SAULT FOREST MANAGEMENT UNIT
COMPARTMENT REVIEW PRESENTATION

COMPARTMENT # 141 ENTRY YEAR: 2010

Compartment Acreage: 1793 County: Mackinac

Revision Date: August 11, 2008

Stand Examiner: Amy Douglass

Legal Description: T43N-R07W Sections 31, 32 & 33; Hendricks Township

RMU (if applicable):

Management Goals: The compartment is located 2 miles northwest of Epoufette. It is in the proposed Strickler Aspen Management Area. Plans for this Management Area are currently being written. The whole compartment is within a deer wintering area. Goals include enhancing the age class diversity within the aspen/mixed upland deciduous/mixed lowland deciduous areas. Cutting in these types have been going on since the mid-1970's. Generally we're moving into the harder accessed areas and treatments will pair up with stands in the adjacent compartment(s). Some of the pine types are in need of treatment, ranging from final harvest of an older CCC plantation to monitoring the younger plantations for detrimental pests. The hardwood stands are heavily infested with beech scale. Treatment for these areas will include salvaging beech while retaining some for wildlife purposes.

Soil and Topography: The eastern 2/3 of the compartment is nearly level and undulating terrain, with steep ravines to the creek bottoms, and is comprised mainly of Wallace sand with adjacent areas of Pullup fine sand and Paquin sand. The level and undulating transition zones are made up of Spot-Finch complex and Markey-Spot-Finch complex. The western edges are undulating areas of Paquin-Finch sands and low ridges and depressions of Croswell-Markey complex. The low level cedar swamps are Markey and Carbondale mucks.

Ownership Patterns, Development, and Land Use in and Around the Compartment: There is one private holding within the compartment which has a seasonal camp. The surrounding area is state lands except for 3 private 40 acre parcels. These also have seasonal camps. Both Great Lakes Gas and Enbridge Oil pipelines, as well as Edison-Sault Transmission line, transect the compartment.

Unique, Natural Features (include only non-site specific and non-sensitive information): The old Lake Nippising bluff is found in areas just south of Great Lakes pipeline. There is a potential for 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): There is evidence of old logging camps in the area.

Special Management Designations or Considerations: The compartment is entirely within a deer wintering complex.

Watershed and Fisheries Considerations: This compartment contains stream reachs of Paquin Creek. Paquin Creek is a cold-water stream that supports stream-resident fish community of brook trout, pearl dace,

slimy sculpin, central mudminnow, brook stickleback. Paquin Creek is also important that is supports natural reproduction of Lake Michigan potadromous fishes such as steelhead, Chinook salmon, and coho salmon. 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 and is used extensively by wintering deer. 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 Paquin Creek.

Portions of red pine at final harvest will be retained to increase the ecological complexity within the stands and provide benefits to numerous wildlife 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 ft^2 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 ≥ 4 x 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: The access is fairly limited due to creeks and wetlands. Paquin Creek Road runs along the eastern border of the compartment. There are several two-tracks leading off this road to access areas between the creeks. The pipelines are used where feasible. Several pipeline crossings may be installed by Great Lakes Gas as part of a 1991 easement agreement to access timber in this area, mainly west of their gate in section 31.

Survey Needs: None needed.

Recreational Facilities and Opportunities: Snowmobile trail 473 runs along Paquin Creek Road. Other recreational opportunities include hunting, fishing and trapping, as well as mushroom and berry picking.

Fire Protection: There would be some potential for fires within the pine areas and adjacent stands, as was seen not too far north during the Troll Fire. Low potential exists within the low lying swamps.

Additional Compartment Information:

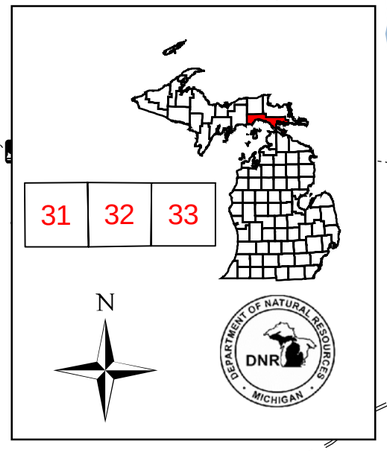
- **Cover Type details, Proposed Treatments, and Stand listings are listed in the attached reports:**
  - **Proposed Treatments – No Limiting Factors**
  - **Proposed Treatments – With Limiting Factors**
  - **Stand Listing – Forested**
  - **Stand Listing – Non Forested**
  - **Special Conservation 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 141
T43N, R07W, Sec. 31-33
County: Mackinac
Unit: Sault Ste. Marie
YOE: 2010
Acres: 1,793 GIS Calculated
Stand Examiner: Amy Douglass
Map Revised: 8/08/2008
Map Phase: Pre-review

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



Legend

- RLS Corners
- Miris Corners
- Highway
- Paved Road
- County Gravel Road
- Gravel Road
- Poor Dirt Road
- Closed Road
- Stream
- Lakes and Rivers All
- Trails
- Pipeline
- Powerline
- Berm
- Gate
- US Highway
- Snowmobile Trails
- Stand Boundaries
- Clearcut (w/Reserves, Patch/Strip)
- Shelter Wood (w/Reserves)
- Thinning (Crown, Low, Systematic)
- 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
- 430 - Upland Mixed Forest
- 611 - Lowland Deciduous Forest
- 612 - Lowland Coniferous Forest
- 613 - Lowland Mixed Forest

Non-Forest Stands
LVL3COVER
- 310 - Herbaceous Openland
- 320 - Upland Shrub
- 330 - Low-Density Trees
- 622 - Lowland Shrub
- 623 - Emergent Wetland

Stand Boundary Map

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Stand # 23
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(412)0) - A7
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31 | 32 | 33

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Legend
- RLS Corners
- Miris Corners
- Highway
- Paved Road
- County Gravel Road
- Gravel Road
- Poor Dirt Road
- Closed Road
- Trails
- Pipeline
- Powerline
- Stream
- Berm
- Gate
- US Highway
- Snowmobile Trails
- Stand Boundaries

Sand Lake
McNaught Pond
Sand Lake Rd
Paquin Creek Rd
Great Lakes Gas Pipeline
Enbridge Energy Partners

31 32 33

1 622-L0 | 2 6120-C9 | 3 4193-B9 | 4 622-L0 | 5 4191-MD9 | 6 4193-B9 | 7 6120-C6 | 8 622-L0 | 9 6112-P9 | 10 6120-C6 | 11 6112-P9 | 12 4130-A3 | 13 6112-P3 | 14 4140-B9 | 15 6132-LM6 | 16 6139-LM1 | 17 6111-P1 | 18 6122-S6 | 19 622-L0 | 20 6118-E2 | 21 623-N0 | 22 623-N0 | 23 622-L0 | 24 4140-B9 | 25 622-L0 | 26 622-L0 | 27 622-L0 | 28 330-U0 | 29 622-L0 | 30 622-L0 | 31 4130-A3 | 32 6120-C6 | 33 4319-UM9 | 34 4130-A3 | 35 4211-R3 | 36 622-L0 | 37 4211-R3 | 38 4130-A5 | 39 4130-A3 | 40 6118-E9 | 41 4130-A6 | 42 310-G0 | 43 6120-C9 | 44 4139-A6 | 45 4211-R3 | 46 622-L0 | 47 4211-R3 | 48 4214-MC9 | 49 4211-R3 | 50 4130-A3 | 51 4139-A6 | 52 310-G0 | 53 4130-A5 | 54 4211-R3 | 55 4191-MD9 | 56 4130-A5 | 57 4130-A3 | 58 4112-M5 | 59 4211-R8 | 60 4133-A6 | 61 320-U0 | 62 4130-A3 | 63 4211-R3 | 64 4319-UM9 | 65 4139-A6 | 66 4211-R3 | 67 4130-A6 | 68 4319-UM9 | 69 4130-A3 | 70 4112-M5 | 71 4214-MC9 | 72 4112-M5 | 73 4319-UM1 | 74 4130-A6 | 75 4112-M5 | 76 4191-MD1 | 77 4112-M9 | 78 4112-M9 | 79 4112-M9 | 80 4211-R3

2

1 0.5 0 1 Miles

85°14'0"W 85°13'0"W 85°12'0"W 85°11'0"W 85°10'0"W
46°9'0"N 46°8'0"N

Dedicated & Proposed Special Conservation Area Map

Compartment 141
T43N, R07W, Sec. 31-33
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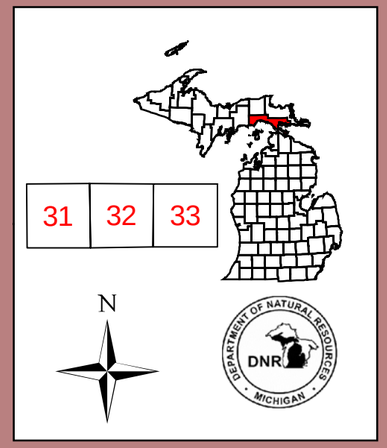
YOE: 2010
Acres: 1,793 GIS Calculated
Stand Examiner: Amy Douglass
Map Revised: 8/08/2008
Map Phase: Pre-review

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



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

85°14'0"W 85°13'0"W 85°12'0"W 85°11'0"W 85°10'0"W
46°6'0"N 46°5'0"N 46°4'0"N

1 622-L0 | 2 6120-C9 | 3 4193-B9 | 4 622-L0 | 5 4191-MD9 | 6 4193-B9 | 7 6120-C6 | 8 622-L0 | 10 6120-C9 | 11 6112-P9 | 12 4130-A3 | 13 6112-P3 | 14 4140-B9 | 15 6132-LM6 | 16 6139-LM1 | 17 6111-P1 | 18 6122-S6 | 19 622-L0 | 20 6118-E2 | 21 623-N0 | 22 4139-A3 | 23 623-N0 | 24 4140-B9 | 25 622-L0 | 27 622-L0 | 28 330-U0 | 29 622-L0 | 30 622-L0 | 31 4130-A3 | 32 6120-C6 | 33 4319-UM3 | 34 4130-A2 | 35 4211-R8 | 36 622-L0 | 38 4130-A5 | 39 4130-A3 | 40 6118-E9 | 41 4130-A6 | 42 310-G0 | 43 6128-Q9 | 44 330-U0 | 45 | 46 622-L0 | 47 4130-A3 | 48 4214-MC9 | 49 4211-R3 | 50 4130-A3 | 51 4139-A6 | 52 310-G0 | 53 4116-M1 | 54 4130-A3 | 55 4191-MD9 | 57 4130-A3 | 58 4112-M9 | 59 4211-R8 | 60 4133-A6 | 61 320-U0 | 62 4130-A3 | 63 4130-A3 | 64 4319-UM9 | 65 4139-A6 | 66 4211-R3 | 67 4130-A6 | 68 4112-M9 | 69 4130-A3 | 70 4116-M3 | 71 4226-MC9 | 72 4112-M5 | 73 4319-UM1 | 74 4130-A6 | 75 4211-R3 | 76 4191-MD1 | 77 4112-M9 | 78 4211-R3

1 0.5 0 1 Miles

Covertype, Acres, and Age summary

(Level 3 Cover Type)

Sault Ste. Marie Mgt. Unit

Compartment 141 Year of Entry 2010

Report Date: 08/07/2008

Age Class

	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	Total
Aspen Types	0	33.1	123.1	368.1	164.7	28.6	0	0	0	0	0	0	0	0	0	**717.7**
Emergent Wetland	1.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1.9**
Herbaceous Openland	18.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**18.2**
Low-Density Trees	13.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**13.1**
Lowland Coniferous Forest	0	0	0	0	0	0	0	5.2	0	0	69.2	0	51.8	0	10.9	**137.1**
Lowland Deciduous Forest	0	38.0	13.1	0	0	0	0	0	0	54.0	0	0	0	0	42.5	**147.6**
Lowland Mixed Forest	0	0	0	1.8	0	0	0	0	54.3	0	0	0	0	0	0	**56.1**
Lowland Shrub	43.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**43.4**
Mixed Upland Deciduous	0	47.0	0	0	0	0	0	0	0	59.2	0	0	0	0	58.6	**164.8**
Natural Pines	0	0	0	0	0	0	0	0	4.7	0	0	0	0	0	0	**4.7**
Northern Hardwood	0	4.8	5.4	0	0	0	0	0	0	0	49.6	24.4	0	0	0	**84.2**
Other Upland Deciduous	0	0	0	0	0	0	0	5.5	2.4	0	0	0	0	0	0	**7.9**
Planted Pines	0	0	136.7	0	0	0	0	152.6	45.9	0	0	0	0	0	0	**335.2**
Upland Mixed Forest	0	22.6	0	4.6	0	0	0	0	0	5.0	0	0	0	0	0	**32.1**
Upland Shrub	29.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**29.0**
Total	**105.5**	**145.5**	**278.4**	**374.4**	**164.7**	**28.6**	**0**	**163.3**	**107.4**	**118.2**	**118.7**	**24.4**	**51.8**	**0**	**112.0**	**1793.0**

Stand	Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective
5	**45141005-Cut**	12.7	4191 - Mixed Upland Deciduous with Conifer	High Density Log	86	Harvest	Clearcut with Reserves	Mixed Upland Deciduous with Conifer

Rev Cmnt: Mainly a high ridge. White birch/aspen over balsam and cedar. Southern tip is wetter. Stand extends into adjacent compartment to the west (144). Manage "stand" as one (stand in 144 had been coded for clearcut in 2003 YOE, but limiting factored due to access).

Rev Spec: Budding trees will be left along edges. Vernal ponds found within the stand will be buffered appropriately (approximately 100' from edge per wildlife biologist). Cedar (5% of canopy) and white spruce (10% of canopy) is to be left (per W/L at prereview). Stream to the east will be buffered where/if needed. Fish recommends 300' buffer along trib's to Paquin Creek, but treatment lines reflect a 200' buffer. Manage with stand in Comp. 144 to the west. Sale will not follow stand line exactly due to lower areas and buffering that will need to be outlined. All conifer < 4 inches at dbh will be left. Small opening by 1/4 corner will be left mainly intact (road may go thru part of it). Winter cut only (per wildlife at prereview).

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

jason testing

Stand	Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective
6	**45141006-Cut**	16.5	4193 - Birch, Aspen	High Density Log	86	Harvest	Clearcut with Reserves	Aspen, Mixed Deciduous

Rev Cmnt: White birch/aspen over balsam. A small creek flows through the fingers on the SE end of stand. This area will be left for retention, but access to the treatment area will be through here using a temporary crossing (culvert or bridge) as necessary.

Rev Spec: Budding trees will be left along edges. Vernal ponds found within the stand will be buffered appropriately (approximately 100' from edge per wildlife biologist). The buffer along the slopes on the east and west sides, as well as the fingers to the east will be left for retention. Fish recommends 300' buffer along trib's to Paquin Creek, but treatment lines reflect a 200' buffer. All conifer < 4 inches at dbh will be left. Winter cut only (per wildlife at prereview).

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

Stand	Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective
14	**45141014-Cut**	1.4	4140 - Other Upland Deciduous	High Density Log	70	Harvest	Clearcut with Reserves	Other Mixed Upland Deciduous

Rev Cmnt: Nice ridge on south edge of pipeline. This stand probably requires a pipeline crossing that the pipeline should put in. Manage with small stand in Compartment 144 (2003 YOE) that was previously coded for clearcut, but limiting factored due to access.

Rev Spec: Budding trees will be left along edges, especially against the younger aspen age classes. Vernal ponds found within the stand will be buffered appropriately (approximately 100' from edge per wildlife biologist). Fish recommends 300' buffer along trib's to Paquin Creek, but treatment lines reflect a 200' buffer. No retention planned within the treatment area due to the small acreage. Stand extends into adjacent compartment to the west (144). Treat together as one small stand. All conifer < 4 inches at dbh will be left. Winter cut only (per wildlife at prereview).

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

Stand	Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective
26	**45141026-Cut**	19.7	6117 - Lowland Deciduous, Mixed Coniferous	High Density Log	88	Harvest	Clearcut with Reserves	Lowland Deciduous, Mixed Coniferous

Rev Cmnt: Variable stand, but mainly white birch/aspen over balsam/cedar. Access is difficult, but may be able to harvest parts with adjacent compartments 143 (2010 YOE) and 144 (2003 YOE).

Rev Spec: Budding trees will be left along edges. Vernal ponds found within the stand will be buffered appropriately (approximately 100' from edge per wildlife biologist). Various parts of the stand will be left for retention (east of creek and long skinny fingers). Fish recommends 300' buffer along trib's to Paquin Creek, but treatment lines reflect a 200' buffer. Some cedar could be left if needed for additional retention. All conifer < 4 inches at dbh will be left. Winter cut only (per wildlife at prereview).

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

Stand	Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective
58	45141058-Cut	9.0	4112 - Maple, Beech, Cherry Association	High Density Log	95	Harvest	Shelter Wood with Reserves	Maple, Beech, Cherry Association

Rev Cmnt: Very heavy to beech, mixed areas of beech/red maple, and areas heavier to red maple. An occasional yellow birch and a few white pine log trees on stand edges. Beech of all sizes have high concentrations of beech scale. Beech snap evident. Striped maple found in most old canopy gaps from fallen trees.

Rev Spec: Cut down to approximately 30 - 50 BA. Leave some of the healthier looking beech.

Next Steps: Underplant white pine and/or oak after harvest. Acceptable regeneration includes maple, beech, cherry, yellow birch and white pine/oak in various amounts. Striped maple will be acceptable for nursing the white pine or oak seedlings.

Stand	Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective
59	45141059-Cut	36.1	42110 - Planted Red Pine	Medium Density Log	76	Harvest	Clearcut with Reserves	Planted Red Pine, Mixed Deciduous

Rev Cmnt: Last thinned in 1994. Most areas fairly open in understory, but some areas of thicker hardwood saps.

Rev Spec: Final harvest leaving no standing live trees within treatment area due to hazards associated with site prep, planting and release work. Small acreage left north of road along northwestern boundary, and small acreage left in southwestern corner. Use old trail road for line here. Pick up a few acres in Comp. 140 to the north to treat with this stand also.

Next Steps: Burn for slash reduction prior to trenching and planting to red pine.

Stand	Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective
77	45141077-Cut	24.4	4112 - Maple, Beech, Cherry Association	High Density Log	100	Harvest	Crown Thinning	Maple, Beech, Cherry Association

Rev Cmnt: Nice hardwood stand for this area. Large trees with lots of regeneration. Beech has large amount of beech scale. Best to salvage some beech now.

Rev Spec: Mark hardwoods to approximately 85 BA, using the Compleat Marker as a guide, as well as other applicable guides. Emphasis will be on marking heavily infected beech while leaving some healthier beech for wildlife purposes.

Next Steps:

Stand	Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective
49	45141049-Other	35.1	42110 - Planted Red Pine		10	Other	Unspecified	Planted Red Pine

Rev Cmnt: Nice red pine plantation that has had some sawfly damage.

Rev Spec: Monitor for RHPS or other pests.

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.

Stand	Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective
66	45141066-Other	35.4	42110 - Planted Red Pine		13	Other	Unspecified	Planted Red Pine

Rev Cmnt: Nice red pine plantation that has had some sawfly damage.

Rev Spec: Monitor for RHPS or other pests.

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.

Stand	Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective
73	45141073-Other	22.6	4319 - Mixed Upland Forest		5	Other	Unspecified	Planted Red Pine

Rev Cmnt: Glass Jaw Pine. Planted in 2003 (FTP C44-519). Aerial release in 2005. Aerial spray for RHPS in 2006.

Rev Spec: Monitor young red pine plantation for competition and pests.

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

Stand	Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective
75	45141075-Other	62.8	42110 - Planted Red Pine		11	Other	Unspecified	Planted Red Pine

Rev Cmnt: Planted in 1996 (south half) and 1997 (north half). Released by skidder in 1999.

Rev Spec: Monitor for RHPS or other pests.

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.

Stand	Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective
76	45141076-Other	32.9	4191 - Mixed Upland Deciduous with Conifer		5	Other	Unspecified	Planted Red Pine

Rev Cmnt: Glass Jaw Pine. Planted in 2003 (FTP C44-519). Aerial release in 2005 (except along Paquin Creek Road) and 2006 (along Paquin Creek Road). Aerial sprayed for RHPS in 2006.

Rev Spec: Monitor young red pine plantation for competition and pests.

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

Stand	Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective
78	45141078-Other	3.4	42111 - Planted Red Pine, Mixed Deciduous		11	Other	Unspecified	Planted Red Pine, Mixed Deciduous

Rev Cmnt: Planted in 1997. Good diverse plantation with some pole sized red pine left.

Rev Spec: Monitor for RHPS or other pests.

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: 311.9

Sault Ste. Marie Mgt. Unit
Inventory Method: IFMAP

PROPOSED TREATMENTS WITH LIMITING FACTORS

Compartment: 141 Entry Yr: 2010
Date 08/07/2008

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

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.