



**SAULT FOREST MANAGEMENT UNIT
COMPARTMENT REVIEW PRESENTATION**

COMPARTMENT # 104 ENTRY YEAR: 2010

Compartment Acreage: 1,923 County: Mackinac

Revision Date: 8/11/08

Stand Examiner: Karen Rodock

Legal Description: T43N-R6W Section 25, 26 & 36; Moran Township

RMU (if applicable):

Management Goals: The compartment is located 5 miles north of Brevort. This compartment is in the proposed Carp River Pine Management Area. The plans for this management area are currently in the draft process. This compartment is primarily red pine with some spruce, mixed swamp conifer and cedar stands, birch, aspen and mixed deciduous stands, jack pine stands and scattered grassy openings or upland shrub stands. Age class diversity within the red pine stands is a goal, so some of the red pine stands are proposed for final harvest and other stands are proposed to be thinned or held for 10 years. This will continue to increase the age class diversity of these red pine sites. One stand is proposed for harvesting with a stand from the Red Pine Project Phase 2 process. The stands on the north side of the compartment will have the treatment extend up to the Dells Mills Road into compartment 105. Some stands will be treated with portions continuing into compartments 115 and 116. One stand is scheduled for planting red pine after a recent sale was completed. Some of the younger red pine stands are scheduled for insect and disease monitoring and/or release.

Soil and Topography: The majority of the compartment is made up of Wallace sands with some Paquin sand, Crosswell-Wainola Complex and Finch sand on the upland. There are a few ridges with most areas being flat to slightly rolling. The terrain slopes to South Branch Carp River with some sharp breaks down to the river. The lowland soil types are Markey-Spot-Finch Complex, Spot-Finch Complex and Markey and Carbondale mucks with a few islands of Pullup sand. Markey and Carbondale mucks, Histosols and Aquents and Entisols are found on lower areas near the South Branch Carp River and its tributaries.

Ownership Patterns, Development, and Land Use in and Around the Compartment: The compartment is entirely in state ownership. The area surrounding the compartment is state land on the west, north, and south. Federal land borders the east edge of the compartment. There is one landlocked private forty, one half mile to the west of the compartment boundary.

Unique, Natural Features (include only non-site specific and non-sensitive information): There is a potential for rare, threatened or endangered plant and animal species and natural communities within this compartment.

Archeological, Historical, and Cultural Features (include only non-site specific and non-sensitive information): None found during examination, but the Forest Service lands to the east have known sites.

Special Management Designations or Considerations: Best management practices and Fisheries recommendations will be observed when harvesting the stand near the South Branch Carp River.

Watershed and Fisheries Considerations: This compartment contains a portion of the South Branch Carp River, a cold water trout stream, and some tributaries. A minimum buffer width of 200 feet should be kept next to these waterbodies. Selective cuts are still okay to 100 feet from the stream.

Wildlife Habitat Considerations: Several ephemeral wetlands and streams and permanent wetlands are within this compartment including branches of the Carp River. Retention and select cutting of mature red pine during final harvest along these wetland areas will provide benefits for species such as red-shouldered hawk. A species of special concern, the rapids clubtail dragonfly, will also benefit from maintaining a no-cut or selective cut buffer around these streams.

Examples of late successional poor conifer swamp natural communities are present and portions will be managed for biodiversity (see Wildlife Objective 8).

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 and minor peat and muck. 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 appears to be limited. There is no current economic oil and gas production in the UP.

Vehicle Access: The Carp River Truck Trail, East Boundary and the Rabbit Road are all state gravel to good dirt roads which run through this compartment. The East Boundary has 2 stream crossings which have been removed years ago therefore it is not a through road. The roads running to the east out of the compartment continue onto the Forest Service lands. The Forest Service road just to the east of the compartment in Section 30 has a load restricted bridge over the Carp River. The bridge restriction does not allow for loaded log truck traffic to M-123. There are many poor dirt roads within the fuel breaks which can be driven down with a two-wheel drive vehicle.

Survey Needs: None needed.

Recreational Facilities and Opportunities: Within this compartment is the Brevort-Trout Lake Motorcycle trail. The Carp River Truck Trail is a groomed snowmobile trail in the winter. The roads within this compartment are used by ORV's. Other recreational uses of the area are for hunting, trapping, fishing on South Branch Carp River, berry picking and sightseers.

Fire Protection: This compartment has a higher fire potential, so it falls within a zone dispatch area. Extra fire units will be dispatched to a fire within this area if it is reported on a high to extreme fire danger day. Fuel breaks are maintained between adjacent pine stands with good access roads on most of the breaks. The age class diversity within the compartment does not allow continuous height crown cover. Therefore, this assists with fire fighting tactics if a start occurs within this area. Several fires have occurred within the Carp River Truck Trail area within the last ten years. The Carp River Truck Trail area is one of the furthest points in west Mackinac County from the Naubinway Field Office for fire response.

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**

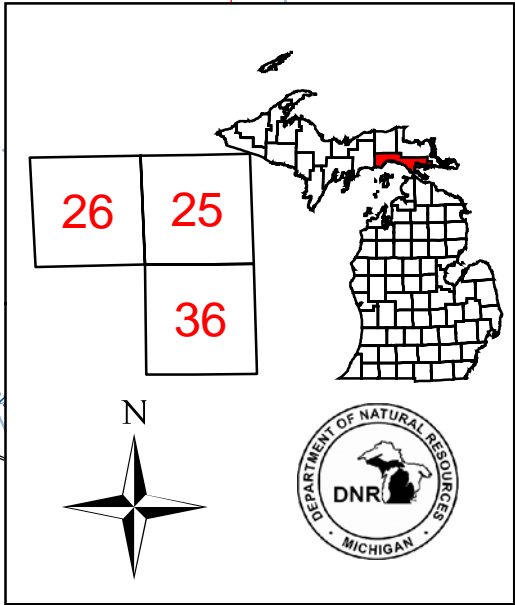
- **The following information is displayed, where pertinent, on the attached compartment maps:**
 - ◆ **Base feature information, stand numbers, cover types**
 - ◆ **Proposed treatments**
 - ◆ **Proposed road access system**
 - ◆ **SCA – Special Conservation Areas**

Cover Type & Treatment Map

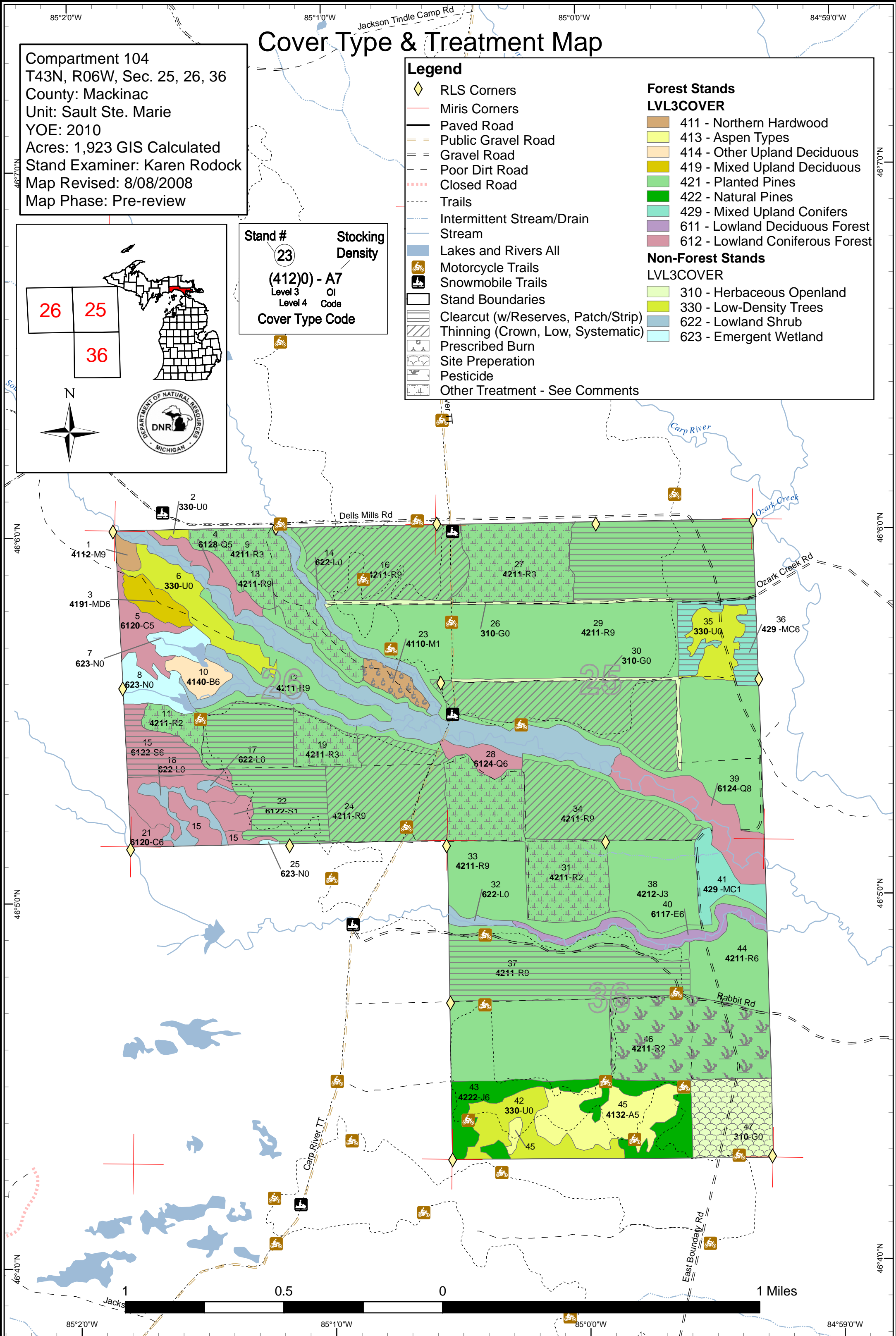
Compartment 104
 T43N, R06W, Sec. 25, 26, 36
 County: Mackinac
 Unit: Sault Ste. Marie
 YOE: 2010
 Acres: 1,923 GIS Calculated
 Stand Examiner: Karen Rodock
 Map Revised: 8/08/2008
 Map Phase: Pre-review

Legend

- ◆ RLS Corners
 - Miris Corners
 - Paved Road
 - Public Gravel Road
 - Gravel Road
 - Poor Dirt Road
 - Closed Road
 - - - Trails
 - · - · Intermittent Stream/Drain
 - Stream
 - Lakes and Rivers All
 - 🏍 Motorcycle Trails
 - 🛷 Snowmobile Trails
 - ▭ Stand Boundaries
 - ▨ Clearcut (w/Reserves, Patch/Strip)
 - ▧ Thinning (Crown, Low, Systematic)
 - ▩ Prescribed Burn
 - Site Preparation
 - ▬ Pesticide
 - ▭ Other Treatment - See Comments
-
- ### Forest Stands
- #### LVL3COVER
- 411 - Northern Hardwood
 - 413 - Aspen Types
 - 414 - Other Upland Deciduous
 - 419 - Mixed Upland Deciduous
 - 421 - Planted Pines
 - 422 - Natural Pines
 - 429 - Mixed Upland Conifers
 - 611 - Lowland Deciduous Forest
 - 612 - Lowland Coniferous Forest
- ### Non-Forest Stands
- #### LVL3COVER
- 310 - Herbaceous Openland
 - 330 - Low-Density Trees
 - 622 - Lowland Shrub
 - 623 - Emergent Wetland



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

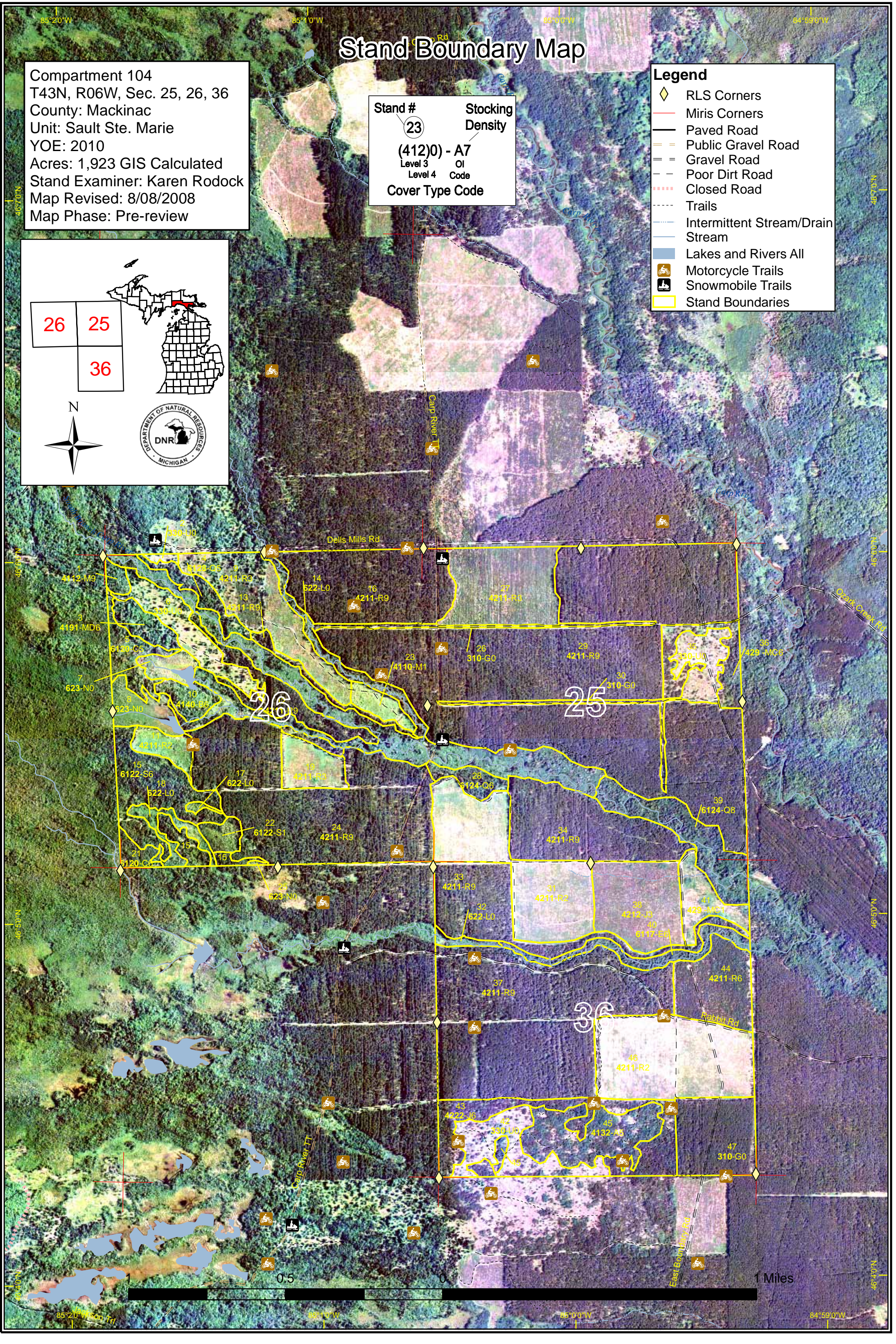


Stand Boundary Map

Compartment 104
 T43N, R06W, Sec. 25, 26, 36
 County: Mackinac
 Unit: Sault Ste. Marie
 YOE: 2010
 Acres: 1,923 GIS Calculated
 Stand Examiner: Karen Rodock
 Map Revised: 8/08/2008
 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
 - Paved Road
 - Public Gravel Road
 - Gravel Road
 - Poor Dirt Road
 - Closed Road
 - Trails
 - Intermittent Stream/Drain
 - Stream
 - Lakes and Rivers All
 - 🏍 Motorcycle Trails
 - 🚙 Snowmobile Trails
 - Stand Boundaries



Sault Ste. Marie Mgt. Unit

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

Compartment 104 Year of Entry 2010

Report Date: 08/07/2008



	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	0	0	0	43.0	0	0	0	0	0	0	0	0	0	43.0
Emergent Wetland	25.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25.1
Herbaceous Openland	54.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	54.3
Low-Density Trees	78.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	78.2
Lowland Coniferous Forest	0	0	0	7.4	0	0	0	0	21.5	93.7	0	0	16.4	0	139.0	
Lowland Deciduous Forest	0	0	0	0	0	0	0	16.5	0	0	0	0	0	0	16.5	
Lowland Shrub	117.4	0	0	0	0	0	0	0	0	0	0	0	0	0	117.4	
Mixed Upland Conifers	0	0	18.7	0	0	0	0	0	0	0	20.9	0	0	0	39.6	
Mixed Upland Deciduous	0	0	0	0	0	0	0	11.7	0	0	0	0	0	0	11.7	
Natural Pines	0	0	0	0	0	0	0	45.5	0	0	0	0	0	0	45.5	
Northern Hardwood	0	0	9.3	0	0	0	0	0	4.1	0	0	0	0	0	13.4	
Other Upland Deciduous	0	0	0	0	0	0	0	10.3	0	0	0	0	0	0	10.3	
Planted Pines	0	0	340.5	36.7	0	0	0	51.9	900.4	0	0	0	0	0	1329.5	
Total	275.0	0	368.5	44.0	0	43.0	0	97.4	938.9	25.6	93.7	20.9	0	16.4	0	1923.5



S
t
a
n
d

Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective
15 45104015-Cut	24.0	6122 - Black Spruce	High Density Pole	97	Harvest	Clearcut with Reserves	Mixed Coniferous Lowland Forest

Rev Cmnt: Stand has a few higher ground areas within the stand. Will treat with the very east portion of stand 23 in compartment 115. Treating just under half of this stand as per wildlife to protect the wetland stands.

Rev Spec: Clearcut with reserves following the retention guidelines to retain some of the under represented species and along the edge of the lowland shrub stands. Treat with a small portion of out of YOE stand 23 in comp 115 with this stand.

Next Steps: Followup treatment with regeneration survey within 4 years after the timber cutting report. Acceptable regeneration is black spruce, balsam fir, white pine, tamarack, aspen, maple, yellow and paper birch, white spruce and cedar.

16 45104016-Cut	72.8	42110 - Planted Red Pine	High Density Log	71	Harvest	Crown Thinning	Planted Red Pine
-----------------	------	--------------------------	------------------	----	---------	----------------	------------------

Rev Cmnt: The stand is a 1937 year plantation. Diameter of the stand ranges for 9 to 17" with a 14" average. The stand to the north in compartment 105 is under contract "Cairn Red Pine" to be clearcut and replanted to red pine.

Rev Spec: Thin to around 120 Basal Area. Leave species diversity within the stand were present. A buffer of approximately 150' will be left along the tributary of the South branch of Carp River as shown on map. Thin up to the Dells Mills Road. Treat stand 66 comp 105 out of YOE by thinning with this stand .

Next Steps:

24 45104024_Final-Cut	75.3	42110 - Planted Red Pine	High Density Log	71	Harvest	Clearcut with Reserves	Planted Red Pine
-----------------------	------	--------------------------	------------------	----	---------	------------------------	------------------

Rev Cmnt: 1937 plantation stand with larger diameters in this portion of the stand.

Rev Spec: Clearcut stand with no retention of live trees within the treatment area. Standing trees within the harvest area create a hazard for aerial spraying of the stand for release and pest management. A minimum of 200' buffer along the tributary of the South Branch Carp River will be left. This area will held for BMP and retention.

Next Steps: After harvest treatment is completed, the stand may be prescribed burned if necessary for site prep depending on amount of slash left on site. Trenching and hand planting of red pine seedling to acceptable regeneration levels will need to be completed within 2 years of the Timber Cutting Report date. After establishment of red pine regeneration, regeneration surveys need to be scheduled for 1 year and 3 years for monitoring of regeneration. Release as necessary determined by TMS.

24 45104024_Thin-Cut	70.1	42110 - Planted Red Pine	High Density Log	71	Harvest	Crown Thinning	Planted Red Pine
----------------------	------	--------------------------	------------------	----	---------	----------------	------------------

Rev Cmnt: Portion of the stand to be thinned and rest to be clearcut.

Rev Spec: Thin to around 120 Basal Area. Leave species diversity within the stand were present. A buffer of approximately 150' will be left along the tributary of the South branch of Carp River as shown on map.

Next Steps:

29 45104029_Final-Cut	91.1	42110 - Planted Red Pine	High Density Log	71	Harvest	Clearcut	Planted Red Pine
-----------------------	------	--------------------------	------------------	----	---------	----------	------------------

Rev Cmnt: Plantation is a 1937 stand. Cutting to create age class diversity within this management area.

Rev Spec: Clearcut stand with no retention of live trees except for witness trees. Standing trees within the treatment area create a hazard for aerial spraying of the stand for release and pest management. Treat up to Dells Mills Road on the north portion in compartment 105 stand 87.

Next Steps: After harvest treatment is completed, the stand may be prescribed burned if necessary for site prep depending on amount of slash left on site. Trenching and hand planting of red pine seedling to acceptable regeneration levels will need to be completed within 2 years of the Timber Cutting Report date. After establishment of red pine regeneration, regeneration surveys need to be scheduled for 1 year and 3 years for monitoring of regeneration. Release as necessary determined by TMS.



S
t
a
n
d

Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective
----------------	-------	------------------	--------------	-----------	----------------	------------------	----------------------

29 45104029_Thi n-Cut	77.0	42110 - Planted Red Pine	High Density Log	71	Harvest	Crown Thinning	Planted Red Pine
----------------------------------	------	-----------------------------	------------------	----	---------	----------------	------------------

Rev
Cmnt: This portion of the stand was planted in 1939. Portion of AOI was thinned in 2001.

Rev
Spec: Thin to around 120 Basal Area. Leave species diversity within the stand were present. A buffer of approximately 150' will be left along the South branch of Carp River as shown on map.

Next
Steps:

34 45104034-Cut	59.3	42110 - Planted Red Pine	High Density Log	73	Harvest	Crown Thinning	Planted Red Pine
------------------------	------	-----------------------------	------------------	----	---------	----------------	------------------

Rev
Cmnt: Small ridge runs east to west in the center of the stand. 1935 plantation with a few white birch present in the stand.

Rev
Spec: Thin to around 120 Basal Area. Leave species diversity within the stand were present. A buffer of approximately 150' will be left along the South branch of Carp River as shown on map.

Next
Steps:

36 45104036-Cut	20.9	429 - Mixed Upland Conifers	High Density Pole	101	Harvest	Clearcut with Reserves	Mixed Upland Forest
------------------------	------	--------------------------------	-------------------	-----	---------	---------------------------	---------------------

Rev
Cmnt: Mortality to the aspen is occurring on the east side of stand.

Rev
Spec: Clearcut with reserves following retention guidelines. Leave a 100' buffer along small drainage in the south east portion of the stand for BMP and retention. As per wildlife, leave the white pine and a few scattered larger white birch and cherry.

Next
Steps: Followup treatment with regeneration survey within 4 years after the timber cutting report. Acceptable regeneration is jack pine, aspen, maple, cherry, yellow and paper birch, balsam fir, white spruce and white pine.

37 45104037-Cut	80.0	42110 - Planted Red Pine	High Density Log	71	Harvest	Clearcut with Reserves	Planted Red Pine
------------------------	------	-----------------------------	------------------	----	---------	---------------------------	------------------

Rev
Cmnt: Stand will be treated with stand 17 of comp 116 which is part of phase 2 of the Red Pine Project.

Rev
Spec: Clearcut stand with no retention of live trees except for witness trees. Standing trees within the stand after harvest create a hazard for aerial spraying of the stand for release and pest management. A 200' minimum buffer will be left on the north side of the stand for BMP and retention along tributary of South Branch Carp River. The Rabbit Road will be used as the north boundary of treatment for most of the treatment area.

Next
Steps: After harvest treatment is completed, the stand may be prescribed burned if necessary for site prep depending on amount of slash left on site. Trenching and hand planting of red pine seedling to acceptable regeneration levels will need to be completed within 2 years of the Timber Cutting Report date. After establishment of red pine regeneration, regeneration surveys need to be scheduled for 1 year and 3 years for monitoring of regeneration. Release as necessary determined by TMS.

47 NF_45104047- Prep	40.2	Unspecified		0	Site Prep	Trenching	Planted Red Pine
---------------------------------	------	-------------	--	---	-----------	-----------	------------------

Rev
Cmnt: Stand was harvested in 2006. The TCR date is 11/1/2006. No burning was needed for the trenching as determined by the TMS. The FTP # C44-548 is for this site.

Rev
Spec: Trench site at approximately 8 feet between rows for hand planting.

Next
Steps: Following trenching, stand is to be planted with red pine at 8' by 6' spacing. Regeneration survey needed to be scheduled for 1 year and 3 year following planting to monitoring regeneration. Release as necessary as determined by the TMS.

**PROPOSED TREATMENTS
NO LIMITING FACTORS**



S
t
a
n
d

Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective
23 45104023-Burn	9.3	4110 - Sugar Maple Association		11	Prescribed Burn	Unspecified	Mixed Upland Herbaceous
<p><u>Rev Cmnt:</u> The opening was created in 1997 after a clearcut of a red pine plantation and prescribe burn. The stand is filling in with cherry, jack pine, spruce and aspen. The previous management objective was for a grassy opening.</p> <p><u>Rev Spec:</u> Prescribe burn stand to create a grassy opening.</p> <p><u>Next Steps:</u> Evaluate burn success and monitor site.</p>							
46 45104046-Spray	80.7	42110 - Planted Red Pine		10	Pesticide	Other - Specify in Comments	Planted Red Pine
<p><u>Rev Cmnt:</u> The east 2/3 of plantation was hand planted in 1998 after trenching and a prescribed burn. The west 1/3 was planted in 2001. The west 1/3 has heavier cherry and aspen mixed into the plantation.</p> <p><u>Rev Spec:</u> Release spraying is needed in a portion of the stand. The TMS will determine the specific location of the spraying needed. The herbicide used will be determined by the TMS.</p> <p><u>Next Steps:</u> If monitoring for RHPS shows that treatment is recommended, then spray when/if necessary with appropriate insecticide recommended by Forest Health Specialist/TMS. Continue to monitor.</p>							
9 45104009-Other	51.3	42110 - Planted Red Pine		10	Other	Unspecified	Planted Red Pine
<p><u>Rev Cmnt:</u> Stand was burned except for the western portion in 1998. The stand was trenched and planted to red pine. The stand has been released.</p> <p><u>Rev Spec:</u> Monitor for RHPS and/or other pest within the stand.</p> <p><u>Next Steps:</u> If monitoring shows that treatment is recommended, then spray when/if necessary with appropriate insecticide recommended by Forest Health Specialist/TMS. Continue to monitor.</p>							
11 45104011-Other	11.1	42110 - Planted Red Pine		11	Other	Unspecified	Planted Red Pine
<p><u>Rev Cmnt:</u> The stand was prescribed burned, trenched and hand planted in 1997. The stand has been released.</p> <p><u>Rev Spec:</u> Monitor for RHPS and/or other pest within the stand.</p> <p><u>Next Steps:</u> If monitoring shows that treatment is recommended, then spray when/if necessary with appropriate insecticide recommended by Forest Health Specialist/TMS. Continue to monitor.</p>							
19 45104019-Other	18.1	42110 - Planted Red Pine		10	Other	Unspecified	Planted Red Pine
<p><u>Rev Cmnt:</u> The stand was prescribed burned, trenched and hand planted in 1998. The stand has been released.</p> <p><u>Rev Spec:</u> Monitor for RHPS and/or other pest within the stand.</p> <p><u>Next Steps:</u> If monitoring shows that treatment is recommended, then spray when/if necessary with appropriate insecticide recommended by Forest Health Specialist/TMS. Continue to monitor.</p>							
27 45104027-Other	54.1	42110 - Planted Red Pine		10	Other	Unspecified	Planted Red Pine
<p><u>Rev Cmnt:</u> Stand was prescribe burned, trenched and hand planted in 1998. The stand has been released.</p> <p><u>Rev Spec:</u> Monitor fo RHPS and/or other pests within the stand.</p> <p><u>Next Steps:</u> If monitoring shows that treatment is recommended, then spray when/if necessary with appropriate insecticide recommended by Forest Health Specialist/TMS. Continue to monitor.</p>							

**PROPOSED TREATMENTS
NO LIMITING FACTORS**



S
t
a
n
d

	Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective	Page 4 of 4
31	45104031- Other	78.6	42110 - Planted Red Pine		10	Other	Unspecified	Planted Red Pine	

Rev
Cmnt: The stand was prescribed burned, trenched and hand planted in 1998. The stand has been released.

Rev
Spec: Monitor for RHPS and/or other pest within the stand.

Next
Steps: If monitoring shows that treatment is recommended, then spray when/if necessary with appropriate insecticide recommended by Forest Health Specialist/TMS. Continue to monitor.

**Total Treatment
Acreage Proposed: 913.9**

**PROPOSED TREATMENTS
WITH LIMITING FACTORS**



S
t
a
n
d

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



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
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	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.
SCA	Wild and Scenic Rivers	Wild and Scenic Rivers are established under authority of the National Wild and Scenic Rivers Act, Public Law 90-542, as amended. Each Wild and Scenic River has a river specific Federal management plan, and State agencies may enter into written cooperative agreements with the administering Federal agency for the management of Wild and Scenic Rivers that are upon State-owned lands. There are 18 miles of Federal designated Wild and Scenic Rivers that are located within the State Forest.