replant. Cut only when the ground is snow-covered to minimize disturbance and treat at the same time as stand 10. SI averaged with previous.										
10	S6	19	69	44	black spruce-swamp	two aged	delayed removal	2		
TREATMENT LIMITING FACTORS: Threatened, endangered, and special concern species/communities										
comnts Fmd : BS (mostly poles), JP poles & saw dying out, and scattered WP saw, over leatherleaf on sphagnum hummocks. Good advanced spruce regen below. Remove the merchantable overstory, cutting when the ground is snow-covered - along with stand 9 - if compatible with the ERA plan. The stand may lie partially within the mesic sand prairie ERA buffer, pending development of an ERA management plan.										
18	J5	68	57	55	jack pine	two aged	final harvest	1	natural regeneration	
TREATMENT LIMITING FACTORS: Threatened, endangered, and special concern species/communities										
comnts Fmd : Multiple-aged JP stand, 3/4 of it is on ground with a seasonal high water table; the other 1/4 is on sandy shallow rises. Groundcover ranges from blueberry and brackenfern to k. angustifolia and leatherleaf. Three main JP age classes: overmature saw and poles 60+ years old, younger poles 30-50 years old, and large saplings. Distribution tends to be in pockets of a single age class. Dieback and windthrow are occurring in the overmature JP. Occasional large WP & RP saw and terrible health/quality small oak. Harvest the JP 3-stick and up, leave all other species. Retention will consist of the 2-stick and under JP poles (at least 10% of BA) and the advanced regen. Given the seasonally-saturated soils, limit harvesting to when the ground is dry, frozen or snow-covered to prevent rutting. The stand is likely to need longer to reach full stocking through natural regen, so a lower stocking level is acceptable at the year-4 regen survey. SI & year of origin averaged with previous. The stand is near a mesic sand prairie ERA fragment and may lie within a buffer that is likely to be delineated to protect the ERA. Harvest if the treatment is compatible with the ERA management plan.										
20	J5	7	57	55	jack pine	two aged	final harvest	2	natural regeneration	
TREATMENT LIMITING FACTORS: Inadequate volume due to small acreage										
comnts Fmd : Multiple age classes of JP; two main ones are the overmature saw & poles (60-70's) and small poles (30-40's), along with lg saps and scattered WP & RP. Overmature JP declining. Except for the stand's NNW, cover is k. angustifolia or leatherleaf over a seasonal high water table. Given the stand's very small size, set up for harvest only if stand 18's Rx is approved, and incorporate it into one sale with the same specs. Averaged SI between old and younger components.										
54	J6	11	69	47	jack pine	two aged	final harvest	1		
TREATMENT LIMITING FACTORS: Threatened, endangered, and special concern species/communities										
comnts Fmd : Similar to stands 2 & 5. Narrow grassy opening in center that was trenched at the same time as stand 3 but was either not planted or most seedlings died. A lot of snags and DWD (downed woody debris) from mature JP breaking up. Old fire plow lines. The stand is adjacent to a tentative buffer for the mesic sand prairie ERA; if compatible with the ERA management plan, cut all JP greater than 2 sticks tall. Limit harvesting to when the ground is snow-covered to minimize surface disturbance. Retention will consist of the 2-stick and under JP. Do not replant; lower than typical stocking is acceptable and preferable in this area. Harvest along with stand 5, applying the same specs. Used previous SI										

Total Acres..... 275

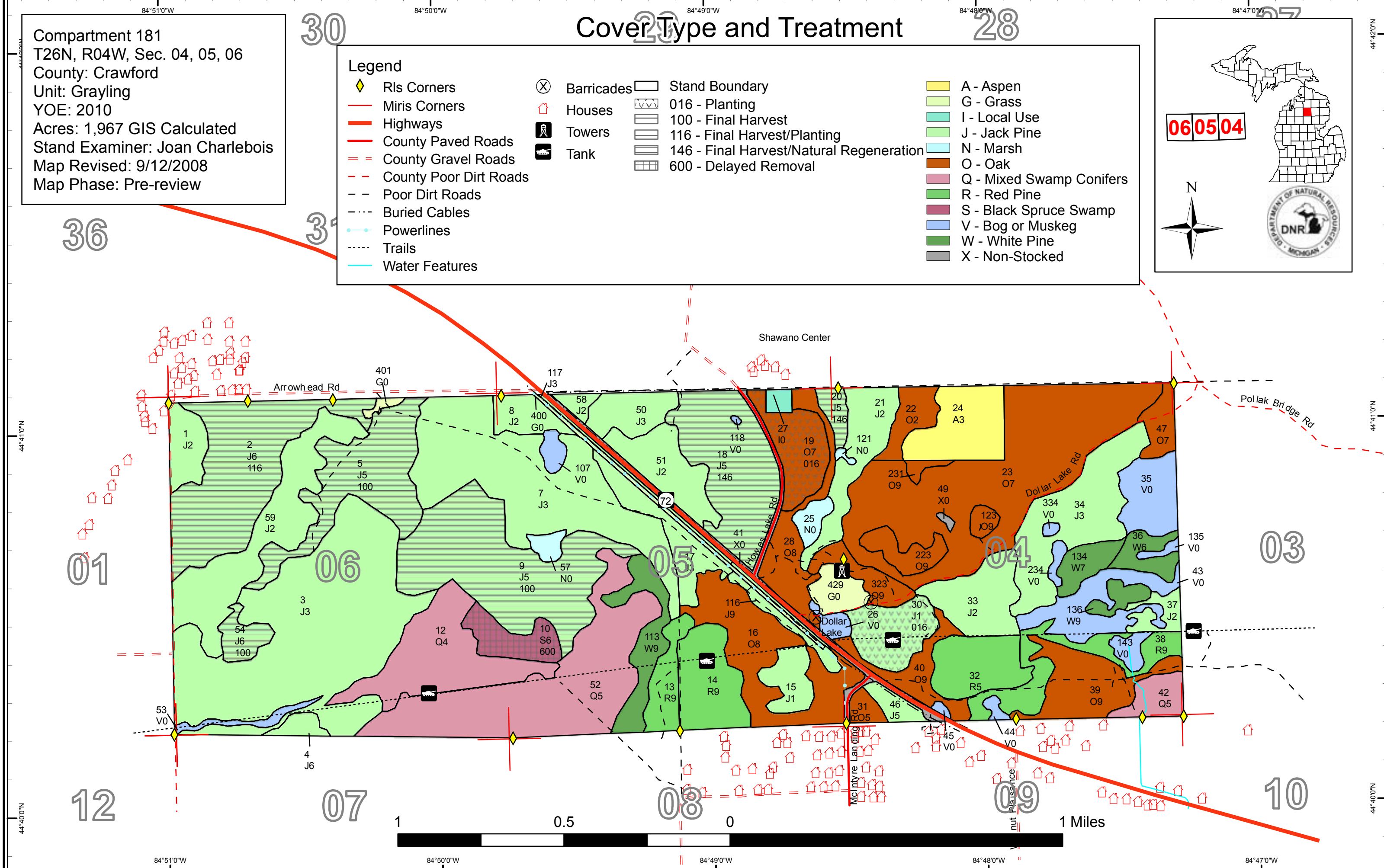
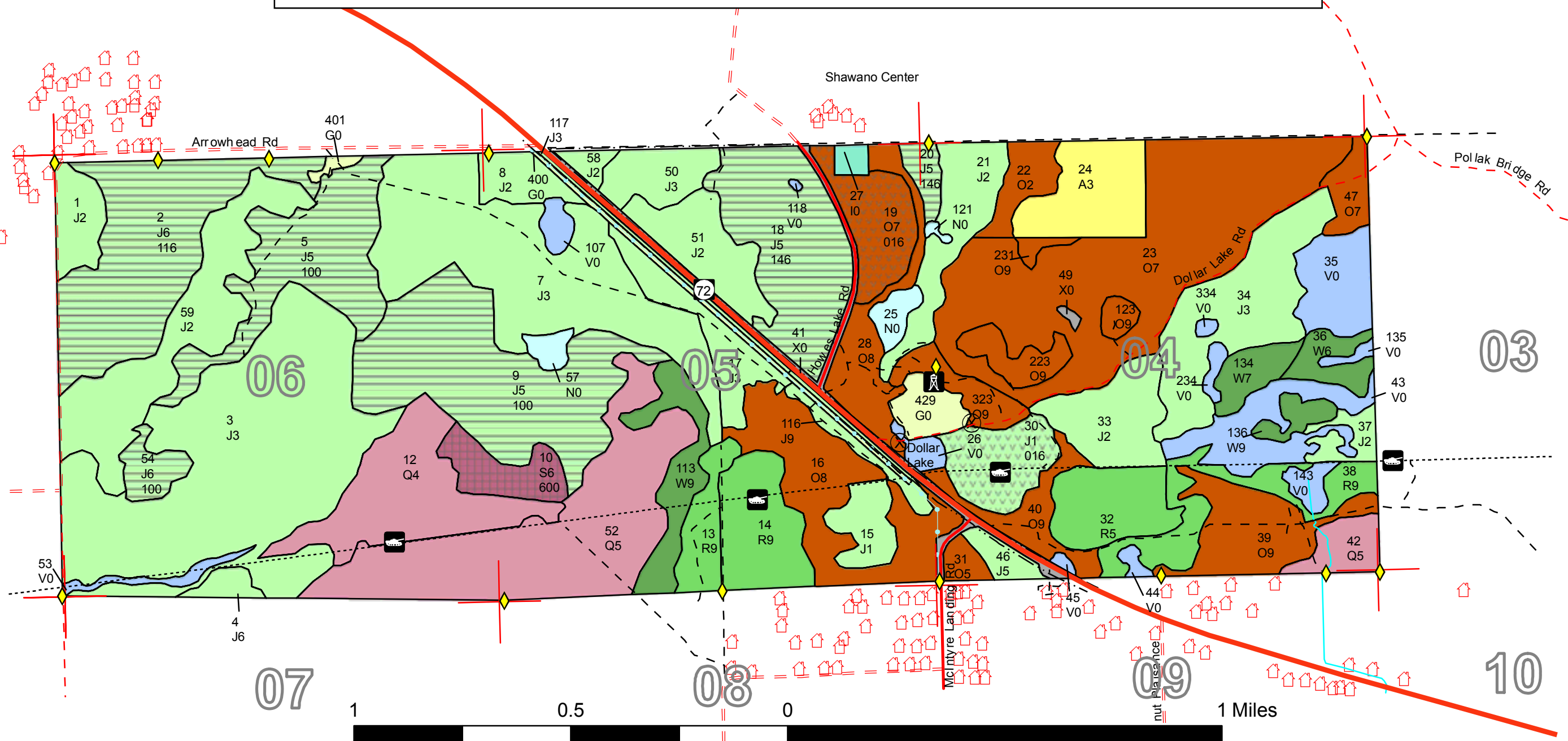
Compartment 181
 T26N, R04W, Sec. 04, 05, 06
 County: Crawford
 Unit: Grayling
 YOE: 2010
 Acres: 1,967 GIS Calculated
 Stand Examiner: Joan Charlebois
 Map Revised: 9/12/2008
 Map Phase: Pre-review

Cover Type and Treatment

Legend

- | | | | |
|--------------------------|--------------|--|----------------------------|
| ◆ Ris Corners | ⊗ Barricades | ▭ Stand Boundary | ■ A - Aspen |
| — Miris Corners | 🏠 Houses | ▨ 016 - Planting | ■ G - Grass |
| — Highways | 🗼 Towers | ▨ 100 - Final Harvest | ■ I - Local Use |
| — County Paved Roads | 🛢 Tank | ▨ 116 - Final Harvest/Planting | ■ J - Jack Pine |
| — County Gravel Roads | | ▨ 146 - Final Harvest/Natural Regeneration | ■ N - Marsh |
| — County Poor Dirt Roads | | ▨ 600 - Delayed Removal | ■ O - Oak |
| — Poor Dirt Roads | | | ■ Q - Mixed Swamp Conifers |
| — Buried Cables | | | ■ R - Red Pine |
| — Powerlines | | | ■ S - Black Spruce Swamp |
| — Trails | | | ■ V - Bog or Muskeg |
| — Water Features | | | ■ W - White Pine |
| | | | ■ X - Non-Stocked |

















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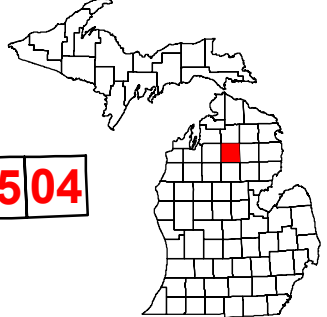


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 T26N, R04W, Sec. 04, 05, 06
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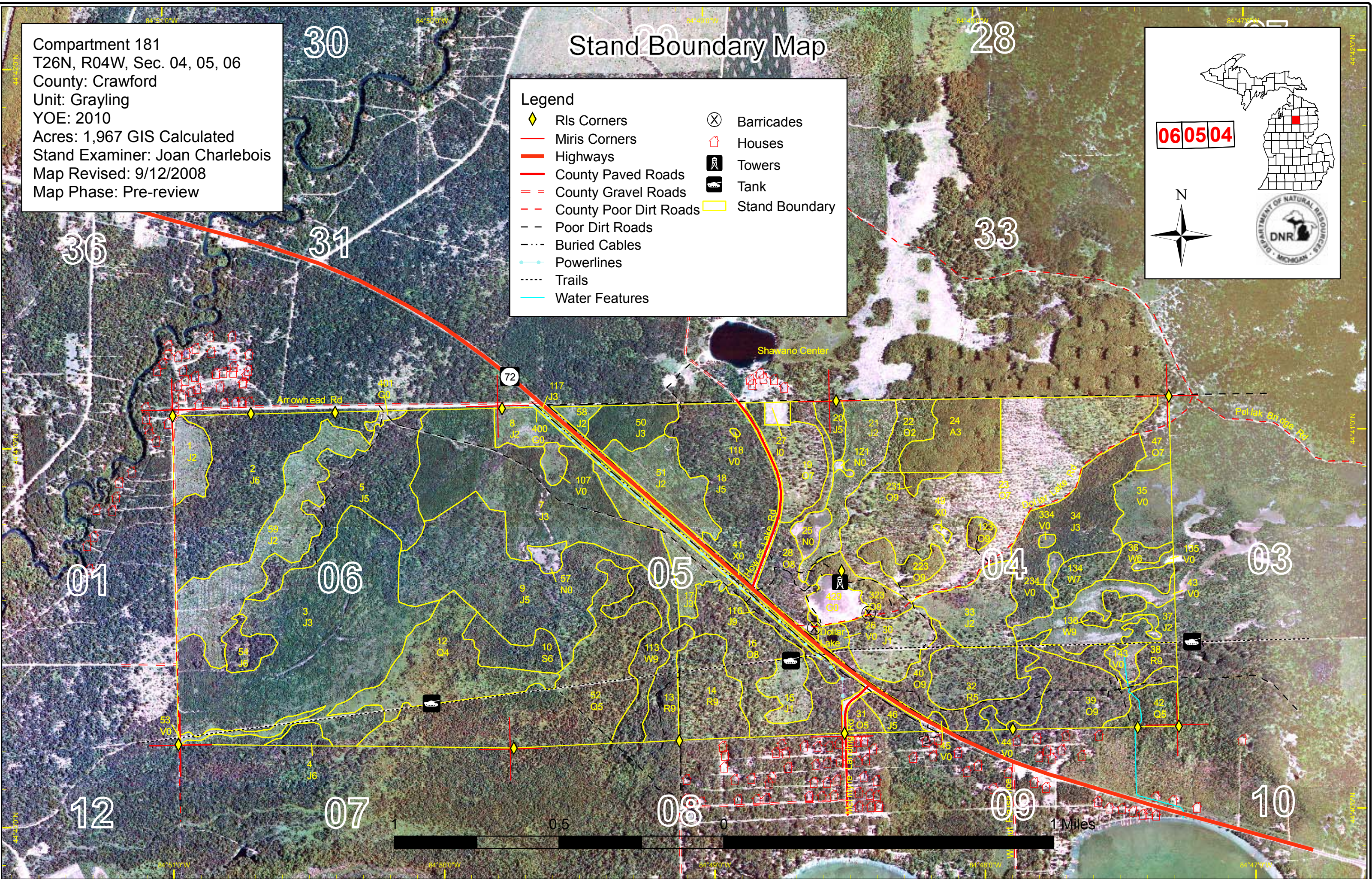
Stand Boundary Map

Legend

- | | |
|--|--|
|  RIs Corners |  Barricades |
|  Miris Corners |  Houses |
|  Highways |  Towers |
|  County Paved Roads |  Tank |
|  County Gravel Roads |  Stand Boundary |
|  County Poor Dirt Roads | |
|  Poor Dirt Roads | |
|  Buried Cables | |
|  Powerlines | |
|  Trails | |
|  Water Features | |



060504

Compartment 181
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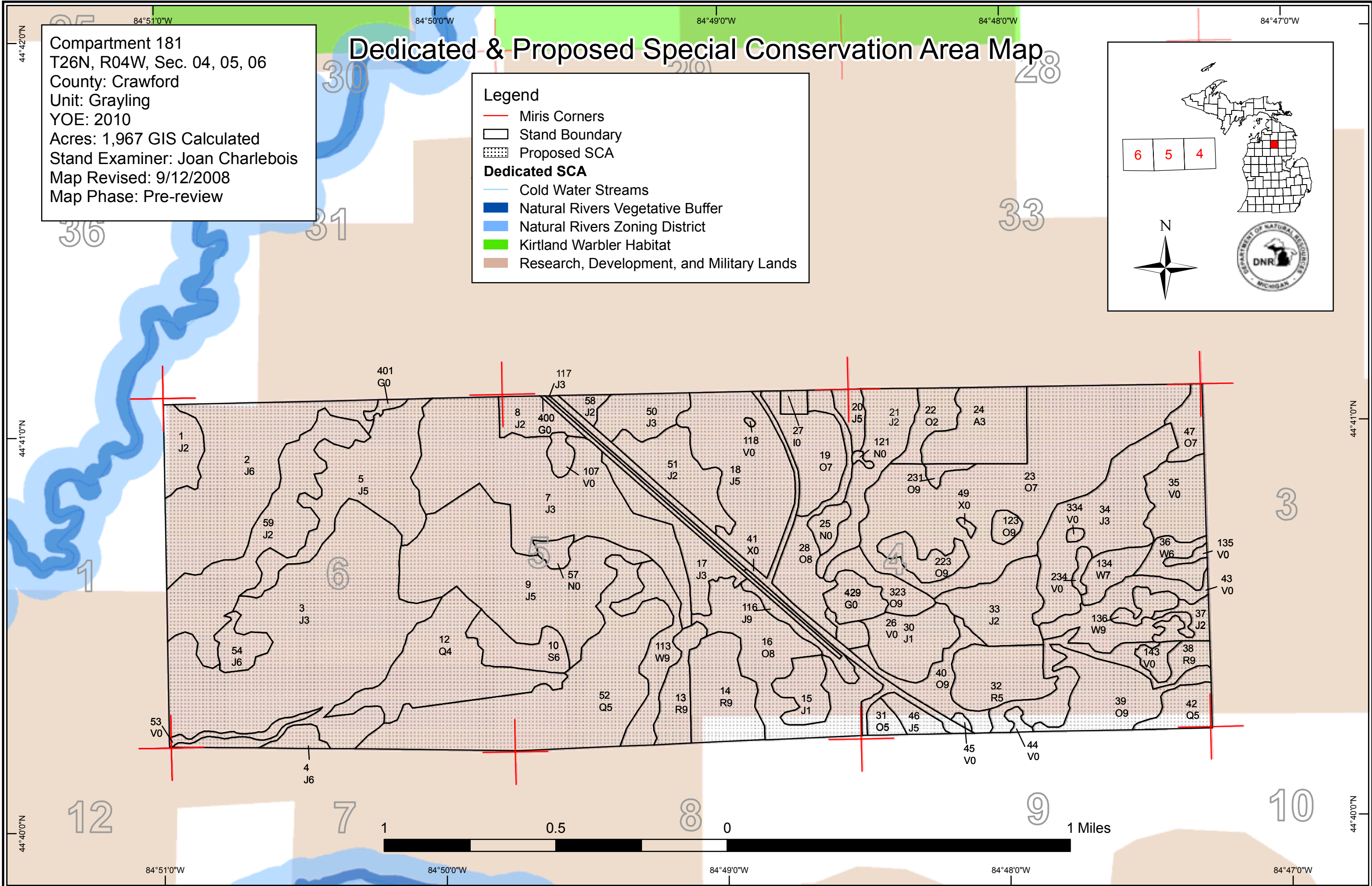
Dedicated & Proposed Special Conservation Area Map

Legend

- Miris Corners
- Stand Boundary
- Proposed SCA

Dedicated SCA

- Cold Water Streams
- Natural Rivers Vegetative Buffer
- Natural Rivers Zoning District
- Kirtland Warbler Habitat
- Research, Development, and Military Lands





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.
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	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	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.