Compartment Review Presentation

Baraga Forest Management Unit

Compartment 11033
Entry Year 2022
Acreage: 1,416
County Houghton
Management Area: Central Houghton

Revision Date: 2020-04-14

Stand Examiner: Fred Hansen

Legal Description:

T53N, R34W, Sections 7, 8, 17, 18 and 19

Identified Planning 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 saw timber 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. The Stand examiners recognized the higher quality values of the streams here for the Otter River and Sante Creek, as these are headwater cold-water trout streams. I would recommend 100 ft. buffers on the streams here, with an additional 5-ft buffer for every 1% of slope.

Wildlife Habitat Considerations:

This compartment provides valuable wildlife habitat to deer, bear, fur-bearers, 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 drifcarry out timber act. 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:

Some survey is needed to carry out timber harvest activity.

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 prone.

Additional Compartment Information:

During the winter of 2019-2020 There was two heavy snow events that caused much of the saplings to bend over. Evidence of EAB was detected during inventory in 2020.

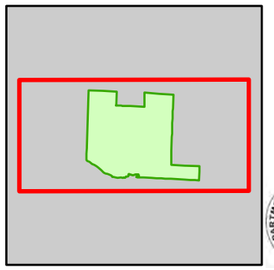
The following reports from the Inventory are attached:

Total Acres by Cover Type and Age Class
Cover Type by Harvest Method
Proposed Treatments – No Limiting Factors
Proposed Treatments – With Limiting Factors
Stand Details (Forested and Nonforested)
Dedicated and Proposed Special Conservation Areas
Site Condition Details

The following information is displayed, where pertinent, on the attached compartment maps:

Base feature information, stand boundaries, cover types, and numbers
Proposed treatments
Site condition boundaries
Details on the road access system

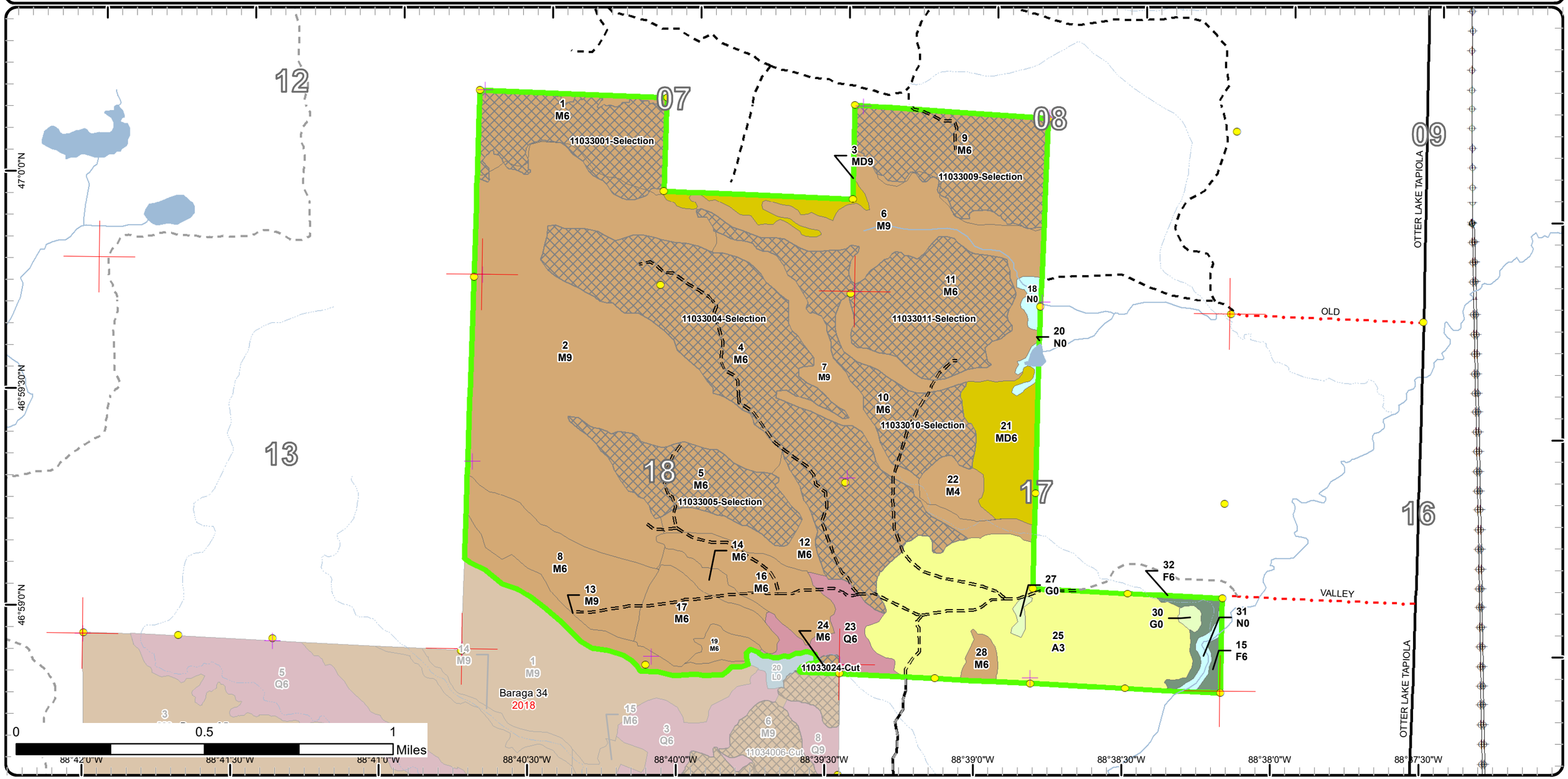
Cover Type & Treatments Map



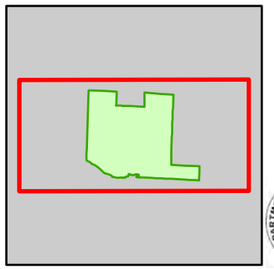
Compartment: 33
T53N, R34W, Sec: 7, 8, 17, 18
County: Houghton
Unit: Baraga
Mgmt Area: Central Houghton
YOE: 2022
Acres: 1,416 GIS Calculated
Examiner: Fred Hansen
Map Revised: 10/2/2020
Map Phase: Post Review

N

- Miris Corners
- Remonumented Section Corners
- Survey Grade Corners
- Counties
- DNR - Forest Access Route
- Federal / State / County - Paved Road
- Federal / State - Dirt / Gravel Road
- County - Gravel Road
- Private - Dirt / Gravel Road
- Intermittent Stream
- Lake/Pond
- Perennial River
- Lakes and Rivers
- Powerline
- Compartment Boundary
- Selection (Group, Single Tree)
- 411 - Northern Hardwood
- 413 - Aspen
- 419 - Mixed Upland Deciduous
- 423 - Other Upland Conifers
- 612 - Lowland Coniferous Forest
- 310 - Herbaceous Openland
- 623 - Emergent Wetland



Stand Boundary Map



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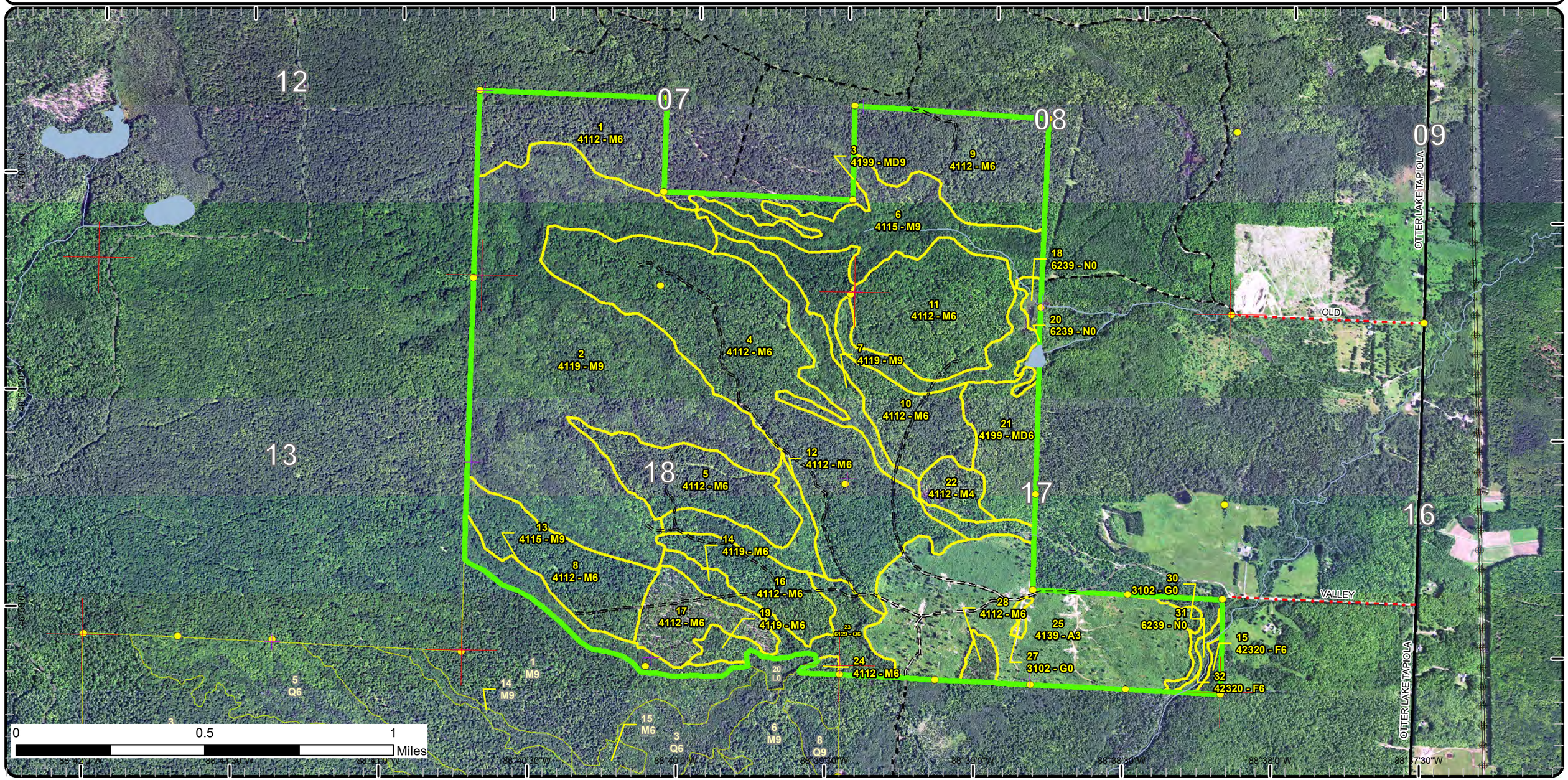
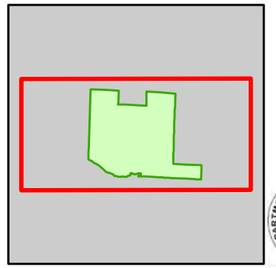


Special Conservation Areas



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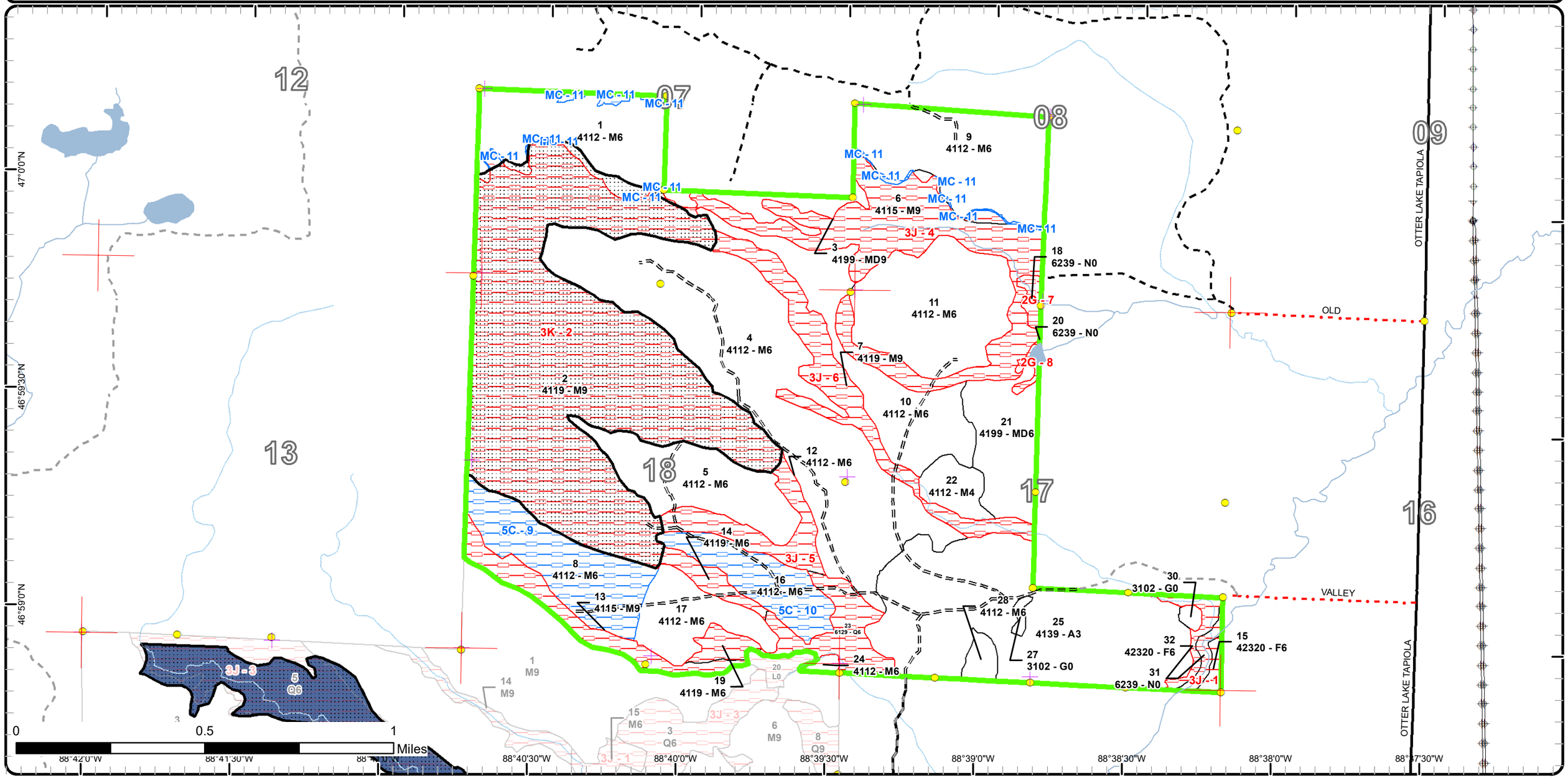
- Lake/Pond
- Perennial River
- Lakes and Rivers
- Powerline
- Compartment Boundary
- Available w/ Constraints
- Unavailable
- 5C: Delay treatment for age/size class diversity or exceptional site quality
- 2G: Too wet (sensitive soils, does not include access issues)
- 3J: Water quality / BMPs (stream, river, or lake)
- 3K: Rare or unique landforms
- Stand Boundaries
- SCA
- Cold Water Streams
- Spring or Seep



Report 1 – Total Acres by Cover Type and Age Class

Baraga Mgt. Unit **Compartment 33** **Year of Entry 2022**

Fred Hansen : Examiner

Age Class

	Non-Forest	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100-109	110-119	120-129	130-139	140-149	150+	Uneven-Aged	Total
Aspen	0	150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**150**
Herbaceous Openland	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**4**
Lowland Conifers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	**25**
Marsh	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**11**
Mixed Upland Deciduous	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	53	**53**
Northern Hardwood	0	0	0	0	0	0	0	0	0	139	0	0	0	0	0	0	0	1023	**1162**
Upland Spruce/Fir	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	**11**
Total	**15**	**150**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**139**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1112**	**1416**

Report 2 – Treatment Summary

Baraga Mgt. Unit

Year of Entry: 2022

Compartment 33

Total Compartment Acres: 1,416

Acres of Harvest

Commercial Harvest - 518

Harvests with Site Condition - 0

Next Step Harvest - 0

Habitat Cut - 0

Cover Type by Harvest Method

		Clearcut	Selection	Patch Clearcut	Seed Tree	Shelterwood	Thinning	Overstory Removal	Salvage	Other	Total Acres
Northern Hardwood		0	519	0	0	0	0	0	0	0	**519**
	Total	**0**	**519**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**519**

Proposed and Next Step Treatments by Method

		Harvest	Site Prep	Planting	Seeding	Burning	Pesticide	Monitoring	Other	Non-Forest Mgt.	Total Acres
Current		519	0	0	0	0	0	0	0	0	**519**
Next Step		0	0	0	0	0	0	516	0	0	**516**
	Total	**519**	**0**	**0**	**0**	**0**	**0**	**516**	**0**	**0**	**1035**

Approved Treatments:

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
1	11033001-Selection	61.8	4112 - Maple, Beech, Cherry Association	Poletimber Well	86	111-140	Harvest	Single Tree Selection	411 - Northern Hardwood	Uneven-Aged	No

Prescription Specs: Selectively thin hardwoods to 70-90 square feet of basal area. Favor oak, hemlock, white pine and cedar where/if present. Oak should be released on 3 sides to an average BA of 60 sq ft. Follow all guidelines set forth in "The Complete Marker".
If areas that are heavy to: oak, aspen, die-back, ash, or hemlock, seed tree harvest (1-5 acres) with a residual 10-30 sq ft BA of the featured species.

Next Step Treatments: Monitoring, Natural Regen (Re-Inventory)

Acceptable Regen: Any combination of the original stand's over story species prior to harvest.

Other Comment: Retention for this stand will be greater than 3% and will consist of tree species of the dominant cover type and reserve tree species

Site Condition

Proposed Start Date: 10/1 /2019

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
4	11033004-Selection	191.7	4112 - Maple, Beech, Cherry Association	Poletimber Well	77	111-140	Harvest	Single Tree Selection	411 - Northern Hardwood	Uneven-Aged	No

Prescription Specs: Selectively thin hardwoods to 70-90 square feet of basal area. Favor oak, hemlock, white pine and cedar where/if present. Oak should be released on 3 sides to an average BA of 60 sq ft. Follow all guidelines set forth in "The Complete Marker".
If areas that are heavy to: oak, aspen, die-back, ash, or hemlock, seed tree harvest (1-5 acres) with a residual 10-30 sq ft BA of the featured species.

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Site Condition

Proposed Start Date: 10/1 /2021

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
5	11033005-Selection	52.3	4112 - Maple, Beech, Cherry Association	Poletimber Well	84	111-140	Harvest	Single Tree Selection	411 - Northern Hardwood	Uneven-Aged	No

Prescription Specs: Selectively thin hardwoods to 70-90 square feet of basal area. Favor oak, hemlock, white pine and cedar where/if present. Oak should be released on 3 sides to an average BA of 60 sq ft. Follow all guidelines set forth in "The Complete Marker".
If areas that are heavy to: oak, aspen, die-back, ash, or hemlock, seed tree harvest (1-5 acres) with a residual 10-30 sq ft BA of the featured species.

Next Step Treatments: Monitoring, Natural Regen (Re-Inventory)

Acceptable Regen: Any combination of the original stand's over story species prior to harvest.

Other Comment: Retention for this stand will be greater than 3% and will consist of tree species of the dominant cover type and reserve tree species.

Site Condition

Proposed Start Date: 10/1 /2021

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
9	11033009-Selection	74.4	4112 - Maple, Beech, Cherry Association	Poletimber Well	86	111-140	Harvest	Single Tree Selection	411 - Northern Hardwood	Uneven-Aged	No

Prescription Specs: Selectively thin hardwoods to 70-90 square feet of basal area. Favor oak, hemlock, white pine and cedar where/if present. Oak should be released on 3 sides to an average BA of 60 sq ft. Follow all guidelines set forth in “The Complete Marker”.
If areas that are heavy to: oak, aspen, die-back, ash, or hemlock, seed tree harvest (1-5 acres) with a residual 10-30 sq ft BA of the featured species.

Next Step Treatments: Monitoring, Natural Regen (Re-Inventory)

Acceptable Regen: Any combination of the original stand’s over story species prior to harvest.

Other Comment: Retention for this stand will be greater than 3% and will consist of tree species of the dominant cover type and reserve tree species

Site Condition

Proposed Start Date: 10/1 /2019

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
10	11033010-Selection	60.4	4112 - Maple, Beech, Cherry Association	Poletimber Well	74	111-140	Harvest	Single Tree Selection	411 - Northern Hardwood	Uneven-Aged	No

Prescription Specs: Selectively thin hardwoods to 70-90 square feet of basal area. Favor oak, hemlock, white pine and cedar where/if present. Oak should be released on 3 sides to an average BA of 60 sq ft. Follow all guidelines set forth in “The Complete Marker”.
If areas that are heavy to: oak, aspen, die-back, ash, or hemlock, seed tree harvest (1-5 acres) with a residual 10-30 sq ft BA of the featured species.

Next Step Treatments: Monitoring, Natural Regen (Re-Inventory)

Acceptable Regen: Any combination of the original stand’s over story species prior to harvest.

Other Comment: Retention for this stand will be greater than 3% and will consist of tree species of the dominant cover type.

Site Condition

Proposed Start Date: 10/1 /2021

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
11	11033011-Selection	75.7	4112 - Maple, Beech, Cherry Association	Poletimber Well	91	111-140	Harvest	Single Tree Selection	411 - Northern Hardwood	Uneven-Aged	No

Prescription Specs: Selectively thin hardwoods to 70-90 square feet of basal area. Favor oak, hemlock, white pine and cedar where/if present. Oak should be released on 3 sides to an average BA of 60 sq ft. Follow all guidelines set forth in “The Complete Marker”.
If areas that are heavy to: oak, aspen, die-back, ash, or hemlock, seed tree harvest (1-5 acres) with a residual 10-30 sq ft BA of the featured species.

Next Step Treatments: Monitoring, Natural Regen (Re-Inventory)

Acceptable Regen: Any combination of the original stand’s over story species prior to harvest.

Other Comment: Retention for this stand will be greater than 3% and will consist of tree species of the dominant cover type.

Site Condition

Proposed Start Date: 10/1 /2021

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
24	11033024-Cut	2.2	4112 - Maple, Beech, Cherry Association	Poletimber Well	99	81-110	Harvest	Single Tree Selection	4112 - Maple, Beech, Cherry Association	Uneven-Aged	No

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.

Next Step Treatments:

Acceptable Regen:

Other Comment: stand is to be harvested with Comp 34 to the south with is a YOE 2018 compartment. Old next step comments: underplant after harvest completion with Hemlock or/and Pine.

Site Condition

Proposed Start Date: 10/1 /2017

Total Treatment Acreage Proposed: **518.5**

Report 4 – Site Conditions

Baraga Mgt. Unit

Fred Hansen : Examiner

Compartment: 33

Year of Entry: 2022

Availability for Management

Total Acres	Acres Available	*Acres Avail With Condition*	Acres Not Available		Dominant Site Conditions *5C*	MC	2G	3J	3K
150	150	***0***	0	**Aspen**					
4	4	***0***	0	**Herbaceous Openland**					
25	0	***0***	25	**Lowland Conifers**				25	
11	0	***0***	11	**Marsh**			7	4	
53	53	***0***	0	**Mixed Upland Deciduous**		0			0
1162	573	***91***	498	**Northern Hardwood**	***86***	5		198	299
11	0	***0***	11	**Upland Spruce/Fir**				11	
1,416	780	***91***	544	Total Forested Acres	***86***	5	7	238	299
	55%	***6%***	38%	Relative Percent					

**Due to limitations in the current Site Conditions Analysis tool, all nonforested acres are considered available. Future development will enable analysis of nonforested types.*

Site No.	Dominant Site Cond Availability	Dominant Site Condition	Acres	Other Site Condition	Other Site Condition	Other Site Condition	Other Site Condition
1	**Unavailable**	**3J: Water quality / BMPs (stream, river, or lake)**	15	1C: Other dept or div proc/practices	Unspecified	Unspecified	Unspecified
	Comments: Riparian travel area						
2	**Unavailable**	**3K: Rare or unique landforms**	299	2F: Too steep	2G: Too wet (sensitive soils, does not include access issues)	Unspecified	Unspecified
	Comments: 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	**Available**	**Minor Change in Acreage**	4				
	Comments:						

4	**Unavailable**	**3J: Water quality / BMPs (stream, river, or lake)**	92	2F: Too steep	Unspecified	Unspecified	Unspecified
	Comments:						
5	**Unavailable**	**3J: Water quality / BMPs (stream, river, or lake)**	89	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
6	**Unavailable**	**3J: Water quality / BMPs (stream, river, or lake)**	42	2F: Too steep	2G: Too wet (sensitive soils, does not include access issues)	Unspecified	Unspecified
	Comments:						
7	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	4	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
8	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	3	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
9	**Available**	**5C: Delay treatment for age/size class diversity or exceptional site quality**	53	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						

10	**Available**	**5C: Delay treatment for age/size class diversity or exceptional site quality**	33	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
11	**Available**	**Minor Change in Acreage**	5				
	Comments:						

Report 5 – 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.

SCA Name	SCA Category	Detail Type	Recommendation	Acres
	Type 1 or Type 2 Old Growth	Verified Type 2 Old Growth Area	**SCA**	303

Comments

Riparian area which also exhibits type to old growth characteristics.

Report 6 – EXISTING SPECIAL CONSERVATION AREA DETAILS

* This is a list of SCA's for this compartment along with a 1/4 mile buffer surrounding the compartment. Refer to the Special Conservation Area Map for locations of the below listed Conservation Areas.

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	Type 1 and Type 2 Old Growth	Old-Growth forest (also termed primary forest, ancient forest, virgin forest, or primeval forest) is an area of forest that has few or no signs of human disturbance and that exhibits unique ecological features related to age, composition and associated structure. Old growth forests are of natural origin. They may be dominated by late successional forest species (i.e. sugar maple and American beech), or may be a very old example of a stand dominated by long-lived early- or mid-seral species (i.e. oak, or red pine).

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
1	4112 - Maple, Beech, Cherry Association	Poletimber Well	61.7	86	111-140	N/A	"Old Road Hardwoods" a 2003 sale.

Canopy Species	% Cover	Size Class	DBH	Age
Sugar Maple	65	Pole/Log	10	86
Red Maple	15	Pole/Log	10	
Yellow Birch	3	Pole/Log	10	
Basswood	5	Pole/Log	10	
Red Oak	7	Log	16	
Quaking Aspen	2	Log	12	
Hemlock	3	Log	16	

Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	High	5 - 10 feet	Sapling
Red Maple	Medium	5 - 10 feet	Sapling
Quaking Aspen	Low	10 - 20 feet	Sapling
Ironwood	Low	5 - 10 feet	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
2	4119 - Mixed Northern Hardwoods	Sawtimber Well	304.2	94	171-200	N/A	2010: 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.

Canopy Species	% Cover	Size Class	DBH	Age
Sugar Maple	55	Log	14	94
Red Maple	20	Log	12	
Yellow Birch	3	Pole/Log	10	
Basswood	2	Pole/Log	10	
White Ash	3	Pole/Log	10	
Red Oak	5	Log	18	
Quaking Aspen	5	Log	14	
Hemlock	7	Log	14	

Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	High	Variable	Pole
Yellow Birch	Medium	Variable	Pole
Balsam Fir	Low	Variable	Pole
Hemlock	Low	Variable	Pole
Ironwood	Low	10 - 20 feet	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
3	4199 - Other Mixed Upland Deciduous	Sawtimber Well	14.3	94	51-80	N/A	cut in the summer of 2012.

Canopy Species	% Cover	Size Class	DBH	Age
Sugar Maple	30	Log	16	
Red Maple	20	Log/Pole	12	
Yellow Birch	3	Log/Pole	12	
Basswood	2	Log/Pole	12	
Red Oak	41	Log	18	94
Quaking Aspen	2	Log	14	
Hemlock	2	Log/Pole	10	

Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	High	Variable	Pole
Red Maple	Low	Variable	Pole
Yellow Birch	Low	Variable	Pole
Ironwood	Low	10 - 20 feet	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
4	4112 - Maple, Beech, Cherry Association	Poletimber Well	191.7	77	111-140	N/A	Cut last rotation with "Beaver Dam Hdwds" 11-012-03-01 2010: Heavier to Oak in the north part of the stand.

Canopy Species	% Cover	Size Class	DBH	Age
Sugar Maple	56	Log/Pole	12	77
Red Maple	25	Log/Pole	12	
Yellow Birch	3	Pole/Log	10	
Basswood	6	Pole/Log	10	
Red Oak	8	Log	16	
Hemlock	2	Log/Pole	12	

Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	Full	Variable	Sapling
Red Maple	Medium	10 - 20 feet	Sapling
Yellow Birch	Low	Variable	Pole
Quaking Aspen	Low	10 - 20 feet	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
5	4112 - Maple, Beech, Cherry Association	Poletimber Well	52.3	84	111-140	N/A	cut last rotation with "Sling Blade Hdwds" 11-014-03-01. 2020:BA's are on the low end.

Canopy Species	% Cover	Size Class	DBH	Age
Sugar Maple	60	Log/Pole	12	84
Red Maple	30	Log/Pole	11	
Basswood	5	Log/Pole	12	
Red Oak	5	Log	16	

Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	High	Variable	Pole
Red Maple	Low	10 - 20 feet	Sapling
Quaking Aspen	Low	5 - 10 feet	Sapling
Ironwood	Low	5 - 10 feet	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
6	4115 - Y.Birch, Hemlock NH	Sawtimber Well	91.7	107	111-140	N/A	2010: Ridge/Swail topography has steep slopes to creek bed. not cuttable. Topography is less severe south of pre-inventory stand 11.

Canopy Species	% Cover	Size Class	DBH	Age
Sugar Maple	40	Log/Pole	10	107
Red Maple	20	Pole/Log	9	
Yellow Birch	10	Log/Pole	10	
Basswood	10	Log	12	
Red Oak	10	XLog/Log	18	
Hemlock	10	Log	14	

Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	High	Variable	Pole
Red Maple	Low	Variable	Pole
Yellow Birch	Low	Variable	Pole
Balsam Fir	Medium	Variable	Pole
Hemlock	Low	Variable	Pole
Ironwood	Low	10 - 20 feet	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
7	4119 - Mixed Northern Hardwoods	Sawtimber Well	42.3	107	111-140	N/A	2010: Ridge/Swail topography has steep slopes to creek bed. not cuttable.

Canopy Species	% Cover	Size Class	DBH	Age
Sugar Maple	40	Pole/Log	10	107
Red Maple	20	Pole/Log	9	
Yellow Birch	10	Pole/Log	10	
Basswood	5	Pole/Log	10	
Red Oak	10	Log	18	
Quaking Aspen	10	Log	12	
Hemlock	5	Log	14	

Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	High	Variable	Pole
Red Maple	Low	Variable	Pole
Yellow Birch	Low	Variable	Pole
Balsam Fir	Medium	Variable	Pole
Hemlock	Low	Variable	Pole
Ironwood	Low	10 - 20 feet	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
8	4112 - Maple, Beech, Cherry Association	Poletimber Well	52.8	71	111-140	N/A	cut last rotation with "Sling Blade Hdwds" 11-014-03-01 2020: BA's are on the low end.

Canopy Species	% Cover	Size Class	DBH	Age
Sugar Maple	70	Log/Pole	12	71
Red Maple	25	Log/Pole	11	
Yellow Birch	2	Pole/Log	10	
Red Oak	3	Log	16	

Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	High	Variable	Pole
Red Maple	Medium	10 - 20 feet	Sapling
Balsam Fir	Low	10 - 20 feet	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
9	4112 - Maple, Beech, Cherry Association	Poletimber Well	77.1	86	111-140	N/A	cut last rotation with "Old Road Hdwds"

Canopy Species	% Cover	Size Class	DBH	Age
Sugar Maple	65	Pole/Log	10	86
Red Maple	15	Pole/Log	10	
Yellow Birch	3	Pole/Log	10	
Basswood	5	Pole/Log	10	
Red Oak	7	Log	16	
Quaking Aspen	2	Log	12	
Hemlock	3	Log	16	

Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	High	5 - 10 feet	Sapling
Red Maple	Medium	5 - 10 feet	Sapling
Quaking Aspen	Low	10 - 20 feet	Sapling
Ironwood	Low	5 - 10 feet	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
10	4112 - Maple, Beech, Cherry Association	Poletimber Well	60.4	74	111-140	N/A	2010: 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.

Canopy Species	% Cover	Size Class	DBH	Age
Sugar Maple	58	Pole/Log	10	74
Red Maple	30	Pole/Log	10	
Yellow Birch	5	Pole	8	
Red Oak	3	Log	14	
Paper Birch	2	Pole	8	

Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	High	Variable	Sapling
Red Maple	Medium	5 - 10 feet	Sapling
Red Oak	Low	Variable	Sapling
Quaking Aspen	Low	5 - 10 feet	Sapling
Balsam Fir	Low	Variable	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
11	4112 - Maple, Beech, Cherry Association	Poletimber Well	75.7	91	111-140	N/A	cut last rotation with "Otter Tail Hdwds" 11-013-03-01. 2020: BA's are on the low end.

Canopy Species	% Cover	Size Class	DBH	Age
Sugar Maple	55	Pole	8	91
Red Maple	30	Pole	8	
Yellow Birch	5	Pole	8	
Basswood	5	Pole/Log	10	
Red Oak	5	Log	16	

Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	High	5 - 10 feet	Sapling
Red Maple	Medium	5 - 10 feet	Sapling
Yellow Birch	Low	Variable	Pole
Paper Birch	Low	Variable	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
12	4112 - Maple, Beech, Cherry Association	Poletimber Well	22.5	77	81-110	N/A	Riparian Cooridor

Canopy Species	% Cover	Size Class	DBH	Age
Sugar Maple	10	Pole	8	
Red Maple	70	Pole	7	77
Yellow Birch	3	Pole	6	
Quaking Aspen	3	Log	12	
Balsam Fir	2	Pole	6	
White Spruce	2	Pole/Log	10	
Northern White Cedar	3	Pole/Log	10	
Hemlock	2	Pole/Log	12	
Black Ash	5	Pole	6	

Sub-Canopy Species	Density	Avg. Height	Size
Red Maple	High	Variable	Pole
Yellow Birch	Medium	Variable	Sapling
Balsam Fir	Medium	Variable	Pole
Hemlock	Low	Variable	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
13	4115 - Y.Birch, Hemlock NH	Sawtimber Well	25.1	83	111-140	N/A	Riparian Cooridor, not cuttable due to topography.

Canopy Species	% Cover	Size Class	DBH	Age
Sugar Maple	40	Log	16	83
Red Maple	35	Pole/Log	10	
Yellow Birch	20	Log/Pole	12	
Basswood	3	Log/Pole	10	
Hemlock	2	Log	18	

Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	High	Variable	Sapling
Red Maple	Low	Variable	Sapling
Yellow Birch	Low	Variable	Sapling
Balsam Fir	Low	10 - 20 feet	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
14	4119 - Mixed Northern Hardwoods	Poletimber Well	8.9	59	51-80	N/A	Riparian Cooridor.

Canopy Species	% Cover	Size Class	DBH	Age
Sugar Maple	10	Pole	8	
Red Maple	60	Pole	8	59
Yellow Birch	6	Pole	9	
Paper Birch	2	Pole	10	
Quaking Aspen	4	Pole/Log	11	
White Spruce	10	Pole/Log	12	
Northern White Cedar	2	Pole/Log	11	
Hemlock	2	Pole/Log	12	
Black Ash	4	Pole	6	

Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	Medium	Variable	Sapling
Red Maple	Medium	Variable	Sapling
Yellow Birch	Low	Variable	Sapling
Balsam Fir	High	Variable	Sapling
White Spruce	Low	Variable	Pole

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
15	42320 - Upland Spruce	Poletimber Well	3.5	81	51-80	N/A	2010: small stand situated on a sloped that is adjacent to the Otter River, save as a riparian corridor.

Canopy Species	% Cover	Size Class	DBH	Age
Quaking Aspen	20	Pole/Log	10	
Balsam Fir	20	Pole	8	
White Spruce	60	Log/Pole	12	81

Sub-Canopy Species	Density	Avg. Height	Size
Balsam Fir	High	Variable	Sapling
Tag Alder	Low	5 - 10 feet	Tall Shrub

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
16	4112 - Maple, Beech, Cherry Association	Poletimber Well	33.3	69	111-140	N/A	cut last rotation as part of "Sling Blade Hardwoods" 11-014-03-01. BA's are on the low end.

Canopy Species	% Cover	Size Class	DBH	Age
Sugar Maple	55	Pole/Log	10	69
Red Maple	25	Pole/Log	10	
Yellow Birch	3	Pole/Log	10	
Basswood	5	Pole/Log	10	
Red Oak	5	Log	14	
Paper Birch	3	Pole	8	
White Spruce	2	Pole/Log	10	
Black Cherry	2	Pole	8	

Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	High	10 - 20 feet	Sapling
Red Maple	Low	10 - 20 feet	Sapling
Balsam Fir	Medium	Variable	Sapling
White Spruce	Low	Variable	Pole
Hemlock	Low	Variable	Pole

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
17	4112 - Maple, Beech, Cherry Association	Poletimber Well	32.7	74	81-110	N/A	Pork chop sale completed summer 2015. 2019: Possibly merge with Stand 8 next rotation.

Canopy Species	% Cover	Size Class	DBH	Age
Sugar Maple	59	Log/Pole	11	74
Red Maple	30	Pole/Log	10	
Yellow Birch	2	Pole/Log	10	
Basswood	2	Pole/Log	12	
Red Oak	3	Log	16	
Balsam Fir	2	Pole	8	
Black Ash	2	Pole	8	

Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	High	Variable	Pole
Balsam Fir	Low	Variable	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
18	6239 - Mixed Emergent Wetland	Nonstocked	4.1		Unspecified	No	Beaver Flooding

Sub-Canopy Species	Density	Avg. Height	Size
Tag Alder	High	5 - 10 feet	Tall Shrub

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
19	4119 - Mixed Northern Hardwoods	Poletimber Well	7.3	86	81-110	N/A	2020: wet stand with lots of drainages.

Canopy Species	% Cover	Size Class	DBH	Age
Sugar Maple	30	Log	12	86
Red Maple	35	Pole/Log	9	86
Yellow Birch	3	Pole	8	
Basswood	2	Pole/Log	10	
Quaking Aspen	15	Log	12	
White Spruce	5	Pole/Log	10	
Northern White Cedar	5	Pole/Log	9	
Hemlock	2	Pole/Log	10	
Black Ash	3	Pole	6	

Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	Medium	Variable	Sapling
Red Maple	Medium	Variable	Sapling
Hemlock	Medium	Variable	Pole

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
20	6239 - Mixed Emergent Wetland	Nonstocked	2.7		Unspecified	No	Beaver Flooding

Sub-Canopy Species	Density	Avg. Height	Size
Tag Alder	High	5 - 10 feet	Tall Shrub

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
21	4199 - Other Mixed Upland Deciduous	Poletimber Well	39.0	77	51-80	N/A	2010: Some nice patches but still overall small diameter. stand could have been old pasture land.

Canopy Species	% Cover	Size Class	DBH	Age
Red Maple	55	Pole/Log	10	77
Yellow Birch	3	Pole	8	
Paper Birch	2	Pole	6	
Quaking Aspen	25	Log	12	
Balsam Fir	5	Pole	6	
White Spruce	2	Pole	9	
White Pine	3	Pole/Log	12	
Hemlock	5	Log/Pole	12	

Sub-Canopy Species	Density	Avg. Height	Size
Red Maple	Medium	10 - 20 feet	Sapling
Yellow Birch	Low	Variable	Pole
Balsam Fir	Medium	Variable	Sapling
White Spruce	Low	Variable	Pole

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
22	4112 - Maple, Beech, Cherry Association	Poletimber Poor	13.7	74	1-50	N/A	2010: 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. 2020: Stand was split from stand 10 due to flooding.

Canopy Species	% Cover	Size Class	DBH	Age
Sugar Maple	58	Pole/Log	10	74
Red Maple	30	Pole/Log	10	
Yellow Birch	5	Pole	8	
Red Oak	3	Log	14	
Paper Birch	2	Pole	8	

Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	High	Variable	Sapling
Red Maple	Medium	5 - 10 feet	Sapling
Red Oak	Low	Variable	Sapling
Quaking Aspen	Low	5 - 10 feet	Sapling
Balsam Fir	Low	Variable	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
23	6129 - Mixed Coniferous Lowland Forest	Poletimber Well	24.8	75	111-140	N/A	Wet drainages throughout stand.

Canopy Species	% Cover	Size Class	DBH	Age
Red Maple	5	Pole	8	
Yellow Birch	5	Pole	8	
Balsam Fir	25	Pole	8	
White Spruce	20	Log/Pole	12	
Northern White Cedar	35	Log/Pole	12	75
Hemlock	10	Log	12	

Sub-Canopy Species	Density	Avg. Height	Size
Red Maple	Low	Variable	Sapling
Yellow Birch	Low	Variable	Sapling
Balsam Fir	High	Variable	Sapling
Northern White Cedar	Low	Variable	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
24	4112 - Maple, Beech, Cherry Association	Poletimber Well	2.2	99	81-110	N/A	2020: stand under contract "FMP Hdwd.11-07-18-01".

Canopy Species	% Cover	Size Class	DBH	Age
Sugar Maple	45	Log/Pole	12	99
Red Maple	35	Pole/Log	10	
Yellow Birch	8	Pole/Log	10	
White Spruce	2	Log	18	
White Pine	5	Log/XLog	24	
Hemlock	3	Log	20	
Black Cherry	2	Pole	8	

Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	Medium	Variable	Sapling
Red Maple	Medium	Variable	Sapling
Northern White Cedar	Low	Variable	Pole
Hemlock	Medium	>20 feet	Log

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
25	4139 - Aspen, Mixed Deciduous	Sapling Well	150.3	7	Immature	N/A	2019: Pork chop , completed in 2015. Stand was 3 different stands merged into one .

Canopy Species	% Cover	Size Class	DBH	Age
Red Maple	24	Pole	8	
Red Oak	5	Log/Pole/Sap	16	
Quaking Aspen	51	Sapling	1	7
Balsam Fir	5	Sapling	1	
Northern White Cedar	1	Pole	8	
White Pine	5	Log	16	57
Hemlock	1	Log	15	
Black Cherry	3	Sapling	1	
Hemlock	1	Sapling	1	
Paper Birch	2	Sapling	1	
White Spruce	2	Sapling	2	

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
27	3102 - Grass	Nonstocked	1.9			No	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.

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
28	4112 - Maple, Beech, Cherry Association	Poletimber Well	6.1	66	81-110	N/A	Pork chop sale completed summer 2015.

Canopy Species	% Cover	Size Class	DBH	Age
Sugar Maple	40	Pole	8	66
Red Maple	35	Pole	8	
Quaking Aspen	5	Log	12	
White Spruce	5	Log	12	
White Pine	5	Log/XLog	18	
Black Cherry	10	Pole	8	

Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	Low	Variable	Pole
Red Maple	Medium	Variable	Pole
Balsam Fir	Medium	Variable	Pole

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
30	3102 - Grass	Nonstocked	2.1			No	2009: 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 determine 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.

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
31	6239 - Mixed Emergent Wetland	Nonstocked	4.2		Unspecified	No	North Branch Otter River.

Sub-Canopy Species	Density	Avg. Height	Size
Tag Alder	Full	5 - 10 feet	Tall Shrub

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
32	42320 - Upland Spruce	Poletimber Well	7.2	81	51-80	N/A	2010: small stand situated on a sloped that is adjacent to the Otter River, save as a riparian corridor.

Canopy Species	% Cover	Size Class	DBH	Age
Quaking Aspen	20	Pole/Log	10	
Balsam Fir	20	Pole	8	
White Spruce	60	Log/Pole	12	81

Sub-Canopy Species	Density	Avg. Height	Size
Balsam Fir	High	Variable	Sapling
Tag Alder	Low	5 - 10 feet	Tall Shrub