SAULT FOREST MANAGEMENT UNIT
COMPARTMENT REVIEW PRESENTATION

COMPARTMENT # 155 ENTRY YEAR: 2009

Compartment Acreage: 1905 County: Mackinac

Revision Date: September 11, 2007

Stand Examiner: Amy Douglass

Legal Description: T44N-R8W Sections 15, 16 & 17; Hudson Township

RMU (if applicable):

Management Goals: This compartment is located 3 miles north of Garnet, along the Borgstrom Road. The area is largely a swamp type with some upland areas of aspen/birch/maple. There are also some red pine plantations within the compartment, and bordering to the south. One small plantation has a very full hardwood understory and is scheduled for treatment to revert back to hardwood. Mixed upland and aspen types have good age class diversity so far, with cuttings done over the past 3 decades. Cutting will continue this decade to enhance the age class diversity and maintain healthy forests. Small hardwood stands will be select cut to promote health and growth, and maintain diversity. Some stands to the northeast will be treated with the adjacent compartment in 2010 year of entry due to access.

Soil and Topography: The large low swamp occupying depressions and/or nearly level areas is primarily Markey and Carbondale mucks, with some Markey-Spot-Finch complex to the north along Borgstrom Road. The northwest bog area (closed depressions) is comprised of Dawson and Loxley peats. The mixed upland ridges consist of Paquin-Spot complex, and cover nearly level and undulating areas with areas of depressions. The rolling to steep areas along the north side of the marshes is Pullup fine sand. The hardwood and pine area along the southern boundary are nearly level and undulating areas, and are comprised of Springlake loamy coarse sand, with a little band of Heinz sandy loam along the cedar swamp. And finally, the low ridges in the west central end of the compartment are Finch-Dawson-Pullup complex.

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): None noted. 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): None noted.

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

Watershed and Fisheries Considerations: Good. All headwater branches of the East Branch Sage River in Mackinac County are classified as Type 1 trout water. They support natural brook and brown trout populations, but Fisheries Division does not actively manage them. Although the populations are not high enough to support a "bunch" of anglers, the streams will provide some harvest for the knowledgeable. They should be protected from new erosion. The stream corridors should be managed to discourage beaver as much as possible.

Wildlife Habitat Considerations: Lowland deciduous predominantly encompasses the area of this compartment with a mix of open, aspen, and other forest types. The deer yard covers the entire compartment, and management practices sustain deer populations by providing a mix of winter cover and forage year-round.

Wildlife observed within this compartment were ruffed grouse, broad-winged hawk, cedar waxwing, pileated woodpecker, black bear, coyote, and red squirrel.

Mineral Resource and Development Concerns and/or Restrictions: Surface sediments consist of lacustrine (lake) sand & gravel, 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 gravel pit is located in Section 20, but potential in the Compartment appears to be limited. 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 16 and 17. Giddings Road, a DNR gravel road, accesses the eastern portion of the compartment. Weasel Road, a DNR gravel road; and Pat Road, a DNR sand road, accesses the southern and northern portions of section 15 respectively. Old Hendricks Road (Dollar Lake Road) snakes along upland ridges west of Borgstrom Road and out through the bog. Hemlock Ridge Road, a DNR sand road, picks up mid-way through Old Hendricks Road and heads west towards Cranberry Lake Road. 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 compartment boundary and continues westerly along Old Hendricks Road (Dollar Lake Road) and Hemlock Ridge Road. The ORV trail winds in and out of the compartment along the southern boundary. Other recreational opportunities include hunting all types of game species, bird watching, mushroom and berry picking, and photography.

Fire Protection: Protection would be adequate to most of the upland areas as they are located along well traveled routes. The exception would be the upland area located off the end of the Pat Road. This area would take longer to access, but the road system is in place to start from. The areas of heavier, lowland soils may be harder to access depending on where the fire was to occur, and may pose mop-up difficulties. Hudson Township Fire Hall is located 4 miles away.

Additional Compartment Information:

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

- **Cover Type by Age Class**
- **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**

Stage 1 Acres Summary By Level 3 Cover Type By Age

Compartment: 45155

Date: 10/2/2007

	0	1-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	>89	Uneven Age	Grand Total
Aspen Types	0	0.8	62.8	185	0	0	0	0	0	0	0	0	248.6
Emergent Wetland	20.7	0	0	0	0	0	0	0	0	0	0	0	20.7
Herbaceous Openland	3.9	0	0	0	0	0	0	0	0	0	0	0	3.9
Lowland Coniferous Forest	0	0	0	0	0	0	0	0	108.7	17.9	894.2	0	1020.8
Lowland Deciduous Forest	0	0	0	31.3	0	0	0	0	0	0	0	0	31.3
Lowland Mixed Forest	0	0	0	0	0	0	0	0	0	0	21.7	0	21.7
Lowland Shrub	156.4	0	0	0	0	0	0	0	0	0	0	0	156.4
Mixed Upland Conifers	0	0	0	0	0	0	0	0	7.2	0	30.8	0	38
Mixed Upland Deciduous	0	0	13.8	0	0	0	29.1	53.7	36.4	0	62.2	0	195.2
Mixed non-forested wetland	6.3	0	0	0	0	0	0	0	0	0	0	0	6.3
Northern Hardwood	0	3.9	0	0	0	0	0	0	31.7	0	7.4	0	43
Other Upland Deciduous	0	0	0	0	0	0	0	0	0	0	27.6	0	27.6
Planted Pines	0	0	4.7	30	0	0	0	0	44.2	0	0	0	78.9
Road/Parking Lot	9.4	0	0	0	0	0	0	0	0	0	0	0	9.4
Upland Shrub	3.5	0	0	0	0	0	0	0	0	0	0	0	3.5
Grand Total	200.2	4.7	81.3	246.3	0	0	29.1	53.7	228.2	17.9	1043.9	0	1905.3

Stand	Treatment Name	Acres	Stage1 CovType	Size Density	1st Age	2nd Age	Treatment Method	Treatment Purpose	Cover Type Objective
7	**155007-Cut**	12.2	6122 - Black Spruce	6	80	0	Clearcut with Reserves	Regeneration	Black Spruce

Rev Cmnt: Lowland black spruce stand with some micro-uplands within stand.

Rev Spec: Leave white pine for retention. Also leaving long, skinny "tail" to northeast. This portion gradiates into bog type.

Next Steps: Regeneration survey will be needed within 4 years following harvest. Acceptable regeneration includes black spruce, tamarack, balsam fir, white pine and aspen in various amounts.

8	**155008-Cut**	12.2	4191 - Mixed Upland Deciduous with Conifer	6	73	0	Clearcut with Reserves	Regeneration	Mixed Upland Deciduous with Conifer

Rev Cmnt: Rolling stand of birch, maple, aspen with white pine and hemlock. This stand continues west into Compartment 166. This small piece will be managed as an out of yoe with this stand.

Rev Spec: Leave all white pine and hemlock for retention. Also small pieces on east side of road will be left intact. Budding trees will be left along the edge of stand.

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

11	**155011-Cut**	7.8	4191 - Mixed Upland Deciduous with Conifer	6	75	0	Clearcut with Reserves	Regeneration	Mixed Upland Deciduous with Conifer

Rev Cmnt: Rolling stand of birch, maple, aspen with white pine and spruce. The ORV trail criss-crosses the stand and Hemlock Ridge Road. The snowmobile trail runs along Hemlock Ridge Road and Old Hendricks Road.

Rev Spec: Leave white pine, hemlock and trees marked for the ORV trail and snowmobile trail. Budding trees will be left along the edges.

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

23	**155023-Cut**	15.0	4191 - Mixed Upland Deciduous with Conifer	9	73	0	Clearcut with Reserves	Regeneration	Mixed Upland Deciduous with Conifer

Rev Cmnt: Upland patch along Borgstrom Road. Aspen with conks and dying. A few low swales between high ground - could cut through. More cedar in lower areas - could leave cedar. Scattered white and red pine. Black spruce patches - cut it all while there. More semi-open areas to the north. Road access off Borgstrom Road may be needed. There is one access that could be used on the south end.

Rev Spec: Budding trees will be left along edges, especially against the younger aspen age classes. White pine, red pine and cedar will be left for additional retention. All conifer < 4 inches at dbh will be left. Semi open areas will have some spruce, etc of various sizes left.

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.

32	**155032-Cut**	3.9	4112 - Maple, Beech, Cherry Association	9	74	0	Single Tree Selection	Regeneration	Maple, Beech, Cherry Association

Rev Cmnt: Small hardwood stand. Lots of edge effect (thick balsam!). Hemlock and yellow birch are present. Some maple tops are dying - especially on north end. There are a couple nice wildlife cavity trees present. While there is currently some (one) beech component, there is BBD in the area. Every effort will be made to maintain some beech component within the stand. Will want to mark in either spring or fall due to the high density of saplings, but it's mostly balsam.

Rev Spec: Mark hardwoods to 85 BA, using the Compleat Marker as a guide, as well as other applicable guides. Retention will include the under-represented species (cherry, hemlock, yellow birch and beech). Efforts can be made to try to regenerate these species also. Maintain species diversity in the subcanopy. Retain wildlife cavity trees.

Next Steps: Regeneration survey will be needed within 4 years following harvest. Acceptable regeneration includes sugar maple, red maple, beech, yellow birch and cherry in various amounts.

Stand	Treatment Name	Acres	Stage1 CovType	Size Density	1st Age	2nd Age	Treatment Method	Treatment Purpose	Cover Type Objective
34	**155034-Cut**	25.5	4140 - Other Upland Deciduous	9	91	0	Clearcut with Reserves	Regeneration	Other Mixed Upland Deciduous

Rev Cmnt: Fairly open stand with pockets of thicker, smaller balsam. Aspen with conks; aspen and birch with dying tops. Small hemlock grove inclusion. Rolling terrain.

Rev Spec: Vernal ponds found within the stand will be buffered appropriately (approximately one tree length away from edge). Hemlock inclusions will be left intact. All conifer < 4 inches at dbh will be left.
Could push edges into the adjacent stand, but these transition edges are good for retention. Also leaving the bluff and finger out into the marsh for retention and bmp's, etc.

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.

Stand	Treatment Name	Acres	Stage1 CovType	Size Density	1st Age	2nd Age	Treatment Method	Treatment Purpose	Cover Type Objective
39	**155039-Cut**	11.6	4193 - Birch, Aspen	9	59	91	Clearcut with Reserves	Regeneration	Aspen, Mixed Deciduous

Rev Cmnt: Majority of birch is on the northern tip.

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 one tree length away from edge). Cedar could be left if needed for additional retention. All conifer < 4 inches at dbh will be left.

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.

Stand	Treatment Name	Acres	Stage1 CovType	Size Density	1st Age	2nd Age	Treatment Method	Treatment Purpose	Cover Type Objective
44	**155044-Cut**	13.4	42110 - Planted Red Pine	8	70	0	Shelterwood	Ecosystem Restoration	Maple, Beech, Cherry Association

Rev Cmnt: Supercanopy of red pine, with hard maple and cherry understory saplings. Not much seedlings or ground cover. Rolling terrain/hummocks.

Rev Spec: Cut red pine to 20 - 30 BA and let maple and cherry take over. Leave the few maple and cherry that are present.

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

Stand	Treatment Name	Acres	Stage1 CovType	Size Density	1st Age	2nd Age	Treatment Method	Treatment Purpose	Cover Type Objective
46	**155046-Cut**	14.1	4191 - Mixed Upland Deciduous with Conifer	9	69	72	Clearcut with Reserves	Regeneration	Mixed Upland Deciduous with Conifer

Rev Cmnt: Low ridge with some low ground.

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 one tree length away from edge). Cedar could be left if needed for additional retention. All conifer < 4 inches at dbh will be left.

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.

Stand	Treatment Name	Acres	Stage1 CovType	Size Density	1st Age	2nd Age	Treatment Method	Treatment Purpose	Cover Type Objective
48	**155048-Cut**	7.4	4110 - Sugar Maple Association	9	92	0	Single Tree Selection	Regeneration	Sugar Maple Association

Rev Cmnt: Nice hardwood patch surrounded by young aspen. Some very large hard maple. And some cankers present on hard maple.

Rev Spec: Mark hardwoods to 85 BA, using the Compleat Marker as a guide, as well as other applicable guides. Retention will include the under-represented species (cherry, beech, etc). Efforts can be made to try to regenerate these species also. Aspen budding trees will be left, if present, along younger aspen stands and openings. Maintain species diversity in the subcanopy. Middle connector corridor mainly aspen and balsam with hard maple. Leave for budding trees. OK for summer marking.

Next Steps: Regeneration survey will be needed within 4 years following harvest. Acceptable regeneration includes sugar maple, basswood, red maple, beech and cherry in various amounts.

Stand	Treatment Name	Acres	Stage1 CovType	Size Density	1st Age	2nd Age	Treatment Method	Treatment Purpose	Cover Type Objective
49	155049-Spray	4.7	42111 - Planted Red Pine, Mixed Deciduous	3	11	0	Pesticide	Pest Management	

Rev Cmnt: Part of larger stand to the south in Compartment 156. Planted in 1996; released twice. FTP C44-395. Some scattered dead red pine present. Misc hardwood species are acceptable within this pine plantation.

Rev Spec: Manage with larger stand in Compartment 156. Monitor for RHPS and spray when/if necessary. Aerial spray with pesticide recommended by Forest Health Specialist/TMS (previously Dimlin has been used). Could spray with backpack or mist blower if populations are small enough.

Next Steps: Continue to monitor for sawfly.

Stand	Treatment Name	Acres	Stage1 CovType	Size Density	1st Age	2nd Age	Treatment Method	Treatment Purpose	Cover Type Objective
51	155051-Cut	2.0	6122 - Black Spruce	6	74	0	Clearcut with Reserves	Regeneration	Black Spruce

Rev Cmnt: Small bog spruce stand within larger aspen/birch stand. Should harvest with adjacent stand due to access.

Rev Spec: Leave white pine. All conifer < 4 inches at dbh will be left.

Next Steps: Regeneration survey will be needed within 4 years following harvest. Acceptable regeneration includes black spruce, balsam, and white pine in various amounts.

Stand	Treatment Name	Acres	Stage1 CovType	Size Density	1st Age	2nd Age	Treatment Method	Treatment Purpose	Cover Type Objective
55	155055-Cut	37.7	4191 - Mixed Upland Deciduous with Conifer	6	69	0	Clearcut with Reserves	Regeneration	Mixed Upland Deciduous with Conifer

Rev Cmnt: Aspen old and dying. Some slash from dead balsam. Old white pine stumps. High ridge on eastern portion. Best access is probably through Compartment 154 (2010 YOE). Some low inclusions, especially in southern portion. Variable U-shaped stand.

Rev Spec: Cut this stand and small black spruce stand with adjacent stands in compartment 154 (2010 YOE) due to access. Some narrow portions may not be harvested. 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 one tree length away from edge). Cedar and white pine could be left if needed for additional retention. All conifer < 4 inches at dbh will be left. Leave some wolfy aspen.

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.

Stand	Treatment Name	Acres	Stage1 CovType	Size Density	1st Age	2nd Age	Treatment Method	Treatment Purpose	Cover Type Objective
58	155058-Spray	3.9	4110 - Sugar Maple Association	1	4	0	Pesticide	Pest Management	

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

Rev Spec: Monitor for release and spray with appropriate herbicide where/if necessary. Monitor for RHPS and spray when/if necessary with appropriate insecticide (previously have used Dimlin). Aerial spray when/if needed with pesticide recommended by Forest Health Specialist/TMS. Could spray with backpack or mist blower if area is too small for aerial spraying.

Next Steps: Continue to check regeneration if necessary. 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. Currently the red pine doesn't have full canopy cover due to its age.

Total Treatment Acreage Proposed: **171.3**

PROPOSED TREATMENTS WITH LIMITING FACTORS

Compartment: 155 Entry Yr: 2009
Inventory Method: IFMAP

Stand	Treatment Name	Acres	Stage1 CovType	Size Density	1st Age	2nd Age	Treatment Method	Treatment Purpose	Cover Type Objective

Limiting Factor and Comment:

Rev Cmnt:

No Stands with Limiting Factors

Rev Spec:

Next Steps:

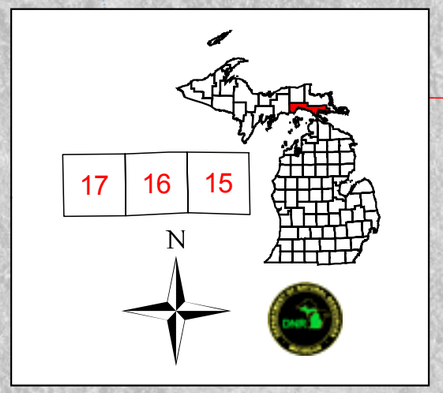
Total Treatment Acreage Proposed: **0**

Field Map

Compartment 155
T44N, R08W, Sec. 15-17
County: Mackinac
Unit: Sault Ste. Marie
YOE: 2009
Acres: 1,905 GIS Calculated
Stand Examiner: Amy Douglas
Map Revised: 9/14/2007
Map Phase: Pre-review

Stand # 23
Stocking Density 7
(A)(412)0) -
Cl Code
Level 3
Level 4
Cover Type Code

Multi-Part Stands
Stand 23, 2 Parts, Split by Stand 34
Stand 62, 6 Parts, South Edge of Stand 60



Legend
- RLS Corners
- Miris Corners
- County Paved Road
- Paved Road
- County Gravel Road
- Public Gravel Road
- Public Poor Dirt Road
- Poor Dirt Road
- Closed Road
- Trails
- Intermittent Stream/Drain
- Stream
- Motorcycle Trails
- Snowmobile Trails
- Stands
- Clearcut with Reserves
- Single Tree Selection
- Shelterwood
- Pesticide

Forest Stands
Level 3
- 411 - Northern Hardwood
- 413 - Aspen Types
- 414 - Other Upland Deciduous
- 419 - Mixed Upland Deciduous
- 421 - Planted Pines
- 429 - Mixed Upland Conifers
- 611 - Lowland Deciduous Forest
- 612 - Lowland Coniferous Forest
- 613 - Lowland Mixed Forest

Non-Forest Stands
Level 3
- 122 - Road/Parking Lot
- 310 - Herbaceous Openland
- 320 - Upland Shrub
- 622 - Lowland Shrub
- 623 - Emergent Wetland
- 629 - Mixed non-forested wetland

Borgstrom Rd
Hemlock Ridge Road
Giddings Rd
Weasel Truck Trl
Big Dollar Lake

1 MC429 -5
2 MC429 -5
3 622
4 310
5 622
6 622
7 S6122-6
8 MD4191-6
9 S6122-5
10 S6122-5
11 MD4191-6
12 C6120-6
13 MC429 -8
14 622
15 A4134-3
16 MD4199-9
17 C6120-6
18 622
19 T6121-4
20 623
21 MD4191-3
22 LM6132-6
23 MD4191-9
24 122
25 M4119-8
26 E6117-3
27 623
28 B4193-6
29 M4112-9
30 A4130-3
31 622
32 M4112-9
33 623
34 B4140-9
35 Q6128-5
36 A4130-3
37 320
38 Q6128-6
39 B4193-9
40 S6122-5
41 A4139-6
42 A4130-3
43 310
44 R4211-8
45 622
46 MD4191-9
47 622
48 M4110-9
49 R4211-3
50 622
51 S6122-6
52 629
53 A4130-3
54 622
55 MD4191-6
56 A4130-3
57 622
58 M4110-1
59 C6120-5
60 C6120-9
61 MD4199-3
62 B6116-2
63 M4110-9
64 A4130-3
65 MD4191-6
66 MD4191-9
67 A4130-3
68 R4211-9
69 A4130-3
70 622
71 B4193-9
72 R4211-6

1 0.5 0 1 Miles