



Compartment Review Presentation

Crystal Falls Forest Management Unit

Compartment 12149

Entry Year 2018

Acreage: 972

County Iron

Management Area: Michigamme Reservoir

Revision Date: 2016-08-20

Stand Examiner: Scott Sebero

Legal Description:

T43N-R32W SECTION 3.
T44N-R32W SECTION 34.

Identified Planning Goals:

Develop age class distribution in aspen type. Develop the quality while maintaining diversity in hardwood types. Maintain health of conifer types and increase acreage where possible. Maintain and improve road system

Soil and topography:

Fine sandy loam with rolling hills to lowland swamps and drainages.

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

State lands mixed with company lands and private parcels. Lands used mainly for hunting and fishing.

Unique Natural Features:

Polliwog Lake, Michigamme Reservoir.

Archeological, Historical, and Cultural Features:

None

Special Management Designations or Considerations:

None

Watershed and Fisheries Considerations:

Wildlife Habitat Considerations:

This compartment is in the Michigamme Reservoir Management Area which has the following featured species: Ruffed grouse, black bear, northern goshawk, pileated woodpecker, and white-tailed deer. This compartment falls within the Deerfoot Lodge Deer Wintering Complex. Lowland conifer provide critical winter cover for deer. Management of uplands to provide winter and spring forage for deer is important. Balancing the age classes of aspen to provide early successional habitat through mature aspen forest is a goal in this compartment. Lowland conifers and lowland hardwood types provide winter and summer cover and are essential for travel corridors for a many species of wildlife, and provide essential habitat for riparian species, such as wood duck. Both these covertype provide critical bear habitat. Mesic conifer in the uplands is promoted to provide structural diversity within stands which increases habitat value, as cover for wildlife. Mast production, such as oak, cherry and raspberry are encouraged to provide valuable forage for bear, deer, grouse and turkey. This compartment has a hunter walking trail and opening that provides herbaceous spring and summer forage particularly important for wildlife, and provide recreational opportunities for consumptive and non-consumptive wildlife users.

Mineral Resource and Development Concerns and/or Restrictions

Surface sediments consist of thin to discontinuous glacial outwash sand and gravel and postglacial alluvium. There is insufficient data to determine the glacial drift thickness. The Precambrian Hemlock Formation and Intrusive subcrops below the glacial drift. There is not a current economic use for these rocks. The Crystal Falls abandoned iron mines are located four miles to the south. The compartment was previously leased and Section 34 is currently leased for metallic exploration. The nearest gravel pit is located several miles away and potential appears to be limited. There is no economic oil and gas production in the UP.

Vehicle Access:

Rock Crusher Road, snowmobile trail and woods roads..

Survey Needs:

Recreational Facilities and Opportunities:

Snowmobile trail runs through compartment.

Fire Protection:

Additional Compartment Information:

The following reports from the Inventory are attached:

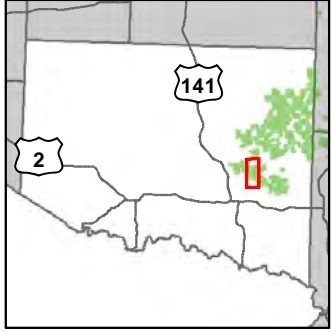
- Total Acres by Cover Type and Age Class**
- Cover Type by Harvest Method**
- Proposed Treatments – No Limiting Factors**
- Proposed Treatments – With Limiting Factors**
- Stand Details (Forested and Nonforested)**
- Dedicated and Proposed Special Conservation Areas**
- Site Condition Details**

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

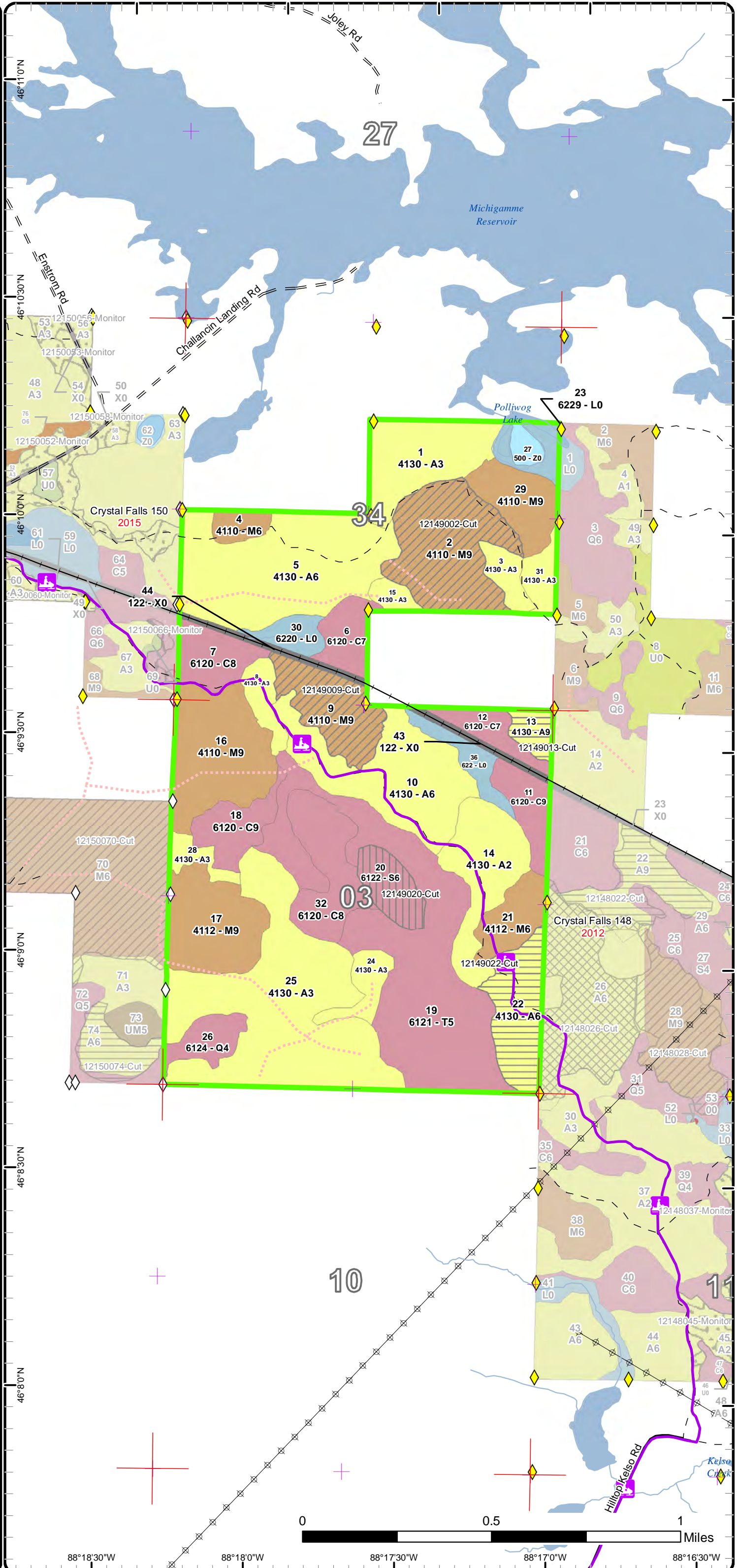
- Base feature information, stand boundaries, cover types, and numbers**
- Proposed treatments**
- Site condition boundaries**
- Details on the road access system**

Cover Type & Treatments Map

Compartment: 149
 T443N R32W Sec. 03
 County: Iron
 Unit: Crystal Falls
 Mgmt Area: Michigamme Reservoir
 YOE: 2018
 Acres: 972 GIS Calculated
 Examiner: Scott Sebero
 Map Revised: 11/29/2016
 Map Phase: Post-Review



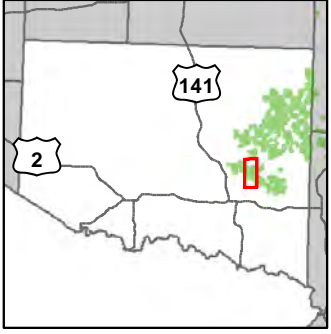
- Miris Corners
- + Remonumented Section Corners
- ◆ Survey Grade GPS Corners
- ◆ Field Grade GPS Corners
- Snowmobile Trails
- Designated Snowmobile Trails
- Paved Roads
- Gravel Roads
- - Poor Dirt Roads
- - - Closed Roads
- Active Railroad
- Rivers
- Powerline
- Compartment Boundary
- Clearcut (w/Reserves)
- Thinning (Crown, Low, Systematic)
- Shelter Wood (w/Reserves)
- 411 - Northern Hardwood
- 413 - Aspen
- 612 - Lowland Coniferous Forest
- 122 - Roads/Parking Lot
- 500 - Water
- 622 - Lowland Shrub
- Lakes



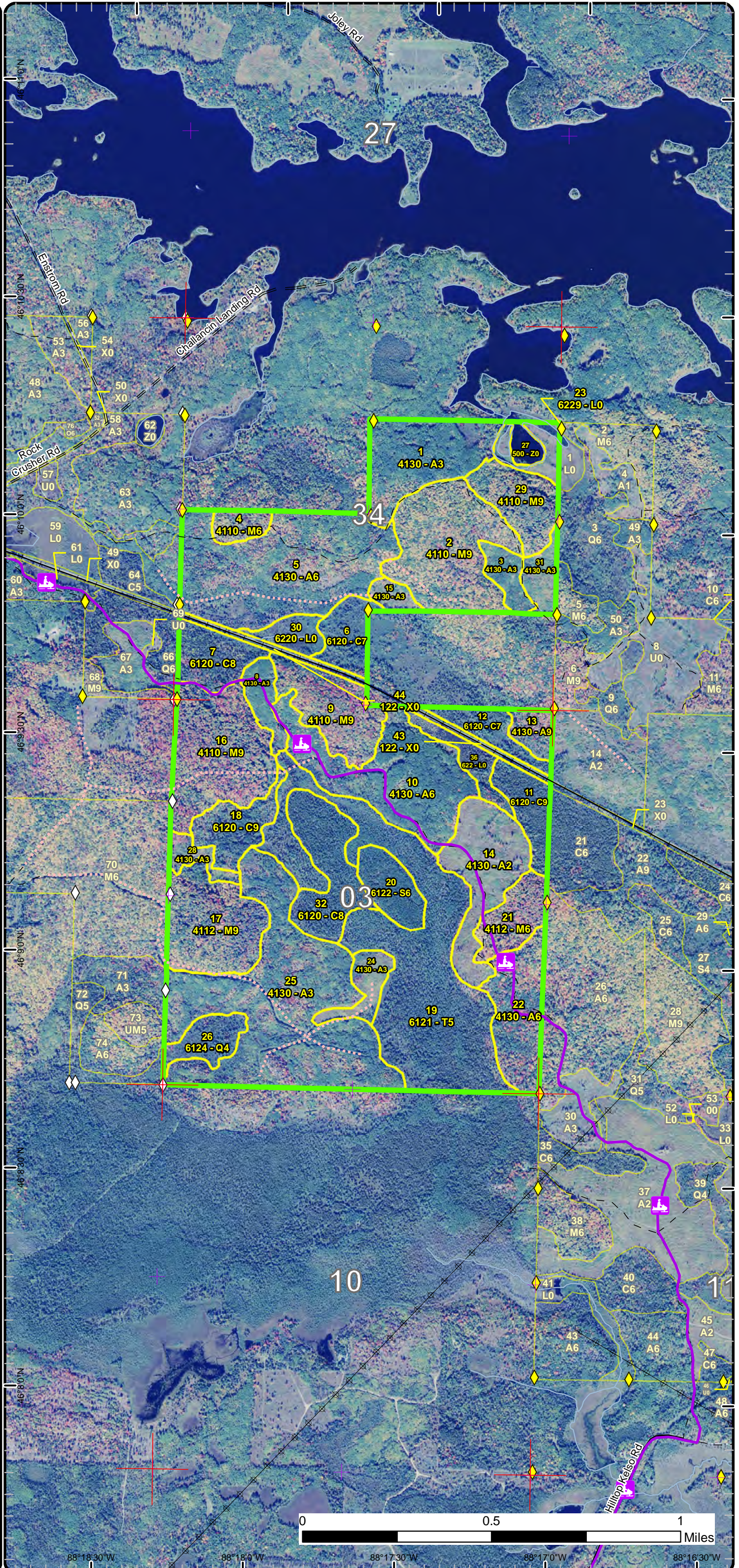
88°18'30"W
88°18'0"W
88°17'30"W
88°17'0"W
88°16'30"W

Stand Boundary Map

Compartment: 149
 T443N R32W Sec. 03
 County: Iron
 Unit: Crystal Falls
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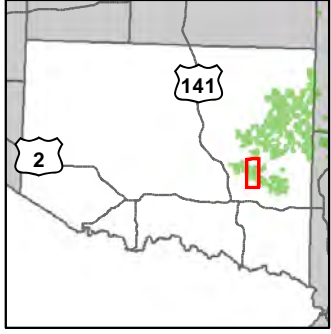
- Miris Corners
- Remonumented Section Corners
- ◆ Survey Grade GPS Corners
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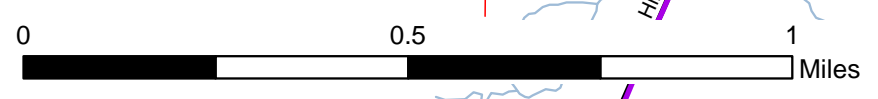
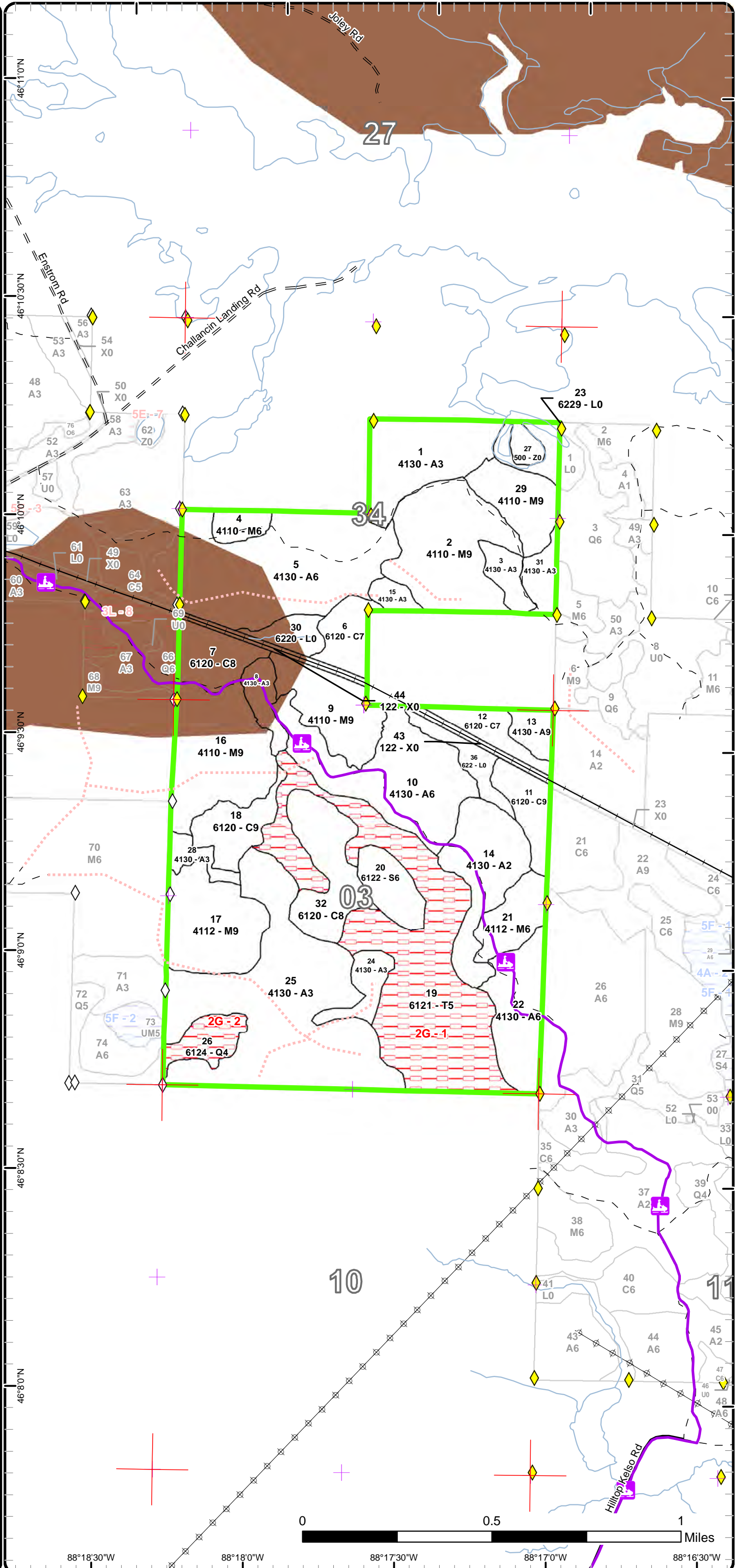
88°18'30"W 88°18'0"W 88°17'30"W 88°17'0"W 88°16'30"W

Special Conservation Areas & Site Conditions Map

Compartment: 149
 T443N R32W Sec. 03
 County: Iron
 Unit: Crystal Falls
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- Miris Corners
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- ◆ Survey Grade GPS Corners
- ◆ Field Grade GPS Corners
- Snowmobile Trails
- Designated Snowmobile Trails
- Paved Roads
- Gravel Roads
- - Poor Dirt Roads
- - - Closed Roads
- Active Railroad
- Rivers
- Powerline
- Compartment Boundary
- - - Unavailable
- - - 2G: Too wet (sensitive soils, does not include access issues)
- Stand Boundaries
- Deer Winter Range



88°18'30"W 88°18'0"W 88°17'30"W 88°17'0"W 88°16'30"W

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	70	10	131	187	0	0	32	0	8	0	0	0	0	0	0	0	0	437
Cedar	0	0	0	0	0	0	0	0	0	97	0	16	0	0	0	0	0	0	112
Lowland Conifers	0	0	0	0	0	0	0	0	0	13	0	0	0	0	0	0	0	0	13
Lowland Shrub	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29
Lowland Spruce/Fir	0	0	0	0	0	0	0	0	0	16	0	0	0	0	0	0	0	0	16
Northern Hardwood	0	0	0	0	0	0	0	0	0	57	167	0	0	0	0	0	0	0	224
Tamarack	0	0	0	0	0	0	0	0	0	123	0	0	0	0	0	0	0	0	123
Urban	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
Water	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Total	46	70	10	131	187	0	0	32	0	314	167	16	0	0	0	0	0	0	971



Report 2 – Treatment Summary

Crystal Falls Mgt. Unit
Year of Entry: 2018

Acres of Harvest

Compartment 149
Total Compartment Acres: 972

Commercial Harvest - 142
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
Aspen	40	0	0	0	0	0	0	0	0	40
Lowland Spruce/Fir	0	0	0	0	16	0	0	0	0	16
Northern Hardwood	0	0	0	0	0	86	0	0	0	86
Total	40	0	0	0	16	86	0	0	0	142

Proposed and Next Step Treatments by Method

	Harvest	Site Prep	Planting	Seeding	Burning	Pesticide	Monitoring	Other	Non-Forest Mgt.	Total Acres
Current	142	0	0	0	0	0	0	0	0	142
Next Step	0	0	0	0	0	0	56	0	0	56
Total	142	0	0	0	0	0	56	0	0	197



Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
2	12149002-Cut	55.5	4110 - Sugar Maple Association	Sawtimber Well	91	111-140	Harvest	Crown Thinning	411 - Northern Hardwood	Even-Aged	Draft Field Boundary

Habitat Cut: No**Site Condition:**

Prescription Mark hardwood to reduce BA to 80. Use complete marker as guide for marking. No red or white pine, hemlock, cedar or oak will be cut. Pole sized black ash will be left.

Next Step
Treatments:

Acceptable
Regen:

Other Buffer broad wing nest one chain. GPS coordinates will be provided by wildlife division.

Comment: WLD-Featured Species: Deer, Bear, Goshawk, other wildlife Broad-winged Hawk. Mesic conifer in the uplands is promoted to provide structural diversity within stands which increases habitat value, as cover for wildlife. Mast production, such as oak, cherry and raspberry are encouraged to provide valuable forage for bear, deer, grouse and turkey.. Drainages, wooded wetland and associated ash should be protected as critical bear habitat. Wildlife trees providing cavities for denning and nesting important for wildlife habitat in this stand.

Proposed Start Date: 10/01/2017

9	12149009-Cut	30.3	4110 - Sugar Maple Association	Sawtimber Well	91	111-140	Harvest	Crown Thinning	411 - Northern Hardwood	Even-Aged	Draft Field Boundary
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Habitat Cut: No**Site Condition:**

Prescription Mark hardwood to reduce BA to 80. Use complete marker as guide for marking. No red or white pine, cedar, hemlock or oak will be cut.

Next Step
Treatments:

Acceptable
Regen:

Other WLD-Featured species: deer, bear, Pileated woodpecker, northern goshawk. Large diameter trees with cavities for nesting and denning wildlife in this stand, particularly yellow birch. Promoting mesic conifer within stand diversity is important: White pine, hemlock, cedar and spruce/fir 6" stump retained where present. Oak and cherry should be maintained for mast production. In DWC-transitions from lowlands are critical for wintering deer to access upland and reach forage in uplands. Drainage with ash and cedar should be protected as critical bear habitat.

Proposed Start Date: 10/01/2017

13	12149013-Cut	8.1	4130 - Aspen	Sawtimber Well	89	51-80	Harvest	Clearcut with Retention	4135 - Aspen, Cedar	Even-Aged	Draft Field Boundary
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Habitat Cut: No**Site Condition:**

Prescription Cut all aspen and maple 2" or more DBH. Cut all spruce and balsam with one or more pulpwood sticks. Leave all cedar and red and white pine.

Specs: Mark out drain in southern part of stand.

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

Acceptable Mix of aspen, maple and spruce and balsam.
Regen:

Other No red and white pine seen at time of inventory. Aspen falling out of stand.

Comment: WLD-Featured Species: Deer, Bear, Grouse, Goshawk. Balancing the age classes of aspen to provide early successional habitat through mature aspen forest is a goal in this compartment. Mesic conifer in the uplands is promoted to provide structural diversity within stands which increases habitat value, as cover for wildlife. Retention of White Pine, hemlock, and cedar component for refuge trees and cover for bear and deer is desirable. This compartment is in DWC-transitions from lowlands are critical for wintering deer to access upland and reach forage in uplands. Mast production, such as oak, cherry and raspberry are encouraged to provide valuable forage for bear, deer, grouse. Drainages and associated ash should be protected as critical bear habitat.

Proposed Start Date: 10/01/2017



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Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
20 12149020-Cut	15.9	6122 - Black Spruce	Poletimber Well	89	81-110	Harvest	Shelterwood with Retention	6123 - Lowland Fir	Even-Aged	Draft Field Boundary

Habitat Cut: No

Site Condition:

Prescription Cut all spruce and tamarack with one or more pulpwood stick. Leave two 1/2 acre pockets of black spruce along west side of stand to serve as seed source. Leave all cedar.
Specs:

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

Acceptable Mix of black spruce and tamarack.
Regen:

Other Winter or very dry summer cut.
Comment: WLD-Featured species: Deer, Bear, Moose. Maintain the Black Spruce covertype. Important habitat for named species.

Proposed Start Date: 10/01/2017

22 12149022-Cut	31.7	4130 - Aspen	Poletimber Well	62	81-110	Harvest	Clearcut with Retention	4134 - Aspen, Spruce/Fir	Even-Aged	Draft Field Boundary
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Habitat Cut: No

Site Condition:

Prescription cut all aspen, maple, birch, spruce and balsam with one or more pulpwood stick. Leave all red and white pine, cedar, hemlock and oak.
Specs:

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

Acceptable Mix of aspen, mixed hardwood and mixed softwood.
Regen:

Other Snowmobile trail running through stand. Protect small intermittent stream running through stand. Mark out ash pocket and retain the ash in that pocket. Save some large yellow birch and small cherry.
Comment: WLD-Featured species: Deer, Bear, other species: red-shouldered hawk. Balancing the age classes of aspen to provide early successional habitat through mature aspen forest is a goal in this compartment. Mesic conifer in the uplands is promoted to provide structural diversity within stands which increases habitat value, as cover for wildlife. Retention of White Pine, hemlock, and cedar component for refuge trees and cover for bear and deer is desirable. This compartment is in DWC-transitions from lowlands are critical for wintering deer to access upland and reach forage in uplands Mast production, such as oak, cherry and raspberry are encouraged to provide valuable forage for bear, deer, grouse. Drainages and associated ash should be protected as critical bear habitat. Maintenance of diverse species for structural diversity such as refuge, cover and den trees is important numerous wildlife species in addition to the featured species named.

Proposed Start Date: 10/01/2017

Total Treatment Acreage Proposed: 141.5

Report 4 – Site Conditions

Crystal Falls Mgt. Unit

Scott Sebero : Examiner

Compartment: 149

Year of Entry: 2018

Availability for Management

Total Acres	Acres Available	Acres Available With Condition	Acres Not Available	Dominant Site Conditions	
Acres	Available	With Condition	Not Available	5F	2G
438	351	87	0	Aspen	87
112	112	0	0	Cedar	
13	0	0	13	Lowland Conifers	13
29	29	0	0	Lowland Shrub	
16	16	0	0	Lowland Spruce/Fir	
224	224	0	0	Northern Hardwood	
123	0	0	123	Tamarack	123
12	12	0	0	Urban	
5	5	0	0	Water	
972	749	87	136	Total Forested Acres	87 136
	77%	9%	14%	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	2G: Too wet (sensitive soils, does not include access issues)	123	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Very wet tag alder with scattered tamarack, black spruce and cedar.							
2	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	13	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Very wet tag alder with scattered tamarack, cedar and black spruce.							
3	Available	5F: Evaluated for Forest Health Considerations	87	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							

Mgt. Unit

Compartment: #Type!

Year of Entry:



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
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Comments



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	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.



Stand	Crystal Falls Mgt. Unit		Report 7 – Forested Stands			Compartment: 149 Year of Entry: 2018
	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
1	4130 - Aspen	Sapling Well	39.5	34	Immature	
2	4110 - Sugar Maple Association	Sawtimber Well	55.5	91	111-140	
3	4130 - Aspen	Sapling Well	9.1	27	Immature	
4	4110 - Sugar Maple Association	Poletimber Well	7.5	91	81-110	
5	4130 - Aspen	Poletimber Well	86.8	37	51-80	lo
6	6120 - Lowland Cedar	Sawtimber Poor	15.0	89	1-50	
7	6120 - Lowland Cedar	Sawtimber Medium	18.1	89	51-80	
8	4130 - Aspen	Sapling Well	10.1	17	Immature	
9	4110 - Sugar Maple Association	Sawtimber Well	30.3	91	111-140	OPIC - FMD: Select harvest done in 2000.
10	4130 - Aspen	Poletimber Well	60.9	32	Immature	Some clumps of larger pole and log sized red maple.
11	6120 - Lowland Cedar	Sawtimber Well	15.7	107	81-110	
12	6120 - Lowland Cedar	Sawtimber Poor	12.0	89	1-50	
13	4130 - Aspen	Sawtimber Well	8.1	89	51-80	Aspen falling out of stand.
14	4130 - Aspen	Sapling Medium	38.2	8	Immature	
15	4130 - Aspen	Sapling Well	5.4	8	Immature	
16	4110 - Sugar Maple Association	Sawtimber Well	51.0	91	81-110	
17	4112 - Maple, Beech, Cherry Association	Sawtimber Well	39.6	89	81-110	
18	6120 - Lowland Cedar	Sawtimber Well	18.5	89	141-170	



Stand	Crystal Falls Mgt. Unit		Report 7 – Forested Stands			Compartment: 149 Year of Entry: 2018	
	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:	
19	6121 - Tamarack	Poletimber Medium	122.9	89	1-50		
20	6122 - Black Spruce	Poletimber Well	15.9	89	81-110		
21	4112 - Maple, Beech, Cherry Association	Poletimber Well	17.5	89	81-110	Red maple stump sprouts from previous harvest.	
22	4130 - Aspen	Poletimber Well	31.7	62	81-110	OPIC - FMD: Snowmobile trail runs through stand.	
24	4130 - Aspen	Sapling Well	11.0	8	Immature	Tag alder along wetter edges of stand.	
25	4130 - Aspen	Sapling Well	121.4	28	Immature	Several large rock outcrops in this stand.	
26	6124 - Lowland Spruce- Fir	Poletimber Poor	12.9	89	1-50		
28	4130 - Aspen	Sapling Well	6.7	8	Immature		
29	4110 - Sugar Maple Association	Sawtimber Well	22.6	91	81-110		
31	4130 - Aspen	Sapling Well	9.3	8	Immature		
32	6120 - Lowland Cedar	Sawtimber Medium	32.9	89	51-80		



Stand	Cover Type	Acres	Managed Site	General Comments:
23	6229 - Mixed lowland shrub	9.2	No	
27	500 - Water	4.8	No	OPIC - FMD: Polliwog Lake.
30	6220 - Alder/willow	9.2	No	OPIC - FMD: OI Stand Year Origin was
36	622 - Lowland Shrub	10.8	No	
43	122 - Road/Parking Lot	5.3	No	OPIC - FMD: R.R. track.
44	122 - Road/Parking Lot	6.3	No	OPIC - FMD: R.R. track.