



SAULT FOREST MANAGEMENT UNIT COMPARTMENT REVIEW PRESENTATION

COMPARTMENT # 143 ENTRY YEAR: 2010

Compartment Acreage: 1632 County: Mackinac

Revision Date: 8/11/2008

Stand Examiner: Steve Crigier

Legal Description: T43N-R8W Section 35; Hudson Township
T42N-R8W Sections 1 & 2; Hudson Township
T42N-R7W Section 6; Hendricks Township

RMU (if applicable):

Management Goals: The management in this compartment will attempt to maintain and regenerate the cedar component through shelter wood harvests, and will enhance the deer wintering areas. Maintaining age class diversity in the aspen/birch stands is an objective of the clearcuts prescribed. The compartment contains Wooded-Dune and Swale Complexes along with other sensitive plant and animal communities, mostly along the lakeshore, that have special management considerations that will enhance their attributes. This compartment is in the proposed Lake Michigan Shoreline Management Area and the plans for this management area are currently in the draft process.

Soil and Topography: Majority of compartment is low ground with some “ridges” of upland areas. Some ridge and swale complex is found along the lakeshore. Soil types found within the compartment include; Leafriver-Croswell-Wainola, Esau-Zela, Croswell-Wainola, Paquin-Finch, Eastport, Eastport-Leafriver, Markey and Carbondale Mucks, Markey-Spot-Finch, Histosols and Aquents, Pullup, Croswell-Markey. Most of the soils indicate low-lying areas that are fairly wet on site. Some of the soils (Pullup) indicate ridges of higher, dry areas.

Ownership Patterns, Development, and Land Use in and Around the Compartment: There are four parcels of private property along the Lake Michigan shoreline within the compartment. State of Michigan lands surround the compartment on three sides with Lake Michigan bordering the compartment on the south side.

Unique, Natural Features (include only non-site specific and non-sensitive information): The compartment is considered a deer wintering area. There are several locations of sensitive plant and animal communities along the lakeshore. The Wooded Dune-Swale Complex ERA is also located near the lakeshore. The compartment has Davenport Creek along with several other small creeks running through it.

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

Special Management Designations or Considerations: The Wooded Dune and Swale Complex is designated as an Ecological Reference Area (ERA) and will be managed according to the plan for this ERA.

Watershed and Fisheries Considerations: This compartment contains a lower stream reach of Davenport Creek. Recent fishery surveys in 2006 and 2007 documented a primarily cold-water fish community consisting of brook trout and sculpins. Juvenile steelhead were also captured as adult fish use Davenport Creek as a spawning and nursery stream. Implementation of BMP's will aid in preventing sediment input from road crossings and upland areas are critically important to protect spawning areas for trout and other stream-resident fishes. Buffering the river is also critical to ensure future inputs of woody material to the stream channel, discourage aspen regeneration close to the stream channel, and provide shading to protect water temperature from warming to a degree that will inhibit trout survival.

Wildlife Habitat Considerations: This compartment lies within the historic Black River deeryard. Retention of cedar within the area is important because of its value to wintering deer and other wildlife. Spruce and fir also provide important canopy structure. Retention of these species increases habitat value within deer yards.

Several ephemeral wetlands and streams and permanent wetlands are within this compartment including Davenport and Paquin Creek.

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 lacustrine (lake) sand and gravel. There is insufficient data to determine the glacial drift thickness. The Silurian Engadine Group subcrops below the glacial drift. The Engadine is quarried for stone/limestone in the area. Gravel pits are not located in the area and potential is questionable. There is no current economic oil and gas production in the UP.

Vehicle Access: Access into the compartment is fairly limited due to the low ground conditions, private land holdings and proximity to the lakeshore. Highway US-2 provides the main access through the compartment. The Hog Island county road runs up the west edge of the compartment with several poor dirt roads branching off to the east. There is some access through private landowners.

Survey Needs: There will need to be a couple of corners placed and about 3/4 of a mile of private line run.

Recreational Facilities and Opportunities: The largest forms of recreation within the compartment are hunting, both deer and small game; and fishing. There is evidence of ORV traffic in accessible areas of the compartment. Walking and wildlife viewing are also possible types of recreation within the compartment.

Fire Protection: The compartment lies in a low risk area for fire danger. Cover types present and the low ground within the compartment are not as susceptible to wildfire as other areas. There is a dry hydrant located by Paquin Creek.

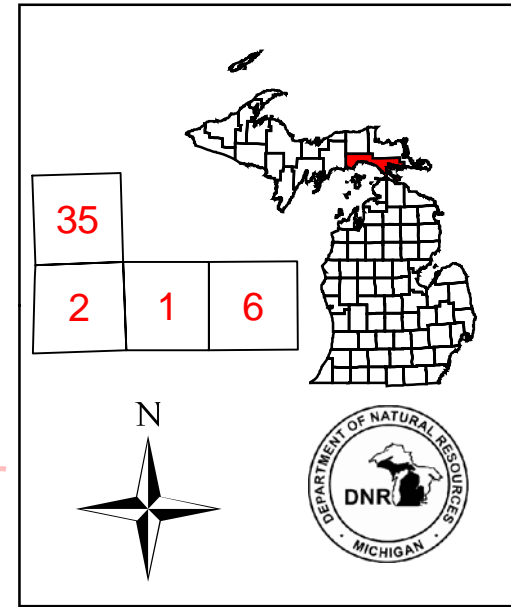
Additional Compartment Information: Some of the treatments require cooperation with adjacent landowners for access. Preliminary access has been granted by one landowner for some of the treatments. Treatments near the pipeline will require notification to Great Lake Gas Company. Several pipeline crossings may be installed by Great Lakes Gas as part of a 1991 easement agreement to access timber in this area. Adjacent limiting factored stands in Compartment 144 may be completed during this YOE due to access.

- **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 143
 T43N, R08W, Sec. 35
 T42N, R08W, Sec. 1, 2
 T42N, R07W, Sec. 6
 County: Mackinac
 Unit: Sault Ste. Marie
 YOE: 2010
 Acres: 1,632 GIS Calculated
 Stand Examiner: Steven Crigier
 Map Revised: 8/11/2008
 Map Phase: Pre-Review



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

Legend

- RLS Corners
- Miris Corners
- Highway
- County Gravel Road
- Paved Road
- Poor Dirt Road
- Closed Road
- Pipelines
- Intermittent Stream/Drain
- Stream
- Lakes and Rivers All
- US Highway
- Stand Boundaries
- Clearcut (w/Reserves, Patch/Strip)
- Shelter Wood (w/Reserves)
- Selection (Group, Single Tree)

Forest Stands

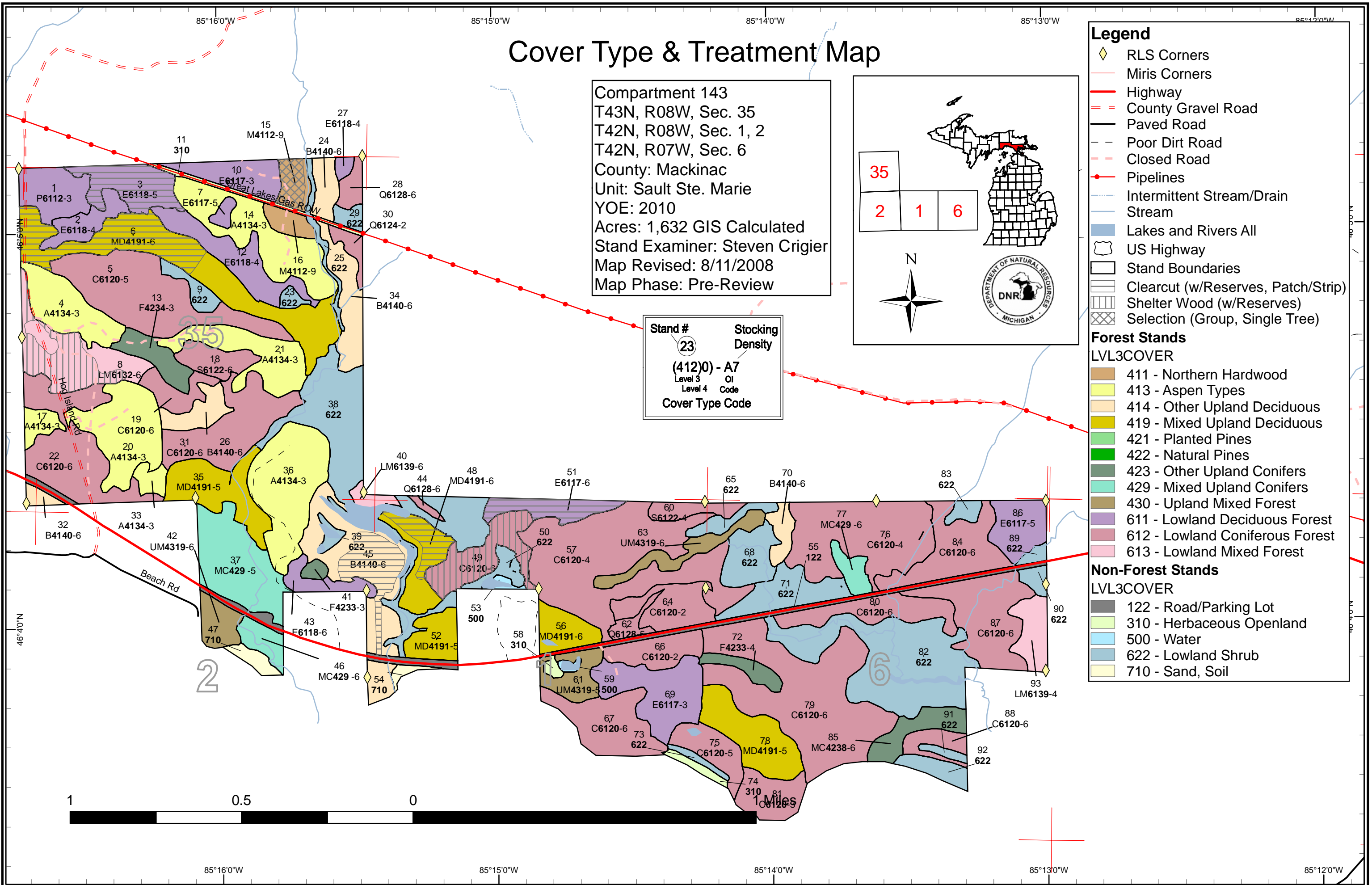
LVL3COVER

- 411 - Northern Hardwood
- 413 - Aspen Types
- 414 - Other Upland Deciduous
- 419 - Mixed Upland Deciduous
- 421 - Planted Pines
- 422 - Natural Pines
- 423 - Other Upland Conifers
- 429 - Mixed Upland Conifers
- 430 - Upland Mixed Forest
- 611 - Lowland Deciduous Forest
- 612 - Lowland Coniferous Forest
- 613 - Lowland Mixed Forest

Non-Forest Stands

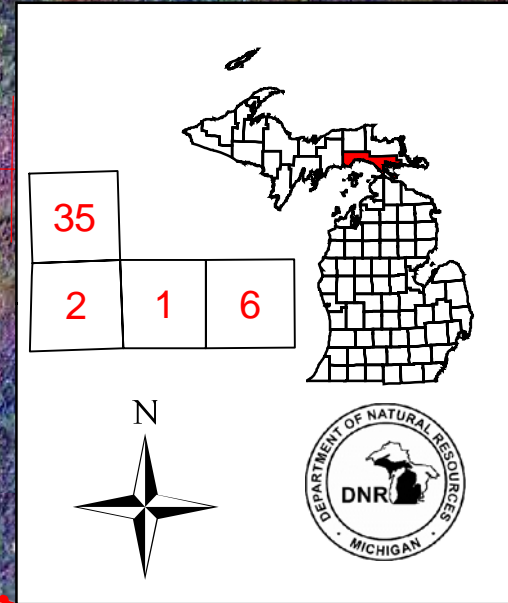
LVL3COVER

- 122 - Road/Parking Lot
- 310 - Herbaceous Openland
- 500 - Water
- 622 - Lowland Shrub
- 710 - Sand, Soil



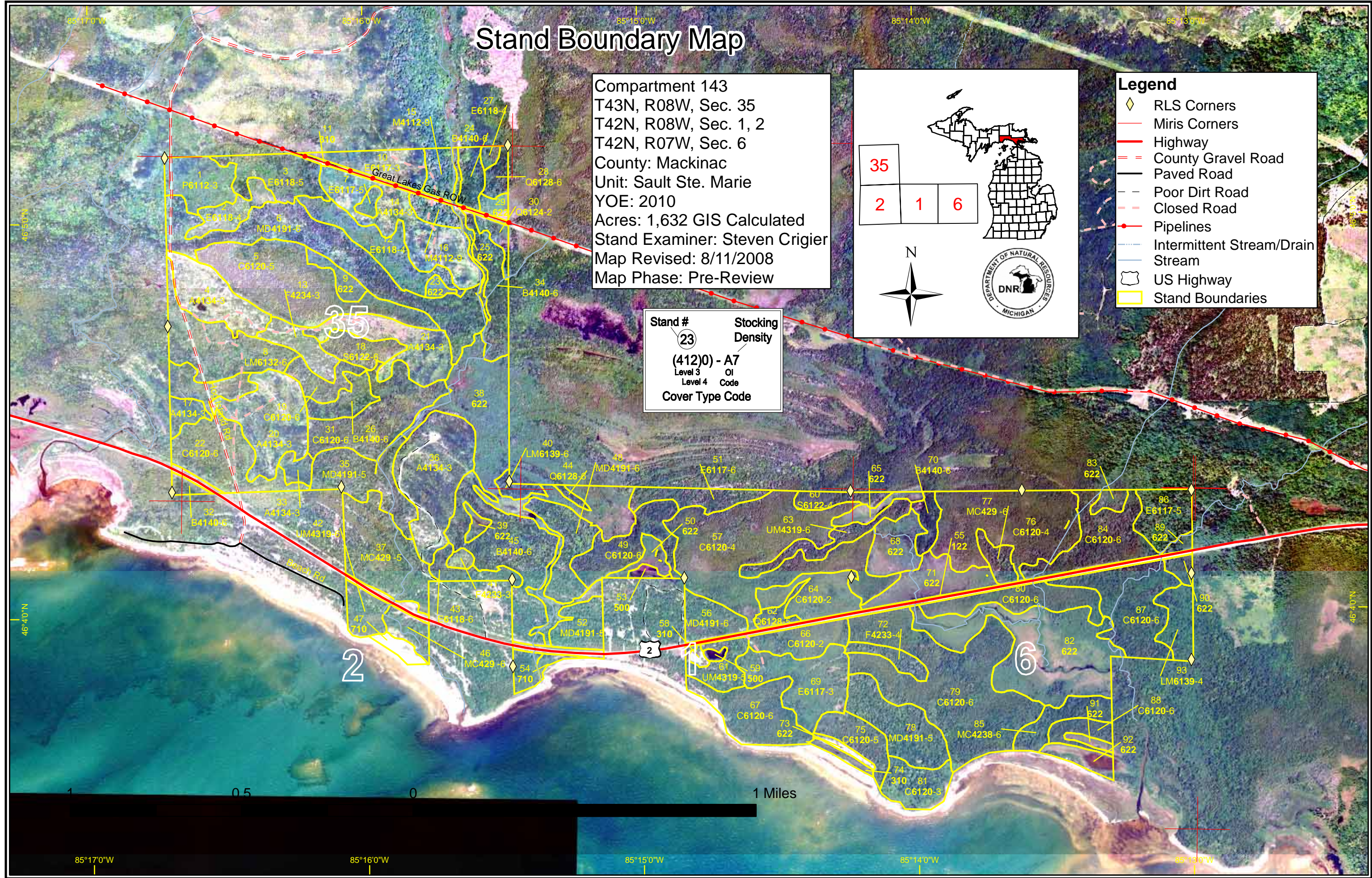
Stand Boundary Map

Compartment 143
 T43N, R08W, Sec. 35
 T42N, R08W, Sec. 1, 2
 T42N, R07W, Sec. 6
 County: Mackinac
 Unit: Sault Ste. Marie
 YOE: 2010
 Acres: 1,632 GIS Calculated
 Stand Examiner: Steven Crigier
 Map Revised: 8/11/2008
 Map Phase: Pre-Review



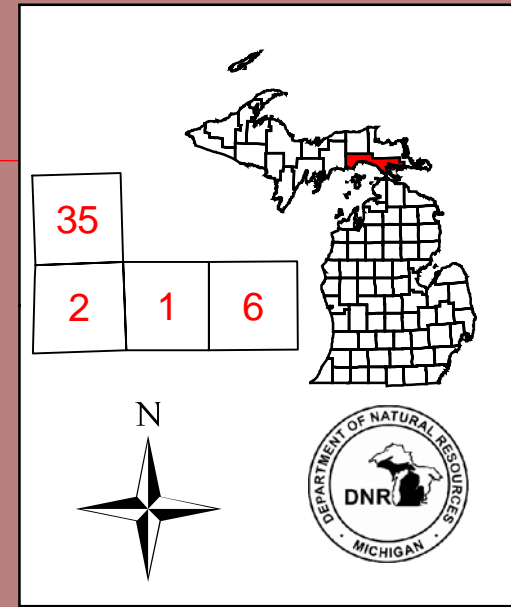
- Legend**
- ◇ RLS Corners
 - Miris Corners
 - Highway
 - == County Gravel Road
 - Paved Road
 - - Poor Dirt Road
 - - Closed Road
 - Pipelines
 - Intermittent Stream/Drain
 - Stream
 - ⬡ US Highway
 - Stand Boundaries

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



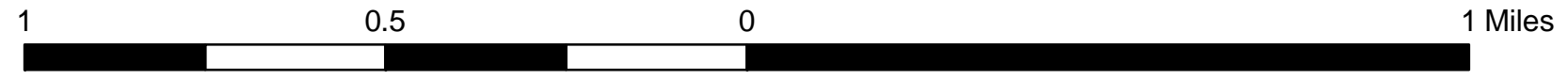
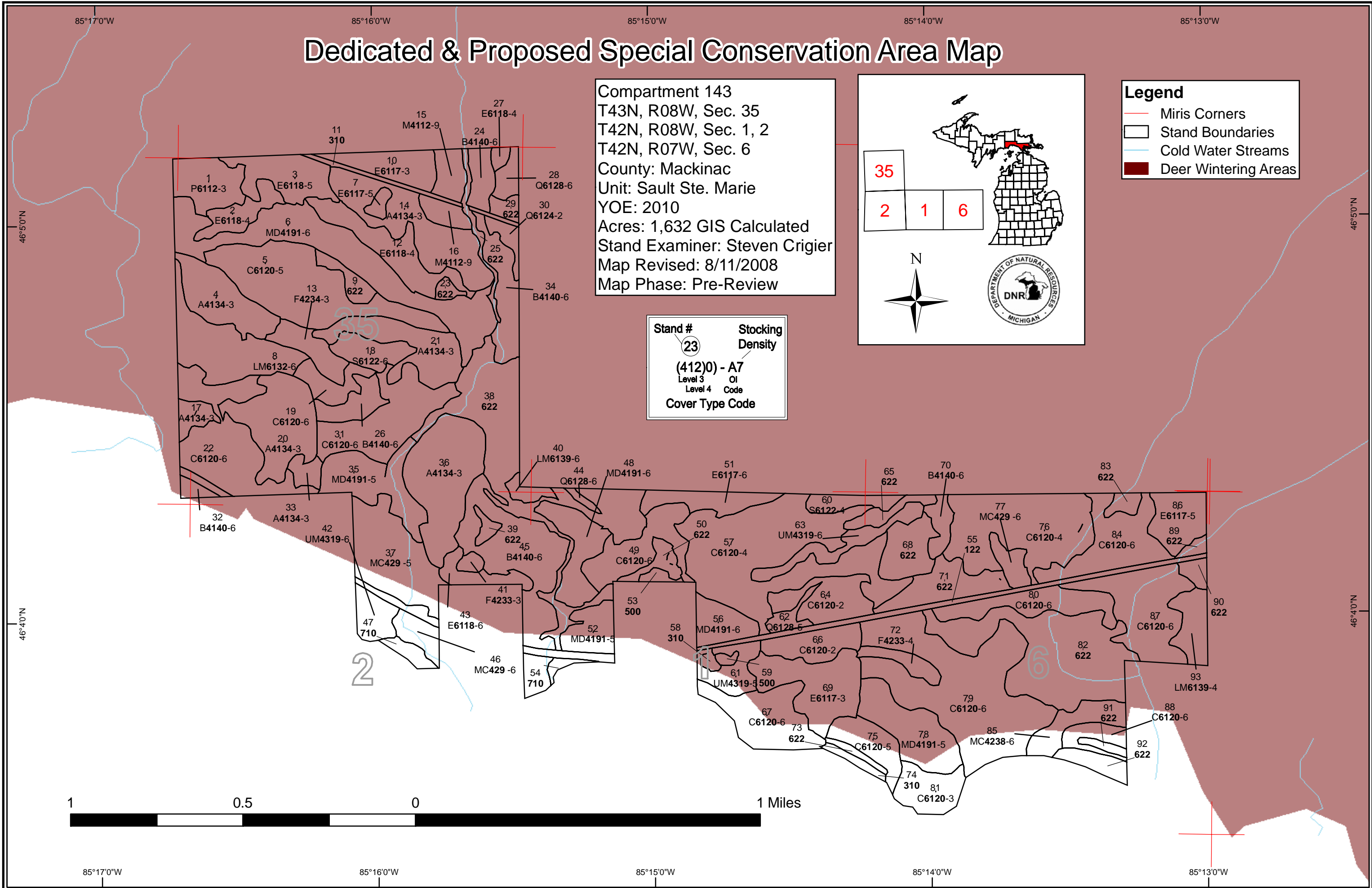
Dedicated & Proposed Special Conservation Area Map

Compartment 143
 T43N, R08W, Sec. 35
 T42N, R08W, Sec. 1, 2
 T42N, R07W, Sec. 6
 County: Mackinac
 Unit: Sault Ste. Marie
 YOE: 2010
 Acres: 1,632 GIS Calculated
 Stand Examiner: Steven Crigier
 Map Revised: 8/11/2008
 Map Phase: Pre-Review



- Legend**
- Miris Corners
 - Stand Boundaries
 - Cold Water Streams
 - Deer Wintering Areas

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



85°17'0"W 85°16'0"W 85°15'0"W 85°14'0"W 85°13'0"W

46°40'N

46°40'N

46°50'N

46°50'N

Sault Ste. Marie Mgt. Unit

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

Compartment 143 Year of Entry 2010

Report Date: 08/11/2008



	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	0	157.0	5.4	4.5	0	0	0	0	0	0	0	0	0	0	167.0
Herbaceous Openland	9.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9.0
Lowland Coniferous Forest	0	0	0	0	0	4.3	0	0	115.1	356.8	51.7	41.0	13.3	0	0	582.1
Lowland Deciduous Forest	0	0	14.8	46.2	0	0	0	12.2	27.3	52.6	0	0	0	0	0	153.2
Lowland Mixed Forest	0	0	0	0	0	0	0	0	47.5	0	0	0	0	0	0	47.5
Lowland Shrub	210.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	210.1
Mixed Upland Conifers	0	0	0	0	0	0	0	0	6.2	0	42.4	0	0	0	0	48.7
Mixed Upland Deciduous	0	0	0	0	0	0	0	0	56.0	94.5	0	0	0	0	0	150.5
Northern Hardwood	0	0	0	0	0	0	0	0	0	0	13.7	0	0	0	0	13.7
Other Upland Conifers	0	0	13.1	0	0	0	0	0	6.4	12.7	0	0	0	0	0	32.2
Other Upland Deciduous	0	0	0	0	0	0	0	0	63.5	2.7	24.4	0	0	0	0	90.6
Road/Parking Lot	23.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23.1
Sand, Soil	6.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6.1
Upland Mixed Forest	0	0	0	0	0	0	0	0	12.4	11.0	9.3	0	0	0	0	32.7
Water	3.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.2
Total	251.5	0	185.0	51.6	4.5	4.3	0	12.2	334.5	530.1	141.6	41.0	13.3	0	0	1569.7



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Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective
3 45143003-Cut	19.3	6118 - Lowland Deciduous with Cedar	Medium Density Pole	79	Harvest	Clearcut	Lowland Balsam Poplar
<p><u>Rev</u> <u>Cmnt:</u> Will have to talk with Great Lakes Gas about using the pipeline for access. Stand is currently under contract 'Bridge Over Mix' (45-107-02-01).</p> <p><u>Rev</u> <u>Spec:</u> Clear cut stand leave 2" or less deciduous and 4" or less coniferous</p> <p><u>Next</u> <u>Steps:</u> Regen check 4 yrs after harvest. Acceptable regen is BAM, Balsam fir, white birch, red maple, black ash, white and black spruce,</p>							
6 45143006-Cut	31.7	4191 - Mixed Upland Deciduous with Conifer	High Density Pole	81	Harvest	Clearcut with Reserves	Mixed Upland Deciduous with Conifer
<p><u>Rev</u> <u>Cmnt:</u> Stand is a ridge in between a cedar stand and a lowland deciduous type. Cedar is mostly in the transition areas to the lower ground. Birch is dying out in areas. May have green-up issued with stand to the north.</p> <p><u>Rev</u> <u>Spec:</u> Clearcut W1/2 of Stand (entire AOI). East half of Stand 6 is left for age class diversity harvest next YOY. Leave white pine and cedar. WLD Comment: Buffer 'Cr' by 150' Leave all WP, Cedar, spruce and fir (25% Of canopy).</p> <p><u>Next</u> <u>Steps:</u> Regen check 4 yrs after harvest. Acceptable regen is white spruce, white birch, balsam fir, cedar, red maple and aspen.</p>							
8 45143008-Cut	21.6	6132 - Mixed Lowland Forest with Cedar	High Density Pole	74	Harvest	Shelter Wood with Reserves	Mixed Lowland Forest with Cedar
<p><u>Rev</u> <u>Cmnt:</u> Currently under contract. 'Bridge Over Mix' unit 8 (45-107-02-01).</p> <p><u>Rev</u> <u>Spec:</u> Shelterwood stand, leave 40-50sqft/ac of cedar and birch.</p> <p><u>Next</u> <u>Steps:</u> Regen check 4 yrs after harvest. Acceptable regen is cedar, birch, maple, balsam fir, spruce white pine.</p>							
15 45143015-Cut	6.5	4112 - Maple, Beech, Cherry Association	High Density Log	91	Harvest	Single Tree Selection	Maple, Beech, Cherry Association
<p><u>Rev</u> <u>Cmnt:</u> Red maple logs are declining, lots of deer browse. Stand has some scattered white pine.</p> <p><u>Rev</u> <u>Spec:</u> Thin stand down to 80sqft/ac. Harvest stand with stand 36 of C. 144 is prescribed (YOY 2013). Leave any white pine.</p> <p><u>Next</u> <u>Steps:</u> Regen check 4 yrs after harvest. Acceptable regen is maple, cherry, beech, balsam fir, spruce, white pine, birch, aspen.</p>							
45 45143045-Cut	16.5	4140 - Other Upland Deciduous	High Density Pole	77	Harvest	Clearcut with Reserves	Other Mixed Upland Deciduous
<p><u>Rev</u> <u>Cmnt:</u> Access might have to come off US-2, hence the narrow piece of the AOI to the south. Creek crossing look to be possible but difficult (OFS layer). Stand has heavy under brush. Maybe best to set up as a separate sale from stands 48, 49 and 51.</p> <p><u>Rev</u> <u>Spec:</u> Clear cut AOI. AOI doesn't encompass the western and southern portions of the stand for retention purposes. Leave a few white birch/ac for seed. Have stand chipped in the summer for scarification. Leave all white pine and hemlock. WLD comments: No cut cedar, WP, Hemlock and fir (25% of canopy). Leave some standing timber to fell after harvest.</p> <p><u>Next</u> <u>Steps:</u> Regen check 4 yrs after harvest. Acceptable regen is fir, maple, aspen, birch, white pine.</p>							

**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
48 45143048-Cut	9.7	4191 - Mixed Upland Deciduous with Conifer	High Density Pole	77	Harvest	Clearcut with Reserves	Mixed Upland Deciduous with Conifer

Rev Cmmt: Access will be through Steve Nelson's Property (906) 292-5508 and through stand 49 and 51.

Rev Spec: Clear cut AOI. AOI doesn't include the southern portion of the stand and 100' along the creek, left for retention and buffer. Leave all white pine hemlock, and cedar. Specify a winter cut from 12/15 to 3/15 due to private property concerns.

Next Steps: regen check 4 yrs after harvest. Acceptable regen is spruce, aspen, maple, birch, fir, cedar.

49 45143049-Cut	22.0	6120 - Lowland Cedar	High Density Pole	78	Harvest	Shelterwood	Lowland Coniferous, Mixed Deciduous
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Rev Cmmt: Stand is soft but not on too wet of ground. cedar tapers off to the north and is heavier to birch. Access will be through Steve Nelson's property who owns the east 1/2 of the pvt to the south (906) 292-5508.

Rev Spec: Shelterwood stand leaving 60-70 sqft/ac of cedar. Winter harvest only, 12/15 to 3/15, due to soils and private property concerns.

Next Steps: Regen check 4 yrs after harvest. Acceptable regen is cedar, spruce, fir, birch, BAM, aspen.

51 45143051-Cut	12.2	6117 - Lowland Deciduous, Mixed Coniferous	High Density Pole	69	Harvest	Clearcut with Reserves	Lowland Deciduous, Mixed Coniferous
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Rev Cmmt: Harvest with stand 115 of C. 144. Leave the ridge/swale areas on the north end of stand 115 out of sale area for retention. Access will be through Steve Nelson's property who owns the E1/2 of the pvt to the south (906) 292-5508.

Rev Spec: Clear cut stand. Leave and white pine, hemlock and cedar. Winter cut only, 12/15 to 3/15 for soil conditions and private property concerns.

Next Steps: Regen check 4 yrs after harvest. Acceptable regen is aspen, birch, fir, spruce, maple.

**Total Treatment
Acreage Proposed: 139.5**

**PROPOSED TREATMENTS
WITH LIMITING FACTORS**



S
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a
n
d

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



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	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	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	Habitat Area	An area that provide some specific need for the life cycle of wildlife species, including State Wildlife Areas and Waterfowl Production Areas, deer wintering complexes in lowland conifer communities, grassland openings and savannas. Habitat areas are distinct from critical habitat designated for recovery of endangered or threatened species (such as Kirtland's warbler or piping plover areas) in that they are more general in nature, are not primarily associated with threatened or endangered species, and are not covered by species recovery plans that are developed in cooperation with Federal agencies.