



GRAYLING FOREST MANAGEMENT UNIT COMPARTMENT REVIEW PRESENTATION

COMPARTMENT # 235 ENTRY YEAR: 2010

GIS Compartment Acreage: 1898 County: Crawford

Revision Date: 1/22/08

Stand Examiner: Patrick Cotant

Legal Description: T26NR3W, Sections 2, 11, 14 and 15

Management Goals: To maintain species diversity while also addressing sustainability, forest health, productivity, wildlife habitat requirements (specifically the Kirtland's Warbler), aesthetics, best management practices and recreational opportunities throughout the compartment. In addition, to maintain a healthy habitat for the endangered species *Dendroica kirtlandii* (Kirtland's Warbler), taking into account warbler management plan directives, species diversity and visual management.

Soils and Topography: Topography within this compartment is flat to gently rolling. Some steeper hills exist in the southern reaches of the compartment, however this is limited to a few localized areas. In terms of land forms present, this compartment consists mainly of upland flats throughout with stream terraces along the AuSable River. The major soil complex present in this area is Grayling sand with small inclusions of other types present. This association is found primarily on upland flats and low knolls which are dominated by Kirtland's Warbler plantations in this area. This soil complex is characterized as being excessively drained with major management concerns including equipment limitation, seedling mortality and erosion from wind and water. Windthrow is also a concern throughout this soil type complex. The bottomlands of this compartment, mainly along the AuSable River are made up mainly of Tawas-Lupton Muck and Leafriver Muck associations. These soil complexes are characterized as being poorly drained and are most often associated with a water course or water body. Major management concerns in these areas include equipment limitation, windthrow and seedling mortality.

Ownership Patterns, Development, and Land Use in and Around the Compartment: The majority of this compartment is contiguous state land with blocks of private ownership mainly concentrated along the AuSable River. Recreation is quite popular in this area with fishing, canoeing and camping being quite common. With large areas dedicated to Kirtland's Warbler habitat management, wildlife viewing is also a major form of recreation in this region. Restrictions regulate activity within the particular stands designated as Kirtland's Warbler habitat at different times of the year.

Unique, Natural Features: The mainstream of the AuSable River runs in an east/west direction through this compartment. The river is approximately 30-50' wide through this stretch and is considered an excellent trout fishery. Wildlife abound within the river corridor and the surrounding areas.

Special Management Designations or Considerations: This compartment is part of the Staley Lake Kirtland's Warbler Management Unit, a High Conservation Value Area (HCVA). The AuSable River is also an HCVA. There is potential for dry prairie plants in grassy openings to include pine barren's species of Hill's thistle, rough fescue, Alleghany plum and pale agoseris. There also is potential for pine barren's species including dusted skipper, grizzled skipper and red-legged spittlebug to be present in these openings. Warbler species will be found in the young jack pine stands that abound in this region. There is also the

potential for eastern massasauga rattler, wood turtle and loon to exist within the riparian zones of this compartment. Bald Eagle have been documented in this area.

Watershed and Fisheries Considerations: The main branch of the AuSable River. This watercourse supports healthy populations of trout and is managed and designated as a Natural River.

Wildlife Habitat Considerations: A great deal of wildlife utilize all areas of this compartment. The major consideration is for Kirtland's Warbler management and extensive fisheries management however numerous species of wildlife were observed while conducting field work and should be considered in all aspects of management of this compartment.

Mineral Resource and Development Concerns and/or Restrictions: Mineral development is limited in this area because of Kirtland Warbler Management. Surface sediments consist of glacial outwash sand and gravel and postglacial alluvium. The glacial drift thickness varies between 200 and 600 feet. Beneath the glacial drift are the Michigan Formation and the Marshall Sandstone. The Michigan is quarried for gypsum and the Marshall was used as a building stone elsewhere in the State. A gravel pit is located two miles to the south and potential is good on the uplands. The Compartment is not currently leased for oil and gas development.

Vehicle Access: Access to this compartment is quite adequate. M-72 runs through the center of the compartment with numerous county roads traveling north and south. On the northern side of the river, North Down River road travels in an east/west direction and again has numerous county roads heading north and south which provide access to many areas of state land. There is also a campground within this compartment at Burtons Landing along with quite a few public access points to the AuSable River.

Survey Needs: Survey information available for this compartment is good. Many key corners have been established by the State of Michigan.

Recreational Facilities and Opportunities: The AuSable River provides the majority of recreational opportunities within this area. Burtons Landing State Forest Campground is located within this compartment and is on the southern bank of the river. There is also a public canoe launch at this location. Keystone Campground directly to the east of the compartment and Canoe Camp State Forest Campground on the northern side of the river are very nearby making this area popular to canoe and outdoor enthusiasts throughout the year. Snowmobile trails, while not within the compartment boundary, are nearby and therefore this area receives quite heavy traffic associated with winter sports as well.

Fire Protection: Jack pine is the dominant tree species within this compartment and therefore fire activity is a concern.

- **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: 235

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	1																										1
G Grass					45																						45
J Jack Pine							1574									38											1612
I Local Name								26																			26
L Lowlnd Brush									3																		3
O Oak														143													143
R Red Pine																66											66
Z Water																									2		2
Total	1				45		1574	26	3					143	104										2		1898

AUSABLE STATE FOREST

GRAYLING FOREST MGT UNIT

CRAWFORD COUNTY

COMPARTMENT: **235**

Table 10 - COMPARTMENT VOLUME SUMMARY - ALL STANDS

COMPARTMENT SUMMARY			
TOTAL VOLUME		CUT VOLUME	
Hardwood	1032 Cds	Hardwood	285 Cds
Hardwood	138 Mbf	Hardwood	49 Mbf
Softwood	6934 Cds	Softwood	4516 Cds
Softwood	807 Mbf	Softwood	661 Mbf
Sum TotVol	9856 Cds	Sum CutVol	6221 Cds
Total Cmpt Acres		Acres Proposed For Cut.....	629
1898			

GRAYLING FOREST MGT UNIT

**Proposed Treatments
With NO Limiting Factors**

Compartment: 235 Entry Year: 2000

Stand	Cover Type	Acres	Age	Site Index	Mgt Obj	Condition	Method Cut	Harvest Priority	Cultural Need	FDF Status
21	J6	38	54	44	red pine	old growth (potential or actual)	final harvest	2		
<p>comnts Fmd : Part of Staley Lake KW management unit, HCVA. Jack pine stand with scattered red pine along with an oak component. Oak is of poor quality, red pine is nice and growing well. Jack pine is beginning to decline. Lots of oak regen throughout stand. Prescription is to final harvest stand leaving red pine and protecting oak regen (clearcut with reserves) wherever possible. Stand will likely regenerate to a red pine overstory with oak beginning to take over understory along with red pine and jack pine regeneration. Red pine was not identified in OI cruise and likely makes up less than or equal to 10 BA overall. Past OI data had red pine representing 10 BA. Some areas in the southern parts of the stand may be higher and this should provide nice visual while also adding to diversity throughout the stand. Hopefully this area will be more prone to regenerating to red pine than the areas that are currently thicker to oak. If regeneration is not sufficient following harvest, plant understory openings with red pine. (old comment) CONSIDER MANAGING FOR RED PINE WHEN JP IS CUT - SI IS 55 1998: SOUTH END OF STAND HAS A LOT OF SCATTERED RED PINE IN IT.</p>										
23	O6	18	100	40	oak	old growth (potential or actual)	shelterwood-seed	1		
<p>comnts Fmd : Part of Staley Lake KW management unit, HCVA. Stand is on a ridge running in a north/south direction. Mid to southern/western portion of stand seems to contain the highest quality timber however there are areas of variable quality throughout. Much better quality and density overall when compared to stand 25 to the north. Lots of regen throughout the stand with white and red pine present in the understory. Red maple regen becomes thicker in southern/eastern parts of the stand with some aspen scattered throughout these same areas. Heavy browse in many areas of the stand. Harvest stand by removing all species except for white oak greater than 8". Also leave all re and white pine to add diversity and also to maintain wildlife cover within the stand. The pine component exists only in the understory aside from a few scattered individuals around the perimeter of the stand. No more than 10 square ft/acre of conifer species will remain following harvest. DO NOT CUT HILLY PORTION HEAVY WOOD THEFT 1998: HEAVY WOOD THEFT OR FIREWOOD CUTTING. THIN IN 10 YEARS</p>										
32	J3	5	7	44	jack pine	old growth (potential or actual)		0	planting	
<p>comnts Fmd : Part of Staley Lake KW management unit, HCVA. Stand was harvested and has regen of different species throughout. Does not look as though it was planted. Regen is growing well and looks good. Lots of wildlife activity throughout stand and surrounding area. (old comment) 1998: CUT AND REPLANT TO JACK PINE Ftp filled out</p>										
33	J3	3	7	45	jack pine	old growth (potential or actual)		0	planting	
<p>comnts Fmd : Part of Staley Lake KW management unit, HCVA. Stand replanted in 2007. Stand is a pretty steep valley in corner of compartment. Lots of wildlife activity, well secluded in this area because of geography. (old comment) 1998: FINAL HARVEST AND REPLANT TO JACK PINE Ftp filled out (Stand was replanted to jack pine under FTP C72-484 in spring of 2007.)</p>										
40	J6	11	59	36	jack pine	old growth (potential or actual)	final harvest	1	planting	
<p>comnts Fmd : Part of Staley Lake KW management unit, HCVA. This stand encompasses border along M-72, east of the break between the two buffer stand along M-72, north of stand 18. The stand in the west corner, west of the opening is now numbered stand 140. Jack pine is declining and in some cases has reached a quite large diameter. Red pine is also present in high numbers and is mainly concentrated immediately adjacent to M-72. It looks as though 4-6 rows of red pine were planted and the remainder to the south was planted to jack pine. Oak is present in low numbers, mainly from stump sprout origin. Some oak regen, understory is mainly an x-type with grasses and blue berry common. To treat this stand, mark to thin red pine by removing 1/3 of the volume and remove all jack pine and oak. The thinning will take place only in the red pine rows along m-72, the northern most reaches of the stand. Mark to leave a few remnant large jack pine for retention and for eventual down woody debris. It is not necessary to replant open areas of this stand following harvest. Visual is of major concern in this area and should be taken into account heavily while setting up stand for treatment. The stand includes the powerline ROW that runs east/west through the stand. This area provides essentially a grassy opening within the stand. (old comment) 1998: CUT AND REGENERATE AS SOON AS POSSIBLE. STAND BORDERS M-72 EAST</p>										
451	G0	15			grass	old growth (potential or actual)		0	opening maintenance	
<p>comnts Fmd : Part of Staley Lake KW management unit, HCVA. Fuelbreak. Cherry, jack pine and scattered oak beginning to establish in light numbers. Prescribed burn for opening maintenance would be desirable. (old comment) 1998: FINAL HARVEST 3-5 CHAIN STRIP AND LEAVE AS A FUELBREAK. HEADQUARTERS JACK 28-00-01</p>										

GRAYLING FOREST MGT UNIT

**Proposed Treatments
With NO Limiting Factors**

Compartment: 235 Entry Year: 2000

Stand	Cover Type	Acres	Age	Site Index	Mgt Obj	Condition	Method Cut	Harvest Priority	Cultural Need	FDF Status
452	G0	5			grass	old growth (potential or actual)		0	opening maintenance	
comnts Fmd : Part of Staley Lake KW management unit, HCVA. Copy of stand 453 separated by road. Stand 453 is to the north of road, stand 452 is to the south. (old comment) 1998: FINAL HARVEST 3-5 CHAIN STRIP AND LEAVE AS A FUELBREAK. HEADQUARTERS JACK 28-00-01										
453	G0	21			grass	old growth (potential or actual)		0	opening maintenance	
comnts Fmd : Part of Staley Lake KW management unit, HCVA. Similar to stand 452, this stand is to the north of the road. Road is the reason these two portions of fuel break were separated into different stands. (old comment) 1998: FINAL HARVEST 3-5 CHAIN STRIP AND LEAVE AS A FUELBREAK. HEADQUARTERS JACK 28-00-01										
Total Acres.....		116								

Stand	Cover Type	Acres	Age	Site Index	Mgt Obj	Condition	Method Cut	Harvest Priority	Cultural Need	FDf Status
1	J6	298	58	40	jack pine	old growth (potential or actual)	final harvest	1	planting	
<p>TREATMENT LIMITING FACTORS: Other Dept./Div. procedures or practices (describe in comment)</p> <p>comnts Fmd : Part of Staley Lake KW management unit, HCVA. Large jack pine mixed in with smaller 4-8" DBH jack pine. Some pockets of small, poor quality aspen are interspersed throughout which add to diversity. A few red pine are also scattered throughout the stand and are growing well, in some cases somewhat limby. Jack pine is of descent quality with some highquality stems present. Understory is characterized by u-type species with some areas of light jack pine as well as oak regen. A very small amount of white pine regen is present as well. This stand is part of KW management block #40 and is scheduled to be final harvested in 2014 and then trenched in 2016/planted in 2017. Final harvest with appropriate retention and leave strips. Retention should be irregular, taking into account visual and wind direction. Leave islands could be strategically left to help with visual while also maintaining diversity of vertical structure in the area. Some red pine pockets could be left as they are growing well and would provide added diversity within the large surrounding areas of JP. Leave standing snags where safety is not an issue. These snags will continue to provide cavity nesting cover and will hopefully develop into coarse DWD in the near future following the harvest. (old comment) TRY TO LEAVE SMALL PATCH OF R3 IN NORTH PORTION OF STAND KW MGT UNIT 5 1998: STAND AS JUST REACHED J5 STATUS WITH SCATTERED POCKETS OF RED PINE, J3 AND U1. STAND IS PART OF THE STALEY LAKE KW MGT UNIT 1 CUTTING BLOCK 5. USED OLD SITE INDEX.</p>										

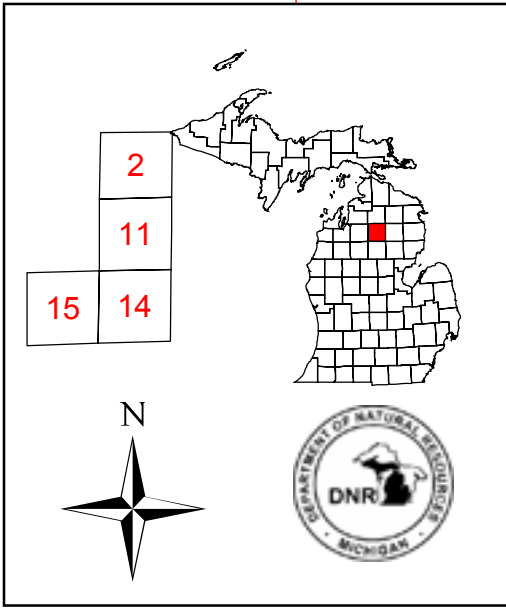
2	J6	229	50	40	jack pine	old growth (potential or actual)	final harvest	1	planting	
<p>TREATMENT LIMITING FACTORS: Other Dept./Div. procedures or practices (describe in comment)</p> <p>comnts Fmd : Part of Staley Lake KW management unit, HCVA. Many openings scattered throughout stand. If sampled intensely the density of the stand may be reduced to a J5 stand. Jack pine is dense in some areas with BA reaching the low 100's and overall is of fair quality. Poor quality oak is again scattered throughoutconcentrated in northern areas of stand however it continues to be a component in the southern areas of stand however with smaller diameters more common. Balsam fir are present in low numbers, concentrated to the southern areas of the stand stretching to stands 37 and 38, where the bulk of this species was left following the Headquarters Jack timber sale. Stand is to be final harvested as a portion of KW management block #40 in 2014 then trenched in 2016 and planted in 2017. Appropriate leave strips should be left to address visual impact from the sale while also maintaining some vertical structure within the sale area and allowing for adequate retention requirements. Leave islands/retention strips should be left along or near Headquarters rd. and North Down River rd. (old comment) KW MGT UNIT 4 1988: USED OLD SITE INDEX. STAND IS PART OF THE STALEY LAKE KW MGT UNIT 1 CUTTING BLOCK 4.</p>										
6	J5	35	41	40	jack pine	old growth (potential or actual)	final harvest	1	planting	

<p>TREATMENT LIMITING FACTORS: Other Dept./Div. procedures or practices (describe in comment)</p> <p>comnts Fmd : Part of Staley Lake KW management unit, HCVA. Previously typed as a J3 stand and still could be typed as this in many areas, however sample revealed stand to be J5 with some areas remaining J3. Growing fairly well with oak scattered throughout. Fair amount of oak regen naturally and by stump sprouts however this regen is of very poor quality. Lots of wildlife use throughout stand. Some 2-tracks are being utilized by private landowners to access property to the south. This stand is to be final harvested as part of KW management block #40 in 2014 and then trenched in 2016/planted in 2017. Appropriate leave islands and retention strips should be left to address visual impact as well as vertical structure diversity. Focus a couple of leave islands along southern edge of stand near private border. Standing snags should be left where they do not create a safety issue, mainly along edge of stand. There will likely be a small amount of dead standing material as this stand is small diameter/young and only light mortality has occurred in places. (old comment) 1998: USED OLD SITE INDEX. PRIVATE INDIVIDUALS ARE USING TWO TRACK IN THE STAND TO ACCESS THEIR PROPERTY.</p>										
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Total Acres..... 562

Dedicated & Proposed Special Conservation Area Map

Compartment 235
 T26N, R03W, Sec. 2, 11, 14, 15
 County: Crawford
 Unit: Grayling
 YOE: 2010
 Acres: 1,898 GIS Calculated
 Stand Examiner: Patrick Cotant
 Map Revised: 9/05/2008
 Map Phase: Pre-review

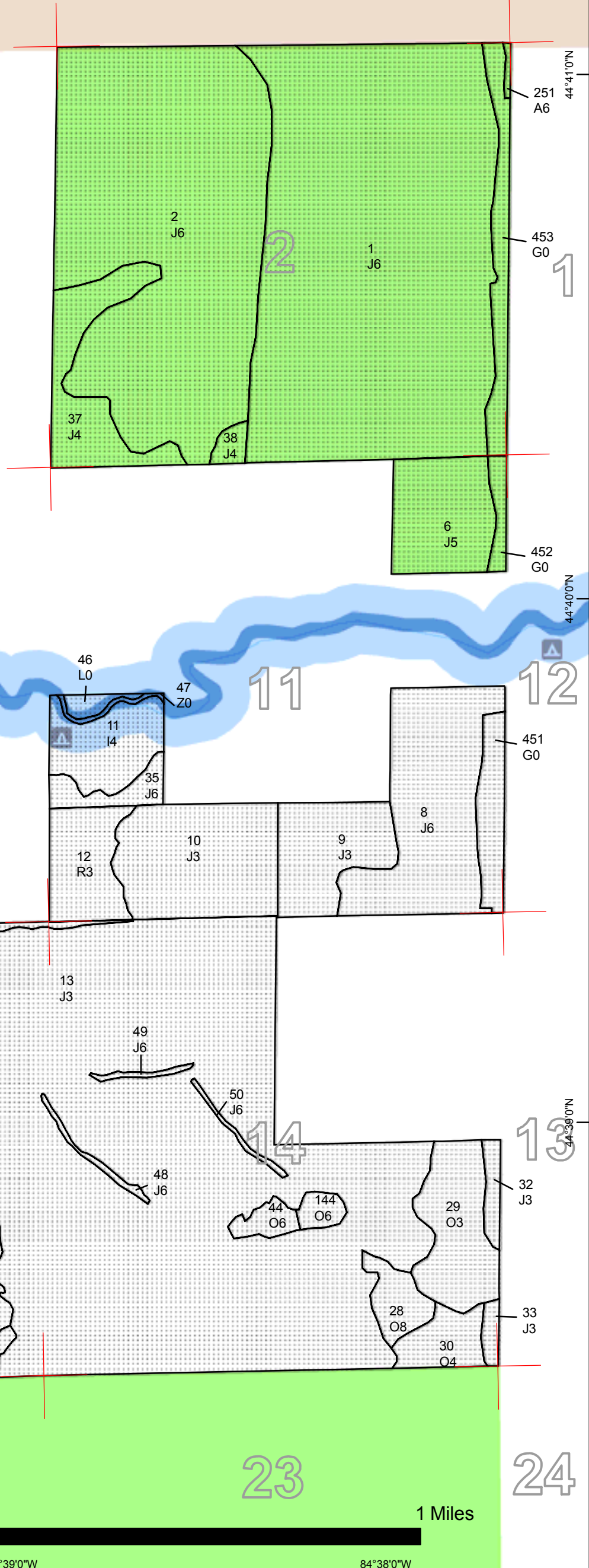


Legend

- 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
- Campgrounds





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	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	Concentrated Recreation Area	Facilities that are designed and maintained for routine or heavy recreational use, including State Parks, State Forest campgrounds, motorized and non-motorized trails, trailheads, staging areas and public access sites.
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.