



SAULT FOREST MANAGEMENT UNIT COMPARTMENT REVIEW PRESENTATION

COMPARTMENT # 5 ENTRY YEAR: 2010

Compartment Acreage: 2191

County: Chippewa

Revision Date: August 11, 2008

Stand Examiner: Jeff Wise

Legal Description: T42N-R7E Sections 15, 16, 21, 22, 25 – 28; Drummond Township

Management Goals: To develop an optimal age class distribution of aspen stands for sustainable forestry and wildlife values. To rotate hardwood treatments for optimum regeneration and stocking of all age classes. Maintain current openings as needed for diversity and enhancement of wildlife benefits. To provide reasonable public access for multiple use benefits such as hunting, trail riding, camping, and hiking, while protecting the natural resources. Past management has been concentrated in the south part and has been successfully completed in past YOE. The north part has limited access and only through private land and has become over mature. It is expected that if not regenerated this YOE, it will begin its conversion to more tolerant conifer types. The area in question is factor limited at this time. This compartment is within the proposed Drummond Island Management Area. Plans for this Management Area are currently being developed.

Soil and Topography: Shelter-Posen-Summerville Association, very deep and shallow, nearly level to very steep, somewhat poorly drained and well drained, loamy soils on ground moraines and glacial lake benches. Markey Dawson Association, very deep, nearly level, very poorly drained, mucky and peaty soils on outwash plains, lake plains, and ground moraines. Generally, the land is rolling with gravel pits, rocky areas, and a good amount of Great lakes shoreline.

Ownership Patterns, Development, and Land Use in and Around the Compartment: A contiguous block of State ownership with one large block of private land centrally located, leaving the northern portion of the compartment virtually inaccessible by vehicle. Private land borders the north, Lake Huron on the east, Fourth Lake on the west and additional State land on the south. There are no developments save a few hunting camps, and land use is hunting and sight seeing.

Unique, Natural Features: A scenic beach known as Glen Cove attracts people from all over. An eagle's nest is the only MNFI element occurrence lying near one treatment boundary, however, has not been active for several years. The exact location is unknown but the area will be monitored closely when conducting field work.

Archeological, Historical, and Cultural Features: None known at this time.

Special Management Designations or Considerations: None at this time.

Watershed and Fisheries Considerations: This compartment contains Lake Huron shoreline as well as all or part of Third and Fourth Lakes, which are part of the Potagannissing River system. These lakes provide important spawning and nursery habitat for northern pike. Best management practices, including the 100-foot buffer, are protective of these waterbodies.

Wildlife Habitat Considerations: This compartment contains wetlands communities associated with the Potagannassing River, Fourth Lake, and the shoreline of the St. Mary's to the east. Ruffed grouse, deer, bear, hare and other furbearers are present. There is also an oak component and representation of late succession hemlock. The large component of overmature aspen is conducive to cavity nesters due to its rapid natural decline.

General Wildlife Objectives and Considerations:

1. Ephemeral wetlands/intermittent streams

Despite their small size, ephemeral wetlands and intermittent streams are critically important to reptile and amphibians and contribute to the overall forest biodiversity (MI Wildlife Action Plan – wetlands: ephemeral wetlands).

Terrestrial habitats within 100 ft of ephemeral wetlands and intermittent streams will be left uncut following to protect water quality BMP guidelines. Mature, undisturbed forests surrounding wetlands are important because harvest practices can degrade habitat suitability for dependent wildlife species, particularly reptiles and amphibians. Soil temperatures increase and humidity decreases with loss of canopy closure, rutting in low areas can disrupt species movement, harvested areas have lower dead and down woody debris, and exposed soils combined with large rain events after harvest can introduce sedimentation impacting water quality and quickly fill in small isolated wetlands.

Adjacent to the water quality buffer, management of the adjacent terrestrial habitat up to 500 ft will incorporate the life requirements of reptile and amphibian species. Harvest within this core habitat zone will avoid peak breeding periods of Apr. 15 – July 15th, when logistically feasible. Retention patches, particularly with clear cut stands, will be placed adjacent to wetland buffers or between wetlands within a stand to increase protection and connectivity.

2. River/Marsh

Maintaining mature, closed canopy forest types adjacent to rivers, lakes, ponds will benefit numerous wildlife species. Wood ducks, hooded mergansers, bald eagle, osprey, numerous passerines, red-shouldered hawk, black bear, fisher, marten, and other aquatic fur bearers are some species which utilize mature forests adjacent to water bodies.

Emphasis of mature forest community elements adjacent to water quality buffers will maximize wildlife value. Retention patches, particularly with clear cuts, will be placed adjacent to or between wetlands within a stand increase protection and connectivity. Harvest within 500 ft will avoid peak breeding reptile and amphibian breeding periods of Apr. 15 – July 15th, when logistically feasible.

3. Oak

Retention of oak is now particularly important given the significant loss of beech across the landscape. Management which encourages and protects mast producing species such as oak will benefit numerous wildlife species such as white-tailed deer, grouse, bear, rodents, and wild turkey.

4. Cedar/conifer/fir/spruce within deer yards

One of the primary objectives within deer yards is to maintain a dense canopy cover which serves as an intercept to snow accumulation during winter. To maintain this cover, retention of these species is important. Because of the low probability of cedar regeneration within concentrated areas of deer use, harvest should be avoided. If harvest of cedar has been conducted within the yard, evaluating harvest techniques and regeneration will be critical to the success of future management.

5. Cedar management outside of deer yard boundaries with regeneration challenges

Where cedar is not regenerating outside of deer yards, clear criteria should be developed to judge adequate regeneration and appropriated actions to correct understocked areas (SFI Performance Measure 2.1). It must be determined where and how much this lower stocking rate is acceptable. Because of the high economic and ecological value of cedar, the priority should be to evaluate regeneration of past harvest areas and to limit or clearly define sustainable harvest levels until status within these areas is determined. Monitoring results will take time (30 - 50 yrs) but will not jeopardize cedar communities as they are long-lived.

In stands where cedar is harvested, actions will be taken to protect desirable or planned advanced natural regeneration during harvest (SFI Performance Measure 2.1):

- 1) Leave cedar seed trees every 30 ft.
- 2) Avoid cutting leaning cedar ($\sim \leq 45^\circ$) - trees provide better opportunities for vegetative regeneration.
- 3) Avoid harvesting large trees ($> 12''$ dbh) - good seed dispersal.
- 4) Create slash piles and downed whole trees adjacent to retained cedar.
- 5) Avoid harvesting in low areas with hummock microtopography as equipment can flatten and result in site conversion to species that are more adapted to wet areas.
- 6) Clearcutting of cedar on shallow organic soils, poorly decomposed acid peats, or wet mineral soils frequently result in inadequate regeneration. Harvest should be restricted to the most productive organic soils.

Citation:

Chimner, R.A., and J.B. Hart 1996. Hydrology and microtopography effects on northern white-cedar regeneration in Michigan's Upper Peninsula. *Can. J. For. Res.* 26:389-393.

Lanasa, M. 1989. Northern white-cedar management and whitetail deer habitat. In: *Proceedings of the National Silvicultural Workshop: Silviculture for all resources; 1987 May 11-14; Sacramento, CA.* Washington, DC: U.S. Department of Agriculture, Forest Service, Timber Management: 19-24.

Verme, L.J., and W.F. Johnson. 1986. Regeneration of Northern white cedar deeryards in upper Michigan. *J. Wild. Manag.* 50:307-313.

6. Northern hardwood

Retention of large diameter living trees and snags will provide cavity, den, and foraging habitat and future dead and down woody debris for numerous wildlife species.

7. Hemlock

Hemlock communities provide habitat for rare raptor species such as red-shouldered hawk and Northern goshawk and is also important to black-throated blue, cerulean, black-throated green warblers, and scarlet tanagers, black bear, moose and marten.

Closed canopy structure results in lower snow levels and lower energy expenditures for deer. When harvesting other trees species within a stand where hemlock is retained, equipment should refrain from removing trees from hemlock inclusions to avoid damaging the canopy.

8. Poor conifer swamp

This natural community is dominated by black spruce, Labrador tea, and sphagnum mosses and is important to many rare plants and animals such as the yellow pitcher plant, black crowberry, spruce grouse, wood turtle, and merlin. When managing for biodiversity within poor conifer swamps, large unharvested tracts may be left to allow natural processes to operate unhindered to generate a range of successional stages.

Examples of this community with late successional characteristics are relatively rare and should be considered for retention with the presence of large trees, treefall gaps, snags and downed wood.

Dead and dying wood will be retained to become snags, stumps, and fallen logs. Long rotation periods (over 100 years) will favor numerous species, such as epiphytic lichen and trunk foraging birds that depend on old, large trees.

Where management does occur, patches of residual trees, all snags, and dead and downed wood will be retained. High retention (> 20 %) will be important because spruce is not very windfirm, thus isolated retention patches blow over easily. Retention of both spruce and fir is important to maintain the multi-storied structure within the stand.

Citation:

Kost, M.A., D.A. Albert, J.G. Cohen, B.S. Slaughter, R.K. Schillo, C.R. Weber, and K.A. Chapman. 2007. Natural Communities of Michigan: Classification and Description. Michigan Natural Features Inventory, Report No. 2007-21, Lansing, MI.

MDNR FMFM Within-Stand Retention Guidelines. 2006. Cover type specific considerations – spruce-fir. Pgs. 25-26.

9. Aspen

Maintaining a component of interspersed large (saw log) living aspen or aspen patches within managed stands will provide for future snag age class and a food resource for ruffed grouse. This aspen multi-age class juxtaposition also provides benefits for deer and hare.

Oak and cherry retained within aspen stands serve as important mast producers.

Retention of longer-lived species such as maple, oak, cedar, and white pine enhance vertical structure and assure a steady supply of snags and downed woody debris.

Retention of conifer < 4" dbh within stands provides cover for ruffed grouse.

10. Red pine

Retention of some red pine at final harvest in plantation stands provide wildlife values in terms of super-canopy nesting trees, a good long-term cavity resource, and live/wood legacy tree retention. The benefit of these patches to wildlife will be maximized by placing retention of red pine adjacent to 100 ft, unharvested, water quality buffers.

The retention zone beyond the buffer can be managed to maximize ecological complexity and natural plant diversity with variable density thinning and longer rotations. Retention within this zone of 60 – 80 ft² per acre of residual red pine at the initial harvest will result in development of two-age cohort stands and potentially multi-cohort stands when this level of harvest is repeated in the future. Economic rotation ages of 50 – 90 years are shorter than those to develop complex stand structures (120 – 200 years). Thus the primary determinant of harvest within the retention zone will be the acceptable level of structural complexity and within-stand heterogeneity.

Because large continuous stands of red pine of the same age are susceptible to severe pest outbreaks, having zones of red pine of varying age classes broken up with alternate non-pine species will prove beneficial.

Management within red pine plantations will enhance and perpetuate oak components which are an important hard mast source for numerous wildlife species.

Citation:

Gilmore, D. W., and B. J. Palik. 2006. A revised manager's handbook for red pine in the North Central Region. Gen. Tech. Rep. NC-264. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Research Station. 55 p.

MDNR FMFM Within-Stand Retention Guidelines. 2006. Cover type specific considerations – red pine. Pgs. 22-23.

Michigan State Forest Red Pine Management Guidelines. 1991.

Nicholls, T. H., and D. D. Skillings. 1997. Pocket guide to red pine diseases and their management. U.S. Department of Agriculture, Forest Service, North Central Research Station.

11. Limestone Boulders

These unique geologic features serve as micro-habitat for several rare plant species including Hart's tongue fern, green spleenwort, and walking fern. Harvesting too close to these boulders can interrupt the canopy cover and micro-climate for these plants. In areas where plants have been found, retention guidelines will be followed (pg. 15). In areas within the plant species distribution (see MNFI summaries) harvest will not occur at a minimum of 10 ft of large boulders (approximately $\geq 4 \times 4$ ft) to protect micro-climate and possible future colonization sites.

12. Retention considerations

- Retention patches placed within a stand for water quality, inoperability, or protection of sensitive habitat can contribute toward but not fully satisfy retention requirements (pg. 10).

- Important to vary retention patterns across the landscape to encourage structural diversity (pg. 11).
 - When retaining scattered trees, important to capture the size diversity by assuring that large diameter trees / trees with desirable wildlife characteristics are included.
 - For stands greater than 10 acres, patches are recommended. This also assures that a representation of the current species community is retained.

Mineral Resource and Development Concerns and/or Restrictions: Surface sediments consist of thin to discontinuous glacial till over bedrock and peat and muck. There is insufficient data to determine the glacial drift thickness. The Silurian Burnt Bluff Group, Cabothead Shale and Manitoulin Dolomite and the Ordovician Queenston Shale subcrop below the glacial drift. The Burnt Bluff is quarried for stone and the Manitoulin could be used for stone/dolomite. Gravel pits are not known in the area and potential is limited. There is no current economic oil and gas production in the UP.

Vehicle Access: The main access to this compartment is a well maintained county road, called either Sheep Ranch Rd or Glen Cove Rd depending on your source of info. Once at Glen Cove, the road turns to a rocky off road trail and is accessible only with good ground clearance or four wheel drive.

Survey Needs: Possibly Sec 15 and 16 for timber sales if access Limiting Factors are removed from northern stands.

Recreational Facilities and Opportunities: The snow trail runs along the lakeshore trail. Glen Cove is a nice beach for swimmers and campers. Hunting, camping, and nature watching are the predominant opportunities for people to enjoy this area. Designated ORV trails wind around various areas as well.

Fire Protection: Glen Cove Road provides good access to most areas in the south portion of the comp. The north part could be accessed through the private hunting camp via Colton Bay Rd. A few other two tracks provide additional limited access. Water sources are plentiful with Lake Huron readily accessible.

Additional Compartment Information:

Cover Type details, Proposed Treatments, and Stand listings are listed in the attached reports:

- ◆ **Proposed Treatments – No Limiting Factors**
 - ◆ **Proposed Treatments – With Limiting Factors**
 - ◆ **Stand Listing – Forested**
 - ◆ **Stand Listing – Non Forested**
 - ◆ **Special Conservation Area (SCA) Details**
- **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**
 - ◆ **SCA – Special Conservation Areas**

Cover Type & Treatment Map

Compartment 5
 T42N, R07E, Sec. 15, 16, 21, 22, 25-28
 County: Chippewa
 Unit: Sault Ste. Marie
 YOE: 2010
 Acres: 2,191 GIS Calculated
 Stand Examiner: Jeffrey Wise
 Map Revised: 8/14/2008
 Map Phase: Pre-review

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

Legend

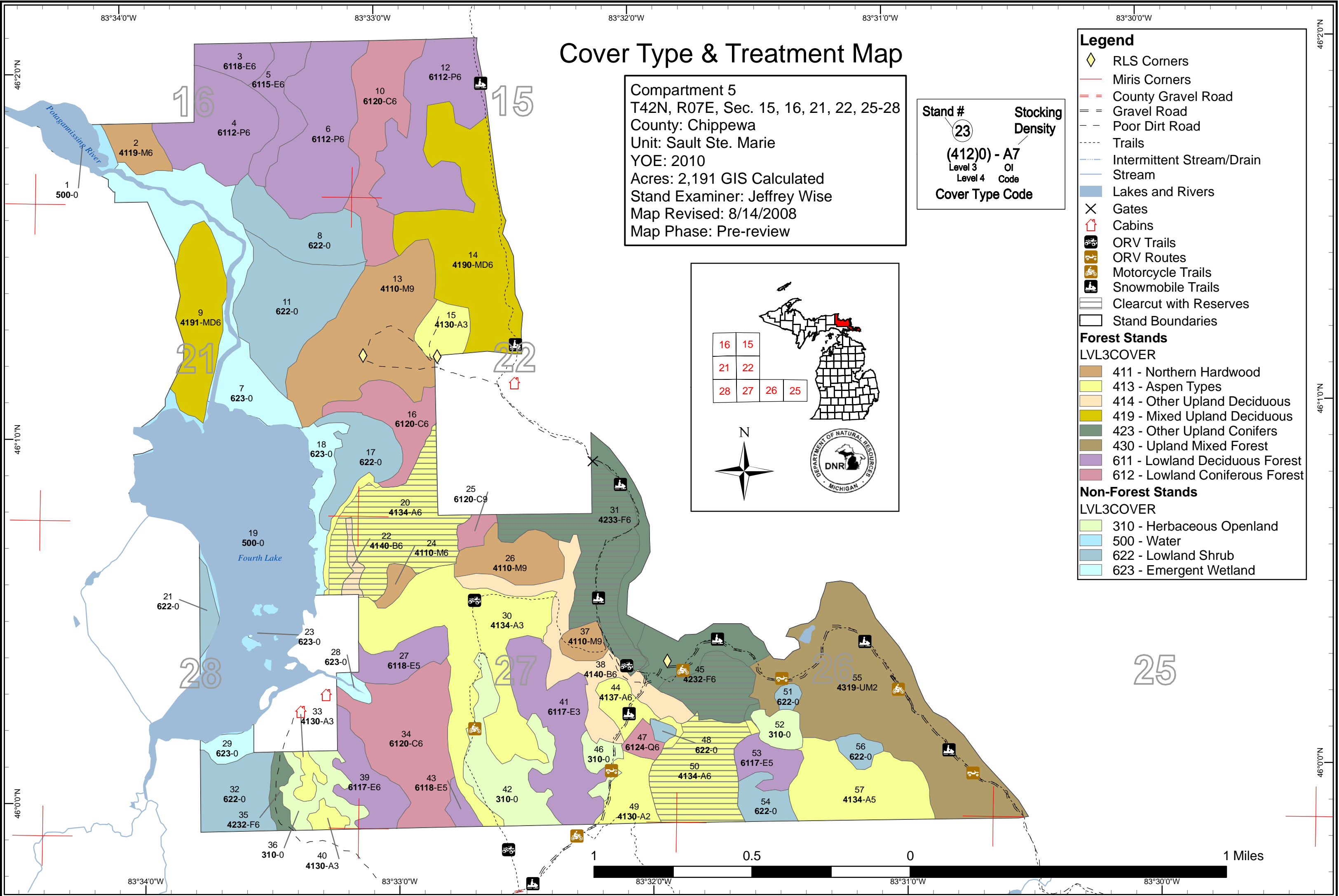
- ◇ RLS Corners
- Miris Corners
- == County Gravel Road
- == Gravel Road
- - - Poor Dirt Road
- - - Trails
- - - Intermittent Stream/Drain
- Stream
- Lakes and Rivers
- × Gates
- 🏠 Cabins
- 🚙 ORV Trails
- 🚙 ORV Routes
- 🏍️ Motorcycle Trails
- 🛷 Snowmobile Trails
- ▨ Clearcut with Reserves
- ▭ Stand Boundaries

Forest Stands
 LVL3COVER

- 411 - Northern Hardwood
- 413 - Aspen Types
- 414 - Other Upland Deciduous
- 419 - Mixed Upland Deciduous
- 423 - Other Upland Conifers
- 430 - Upland Mixed Forest
- 611 - Lowland Deciduous Forest
- 612 - Lowland Coniferous Forest

Non-Forest Stands
 LVL3COVER

- 310 - Herbaceous Openland
- 500 - Water
- 622 - Lowland Shrub
- 623 - Emergent Wetland

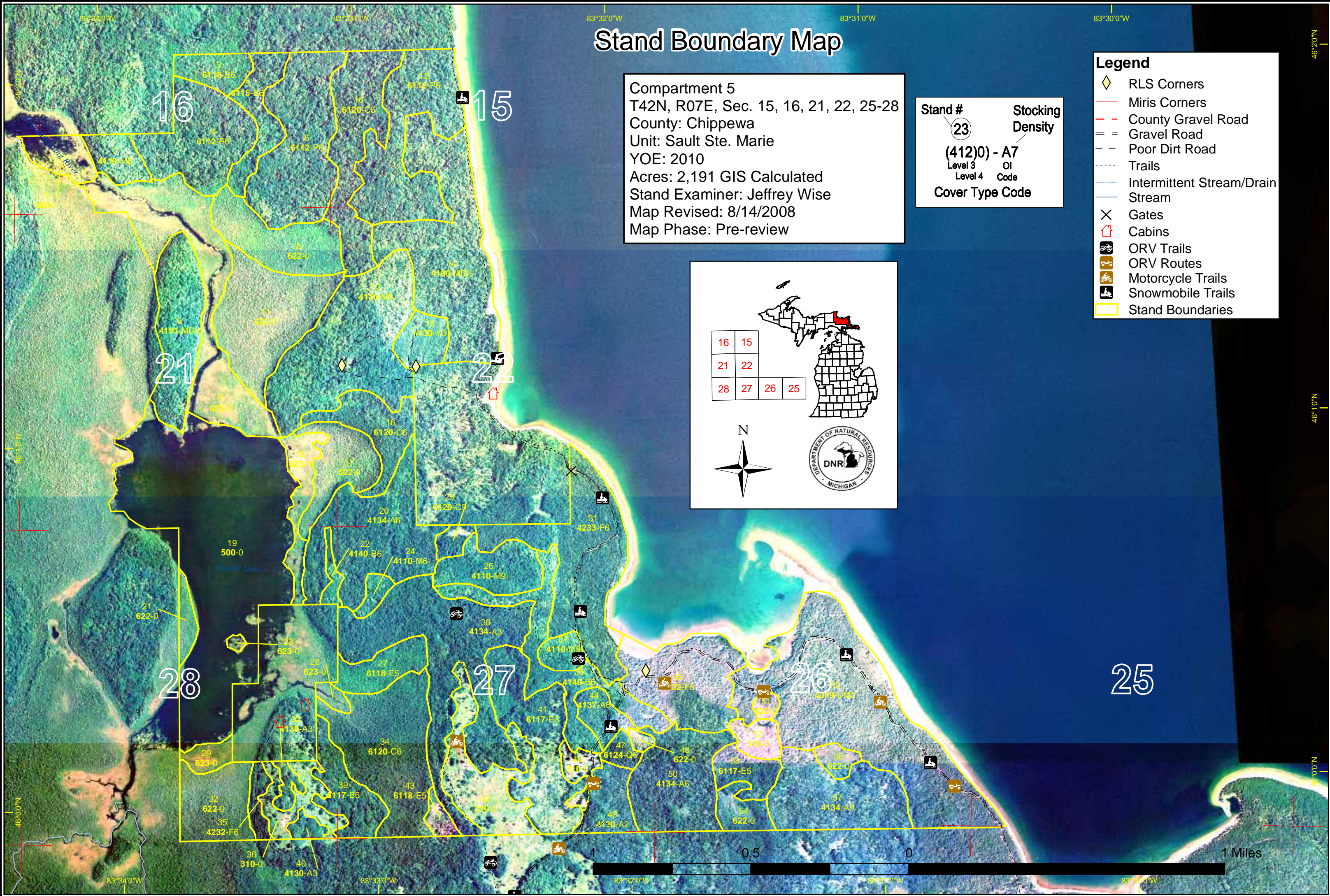
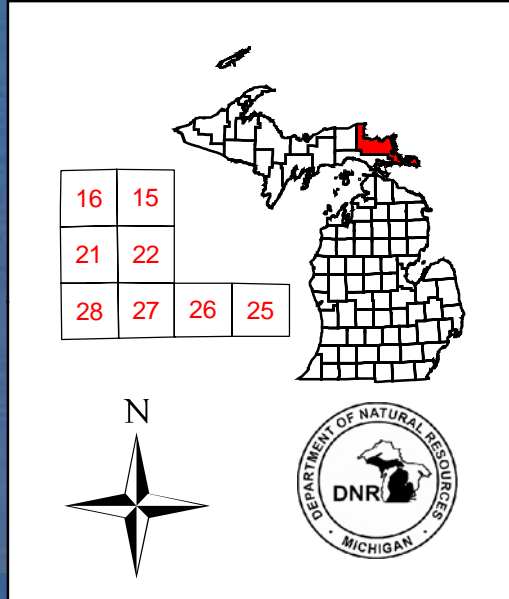


Stand Boundary Map

Compartment 5
 T42N, R07E, Sec. 15, 16, 21, 22, 25-28
 County: Chippewa
 Unit: Sault Ste. Marie
 YOE: 2010
 Acres: 2,191 GIS Calculated
 Stand Examiner: Jeffrey Wise
 Map Revised: 8/14/2008
 Map Phase: Pre-review

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





- Legend**
- ◇ RLS Corners
 - Miris Corners
 - == County Gravel Road
 - == Gravel Road
 - - - Poor Dirt Road
 - Trails
 - Intermittent Stream/Drain
 - Stream
 - × Gates
 - 🏠 Cabins
 - 🚙 ORV Trails
 - 🛵 ORV Routes
 - 🏍️ Motorcycle Trails
 - 🛷 Snowmobile Trails
 - 🟡 Stand Boundaries

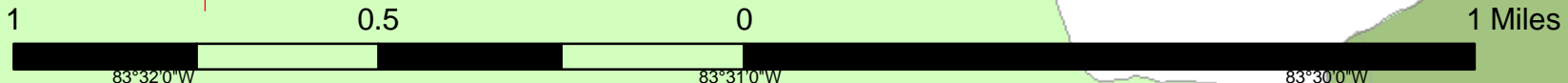
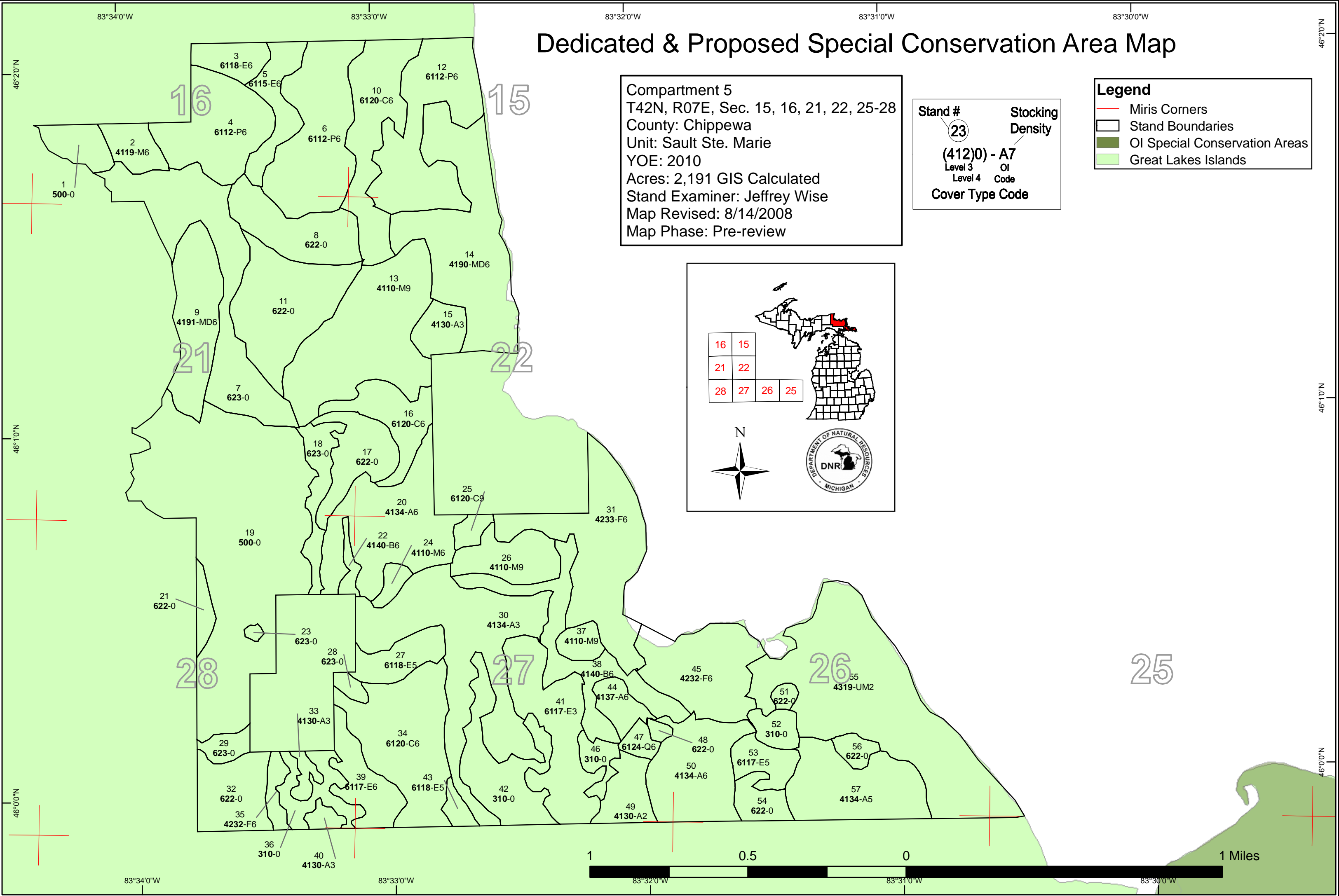
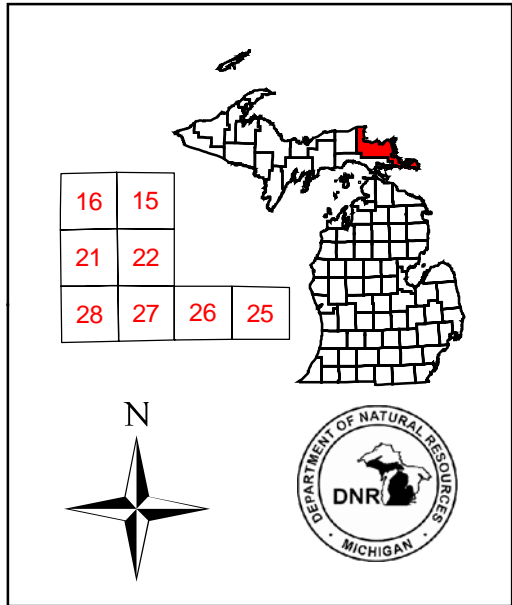


Dedicated & Proposed Special Conservation Area Map

Compartment 5
 T42N, R07E, Sec. 15, 16, 21, 22, 25-28
 County: Chippewa
 Unit: Sault Ste. Marie
 YOE: 2010
 Acres: 2,191 GIS Calculated
 Stand Examiner: Jeffrey Wise
 Map Revised: 8/14/2008
 Map Phase: Pre-review

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

- Legend**
-  Miris Corners
 -  Stand Boundaries
 -  OI Special Conservation Areas
 -  Great Lakes Islands



Covertypes, Acres, and Age summary (Level 3 Cover Type)

Sault Ste. Marie Mgt. Unit

Compartment 005 Year of Entry 2010

Report Date: 08/14/2008



| | 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 | 111.6 | 0 | 25.7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 216.6 | 353.9 |
| Emergent Wetland | 117.9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 117.9 |
| Herbaceous Openland | 84.2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 84.2 |
| Lowland Coniferous Forest | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 170.5 | 170.5 |
| Lowland Deciduous Forest | 0 | 58.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15.3 | 55.0 | 0 | 0 | 237.9 | 366.2 |
| Lowland Shrub | 203.6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 203.6 |
| Mixed Upland Deciduous | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 47.4 | 0 | 0 | 100.3 | 147.7 |
| Northern Hardwood | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 155.7 | 155.7 |
| Other Upland Conifers | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 149.5 | 149.5 |
| Other Upland Deciduous | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 53.7 | 53.7 |
| Upland Mixed Forest | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 154.4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 154.4 |
| Water | 234.1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 234.1 |
| Total | 639.8 | 169.6 | 0 | 25.7 | 0 | 0 | 0 | 154.4 | 0 | 0 | 15.3 | 102.4 | 0 | 0 | 1084.3 | 2191.4 |

**PROPOSED TREATMENTS
NO LIMITING FACTORS**



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| Treatment Name | Acres | Stage1 CoverType | Size Density | Stand Age | Treatment Type | Treatment Method | Cover Type Objective |
|-----------------|-------|--------------------------|-------------------|-----------|----------------|------------------------|----------------------|
| 20 45005020-Cut | 70.6 | 4134 - Aspen, Spruce/Fir | High Density Pole | 68 | Harvest | Clearcut with Reserves | Aspen, Spruce/Fir |

Rev Cmnt: Sale boundary lines must buffer any drainages and Fourth Lake by 100 feet. No survey needed for private boundary. Use snow trail or 500 feet buffer from Glen Cove and access roads. Visuals very important in this area.

Rev Spec: Cut all trees that will make at least one pulpwood stick to 4" top. Retain cedar, pine, any oak, hemlock, sugar maple, and yellow birch, along with some scattered mature aspen along boundary, and all den trees and snags.

Next Steps: Regeneration survey in year 4 after harvest, regeneration of present species desired.

| | | | | | | | |
|-----------------|-----|-------------------------------|-------------------|----|---------|------------------------|--------------|
| 22 45005022-Cut | 5.1 | 4140 - Other Upland Deciduous | High Density Pole | 68 | Harvest | Clearcut with Reserves | Birch, Aspen |
|-----------------|-----|-------------------------------|-------------------|----|---------|------------------------|--------------|

Rev Cmnt: No survey needed on south boundary, line will be placed well north of private.

Rev Spec: Cut all trees that will make at least one pulpwood stick to a 4" top. Retain sugar maple and any cedar and pine, and all den trees and snags.

Next Steps: Regeneration survey in year 4 after harvest, regeneration of present species desired

| | | | | | | | |
|-----------------|------|--------------------|-------------------|----|---------|------------------------|-------------------|
| 31 45005031-Cut | 67.0 | 42330 - Upland Fir | High Density Pole | 63 | Harvest | Clearcut with Reserves | Upland Spruce/Fir |
|-----------------|------|--------------------|-------------------|----|---------|------------------------|-------------------|

Rev Cmnt: No survey needed for the private boundary. Use snow trail and up to 200 ft retention buffer from Glen Cove and orv trail. Treatment map will reflect actual treatable area.

Rev Spec: Cut all trees that will make at least one pulpwood stick to a 4" top. Retain cedar and pine, and all den trees and snags.

Next Steps: Regeneration survey in year4 after harvest, regeneration of present species desired.

| | | | | | | | |
|-----------------------|------|-----------------------|-------------------|----|---------|------------------------|-------------------|
| 45 45005045-Cut_small | 28.0 | 42320 - Upland Spruce | High Density Pole | 68 | Harvest | Clearcut with Reserves | Upland Spruce/Fir |
|-----------------------|------|-----------------------|-------------------|----|---------|------------------------|-------------------|

Rev Cmnt: Use road/ snow trail as a retention buffer for Glen Cove, and rec trails, and up to 200ft buffer south of road east of Glen Cove. Treatment map reflects actual treatable area.

Rev Spec: Cut all trees that will make at least one pulpwood stick to 4" top. retain cedar, pine, and all den trees and snags.

Next Steps: Regeneration survey in year 4 after harvest, regeneration of present species desired.

| | | | | | | | |
|-----------------|------|--------------------------|-------------------|----|---------|------------------------|----------------------|
| 50 45005050-Cut | 51.2 | 4134 - Aspen, Spruce/Fir | High Density Pole | 68 | Harvest | Clearcut with Reserves | Aspen, Mixed Conifer |
|-----------------|------|--------------------------|-------------------|----|---------|------------------------|----------------------|

Rev Cmnt: No survey needed for south boundary, State land to the south, The sale boundary line on the south side could be staggered a bit to leave small clumps of trees but not extend into Comp 19.

Rev Spec: Cut all trees that will make at least one pulpwood stick to a 4" top. Retain cedar, pine, and all den trees and snags. Buffer any drainages and wetlands by 100 feet to also serve as retention.

Next Steps: Regeneration survey in year 4 after harvest, regeneration of present species desired.

**Total Treatment
Acreage Proposed: 221.8**

**PROPOSED TREATMENTS
WITH LIMITING FACTORS**



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| Treatment Name | Acres | Stage1 Cover Type | Size Density | Stand Age | Treatment Type | Treatment Method | Cover Type Objective | Page 1 of 1 |
|----------------|-------|-------------------|--------------|-----------|----------------|------------------|----------------------|-------------|
|----------------|-------|-------------------|--------------|-----------|----------------|------------------|----------------------|-------------|

Limiting Factor
and Comment:

Rev
Cmnt:

Rev
Spec:

Next
Steps:

No Treatment
Reason

**Total Treatment
Acreage Proposed: 0**



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 Name | Acres | Comments |
|-------|----------|-------|----------|
| <hr/> | | | |
| <hr/> | | | |



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 | Coastal Environmental Areas | The public designation process is defined by Part 323, Shorelands Protection and Management, of the Natural Resources and Environmental Protection Act, 1994 PA 451. The program is administered by the Michigan Department of Environmental Quality (DEQ). This is an inactive program with no new areas currently under consideration by the DEQ. |
| 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. |
| 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 | Great Lakes Islands | Great Lakes Islands provide significant habitat for numerous species, including many rare plants and animals, several of which are endemic or largely restricted to the Great Lakes region. Due to their isolation, islands provide good examples of many Great Lakes-associated natural communities and ecosystems, and thus have potential to provide insights for understanding the consequences of human disturbance on the increasingly fragmented ecosystems of the mainland. |