



SAULT FOREST MANAGEMENT UNIT COMPARTMENT REVIEW PRESENTATION

COMPARTMENT # 156 ENTRY YEAR: 2010

Compartment Acreage: 1,916 County: Mackinac

Revision Date: August 11, 2008

Stand Examiner: Matt Edison

Legal Description: T44N-R8W Sections 20, 21, & 22; Hudson Township

RMU (if applicable):

Management Goals: Compartment is located 2 miles north of Garnet. The compartment is within the proposed Mackinac Mix Management Area. Plans for this Management Area are currently in progress. This entry, timber management will focus on second thinning of several pine plantations and final harvest of a single mature red pine plantation. Also, one hardwood stand will be select cut to promote regeneration and to bring stand into regulation. One small mature aspen stand will be harvested to facilitate natural regeneration. There is also a grown in opening that has been proposed for a clearcut to reclaim the opening for wildlife values. Regeneration processes will continue within the compartment during this entry period at several different stages. Prescribed burning, trenching, planting, and monitoring immature pine plantations for acceptable regeneration levels, pest management and release treatments will all occur within this entry period. All harvests and treatments will be in compliance with FMFM work instructions.

Soil and Topography: Compartment is level to slightly rolling. Markey and Carbondale mucks dominate the lowlands with Crowell-Spot complex. The uplands are comprised of Springlake loamy sands and Wallace sands.

Ownership Patterns, Development, and Land Use in and Around the Compartment: This compartment and surrounding areas are comprised solely of state lands. Borgstrom Road was recently upgraded from a good county gravel road to an all season paved road. Therefore, more traffic is using this road and it gives us more opportunities for trucking access on timber sales.

Unique, Natural Features (include only non-site specific and non-sensitive information): There are recorded occurrences of threatened and endangered species in this compartment per MNFI database. There is also potential for other rare, threatened, or endangered plant and animal species within the compartment.

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

Special Management Designations or Considerations: The ORV trail runs throughout the compartment and needs to be signed and kept cleared during logging operations. Cutting is discouraged along snowmobile trails during snowmobile season unless snow base is left on trail and trail is signed. A Wetland mitigation pond is located in section 20.

Watershed and Fisheries Considerations: Poor-to-none. Survey evidence from Big Dollar Lake implies that it is subject to periodic winter-kill. It is shallow, with a soft, organic bottom. Fisheries Division has no foreseeable plans to manage this lake. Even so, it will often provide good fishing for perch and sunfish.

Wildlife Habitat Considerations: A large portion of this compartment lies within the Hendricks Quarry 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.

Portions of red pine at final harvest near Big Dollar Lake and associated ephemeral and permanent wetlands will be retained and managed to improve ecological complexity. This will provide benefits to wildlife species such as northern goshawk, red-shouldered hawk and numerous reptile and amphibian species.

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 coarse-textured till and peat and muck. There is insufficient data to determine the glacial drift thickness. The Silurian Manistique Group subcrops below the glacial drift. The Manistique could be used for stone/limestone. The Dollar Lake and South Pond Ridge gravel pits are located in Sections 20 and 21 and potential is good. There is no current economic oil and gas production in the UP.

Vehicle Access: Decent vehicle access exists for the upland areas of the compartment. Borgstrom Road, an all season county road, runs north-south between sections 20 and 21. Giddings Road, a DNR gravel road, accesses the northern portion of the compartment. Weasel Road, a DNR gravel road accesses the northern portions of section 22. Dollar Lake Rd. runs through Sec. 21 and crosses Borgstrom Rd. then continues west

a short distance before leaving the compartment. A few other two-tracks exist, mainly accessing old timber sales.

Survey Needs: None needed for timber sale purposes; however, some bearing trees (and corners?) may have been lost during road construction on Borgstrom Road.

Recreational Facilities and Opportunities: Snowmobile trail number 2 crosses Borgstrom Road just to the south of the northern compartment boundary and continues through the compartment to the southeast and west along Old Hendricks Road (Dollar Lake Road) and Hemlock Ridge Road. The ORV trail winds in and out of the compartment stands to the east and north sides of Big Dollar Lake and dips in and out of the compartment west of Borgstrom Rd. Other recreational opportunities include hunting all types of game species, bird watching, mushroom and berry picking, and photography.

Fire Protection: There is good access to most of the upland areas in the compartment. There are stands of red pine and other mixed pines, which would be the areas of highest concern. There are large grass openings that would bring fire potential also. Water sources within the compartment could be Big Dollar Lake as well as many small ponds. Ignition sources are common during the fall hunting seasons as the area is commonly used for hunting and setting up camps.

Additional Compartment Information:

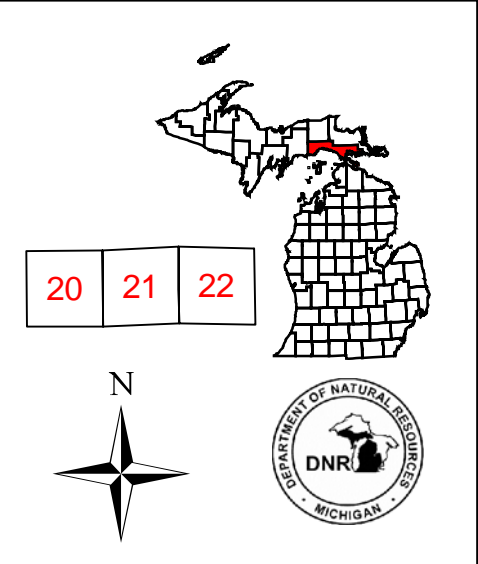
- **Cover Type details, Proposed Treatments, and Stand listings are listed in the attached reports:**
 - ◆ **Proposed Treatments – No Limiting Factors**
 - ◆ **Proposed Treatments – With Limiting Factors**
 - ◆ **Stand Listing – Forested**
 - ◆ **Stand Listing – Non Forested**
 - ◆ **Special Conservation 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 156
 T44N, R08W, Sec.20-22
 County: Mackinac
 Unit: Sault Ste. Marie
 YOE: 2010
 Acres: 1,916 GIS Calculated
 Stand Examiner: Matthew Edison
 Map Revised: 8/07/2008
 Map Phase: Pre-review

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



Legend

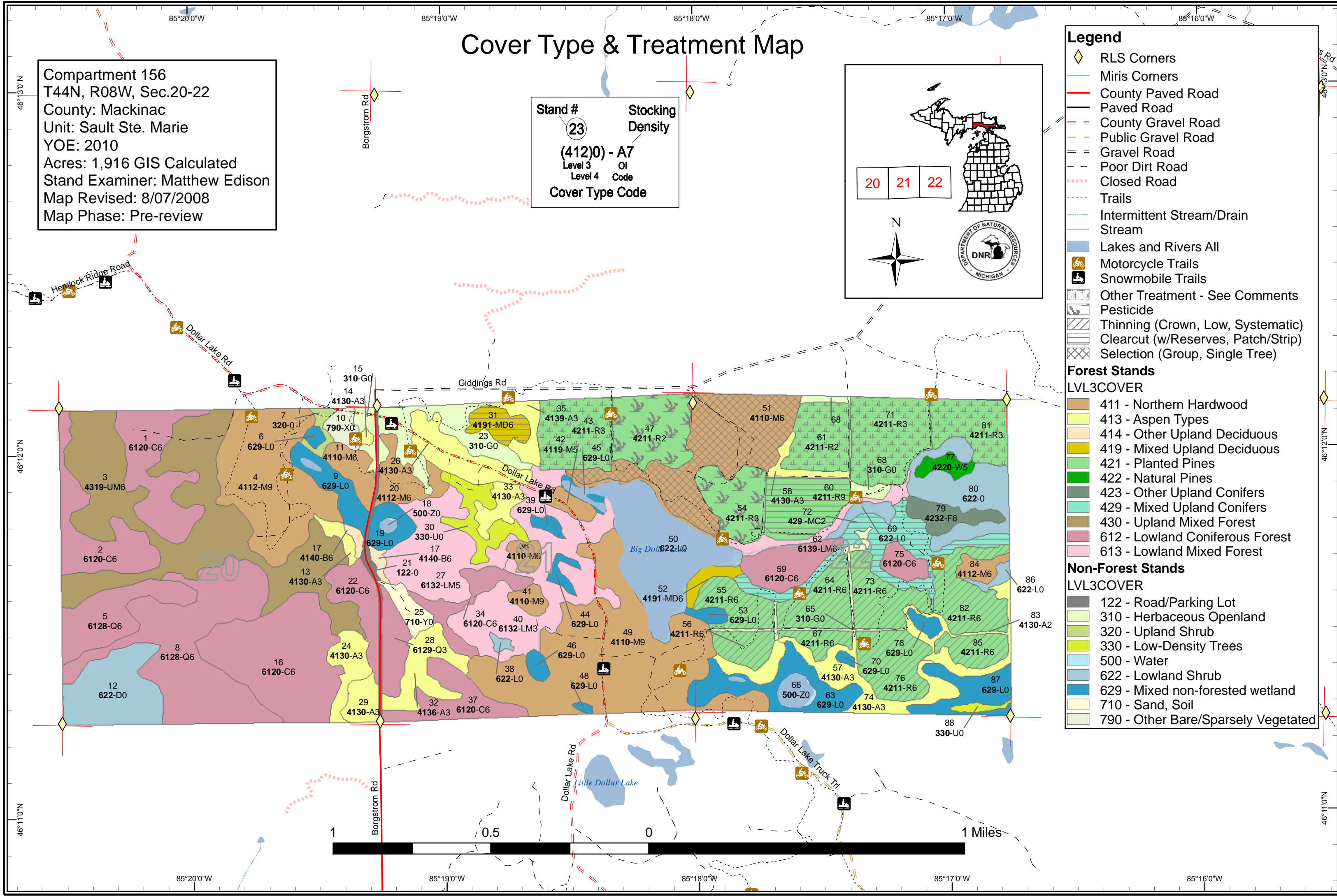
- RLS Corners
- Miris Corners
- County Paved Road
- Paved Road
- County Gravel Road
- Public Gravel Road
- Gravel Road
- Poor Dirt Road
- Closed Road
- Trails
- Intermittent Stream/Drain
- Stream
- Lakes and Rivers All
- Motorcycle Trails
- Snowmobile Trails
- Other Treatment - See Comments
- Pesticide
- Thinning (Crown, Low, Systematic)
- Clearcut (w/Reserves, Patch/Strip)
- 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
 - 612 - Lowland Coniferous Forest
 - 613 - Lowland Mixed Forest

Non-Forest Stands

- LVL3COVER**
- 122 - Road/Parking Lot
 - 310 - Herbaceous Openland
 - 320 - Upland Shrub
 - 330 - Low-Density Trees
 - 500 - Water
 - 622 - Lowland Shrub
 - 629 - Mixed non-forested wetland
 - 710 - Sand, Soil
 - 790 - Other Bare/Sparsely Vegetated

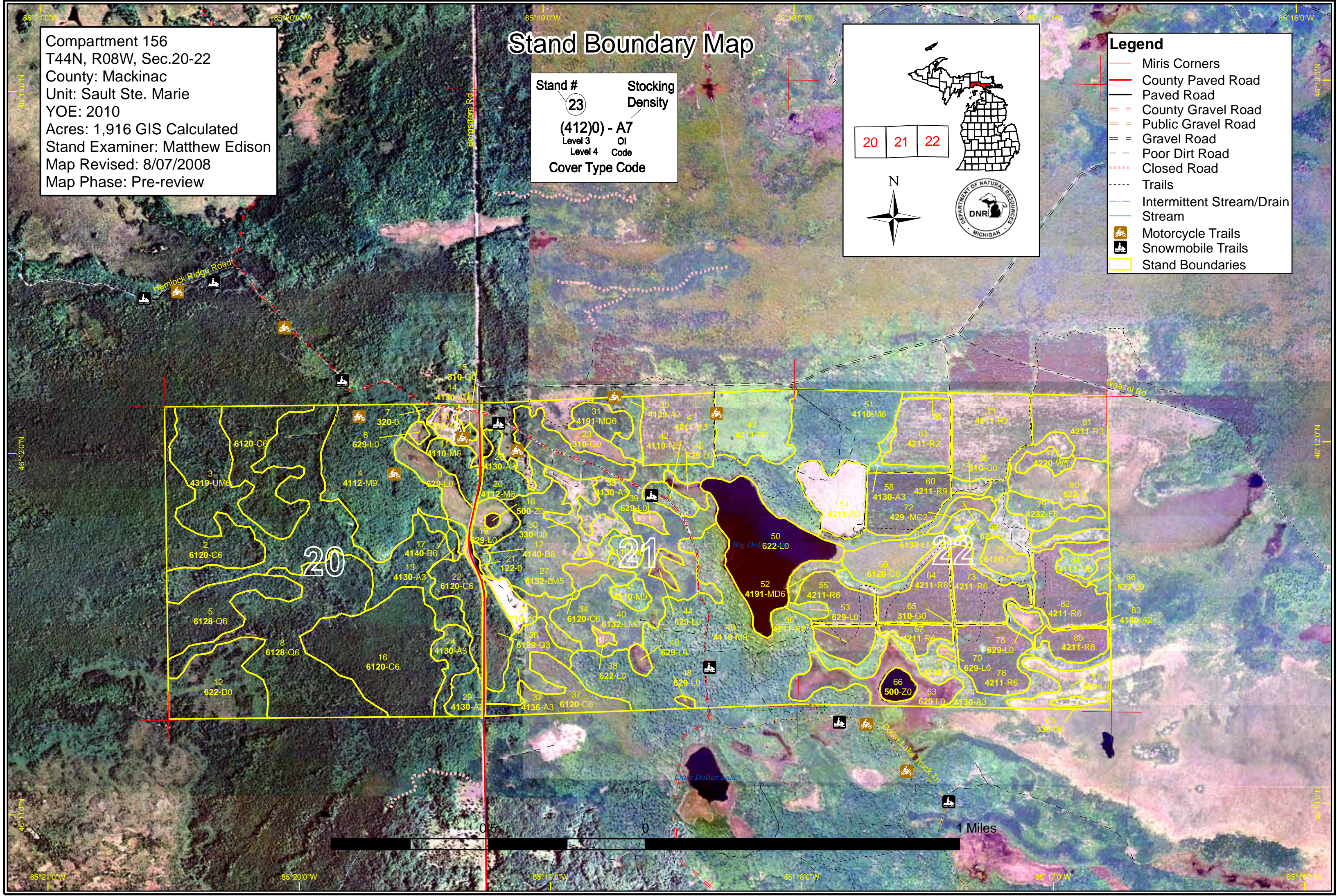


Compartment 156
 T44N, R08W, Sec.20-22
 County: Mackinac
 Unit: Sault Ste. Marie
 YOE: 2010
 Acres: 1,916 GIS Calculated
 Stand Examiner: Matthew Edison
 Map Revised: 8/07/2008
 Map Phase: Pre-review

Stand Boundary Map

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

- Legend**
- Miris Corners
 - County Paved Road
 - Paved Road
 - County Gravel Road
 - Public Gravel Road
 - Gravel Road
 - Poor Dirt Road
 - Closed Road
 - Trails
 - Intermittent Stream/Drain
 - Stream
 - Motorcycle Trails
 - Snowmobile Trails
 - Stand Boundaries



20

21

22

Big Doll

622-L0

52 4191-MD6

66 500-Z0

1 Miles



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

Sault Ste. Marie Mgt. Unit

Compartment 156 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 | 87.7 | 50.4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 138.0 |
| Herbaceous Openland | 47.2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 47.2 |
| Low-Density Trees | 18.8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18.8 |
| Lowland Coniferous Forest | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14.1 | 203.4 | 116.1 | 16.4 | 28.3 | 0 | 0 | 378.3 |
| Lowland Mixed Forest | 0 | 0 | 0 | 0 | 11.2 | 0 | 0 | 0 | 119.9 | 0 | 0 | 0 | 0 | 0 | 0 | 131.1 |
| Lowland Shrub | 146.2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 146.2 |
| Mixed non-forested wetland | 95.8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 95.8 |
| Mixed Upland Conifers | 0 | 0 | 0 | 35.7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35.7 |
| Mixed Upland Deciduous | 0 | 0 | 0 | 0 | 0 | 0 | 16.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16.0 |
| Natural Pines | 0 | 0 | 0 | 0 | 0 | 5.9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5.9 |
| Northern Hardwood | 0 | 0 | 0 | 0 | 0 | 6.2 | 11.6 | 251.6 | 77.2 | 0 | 0 | 0 | 0 | 0 | 0 | 346.7 |
| Other Bare/Sparsely Vegetated | 6.7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6.7 |
| Other Upland Conifers | 0 | 0 | 12.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12.0 |
| Other Upland Deciduous | 0 | 0 | 0 | 0 | 0 | 4.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4.5 |
| Planted Pines | 0 | 59.7 | 124.3 | 0 | 0 | 149.3 | 0 | 0 | 29.2 | 0 | 0 | 0 | 0 | 0 | 0 | 362.4 |
| Road/Parking Lot | 6.6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6.6 |
| Sand, Soil | 7.8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7.8 |
| Upland Mixed Forest | 0 | 0 | 0 | 0 | 0 | 0 | 145.1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 145.1 |
| Upland Shrub | 3.8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3.8 |
| Water | 7.4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7.4 |
| Total | 340.2 | 59.7 | 223.9 | 86.1 | 11.2 | 165.8 | 172.8 | 251.6 | 240.4 | 203.4 | 116.1 | 16.4 | 28.3 | 0 | 0 | 1916.0 |

**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 |
|-----------------|-------|--|-------------------|-----------|----------------|------------------------|----------------------|
| 31 45156031-Cut | 10.5 | 4191 - Mixed Upland Deciduous with Conifer | High Density Pole | 58 | Harvest | Clearcut with Reserves | Aspen, Birch |

Rev Cmnt: Access is off of Giddings Rd.

Rev Spec: Clearcut to facilitate aspen & birch regeneration. The stand is small and adjacent to grass opening on the west and south and a mixed stand of aspen, birch, jack pine, balsam fir, and a little red maple to the east. This stand is good quality aspen and there is not much for underrepresented trees. Reserve 10% of spruce = 1 tree per/ acre.

Next Steps: Regeneration survey will be needed within 4 years following harvest. Acceptable regeneration includes aspen, spruce, balsam, birch, cedar, cherry, and maple in various amounts.

| | | | | | | | |
|-----------------|------|--------------------------------|-------------------|----|---------|-----------------------|-------------------------|
| 51 45156051-Cut | 72.1 | 4110 - Sugar Maple Association | High Density Pole | 68 | Harvest | Single Tree Selection | Sugar Maple Association |
|-----------------|------|--------------------------------|-------------------|----|---------|-----------------------|-------------------------|

Rev Cmnt:

Rev Spec: Thin basal area to 80-85 according to compleat marker and other guideline documents. Promote Black Cherry and other underrepresented species where possible. Apply appropriate buffer on south edge of stand against Big Dollar Lake.

Next Steps: Survey for regeneration within 4 years. Acceptable regeneration will consist of various amounts of Red Maple, Sugar Maple, Yellow Birch, Beech, Paper Birch, and Black Cherry

| | | | | | | | |
|-----------------|------|--------------------------|-------------------|----|---------|----------------|------------------|
| 55 45156055-Cut | 17.2 | 42110 - Planted Red Pine | High Density Pole | 47 | Harvest | Crown Thinning | Planted Red Pine |
|-----------------|------|--------------------------|-------------------|----|---------|----------------|------------------|

Rev Cmnt: ORV Trail throughout stand. Provide for trail protection during harvests.

Rev Spec: Second thinning of this stand. Mark cut trees within rows to release crowns and thin basal area to approximately 120.

Next Steps: Examine in future entry years until ready for final harvest / regeneration.

| | | | | | | | |
|-----------------|------|--------------------------|-------------------|----|---------|----------------|------------------|
| 56 45156056-Cut | 12.0 | 42110 - Planted Red Pine | High Density Pole | 47 | Harvest | Crown Thinning | Planted Red Pine |
|-----------------|------|--------------------------|-------------------|----|---------|----------------|------------------|

Rev Cmnt: ORV Trail throughout stand. Provide for trail protection during harvests.

Rev Spec: Second thinning of this stand. Mark cut trees within rows to release crowns and thin basal area to approximately 120.

Next Steps: Examine in future entry years until ready for final harvest / regeneration.

| | | | | | | | |
|-----------------|------|--------------------------|------------------|----|---------|------------------------|------------------|
| 60 45156060-Cut | 27.4 | 42110 - Planted Red Pine | High Density Log | 71 | Harvest | Clearcut with Reserves | Planted Red Pine |
|-----------------|------|--------------------------|------------------|----|---------|------------------------|------------------|

Rev Cmnt: ORV trail runs through south edge of stand. Provide for protection of trail during harvest operations.

Rev Spec: Mature red pine plantation. Reserve trees will be in buffer strip along south edge of stand. 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. Apply appropriate buffers along south edge against wetland type.

Next Steps: Following harvest, prepare FTP for prescribed burning, trenching, and planting of Red Pine. Following planting, conduct regeneration surveys as required.

**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 |
|----------------|-------|------------------|--------------|-----------|----------------|------------------|----------------------|
|----------------|-------|------------------|--------------|-----------|----------------|------------------|----------------------|

| | | | | | | | | |
|-----------|---------------------|------|--------------------------|-------------------|----|---------|----------------|------------------|
| 64 | 45156064-Cut | 21.9 | 42110 - Planted Red Pine | High Density Pole | 47 | Harvest | Crown Thinning | Planted Red Pine |
|-----------|---------------------|------|--------------------------|-------------------|----|---------|----------------|------------------|

Rev Cmmt: ORV Trail throughout stand. Provide for trail protection during harvests.

Rev Spec: Second thinning of this stand. Mark cut trees within rows to release crowns and thin basal area to approximately 120.

Next Steps: Examine in future entry years until ready for final harvest / regeneration

| | | | | | | | | |
|-----------|---------------------|-----|--------------------------|-------------------|----|---------|----------------|------------------|
| 67 | 45156067-Cut | 7.8 | 42110 - Planted Red Pine | High Density Pole | 47 | Harvest | Crown Thinning | Planted Red Pine |
|-----------|---------------------|-----|--------------------------|-------------------|----|---------|----------------|------------------|

Rev Cmmt: ORV Trail throughout stand. Provide for trail protection during harvests.

Rev Spec: Second thinning of this stand. Mark cut trees within rows to release crowns and thin basal area to approximately 120.

Next Steps: Examine in future entry years until ready for final harvest / regeneration.

| | | | | | | | | |
|-----------|---------------------|------|-----------------------------|-----------------------|----|---------|------------------------|--------------------------------|
| 72 | 45156072-Cut | 35.8 | 429 - Mixed Upland Conifers | Medium Density Saplin | 29 | Harvest | Clearcut with Reserves | Mixed Non-Pine Upland Conifers |
|-----------|---------------------|------|-----------------------------|-----------------------|----|---------|------------------------|--------------------------------|

Rev Cmmt: Stand is grown in opening with merchantable timber.

Rev Spec: Cut merchantable aspen and conifers. Leave a reserve representative of current species.

Next Steps: Regeneration survey will be needed within 4 years following harvest. Acceptable regeneration includes any mix of aspen, spruce, balsam, birch, cedar, cherry, pine, or maple. Examine next entry .

| | | | | | | | | |
|-----------|---------------------|------|--------------------------|-------------------|----|---------|----------------|------------------|
| 73 | 45156073-Cut | 22.5 | 42110 - Planted Red Pine | High Density Pole | 47 | Harvest | Crown Thinning | Planted Red Pine |
|-----------|---------------------|------|--------------------------|-------------------|----|---------|----------------|------------------|

Rev Cmmt: ORV Trail throughout stand. Provide for trail protection during harvests.

Rev Spec: Second thinning of this stand. Mark cut trees within rows to release crowns and thin basal area to approximately 120.

Next Steps: Examine in future entry years until ready for final harvest / regeneration

| | | | | | | | | |
|-----------|---------------------|------|--------------------------|-------------------|----|---------|----------------|------------------|
| 76 | 45156076-Cut | 27.3 | 42110 - Planted Red Pine | High Density Pole | 40 | Harvest | Crown Thinning | Planted Red Pine |
|-----------|---------------------|------|--------------------------|-------------------|----|---------|----------------|------------------|

Rev Cmmt: ORV Trail throughout stand. Provide for trail protection during harvests.

Rev Spec: Second thinning of this stand. Mark cut trees within rows to release crowns and thin basal area to approximately 120.

Next Steps: Examine in future entry years until ready for final harvest / regeneration.

| | | | | | | | | |
|-----------|---------------------|------|--------------------------|-------------------|----|---------|----------------|------------------|
| 82 | 45156082-Cut | 28.2 | 42110 - Planted Red Pine | High Density Pole | 47 | Harvest | Crown Thinning | Planted Red Pine |
|-----------|---------------------|------|--------------------------|-------------------|----|---------|----------------|------------------|

Rev Cmmt: ORV Trail throughout stand. Provide for trail protection during harvests.

Rev Spec: Second thinning of this stand. Mark cut trees within rows to release crowns and thin basal area to approximately 120.

Next Steps: Examine in future entry years until ready for final harvest / regeneration.

**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 |
|----------------|-------|------------------|--------------|-----------|----------------|------------------|----------------------|
|----------------|-------|------------------|--------------|-----------|----------------|------------------|----------------------|

| | | | | | | | | |
|----|--------------|------|--------------------------|-------------------|----|---------|----------------|------------------|
| 85 | 45156085-Cut | 12.5 | 42110 - Planted Red Pine | High Density Pole | 47 | Harvest | Crown Thinning | Natural Red Pine |
|----|--------------|------|--------------------------|-------------------|----|---------|----------------|------------------|

Rev Cmnt: ORV Trail throughout stand. Provide for trail protection during harvests.

Rev Spec: Second thinning of this stand. Mark cut trees within rows to release crowns and thin basal area to approximately 120.

Next Steps: Examine in future entry years until ready for final harvest / regeneration.

| | | | | | | | | |
|----|----------------|------|--------------------------|--|---|-----------|--------|------------------|
| 47 | 45156047-Spray | 33.9 | 42110 - Planted Red Pine | | 5 | Pesticide | Aerial | Planted Red Pine |
|----|----------------|------|--------------------------|--|---|-----------|--------|------------------|

Rev Cmnt: Planted in 2003. Released in 2005. Unit was not burned prior to trenching and planting. FTP C44-521. RP about 2-3 ft. tall.

Rev Spec: Scheduled for aerial spray release in 2008 (TMS) using Accord. Monitor for RHPS (sawfly) or other pests and treat when/ if necessary. Apply pesticides by aerial spray, backpack spray, or use mist blower as recommended by Forest Health Specialist.

Next Steps: Continue to check regeneration. Continue to monitor for release needs. Continue to monitor for RHPS and other pests, and spray if necessary. Although this is a red pine plantation, some levels of aspen/maple/cherry are acceptable.

| | | | | | | | | |
|----|----------------|------|--------------------------|--|---|-----------|--------|------------------|
| 54 | 45156054-Spray | 25.8 | 42110 - Planted Red Pine | | 4 | Pesticide | Aerial | Planted Red Pine |
|----|----------------|------|--------------------------|--|---|-----------|--------|------------------|

Rev Cmnt:

Rev Spec: Scheduled for aerial spray release in 2008 (TMS) using Accord. Monitor for RHPS (sawfly) or other pests and treat when/ if necessary. Apply pesticides by aerial spray, backpack spray, or use mist blower as recommended by Forest Health Specialist.

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.

| | | | | | | | | |
|----|----------------|------|--------------------------|--|----|-------|-------------|------------------|
| 43 | 45156043-Other | 33.3 | 42110 - Planted Red Pine | | 12 | Other | Unspecified | Planted Red Pine |
|----|----------------|------|--------------------------|--|----|-------|-------------|------------------|

Rev Cmnt: Edge treatments for RHPS by mistblower was done 2003.

Rev Spec: Monitor for RHPS (sawfly) or other pests and treat when/ if necessary. Apply pesticides by aerial spray, backpack spray, or use mist blower as recommended by Forest Health Specialist.

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.

| | | | | | | | | |
|----|----------------|------|--------------------------|--|----|-------|-------------|------------------|
| 61 | 45156061-Other | 25.1 | 42110 - Planted Red Pine | | 12 | Other | Unspecified | Planted Red Pine |
|----|----------------|------|--------------------------|--|----|-------|-------------|------------------|

Rev Cmnt:

Rev Spec: Monitor for RHPS (sawfly) or other pests and treat when/ if necessary. Apply pesticides by aerial spray, backpack spray, or use mist blower as recommended by Forest Health Specialist.

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.

| | | | | | | | | |
|----|----------------|------|--------------------------|--|----|-------|-------------|------------------|
| 71 | 45156071-Other | 40.1 | 42110 - Planted Red Pine | | 14 | Other | Unspecified | Planted Red Pine |
|----|----------------|------|--------------------------|--|----|-------|-------------|------------------|

Rev Cmnt:

Rev Spec: Monitor for RHPS (sawfly) or other pests and treat when/ if necessary. Apply pesticides by aerial spray, backpack spray, or use mist blower as recommended by Forest Health Specialist.

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.

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Sault Ste. Marie Mgt. Unit
Inventory Method: IFMAP

**PROPOSED TREATMENTS
NO LIMITING FACTORS**

Compartment: 156

Entry Yr: 2010

Date 08/11/2008



| Treatment Name | Acres | Stage1 CoverType | Size Density | Stand Age | Treatment Type | Treatment Method | Cover Type Objective |
|-------------------|-------|--------------------------|--------------|-----------|----------------|------------------|----------------------|
| 81 45156081-Other | 25.8 | 42110 - Planted Red Pine | | 14 | Other | Unspecified | Planted Red Pine |

Rev
Cmnt:

Rev Monitor for RHPS (sawfly) or other pests and treat when/ if necessary. Apply pesticides by aerial spray, backpack spray, or use mist blower as
Spec: recommended by Forest Health Specialist.

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

**Total Treatment
Acreage Proposed: 479.0**

**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 |
|-------|----------|-------|----------|
| | | | |



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 | 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. |