Baraga Forest Management Unit
Compartment Review Presentation
Compartment #33 Entry Year: 2012
Compartment Acreage: 1,456 County: Houghton

Revision Date: 7/14/2010

Stand Examiner: Brad S. Carlson

Legal Description: T53N, R34W, Sections 7, 8, 17 and 18

RMU (if applicable):

Management Goals: To maintain a healthy sustainable forest with special consideration to wildlife and fisheries habitat.

Soil and Topography: The terrain is rolling in the southeast and increasingly hilly to the north and west. Western and northern portions are steep hills with deep gullies. Soils are Kalkaska-Waiska sands, Keweenaw- Kalkaska complex, Munising-Alcoma-Liminga complex and Kalkaska-Halfaday sands.

Ownership Patterns, Development, and Land Use in and Around the Compartment: This compartment adjoins state land to the south of section 18. Otherwise, this compartment is surrounded by private industrial lands managed for timber and a few small private parcels used for recreational purposes. The State owns a 1/5 undivided interest in the S1/2 of the SE1/4 of Section 17 which as if 2009 was in the process of a land transaction with would give the state sole ownership.

Unique, Natural Features: None.

Archeological, Historical, and Cultural Features: None.

Special Management Designations or Considerations: Stands of high quality northern hardwoods sawtimber located on steep terrain with erodible soils draining into a high quality trout stream make good candidates for SCA designations for potential old growth.

Watershed and Fisheries Considerations: There are many tributaries to the Otter River watershed in this area.

Wildlife Habitat Considerations: This compartment provides valuable wildlife habitat to deer, bear, furbearers, woodland raptors and neo tropical migrant song birds. Silvicultural practices which promote improvement of within stand structural and species composition of hardwood associations through promotion of conifer species such as eastern hemlock should be emphasized here. Maintenance of wildlife movement corridors particularly along riparian influence zones is a wildlife emphasis. Along with Maintenance of aspen acreage within this compartment for early forest wildlife species

Mineral Resource and Development Concerns and/or Restrictions: Surface sediments consist of lacustrine sand and gravel and an end moraine of fine-textured glacial till. The Glacial Drift thickness varies between 50 and 100 feet. The Precambrian Jacobsville Sandstone subcrops below the glacial drift. There is not a current economic use for the Jacobsville, but it was used as a building stone in the past. The closest gravel pit is three miles to the southeast and potential appears to be limited. Old abandoned copper mines are located to the north (Globe and Champion). This area has not been leased before. There is no economic oil and gas production in the UP.

Vehicle Access: There are opportunities to access this compartment from Torro Road, Valley Road and Old Road, unfortunately all of these roads are gated on private land.

Survey Needs: None.

Recreational Facilities and Opportunities: The hunting opportunities in this compartment are excellent for big and small game hunting alike. However, due to the lack of vehicular access for the public, these opportunities are not readily available.

Fire Protection: This area is not known to be fire prove

Additional Compartment Information:

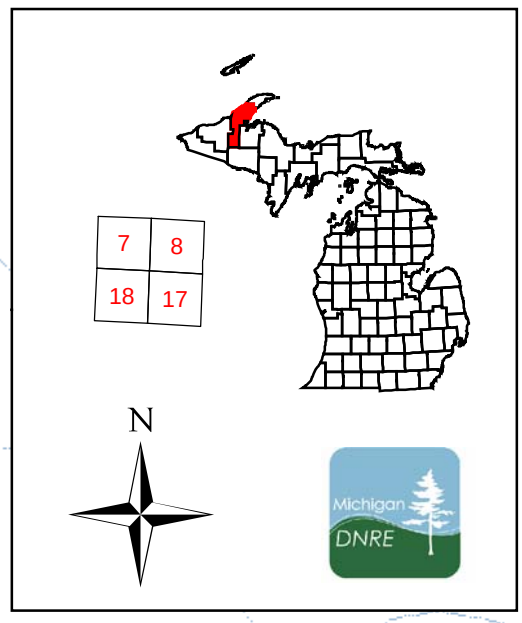
- **The following 5 reports from the Operations Inventory System (OIPC) are attached:**
  - **Cover Type by Age Class**
  - **Cover Type by Management Objective**
  - **Compartment Volume Summary**
  - **Proposed Treatments – No Limiting Factors**
  - **Proposed Treatments – With Limiting Factors**

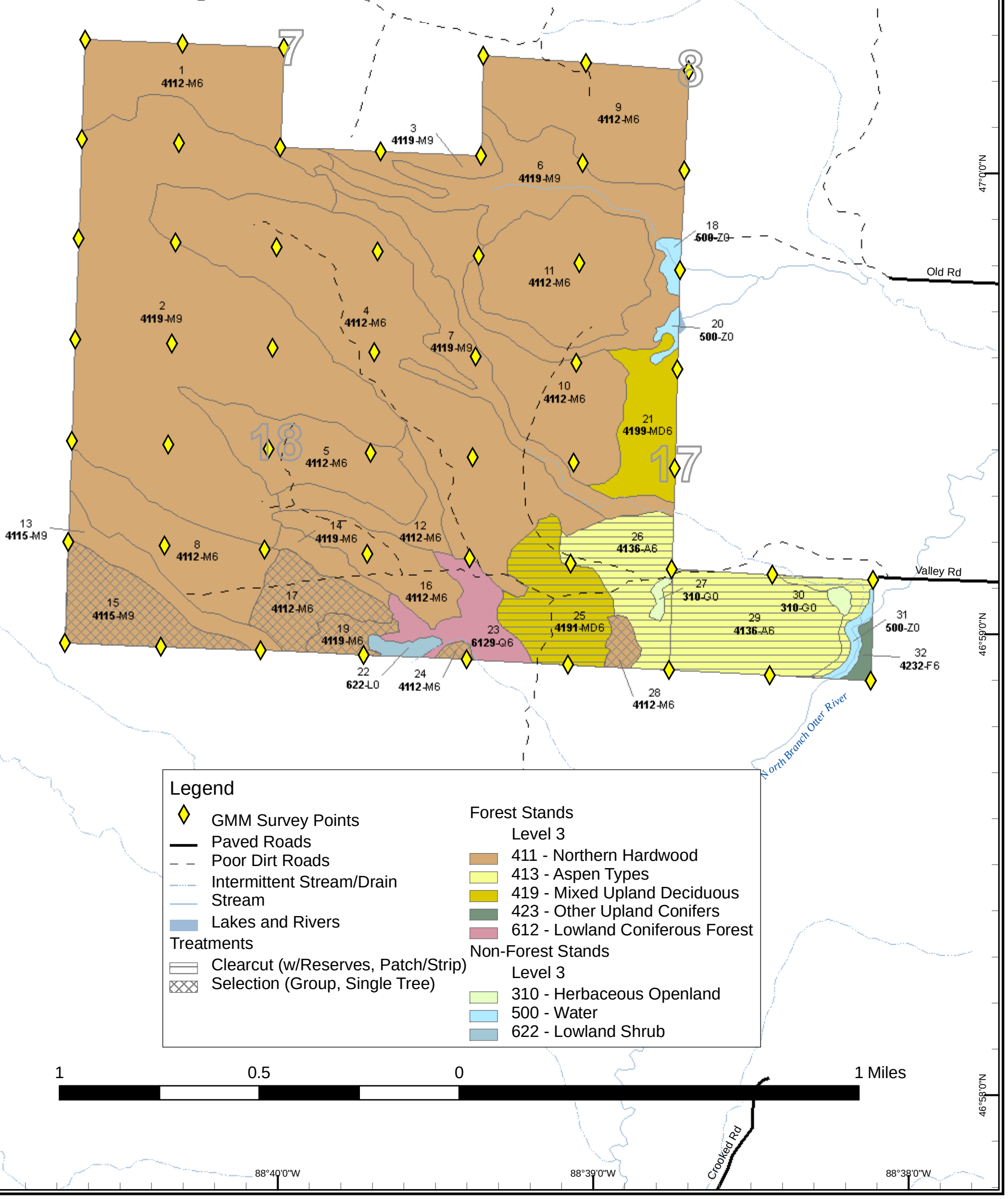
- **The following information is displayed, where pertinent, on the attached compartment maps:**
  - **Base feature information, stand numbers, cover types**
  - **Proposed treatments**
  - **Proposed road access system**
  - **Suggested potential old growth**

Cover Type & Treatment Map

Compartment 33
T53N, R34W, Sec. 7,8,17,18
County: Houghton
Unit: Baraga
YOE: 2012
Acres: 1,456 GIS Calculated
Stand Examiner: Brad Carlson
Map Revised: 4/02/2010
Map Phase: Pre-Review

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





Legend

- GMM Survey Points
- Paved Roads
- Poor Dirt Roads
- Intermittent Stream/Drain
- Stream
- Lakes and Rivers

Treatments
- Clearcut (w/Reserves, Patch/Strip)
- Selection (Group, Single Tree)

Forest Stands
Level 3
- 411 - Northern Hardwood
- 413 - Aspen Types
- 419 - Mixed Upland Deciduous
- 423 - Other Upland Conifers
- 612 - Lowland Coniferous Forest

Non-Forest Stands
Level 3
- 310 - Herbaceous Openland
- 500 - Water
- 622 - Lowland Shrub

1 0.5 0 1 Miles

Stand Boundary Map

Compartment 33
T53N, R34W, Sec. 7,8,17,18
County: Houghton
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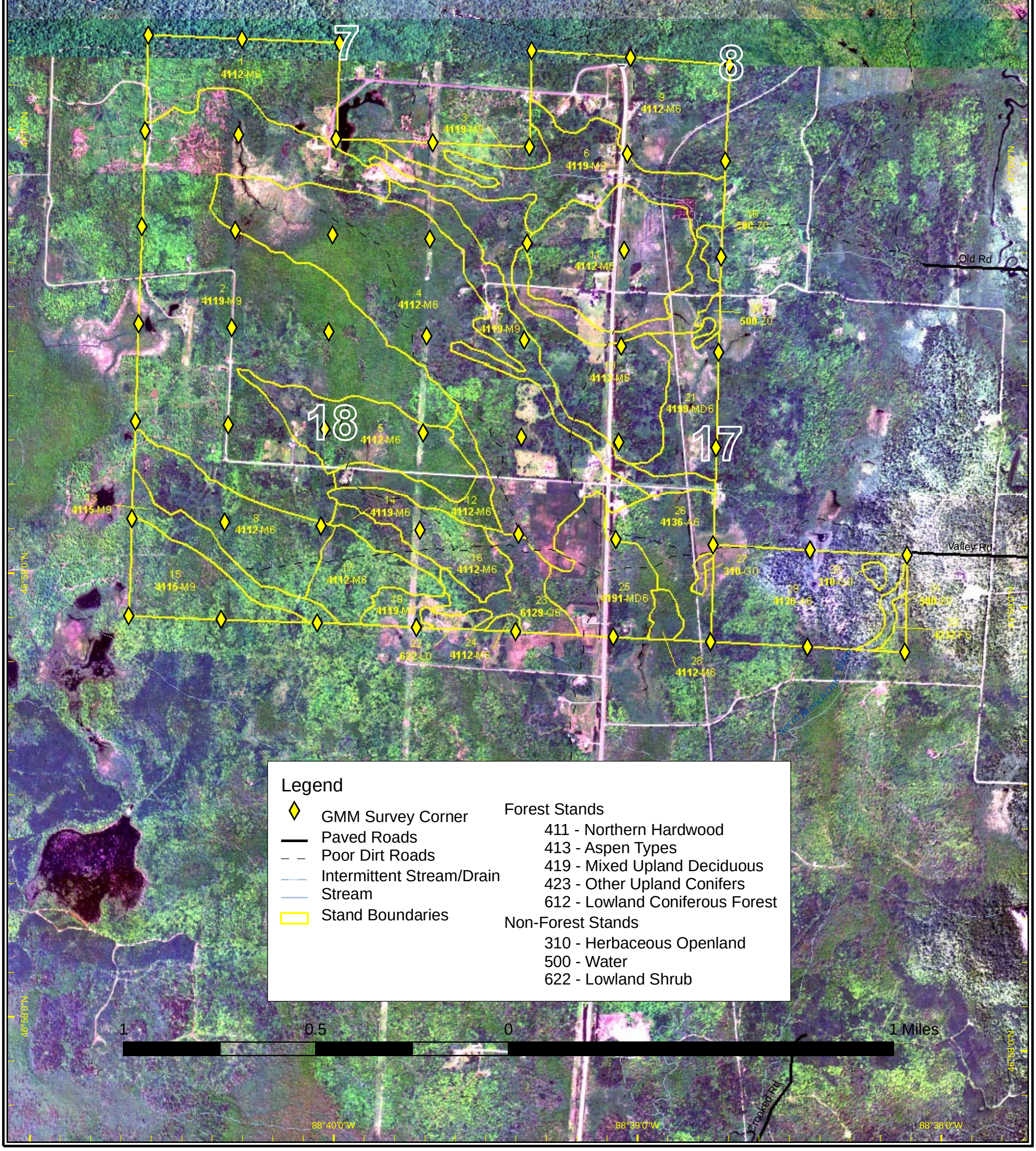

Legend

- GMM Survey Corner
- Paved Roads
- Poor Dirt Roads
- Intermittent Stream/Drain
- Stream
- Stand Boundaries

Forest Stands
- 411 - Northern Hardwood
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Non-Forest Stands
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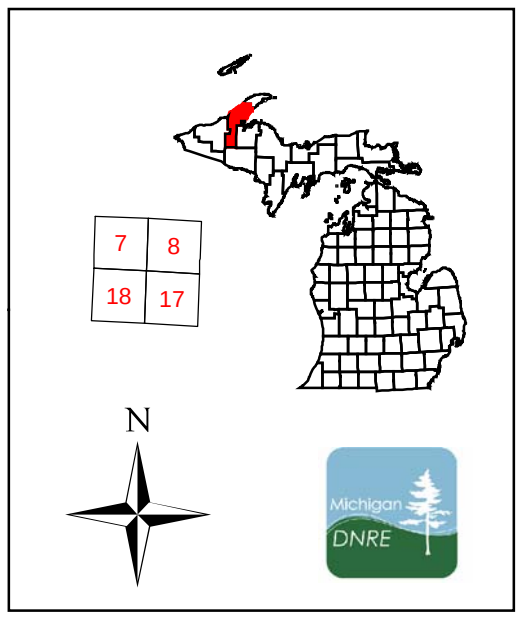
1 0.5 0 1 Miles

Dedicated & Proposed Special Conservation Area Map

Compartment 33
T53N, R34W, Sec. 7,8,17,18
County: Houghton
Unit: Baraga
YOE: 2012
Acres: 1,456 GIS Calculated
Stand Examiner: Brad Carlson
Map Revised: 4/02/2010
Map Phase: Pre-Review

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



7
1 **4112**-M6
3 **4119**-M9
9 **4112**-M6
6 **4119**-M9
18 **500**-Z0
11 **4112**-M6
2 **4119**-M9
4 **4112**-M6
7 **4119**-M9
20 **500**-Z0
10 **4112**-M6
21 **4199**-MD6
8
18
5 **4112**-M6
17
13 **4115**-M9
14 **4119**-M6
12 **4112**-M6
26 **4136**-A6
8 **4112**-M6
16 **4112**-M6
27 **310**-G0
30 **310**-G0
15 **4115**-M9
17 **4112**-M6
25 **4191**-MD6
29 **4136**-A6
31 **500**-Z0
19 **4119**-M6
23 **6129**-Q6
32 **4232**-F6
22 **622**-L0
24 **4112**-M6
28 **4112**-M6

Legend
- GMM Survey Corner
- Stand Boundaries

Proposed Special Conservation Areas
- SCA - Special Conservation Area

Dedicated Special Conservation Areas
- Cold Water Streams

1 0.5 0 1 Miles

88°41'0"W 88°40'0"W 88°39'0"W 88°38'0"W
47°1'0"N 47°0'0"N 46°59'0"N 46°58'0"N

Table 1 – Total Acres by Cover Type and Age Class

Baraga Mgt. Unit *(Level 3 Cover Type)* **Compartment 033 Year of Entry 2012**

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	0	0	0	0	0	0	0	0	0	0	0	0	0	111	**111**
Herbaceous Openland	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**4**
Lowland Coniferous Forest	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26	**26**
Lowland Shrub	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**4**
Mixed Upland Deciduous	0	0	0	0	0	0	0	0	0	0	0	0	0	0	79	**79**
Northern Hardwood	0	0	0	0	0	0	6	29	143	0	0	0	0	0	1040	**1217**
Other Upland Conifers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	**3**
Water	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**11**
Total	**19**	**0**	**0**	**0**	**0**	**0**	**6**	**29**	**143**	**0**	**0**	**0**	**0**	**0**	**1259**	**1456**

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Table 2 – Proposed Treatment Summaries

Baraga Mgt. Unit
Year of Entry 2012

Compartment 033
Total Compartment Acres: 1456

Acres by Treatment Type

Commercial Harvest - 240	Site Prep - 0	Tree Planting - 0	Prescribed Burn - 0	Other - 0
Habitat Cut - 0	Opening Maintenance - 0	Tree Seeding - 0	Pesticide - 0	

Cover Type by Harvest Method

	Clearcut	Selection	Seed Tree	Shelterwood	Thinning	Other - Specify	Total Acres
Aspen	111	0	0	0	0	0	**111**
Mixed Upland Deciduous	45	0	0	0	0	0	**45**
Northern Hardwood	0	84	0	0	0	0	**84**
Total	**156**	**84**	**0**	**0**	**0**	**0**	**240**

Stand	Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective
17	11033017-Cut	29.0	4112 - Maple, Beech, Cherry Association	High Density Pole	64	Harvest	Single Tree Selection	Maple, Beech, Cherry Association

Prescription Specs: Mark to 70-90 sq ba. Favor oak, white pine, and hemlock where present. Refer to the "Complete Marker" for further marking guidelines.

Other Comments:

Next Steps: underplant after harvest completion with Hemlock or/and Pine.

Stand	Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective
19	11033019-Cut	9.8	4119 - Mixed Northern Hardwoods	High Density Pole	76	Harvest	Single Tree Selection	Mixed Northern Hardwoods

Prescription Specs: Mark to 70-90 sq ba. Favor oak, white pine, and hemlock where present. Refer to the "Complete Marker" for further marking guidelines.

Other Comments:

Next Steps: underplant after harvest completion with Hemlock or/and Pine.

Stand	Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective
24	11033024-Cut	2.0	4112 - Maple, Beech, Cherry Association	High Density Pole	89	Harvest	Single Tree Selection	Maple, Beech, Cherry Association

Prescription Specs: Mark to 70-90 sq ba. Favor oak, white pine, and hemlock where present. Refer to the "Complete Marker" for further marking guidelines.

Other Comments: stand is to be harvested with Comp 34 to the south with is a YOE 2018 compartment.

Next Steps: underplant after harvest completion with Hemlock or/and Pine.

Stand	Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective
25	11033025-Cut	44.8	4191 - Mixed Upland Deciduous with Conifer	High Density Pole	67	Harvest	Clearcut with Reserves	Mixed Upland Deciduous with Conifer

Prescription Specs: Harvest all species except White Pine, Hemlock, Cedar and Red Oak.

Other Comments:

Next Steps:

Stand	Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective
26	11033026-Cut	39.1	4136 - Aspen, Mixed Conifer	High Density Pole	68	Harvest	Clearcut with Reserves	Aspen, Mixed Conifer

Prescription Specs: Harvest all species except White Pine and Hemlock. Cedar and Red Oak should also be reserved if they are present.

Other Comments:

Next Steps:

Stand	Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective
28	11033028-Cut	5.6	4112 - Maple, Beech, Cherry Association	High Density Pole	56	Harvest	Single Tree Selection	Maple, Beech, Cherry Association

Prescription Specs: Mark to 70-90 sq ba. Favor oak, white pine, and hemlock where present. Refer to the "Complete Marker" for further marking guidelines.

Other Comments:

Next Steps: underplant after harvest completion with Hemlock or/and Pine.

Total Treatment Acreage Proposed: **130.3**

Table 4 -- Treatments Prescribed with a Limiting Factor

Stand	Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective
15	11033015-Cut	38.0	4115 - Y.Birch, Hemlock NH	High Density Log	73	Harvest	Single Tree Selection	Y.Birch, Hemlock NH

Prescription Specs: Mark to 70-90 sq ba. Favor oak, white pine, and hemlock where present. Refer to the "Complete Marker" for further marking guidelines.

Other Comment: Currently under contract, sale #11-007-08-01

Next Steps:

Limiting Factor and No Treatment Reason: 1F: Other dept or div proc/practices
Currently under contract, Timbersale #11-007-08-01

Stand	Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective
29	11033029-Cut	63.8	4136 - Aspen, Mixed Conifer	High Density Pole	68	Harvest	Clearcut with Reserves	Aspen, Mixed Conifer

Prescription Specs: Harvest all species except White Pine and Hemlock. Cedar and Red Oak should also be reserved if they are present.

Other Comment: Buffer Otter River to the top of the imperable slope.

Next Steps:

Limiting Factor and No Treatment Reason: 1F: Other dept or div proc/practices
When the parcel becomes 100% state the prescription should be implemented.

Stand	Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective
29	11033029-Cut_small	7.8	4136 - Aspen, Mixed Conifer	High Density Pole	68	Harvest	Clearcut with Reserves	Aspen, Mixed Conifer

Prescription Specs: Harvest all species except White Pine and Hemlock. Cedar and Red Oak should also be reserved if they are present.

Other Comment: Buffer Otter River to the top of the imperable slope.

Next Steps:

Limiting Factor and No Treatment Reason: 1F: Other dept or div proc/practices
When the parcel becomes 100% state the prescription should be implemented.

Total Treatment Acreage Proposed: **109.7**

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
1	4112 - Maple, Beech, Cherry Association	High Density Pole	65.5	76	81-110	part of "Old Road Hardwoods" a 2003 sale.
2	4119 - Mixed Northern Hardwoods	High Density Log	303.5	Uneven Age	171-200	Code as SCA "Unique Site". Very extreme topography (deep ravines/razorback ridges) that contain a hardwood stand that was harvested probably just once in the early part of the 20th century and will never be harvested again. It was previously coded as potential old growth.
3	4119 - Mixed Northern Hardwoods	High Density Log	16.0	Uneven Age	141-170	stand is now in a possible land trade, Access to this stand is across private and would involve a large culvert or temporary bridge. There is possible access on state from the west and if this stand is not traded away by next rotation it should be harvested then with stand to the west (Old Road Hdwds).
4	4112 - Maple, Beech, Cherry Association	High Density Pole	193.8	Uneven Age		Cut last rotation with "Beaver Dam Hdwds" 11-012-03-01
5	4112 - Maple, Beech, Cherry Association	High Density Pole	52.3	Uneven Age	51-80	cut last rotation with "Sling Blade Hdwds" 11-014-03-01.
6	4119 - Mixed Northern Hardwoods	High Density Log	86.9	Uneven Age	111-140	Ridge/Swail topography has steep slopes to creek bed. not cuttable. Topography is less severe south of preinventory stand 11.
7	4119 - Mixed Northern Hardwoods	High Density Log	44.4	Uneven Age	111-140	Ridge/Swail topography has steep slopes to creek bed. not cuttable.
8	4112 - Maple, Beech, Cherry Association	High Density Pole	54.0	Uneven Age	81-110	cut last rotation with "Sling Blade Hdwds" 11-014-03-01
9	4112 - Maple, Beech, Cherry Association	High Density Pole	77.1	76	81-110	cut last rotation with "Old Road Hdwds"
10	4112 - Maple, Beech, Cherry Association	High Density Pole	77.0	Uneven Age		cut last rotation with "Otter Tail Hdwds" 11-013-03-01. Sale could have been extended to "Old Road Hdwds" to the NW with enough room for a road to be built in need be. The very north part of this stand in involve in a possible land trade.
11	4112 - Maple, Beech, Cherry Association	High Density Pole	75.7	Uneven Age	81-110	cut last rotation with "Otter Tail Hdwds" 11-013-03-01.
12	4112 - Maple, Beech, Cherry Association	High Density Pole	22.5	Uneven Age	81-110	Riparian Cooridor
13	4115 - Y.Birch, Hemlock NH	High Density Log	20.6	Uneven Age	111-140	Riparian Cooridor, not cuttable due to topography.
14	4119 - Mixed Northern Hardwoods	High Density Pole	10.3	Uneven Age	51-80	Riparian Cooridor.
15	4115 - Y.Birch, Hemlock NH	High Density Log	38.0	Uneven Age	111-140	Stand is Currently under contract to Park Falls Hardwoods as part of "Laski North Hardwoods" 11-007-08-01

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
16	4112 - Maple, Beech, Cherry Association	High Density Pole	33.3	Uneven Age	81-110	cut last rotation as part of "Sling Blade Hardwoods" 11-014-03-01.
17	4112 - Maple, Beech, Cherry Association	High Density Pole	29.0	64	111-140	cut with preinventoy stand 19.
19	4119 - Mixed Northern Hardwoods	High Density Pole	9.8	Uneven Age	81-110	Harvestable acerage may be reduced due to intermittent drainages that may exist. cut with stand preinventory 17.
21	4199 - Other Mixed Upland Deciduous	High Density Pole	34.3	Uneven Age	51-80	Some nice patches but still overall small diameter. stand could have been old pasture land.
23	6129 - Mixed Coniferous Lowland Forest	High Density Pole	26.1	Uneven Age	111-140	Wet drainages throughout stand.
24	4112 - Maple, Beech, Cherry Association	High Density Pole	2.0	Uneven Age	81-110	Harvest with stand to the south in comp 34 next rotation.
25	4191 - Mixed Upland Deciduous with Conifer	High Density Pole	44.8	Uneven Age	51-80	Harvest all species except Red Oak, White Pine, Hemlock and Cedar.
26	4136 - Aspen, Mixed Conifer	High Density Pole	39.1	Uneven Age	51-80	Harvest all species except White Pine and Hemlock. If there are any Red Oak or Cedar trees found while preparing the sale they should also be reserved from cutting.
28	4112 - Maple, Beech, Cherry Association	High Density Pole	5.6	56	111-140	
29	4136 - Aspen, Mixed Conifer	High Density Pole	71.7	Uneven Age	51-80	1/5 individed interest parcel that is current involved in a possilbe land transaction that will make it 100% State of Michigan owned. If aquired stand should be held for one more rotation to stagger the age class in the area. Looks to be old pasture land.
32	42320 - Upland Spruce	High Density Pole	3.5	Uneven Age	51-80	small stand situated on a sloped that is adjacent to the Otter River, save as a riparian cooridor.

Stand	Cover Type	Acres	Gen Cmts:
18	50 - Water	4.1	Beaver Flooding
20	50 - Water	2.7	Beaver Flooding
22	6229 - Mixed lowland shrub	4.4	mix of beaver flooding and tag alder
27	3102 - Grass	1.9	Looks to be an old Farm feild and possible homestead, edges are encroaching and field is close to being forested. All trees in this opening will be harvested when adjacent stand is cut, except the white pine.
30	3102 - Grass	1.8	Stand is close to being forested, Appears to be the site of an old homestead. Further investigation will be needed in the summer month to determing this. Stand in contained in a 1/5 undivided interest parcel that in currently involved in a possible land trade that would make it 100% State of Michigan owned.
31	50 - Water	4.2	Otter River.

7 – 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 Type	SCA Name	Acres	Comments
2	**Unique Site - SCA**	11033002	303.5	Code as SCA "Unique Site". Very extreme topography (deep ravines/razorback ridges) that contain a hardwood stand that was harvested probably just once in the early part of the 20th century and will never be harvested again. It was previously coded as potential old growth.

8 – 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	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	Potential Old Growth Areas	This category contains stands were identified for a broad range of reasons and were coded in the OI database as stand condition 8 as potential old growth (POG). Approximately 310,000 acres have been identified through the Operations Inventory (OI)/Compartment Review process. For stands in Year of Entry 2008 and forward, potential old growth is managed for the identified objective until it is: 1) vetted through the Biodiversity Conservation Planning Process (BCPP) and given a specific designation and objective (as an ERA, HCVA, or other type of SCA) and is released from the potential old growth designation; or 2) it is released from the potential old growth designation via the Compartment Review process.