



Compartment Review Presentation

Crystal Falls Forest Management Unit

Compartment 12086

Entry Year 2017

Acreage: 1,233

County Dickinson

Management Area: Groveland

Revision Date: 2015-07-27

Stand Examiner: Linda Lindberg

Legal Description:

T41N,R29W sec 35 and 36

Identified Planning Goals:

This compartment is in the Groveland Management area which is dominated by three natural communities: dry mesic northern forest, mesic northern forest and poor conifer swamp. This area is on a bedrock controlled ground moraine. The goal in areas that are operable is to put the best growth on the best stems in the hardwoods while taking the opportunity to promote diverse wildlife values. Also, to work toward age class diversity in the aspen.

Soil and topography:

Several drainages run east and west in this compartment. One makes a fairly deep valley near the center of the compartment. There are some steep areas some of which are not harvestable.

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

Small private ownership is found in and around this compartment.

Unique Natural Features:

Archeological, Historical, and Cultural Features:

Special Management Designations or Considerations:

The Carney Lake Outlet and a creek that comes from Benton Lake, flow through this compartment.

Watershed and Fisheries Considerations:

The headwaters of Breen Creek are in this compartment. Breen Creek eventually flows into the Sturgeon River (a Type I Trout Stream). Streams, regardless of their size or frequency of flow, are connected to downstream waters and strongly influence their function. Additionally, wetlands and open waters in riparian areas and floodplains are physically, chemically, and biologically integrated with rivers via functions that improve downstream water quality. These systems act as effective buffers to protect downstream waters from pollution and are essential components of river food webs. BMP's should be implemented to control sediment sources from adjacent uplands. Fine sediments such as silt and sand negatively affect natural reproduction of fish, decrease the diversity of aquatic invertebrate and fish taxa, and result in lower overall fish populations.

Wildlife Habitat Considerations:

This compartment is located on the southern-most portion of the historic Camp Suicide Deer Wintering Complex. White-tailed deer was selected as a featured species to manage for critical habitat conditions which include important conifers, primarily hemlock, cedar and white pine, for winter cover, travel corridors and upland dispersal for forage. Black bear habitat management includes protecting and enhancing riparian corridors, lowland hardwoods, lowland conifers, vernal ponds, drainages, refuge trees, mast producing trees and shrubs. Maintaining mature forest conditions will provide critical habitat for northern goshawk and Blackburnian warbler. This compartment has a diverse mixture of types and age classes in many of the stand types.

Mineral Resource and Development Concerns and/or Restrictions

Vehicle Access:

Access is fairly good when roads are dry. There are many areas here that have thin soils that perch water.

Survey Needs:

No survey needs in this compartment.

Recreational Facilities and Opportunities:

Good hunting, fishing, trapping and cross country skiing opportunity.

Fire Protection:

Good access for south Dickinson.

Additional Compartment Information:

The following reports from the Inventory are attached:

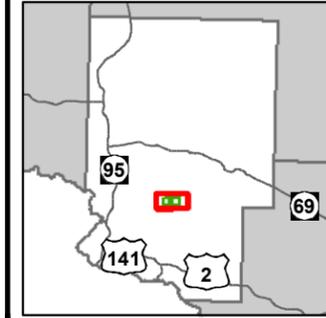
- Total Acres by Cover Type and Age Class
- Cover Type by Harvest Method
- Proposed Treatments – No Limiting Factors
- Proposed Treatments – With Limiting Factors
- Stand Details (Forested and Nonforested)
- Dedicated and Proposed Special Conservation Areas
- Site Condition Details

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

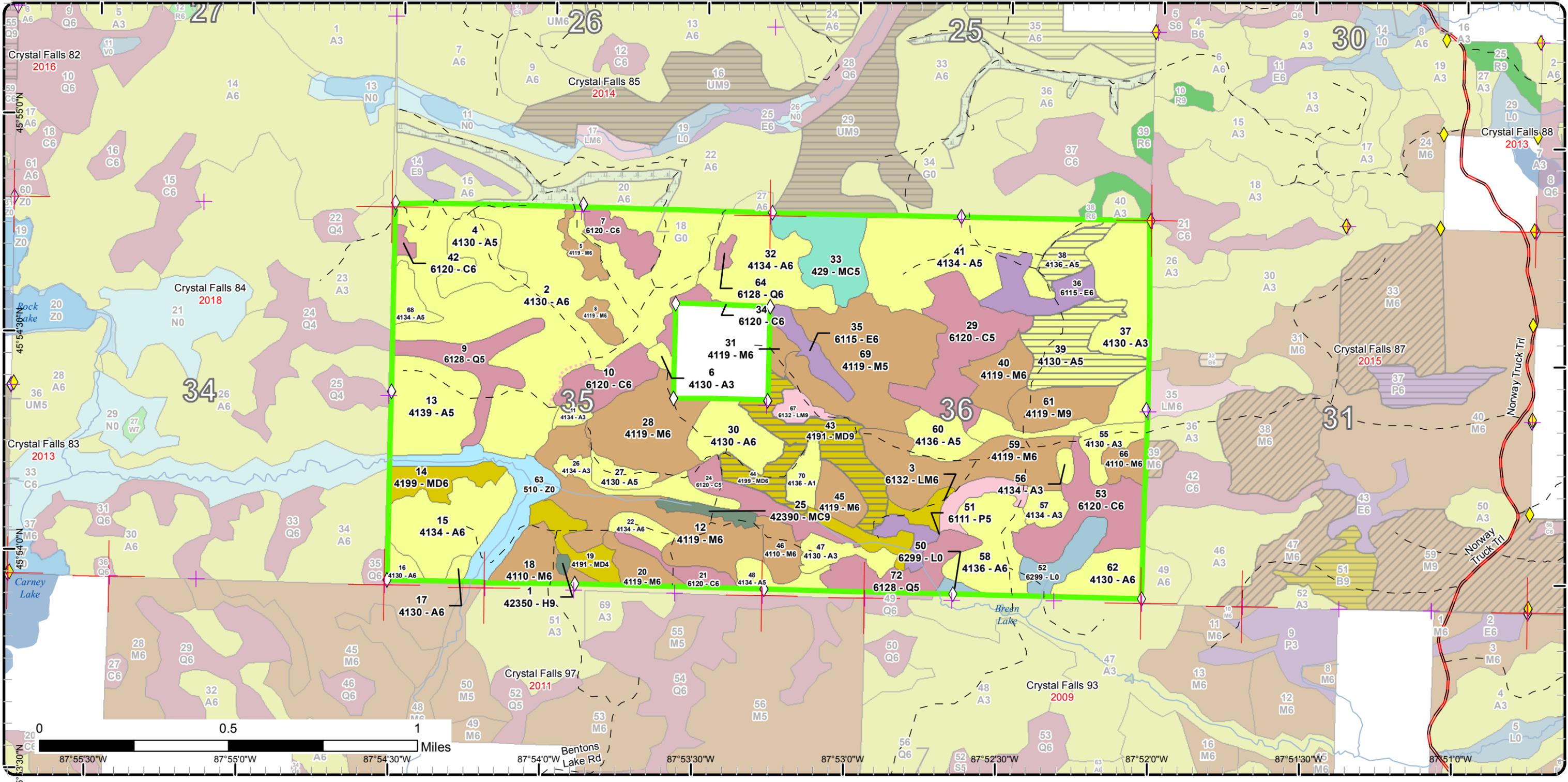
- Base feature information, stand boundaries, cover types, and numbers
- Proposed treatments
- Site condition boundaries
- Details on the road access system

Cover Type & Treatments

Compartment: 86
 T41N R29W 35-36
 County: Dickinson
 Unit: Crystal Falls
 Mgmt Area: Groveland
 YOE: 2017
 Acres: 1233 GIS Calculated
 Examiner: Linda Lindberg
 Map Revised: 8/28/2015
 Map Phase: Pre-Review

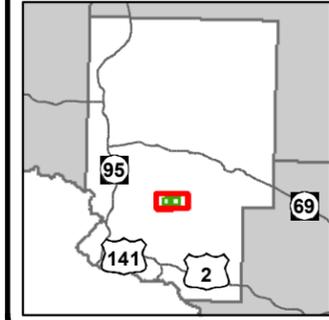


- ✚ Remonumented Section Corners
- ◆ Survey Grade GPS Corners
- ◇ Field Grade GPS Corners
- Miris Corners
- County Gravel Roads
- - Poor Dirt Roads
- ⋯ Closed Roads
- Rivers
- Lakes
- ▭ Clearcut (w/Reserves)
- 411 - Northern Hardwood
- 413 - Aspen
- 419 - Mixed Upland Deciduous
- 423 - Other Upland Conifers
- 429 - Mixed Upland Conifers
- 611 - Lowland Deciduous Forest
- 612 - Lowland Coniferous Forest
- 613 - Lowland Mixed Forest
- 500 - Water
- 622 - Lowland Shrub

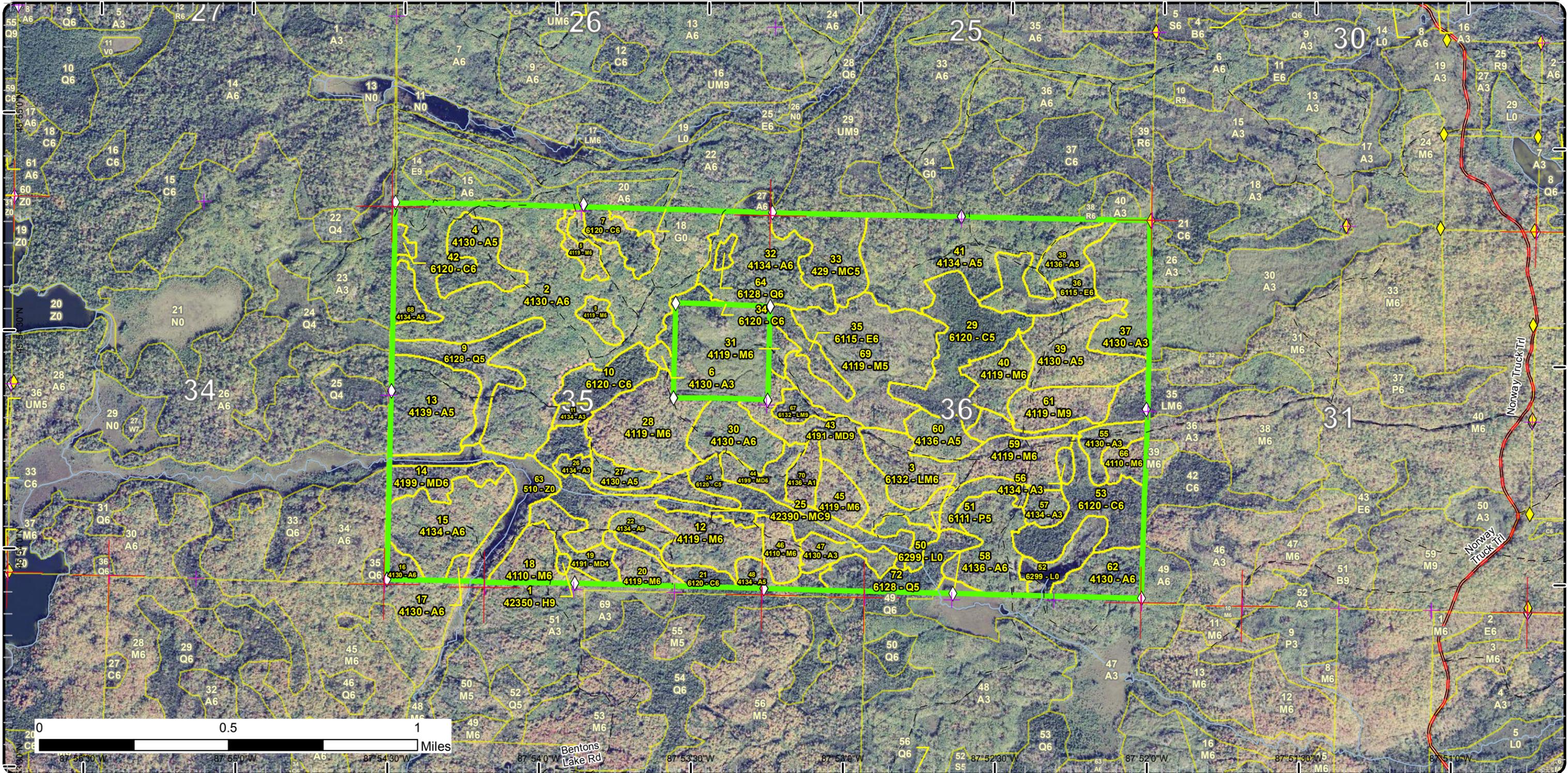


Stand Boundary Map

Compartment: 86
 T41N R29W 35-36
 County: Dickinson
 Unit: Crystal Falls
 Mgmt Area: Groveland
 YOE:
 Acres: GIS Calculated
 Examiner:
 Map Revised: 8/28/2015
 Map Phase: Pre-Review

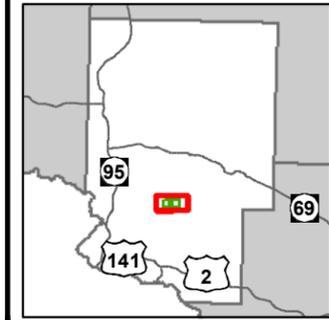


- + Remonumented Section Corners
- ◆ Survey Grade GPS Corners
- ◇ Field Grade GPS Corners
- Miris Corners
- County Gravel Roads
- - Poor Dirt Roads
- - - Closed Roads
- Rivers

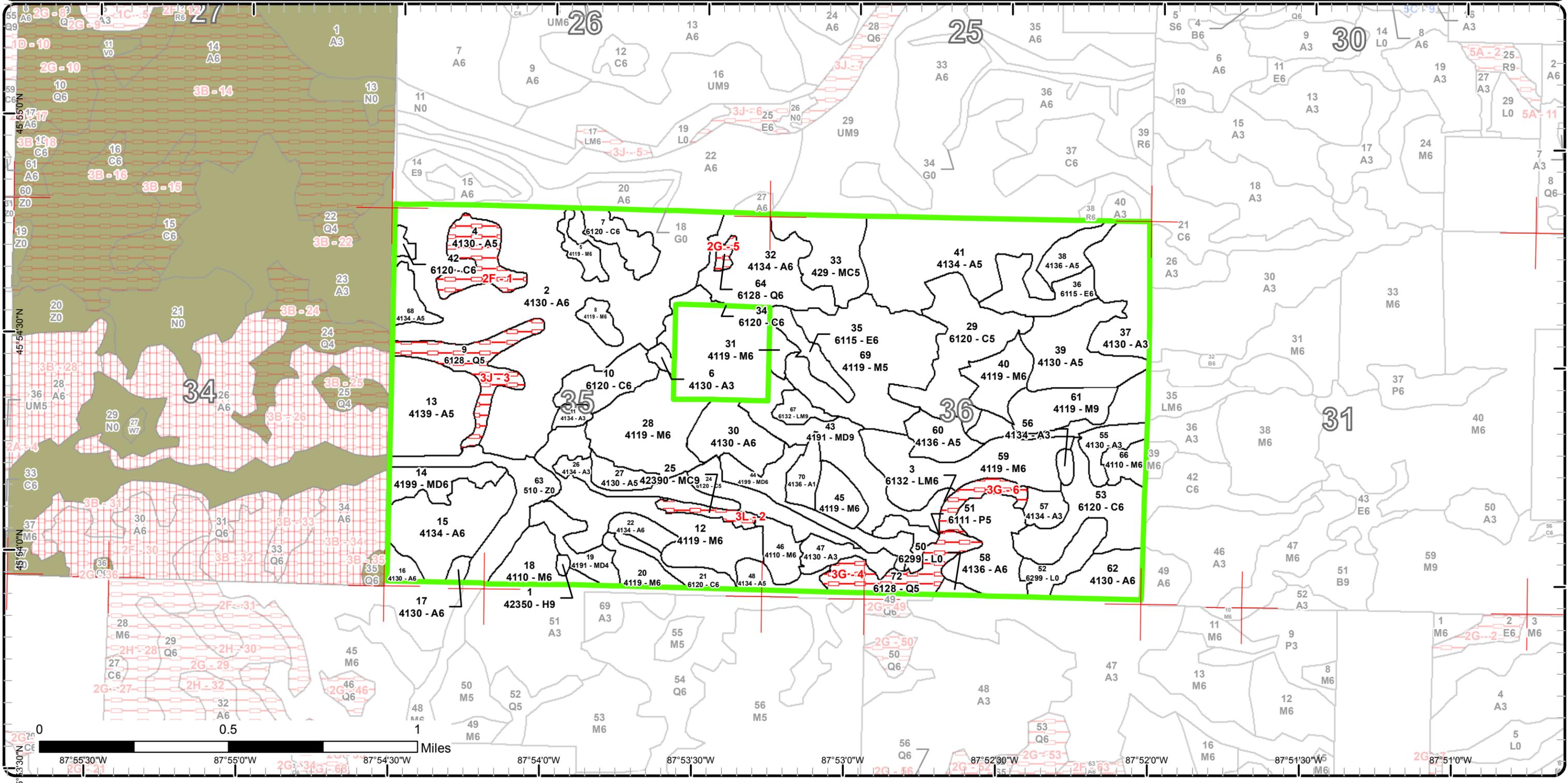


Special Conservation Areas & Site Conditions Map

Compartment: 86
 T41N R29W 35-36
 County: Dickinson
 Unit: Crystal Falls
 Mgmt Area: Groveland
 YOE: 2017
 Acres: 1233 GIS Calculated
 Examiner: Linda Lindberg
 Map Revised: 8/28/2015
 Map Phase: Pre-Review



- Miris Corners
- Stand Boundaries
- Site Condition
- Unavailable
- Unavailable Factors
- 2F: Too steep
- 2G: Too wet (sensitive soils, does not include access issues)
- 3G: Other Influence zones - See comments
- 3J: Water quality / BMPs (stream, river, or lake)
- 3L: Other wildlife concerns
- Special Conservation Areas



Report 1 – Total Acres by Cover Type and Age Class



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	8	87	37	88	286	0	31	0	24	0	0	0	0	0	0	0	0	561
Cedar	0	0	0	0	0	0	0	0	0	37	27	0	0	0	0	0	0	0	64
Lowland Aspen/Balsam Poplar	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	6
Lowland Conifers	0	0	0	0	0	0	0	0	0	21	0	0	0	0	0	0	0	0	21
Lowland Deciduous	0	0	0	0	0	0	17	0	0	0	0	0	0	0	0	0	0	0	17
Lowland Shrub	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Mixed Upland Deciduous	0	0	0	0	0	12	0	0	31	0	0	0	0	0	0	0	0	31	74
Northern Hardwood	0	0	0	0	0	0	0	0	0	97	0	0	0	0	0	0	0	169	266
Upland Conifers	0	0	0	0	0	0	0	0	0	24	0	0	0	0	0	0	0	0	24
Water	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25
Total	27	8	87	37	88	304	17	31	31	203	27	0	0	0	0	0	0	200	1060



Report 2 – Treatment Summary

Crystal Falls Mgt. Unit
Year of Entry: 2017

Compartment 86
Total Compartment Acres: 1,233

Acres of Harvest

Commercial Harvest - 78
Harvests with Site Condition - 0
Next Step Harvest - 52
Habitat Cut - 0

Cover Type by Harvest Method

	Clearcut	Selection	Patch Clearcut	Seed Tree	Shelterwood	Thinning	Overstory Removal	Salvage	Other	Total Acres
Aspen	41	0	0	0	0	0	0	0	0	41
Mixed Upland Deciduous	37	0	0	0	0	0	0	0	0	37
Total	78	0	0	0	0	0	0	0	0	78

Proposed and Next Step Treatments by Method

	Harvest	Site Prep	Planting	Seeding	Burning	Pesticide	Monitoring	Other	Non-Forest Mgt.	Total Acres
Current	78	0	0	0	0	0	0	0	0	78
Next Step	52	0	0	0	0	26	0	0	0	78
Total	129	0	0	0	0	26	0	0	0	156



S t a n d	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
38	12086038-Cut	9.8	4136 - Aspen, Mixed Conifer	Poletimber Medium	55	51-80	Harvest	Clearcut with Retention	413 - Aspen	Even-Aged	Approved Proposal

Habitat Cut: No**Site Condition:**

Prescription Cut all trees 2 inches or more in diameter except red and white pine, cedar, hemlock, oak, elm and cedar. Cut all spruce and balsam that is 6
Specs: inches or more in diameter at a 4 inch stump

Next Step
Treatments:

Acceptable aspen
Regen:

Other Old next step comments:
Comment:

Proposed Start Date: 10/1 /2016

39	12086039-Cut	31.2	4130 - Aspen	Poletimber Medium	60	51-80	Harvest	Clearcut with Retention	4319 - Mixed Upland Forest	Even-Aged	Approved Proposal
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Habitat Cut: No**Site Condition:**

Prescription Cut all merchantable trees except red and white pine, cedar, hemlock, cherry, oak or elm. Beware of vernal ponds and nest trees which may be
Specs: present. There is an acre of pure hardwood in the NE corner of the stand at the end of the road that goes in that direction. This should be left and could be thinned because it will NOT regenerate to aspen.

Next Step
Treatments:

Acceptable aspen and small aged hardwood that is the unmerchantable that is left. There is a vernal pond in the north corner where the road Y's. No trees
Regen: should be cut here.

Other There is a vernal pond in the north corner where the road Y's. No trees should be cut here. Old next step comments:
Comment:

Proposed Start Date: 10/1 /2016

43	12086043-Cut	26.3	4191 - Mixed Upland Deciduous with Conifer	Sawtimber Well	75	51-80	Harvest	Clearcut with Retention	4199 - Other Mixed Upland Deciduous	Even-Aged	Approved Proposal
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Habitat Cut: No**Site Condition:**

Prescription Cut all trees two inches or more in diameter except red and white pine, cedar, hemlock, oak, cherry and elm. Cut al spruce and balsam that is 6
Specs: inches or greater at a 4 inch stump. Leave Retention. There are wet areas and rocks that should be taken out of the sale and the volume and acres will be decreased accordingly.

Next Step
Treatments:

Acceptable aspen, spruce and balsam and a few birch sprouts which may be browsed by deer
Regen:

Other Old next step comments:
Comment:

Proposed Start Date: 10/1 /2016

44	12086044-Cut	10.6	4199 - Other Mixed Upland Deciduous	Poletimber Well	78	81-110	Harvest	Clearcut with Retention	4199 - Other Mixed Upland Deciduous	Even-Aged	Approved Proposal
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Habitat Cut: No**Site Condition:**

Prescription Cut all trees that are two inches or more in diameter except oak, elm, cherry, red and white pine, cedar and hemlock. Cut all spruce, balsam that
Specs: is 6 inches or greater at a 4 inch stump.

Next Step
Treatments:

Acceptable Aspen and red maple sprouts
Regen:

Other Old next step comments:
Comment:

Proposed Start Date: 10/1 /2016

**Total Treatment
Acreage Proposed: 77.9**

Report 5 – Site Conditions

Crystal Falls Mgt. Unit
Linda Lindberg : Examiner

Compartment: 86
Year of Entry: 2017

Dominant Site Conditions

	2F	2G	3G	3J	3L
Aspen	18				
Cedar					
Hemlock					
Lowland Aspen/Balsam Poplar					
Lowland Conifers		2	19	21	
Lowland Deciduous					
Lowland Mixed Forest			8		
Lowland Shrub					
Mixed Upland Deciduous					
Northern Hardwood					
Upland Conifers					5
Water					
Total Forested Acres	18	2	28	21	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
1	Unavailable	2F: Too steep	18	Unspecified	Unspecified	Unspecified	Unspecified
Comments: What was cut has been but is not worth going to because of steep terrain.							
2	Unavailable	3L: Other wildlife concerns	5	Unspecified	Unspecified	Unspecified	Unspecified
Comments: This stand is mostly cedar and hemlock							
3	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	21	Unspecified	Unspecified	Unspecified	Unspecified
Comments: There is hardly any Q left in this compartment as it has all been cut through so this can be left for retention and there is some cedar in here also. This is a drainage and some was cut in the south part.							

Report 5 – Site Conditions

Crystal Falls Mgt. Unit

Compartment: 86

Linda Lindberg : Examiner

Year of Entry: 2017

4	Unavailable	3G: Other Influence zones - See comments	20	Unspecified	Unspecified	Unspecified	Unspecified
<p>Comments: Most of the swamps were cut through in this compartment and this one was left uncut and has a lot of cedar.</p>							
5	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	2	Unspecified	Unspecified	Unspecified	Unspecified
<p>Comments: Some of this drainage was cut already and this has a lot of cedar and since so much of the drainages and wetland has been cut including some of this stand because it was joined to stand 34 until it got cut.</p>							
6	Unavailable	3G: Other Influence zones - See comments	8	Unspecified	Unspecified	Unspecified	Unspecified
<p>Comments: This is a drainage or what is left of one.</p>							

Mgt. Unit

Compartment: #Type!

Year of Entry:



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
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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
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Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
2	4130 - Aspen	Poletimber Well	165.4	40	1-50	OPIC - FMD: OI Stand Year Origin was 1975 Some drainages were cut through in this stand. Cedar and black ash were left.
4	4130 - Aspen	Poletimber Medium	17.6	85	1-50	OPIC - FMD: This stand has had aspen cut; it is an old mountain top; high with shallow soil and small water patches. Fir grows thick on rock tops. As stated before, this is a rocky area that isn't cut nor should it be. It is very steep.
7	6120 - Lowland Cedar	Poletimber Well	11.2	95	81-110	OPIC - FMD: EAST SIDE IS BIG ASPEN; 2 N/S DRAINAGES W/GIANT CEDAR MAKE IT A GOOD WILDLIFE STAND. TAKING ASPEN AND FIR WILL CAUSE THE REST TO BLOW DOWN. Good for wildlife with all the wet areas and a lot of wet was cut in this compartment already
8	4119 - Mixed Northern Hardwoods	Poletimber Well	5.3	85	51-80	OPIC - FMD: MINNOW TAR HARDWOODS SALE COMPLETED 10-2-11
9	6128 - Lowland Coniferous, Mixed Deciduous	Poletimber Medium	21.2	89	51-80	This is a drainage and since a lot have been cut through and this was cut in the south portion, it should be left
10	6120 - Lowland Cedar	Poletimber Well	16.1	98	51-80	OPIC - FMD: OI Stand Year Origin was 1920 This is a drainage all through here and it is mostly cedar
11	4134 - Aspen, Spruce/Fir	Sapling Well	3.3	15	Immature	OPIC - FMD: OI Stand Year Origin was 2000
12	4119 - Mixed Northern Hardwoods	Poletimber Well	44.6	85	81-110	
13	4139 - Aspen, Mixed Deciduous	Poletimber Medium	34.2	40	81-110	OPIC - FMD: OI Stand Year Origin was 1975
14	4199 - Other Mixed Upland Deciduous	Poletimber Well	12.6	85	81-110	OPIC - FMD: Steep, rugged north slope, nice buffer to stream. As mentioned above. What could be cut was cut and this stand is a good buffer and very steep.
15	4134 - Aspen, Spruce/Fir	Poletimber Well	35.5	40	51-80	OPIC - FMD: This stand is moving out of the A3
16	4130 - Aspen	Poletimber Well	4.1	85	51-80	OPIC - FMD: SOME AREAS ROCKOUTCROPS DIFFICULT LOGGING; LEFT OVER FROM SURROUNDING CUT. 2015 This could be called retention for stand 15
17	4130 - Aspen	Poletimber Well	2.1	85	51-80	OPIC - FMD: SOME AREAS ROCKOUTCROPS DIFFICULT LOGGING; LEFT OVER FROM SURROUNDING CUT 2015 If this could have been cut it would have and it is both buffer and retention
18	4110 - Sugar Maple Association	Poletimber Well	14.9	85	81-110	OPIC - FMD: OI Stand Year Origin was 555



Stand	Crystal Falls Mgt. Unit		Report 8 – Forested Stands			Compartment: 86 Year of Entry: 2017	
	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:	
19	4191 - Mixed Upland Deciduous with Conifer	Poletimber Poor	12.5	40	1-50	OPIC - FMD: This stand is moving out of the A3	
20	4119 - Mixed Northern Hardwoods	Poletimber Well	9.3	85	81-110	OPIC - FMD: OI Stand Year Origin was 555	
21	6120 - Lowland Cedar	Poletimber Well	7.5	86	51-80	OPIC - FMD: SWAMP IS TOO WET TO CUT IN The vast majority of this is cedar	
22	4134 - Aspen, Spruce/Fir	Poletimber Well	6.2	40	51-80	OPIC - FMD: This stand is moving out of the A3	
26	4134 - Aspen, Spruce/Fir	Sapling Well	11.3	15	Immature	OPIC - FMD: OI Stand Year Origin was 2000	
27	4130 - Aspen	Poletimber Medium	6.8	40	1-50	OPIC - FMD: THIS STAND IS IN A DRAINAGE BUT IT IS VERY GOOD ASPEN	
28	4119 - Mixed Northern Hardwoods	Poletimber Well	36.6	85	51-80	OPIC - FMD: OI Stand Year Origin was 555 This does not need to be cut yet.	
30	4130 - Aspen	Poletimber Well	19.3	40	81-110	OPIC - FMD: OI Stand Year Origin was 1975needs to grow. Some blown down	
31	4119 - Mixed Northern Hardwoods	Poletimber Well	4.1	85	81-110	OPIC - FMD: OI Stand Year Origin was 555 Average 80 BA	
32	4134 - Aspen, Spruce/Fir	Poletimber Well	37.0	25	Immature	OPIC - FMD: OI Stand Year Origin was 1990	
33	429 - Mixed Upland Conifers	Poletimber Medium	24.3	85	1-50	OPIC - FMD: ROCK BLUFFS, LEFT FROM LAST CUT B/C OF INACCESSIBILITY If this could have been cut it would have been cut already but can be retention	
36	6115 - Lowland Ash	Poletimber Well	16.8	55	81-110	OPIC - FMD: OI Stand Year Origin was 1960There should be a culvert on the road here.	
37	4130 - Aspen	Sapling Well	45.8	14	Immature	OPIC - FMD: cut in 2001 as Tadpole Gumbo sale #008-01-01.	
39	4130 - Aspen	Poletimber Medium	31.2	60	51-80	OPIC - FMD: OI Stand Year Origin was 1975	
40	4119 - Mixed Northern Hardwoods	Poletimber Well	15.1	85	51-80	OPIC - FMD: BAND (E/W) OF ALMOST PURE BIRCH ON NORTH END Most of the birch has been cut in this stand. A few remain	
41	4134 - Aspen, Spruce/Fir	Poletimber Medium	61.3	35	51-80	YOE 1980	

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Crystal Falls Mgt. Unit

Report 8 – Forested Stands

Compartment: 86
Year of Entry: 2017

	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
43	4191 - Mixed Upland Deciduous with Conifer	Sawtimber Well	31.3	75	51-80	OPIC - FMD: OI Stand Year Origin was 1925
44	4199 - Other Mixed Upland Deciduous	Poletimber Well	18.5	78	81-110	
45	4119 - Mixed Northern Hardwoods	Poletimber Well	9.8	85	81-110	OPIC - FMD: TAKE BIRCH AND ASPEN, PROTECT M3 There is some wet in this also but it was cut last time and is good.
46	4110 - Sugar Maple Association	Poletimber Well	9.4	85	51-80	OPIC - FMD: A3 ON SW OF STAND 3" DBH AVG; RECENT THIN This has a few areas that are high but for the most part is 70-90 BA
47	4130 - Aspen	Sapling Well	9.3	15	Immature	OPIC - FMD: OI Stand Year Origin was 2000
48	4134 - Aspen, Spruce/Fir	Poletimber Medium	7.6	40	1-50	OPIC - FMD: This stand is moving out of the A3
51	6111 - Lowland Balsam Poplar	Poletimber Medium	6.4	40	51-80	OPIC - FMD: OI Stand Year Origin was 1975
53	6120 - Lowland Cedar	Poletimber Well	29.8	86	1-50	This is a drainage that has been cut through in areas!!
55	4130 - Aspen	Sapling Well	9.0	14	Immature	OPIC - FMD: sale cut in 2001 as Tadpole Gumbo sale #008-01- 01
56	4134 - Aspen, Spruce/Fir	Sapling Well	2.3	14	Immature	OPIC - FMD: sale cut in 2001 as Tadpole Gumbo sale #008-01- 01
57	4134 - Aspen, Spruce/Fir	Sapling Well	6.3	14	Immature	OPIC - FMD: sale cut in 2001 as Tadpole Gumbo sale #008-01- 01
58	4136 - Aspen, Mixed Conifer	Poletimber Well	26.7	35	81-110	OPIC - FMD: OI Stand Year Origin was 1960
59	4119 - Mixed Northern Hardwoods	Poletimber Well	39.5	85	51-80	OPIC - FMD: E&W DRAINAGES (Ash, cedar, hemlock) APROX 5 CH APART. Sale operations are to avoid drainages. MINNOW TAR HARDWOODS SALE COMPLETED 10-2-11 60-70 BA 2015
60	4136 - Aspen, Mixed Conifer	Poletimber Medium	11.7	40	1-50	OPIC - FMD: OI Stand Year Origin was 1975
61	4119 - Mixed Northern Hardwoods	Sawtimber Well	17.2	85	51-80	OPIC - FMD: E&W DRAINAGES APROX 5 CH APART. sale operations are to avoid drainages. MINNOW TAR HARDWOODS SALE COMPLETED 10-2-11
69	4119 - Mixed Northern Hardwoods	Poletimber Medium	60.0	85	1-50	OPIC - FMD: Reserve the hardwood. Stand cut in summer of 2008. This has spruce, balsam and hardwood amongst the clearcut

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Crystal Falls Mgt. Unit

Report 8 – Forested Stands

Compartment: 86
Year of Entry: 2017



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
70	4136 - Aspen, Mixed Conifer	Sapling Poor	7.8	7	Immature	OPIC - FMD: Reserve the hardwood. Stand cut in the summer 2008. Lots of wet and rocks



Stand	Cover Type	Acres	Managed Site	General Comments:
50	6299 - Lowland Shrub (OI)	2.1	No	Part of Breen Creek
63	510- Water (OI)	24.9	No	Carney Lake Outlet