



Compartment Review Presentation

Crystal Falls Forest Management Unit

Compartment 145

Entry Year 2016

Acreage: 878

County Iron

Management Area: Ralph Ground Moraine

Revision Date: 07/25/2014

Stand Examiner: Scott Sebero

Legal Description:

T43N-R31W Sections 13 - 15

Identified Planning Goals:

Our management goals in this compartment are to develop age class distribution in aspen types, maintain health of conifer types and increase acreage where possible, and to develop the quality while maintaining diversity in hardwood types.

Soil and topography:

A mix of Trenary fine sand loam with 6 to 18 percent slopes, stony rolling areas on knolls and back slopes on ground moraines and end moraines and Lupton-Cathro-Humaquepts complex with 0 to 2 percent slopes, depressions on ground moraines and outwash plains.

Ownership Patterns, Development, and Land Use in and Around the Compartment:

Ownership patterns in this compartment consist mostly of State lands and WE Energies with some small private parcels and hunting camps. Lands in and around this compartment are used mainly for hunting and managed for forest products.

Unique Natural Features:

No Unique Natural Features known.

Archeological, Historical, and Cultural Features:

No Archeological, Historical, or Cultural Features known.

Special Management Designations or Considerations:

Watershed and Fisheries Considerations:

Wildlife Habitat Considerations:

This compartment lies in the center of the Old Mansfield Deer Wintering Complex. Some of the best cedar in east Iron County is found in this compartment. It is critical that travel corridors and transition zones be maintained and enhanced when prescribed stands are treated. Age class diversity in the aspen stands will provide better grouse and woodcock habitat.

Mineral Resource and Development Concerns and/or Restrictions

Surface sediments consist of an end moraine of coarse-textured till and medium-textured till. The glacial drift thickness varies between 10 and 50 feet. The Precambrian Hemlock and Michigamme and Randville Formations and Archean Volcanics and Sedimentary Rocks subcrop below the glacial drift. The Randville has been used as a dimension stone and a quarry is located one mile to the south. Abandoned iron mines are located to the west. Part of this compartment was previously leased for metallic exploration. The nearest gravel pit is located two miles to the south, but there should be potential. There is no economic oil and gas production in the UP.

Vehicle Access:

Vehicle access is fairly good. Access is from Way Dam Road and connecting two tracks. Access to far eastern portion of compartment is through private.

Survey Needs:

None

Recreational Facilities and Opportunities:

None

Fire Protection:

Additional Compartment Information:

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**

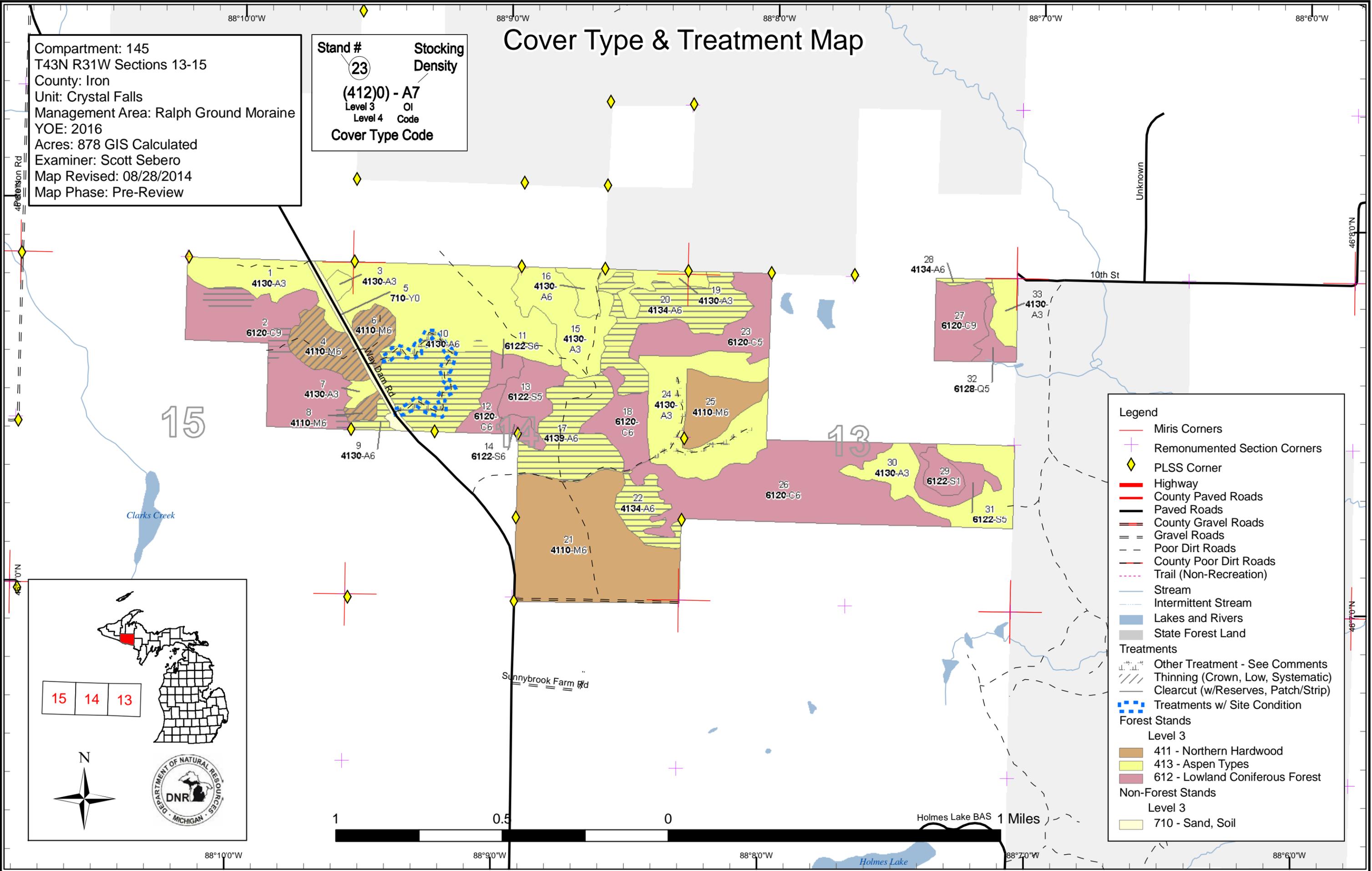
The following information is displayed, where pertinent, on the attached compartment maps:

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

Cover Type & Treatment Map

Compartment: 145
 T43N R31W Sections 13-15
 County: Iron
 Unit: Crystal Falls
 Management Area: Ralph Ground Moraine
 YOE: 2016
 Acres: 878 GIS Calculated
 Examiner: Scott Sebero
 Map Revised: 08/28/2014
 Map Phase: Pre-Review

Stand #
 23
Stocking Density
 (4120) - A7
 Level 3 OI
 Level 4 Code
Cover Type Code



Legend

- Miris Corners
- Remonumented Section Corners
- PLSS Corner
- Highway
- County Paved Roads
- Paved Roads
- County Gravel Roads
- Gravel Roads
- Poor Dirt Roads
- County Poor Dirt Roads
- Trail (Non-Recreation)
- Stream
- Intermittent Stream
- Lakes and Rivers
- State Forest Land

Treatments

- Other Treatment - See Comments
- Thinning (Crown, Low, Systematic)
- Clearcut (w/Reserves, Patch/Strip)
- Treatments w/ Site Condition

Forest Stands

Level 3

- 411 - Northern Hardwood
- 413 - Aspen Types
- 612 - Lowland Coniferous Forest

Non-Forest Stands

Level 3

- 710 - Sand, Soil

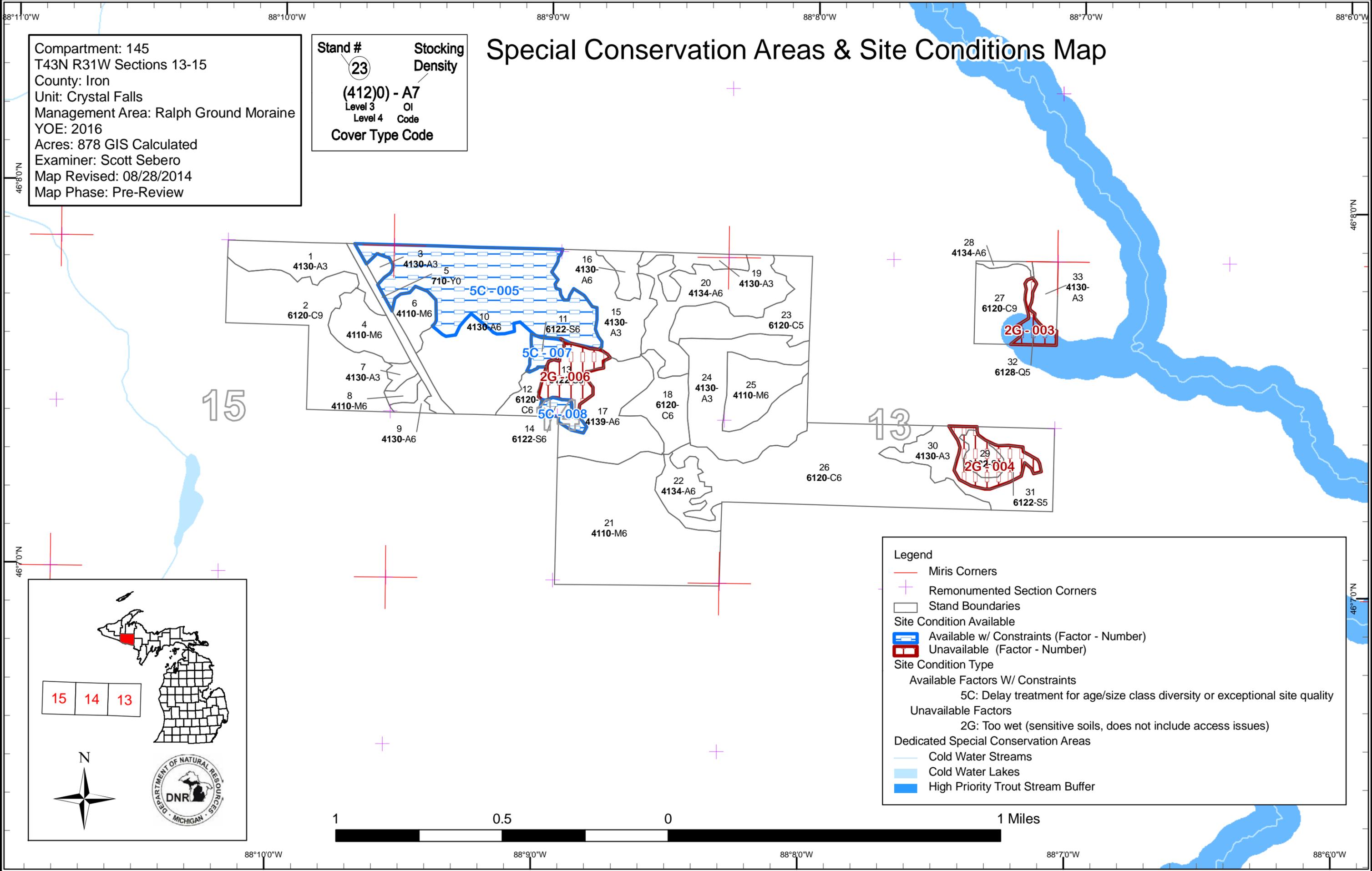
15 14 13
 N
 DEPARTMENT OF NATURAL RESOURCES
 DNR
 MICHIGAN



Compartment: 145
 T43N R31W Sections 13-15
 County: Iron
 Unit: Crystal Falls
 Management Area: Ralph Ground Moraine
 YOE: 2016
 Acres: 878 GIS Calculated
 Examiner: Scott Sebero
 Map Revised: 08/28/2014
 Map Phase: Pre-Review

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

Special Conservation Areas & Site Conditions Map



Legend

- Miris Corners
- Remonumented Section Corners
- Stand Boundaries
- Site Condition Available
 - Available w/ Constraints (Factor - Number)
 - Unavailable (Factor - Number)
- Site Condition Type
 - Available Factors W/ Constraints
 - 5C: Delay treatment for age/size class diversity or exceptional site quality
 - Unavailable Factors
 - 2G: Too wet (sensitive soils, does not include access issues)
- Dedicated Special Conservation Areas
 - Cold Water Streams
 - Cold Water Lakes
 - High Priority Trout Stream Buffer



88°11'0"W 88°10'0"W 88°9'0"W 88°8'0"W 88°7'0"W 88°6'0"W
 46°8'0"N 46°7'0"N 46°6'0"N

Report 1 – Total Acres by Cover Type and Age Class



	Age Class														Total
	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 +	Uneven Age	
Aspen	44	47	87	0	142	0	0	0	100	0	0	0	0	0	420
Cedar	0	0	0	0	0	0	0	0	60	0	185	0	0	0	244
Lowland Conifers	0	0	0	0	0	0	0	0	6	0	0	0	0	0	6
Lowland Spruce/Fir	0	0	0	0	0	0	0	0	45	0	0	0	0	0	45
Northern Hardwood	0	0	0	0	0	0	0	0	121	0	33	0	0	0	153
Sand, Soil	9	0	0	0	0	0	0	0	0	0	0	0	0	0	9
Total	53	47	87	0	142	0	0	0	332	0	217	0	0	0	878



Report 2 – Proposed Treatment Summaries

Crystal Falls Mgt. Unit
Year of Entry 2016

Compartment 145
Total Compartment Acres: 878

Acres by Treatment Type

Commercial Harvest - 192 Tree Planting - 0 Other - 0
 Habitat Cut - 0 Opening Maintenance - 16

Cover Type by Harvest Method

	Clearcut	Selection	Seed Tree	Shelterwood	Thinning	Other - Specify	Total Acres
Aspen Types	149	0	0	0	0	0	149
Lowland Coniferous Forest	11	0	0	0	0	0	11
Northern Hardwood	0	0	0	0	33	0	33
Total	160	0	0	0	33	0	192



S t a n d	Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
2	12145002- Cut_small	10.6	6120 - Lowland Cedar	High Density Log	100	141-170	Harvest	Clearcut with Reserves	6128 - Lowland Coniferous, Mixed Deciduous	Cmpt. Review Proposal

Prescription Cut all aspen and mixed hardwood 2" DBH or greater. Cut all spruce, balsam, tamarack and jack pine with one or more pulpwood stick. Cut
Specs: cedar that are blown over. No standing cedar will be cut. Leave hemlock and red and white pine.

Other
Comments:

Next
Steps: Regen survey per work constructions.

Proposed
Start Date: 10/01/2015

4	12145004-Cut	18.9	4110 - Sugar Maple Association	High Density Pole	100	111-140	Harvest	Crown Thinning	4110 - Sugar Maple Association	Cmpt. Review Proposal
---	--------------	------	-----------------------------------	-------------------------	-----	---------	---------	----------------	-----------------------------------	--------------------------

Prescription Cut all aspen, spruce and balsam with one or more pulpwood stick. Cut all marked mixed hardwood to 70 BA. Leave red and white pine, cedar
Specs: and hemlock.

Other
Comments:

Next
Steps:

Proposed
Start Date: 10/01/2015

6	12145006-Cut	10.1	4110 - Sugar Maple Association	High Density Pole	100	111-140	Harvest	Crown Thinning	4110 - Sugar Maple Association	Cmpt. Review Proposal
---	--------------	------	-----------------------------------	-------------------------	-----	---------	---------	----------------	-----------------------------------	--------------------------

Prescription Cut all aspen, spruce and balsam with one or more pulpwood stick. Cut all marked mixed hardwood to 70 BA. Leave red and white pine, cedar
Specs: and hemlock.

Other
Comments:

Next
Steps:

Proposed
Start Date: 10/01/2015

8	12145008-Cut	3.6	4110 - Sugar Maple Association	High Density Pole	100	111-140	Harvest	Crown Thinning	4110 - Sugar Maple Association	Cmpt. Review Proposal
---	--------------	-----	-----------------------------------	-------------------------	-----	---------	---------	----------------	-----------------------------------	--------------------------

Prescription Cut all aspen, spruce and balsam with one or more pulpwood stick. Cut all marked mixed hardwood to 70 BA. Leave red and white pine, cedar
Specs: and hemlock.

Other
Comments:

Next
Steps:

Proposed
Start Date: 10/01/2015



S t a n d	Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
9	12145009-Cut	3.4	4130 - Aspen	High Density Pole	48	81-110	Harvest	Clearcut with Reserves	413 - Aspen	Cmpt. Review Proposal

Prescription Cut all aspen and mixed hardwood 2" DBH or greater. Cut all spruce, balsam, tamarack and jack pine with one or more pulpwood stick. Leave
Specs: oak, cedar, hemlock and red and white pine.

Other
Comments:

Next
Steps:

Proposed
Start Date: 10/01/2015

10	12145010- Cut_small	45.6	4130 - Aspen	High Density Pole	48	81-110	Harvest	Clearcut with Reserves	4134 - Aspen, Spruce/Fir	Cmpt. Review Proposal
----	------------------------	------	--------------	-------------------------	----	--------	---------	---------------------------	-----------------------------	--------------------------

Prescription Cut all aspen and mixed hardwood 2" DBH or greater. Cut all spruce, balsam, tamarack and jack pine with one or more pulpwood stick. Leave
Specs: oak, cedar, hemlock and red and white pine.

Other
Comments:

Next
Steps:

Proposed
Start Date: 10/01/2015

17	12145017-Cut	39.3	4139 - Aspen, Mixed Deciduous	High Density Pole	84	81-110	Harvest	Clearcut with Reserves	4134 - Aspen, Spruce/Fir	Cmpt. Review Proposal
----	--------------	------	----------------------------------	-------------------------	----	--------	---------	---------------------------	-----------------------------	--------------------------

Prescription Cut all aspen and mixed hardwood 2" DBH or greater. Cut all spruce, balsam, tamarack and jack pine with one or more pulpwood stick. Leave
Specs: oak, cedar, hemlock and red and white pine.

Other
Comments:

Next
Steps:

Proposed
Start Date: 10/01/2015

20	12145020-Cut	43.5	4134 - Aspen, Spruce/Fir	High Density Pole	84	81-110	Harvest	Clearcut with Reserves	4134 - Aspen, Spruce/Fir	Cmpt. Review Proposal
----	--------------	------	-----------------------------	-------------------------	----	--------	---------	---------------------------	-----------------------------	--------------------------

Prescription Cut all aspen and mixed hardwood 2" DBH or greater. Cut all spruce, balsam, tamarack and jack pine with one or more pulpwood stick. Leave
Specs: oak, cedar, hemlock, and red and white pine.

Other
Comments:

Next Regen survey per work constructions.
Steps:

Proposed
Start Date: 10/01/2015



S t a n d	Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
22	12145022-Cut	15.7	4134 - Aspen, Spruce/Fir	High Density Pole	84	81-110	Harvest	Clearcut with Reserves	4134 - Aspen, Spruce/Fir	Cmpt. Review Proposal

Prescription Cut all aspen and mixed hardwood 2" DBH or greater. Cut all spruce, balsam, tamarack and jack pine with one or more pulpwood stick. Leave
Specs: oak, cedar, hemlock, and red and white pine.

Other
Comments:

Next
Steps: Regen survey per work constructions.

Proposed
Start Date: 10/01/2015

28	12145028-Cut	1.8	4134 - Aspen, Spruce/Fir	High Density Pole	84	51-80	Harvest	Clearcut with Reserves	4134 - Aspen, Spruce/Fir	Cmpt. Review Proposal
----	--------------	-----	-----------------------------	-------------------------	----	-------	---------	---------------------------	-----------------------------	--------------------------

Prescription Cut all aspen and mixed hardwood 2" DBH or greater. Cut all spruce, balsam, tamarack and jack pine with one or more pulpwood stick. Leave
Specs: oak, cedar, hemlock, and red and white pine.

Other
Comments:

Next
Steps: Regen survey per work constructions.

Proposed
Start Date: 10/01/2015

24	12145024- Hunter Walking Trail- NonFor	6.2	4130 - Aspen	High Density Sapling	25		Non-Forest Management	Other - Specify	310 - Herbaceous Openland	Cmpt. Review Proposal
----	---	-----	--------------	----------------------------	----	--	--------------------------	-----------------	------------------------------	--------------------------

Prescription Opening Maintenance
Specs:

Other
Comments: Mowing/discing/seeding

Next
Steps:

Proposed
Start Date: 10/01/2016

**Total Treatment
Acreage Proposed: 198.7**

S
t
a
n
d

	Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
25	12145025- Hunter Walking Trail- NonFor	9.7	4110 - Sugar Maple Association	High Density Pole	84	51-80	Non-Forest Management	Other - Specify	310 - Herbaceous Openland	Cmpt. Review Proposal

Prescription Opening Maintenance
Specs:

Other Mowing/discing/seeding
Comment:

Next
Steps:

Proposed
Start Date: 10/01/2016

Limiting Factor 5C: Delay treatment for age/size class diversity or exceptional site quality

**Total Treatment
Acreage Proposed: 9.7**

Report 5 – Site Conditions

Crystal Falls Mgt. Unit

Scott Sebero : Examiner

Compartment 145

Year of Entry 2016

Availability for Management

Availability for Management			Dominant Site Conditions			
Total Acres	Acres Available	Acres Not Available		No	5C	2G
427	427		Aspen	342	85	
244	244		Cedar	244		
6		6	Lowland Conifers			6
44	10	34	Lowland Spruce/Fir		10	34
153	153		Northern Hardwood	153		
874	834	40	Total Forested Acres	740	94	40
	95%	5%	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
003	Not Available	2G: Too wet (sensitive soils, does not include access issues)	6	4A: No merchantable products (see product standards)			
Comments:							
004	Not Available	2G: Too wet (sensitive soils, does not include access issues)	19	4A: No merchantable products (see product standards)			
Comments:							
005	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	85				
Comments:							

Report 5 – Site Conditions

Crystal Falls Mgt. Unit

Scott Sebero : Examiner

Compartment 145

Year of Entry 2016

006	Not Available	2G: Too wet (sensitive soils, does not include access issues)	16	4A: No merchantable products (see product standards)
Comments:				
007	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	5	
Comments:				
008	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	5	
Comments:				



Report 6 – 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
-----------------	---------------------	--------------------	-----------------------	--------------

Comments



Report 7 – 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	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.
SCA	Riparian Area	A transitional area between aquatic and terrestrial ecosystems in which the terrestrial ecosystem influences the aquatic ecosystem and vice-versa. Because of the unique conditions adjacent to lakes, streams and open water wetlands, riparian areas harbor a high diversity of plants and wildlife. Riparian communities are ecologically and socially significant in their effects on water quality and quantity, as well as aesthetics, habitat, bank stability, timber production, and their contribution to overall biodiversity.



Stand	Crystal Falls Mgt. Unit		Report 8 – Forested Stands			Compartment: 145 Year of Entry: 2016
	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
1	4130 - Aspen	High Density Sapling	25.4	23		
2	6120 - Lowland Cedar	High Density Log	66.0	100	141-170	Harvest three pockets within this stand that have large aspen, red maple and spruce still standing. Salvage blow down cedar within the three areas marked out for harvest.
3	4130 - Aspen	High Density Sapling	2.8	23		
4	4110 - Sugar Maple Association	High Density Pole	18.9	100	111-140	
6	4110 - Sugar Maple Association	High Density Pole	10.1	100	111-140	
7	4130 - Aspen	High Density Sapling	3.3	23		
8	4110 - Sugar Maple Association	High Density Pole	3.6	100	111-140	
9	4130 - Aspen	High Density Pole	3.4	48	81-110	
10	4130 - Aspen	High Density Pole	130.7	48	81-110	Harvest SW portion of stand. About 40 acres.
11	6122 - Black Spruce	High Density Pole	5.1	84	81-110	
12	6120 - Lowland Cedar	High Density Pole	7.6	84	81-110	
13	6122 - Black Spruce	Medium Density Pole	15.8	84	1-50	
14	6122 - Black Spruce	High Density Pole	5.0	84	81-110	
15	4130 - Aspen	High Density Sapling	33.2	6		
16	4130 - Aspen	High Density Pole	7.5	41	51-80	
17	4139 - Aspen, Mixed Deciduous	High Density Pole	39.3	84	81-110	
18	6120 - Lowland Cedar	High Density Pole	19.9	84	51-80	
19	4130 - Aspen	High Density Sapling	10.3	6		



S t a n d	Crystal Falls Mgt. Unit		Report 8 – Forested Stands			Compartment: 145 Year of Entry: 2016
	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
20	4134 - Aspen, Spruce/Fir	High Density Pole	43.5	84	81-110	
21	4110 - Sugar Maple Association	High Density Pole	97.6	84	51-80	
22	4134 - Aspen, Spruce/Fir	High Density Pole	15.7	84	81-110	
23	6120 - Lowland Cedar	Medium Density Pole	32.2	84	51-80	
24	4130 - Aspen	High Density Sapling	55.3	25		
25	4110 - Sugar Maple Association	High Density Pole	23.0	84	51-80	
26	6120 - Lowland Cedar	High Density Pole	96.3	100	171-200	
27	6120 - Lowland Cedar	High Density Log	22.2	100	171-200	
28	4134 - Aspen, Spruce/Fir	High Density Pole	1.8	84	51-80	
29	6122 - Black Spruce	Low Density Sapling	7.6	84		
30	4130 - Aspen	High Density Sapling	38.3	15		
31	6122 - Black Spruce	Medium Density Pole	11.5	84	1-50	
32	6128 - Lowland Coniferous, Mixed Deciduous	Medium Density Pole	6.5	84	51-80	
33	4130 - Aspen	High Density Sapling	9.0	15		



Stand	Cover Type	Acres	Managed Site	Management Priority (Objective)	General Comments:
5	710 - Sand, Soil	9.4	No	Unspecified	