



Compartment Review Presentation

Crystal Falls Forest Management Unit

Compartment 12043

Entry Year 2017

Acreage: 1,948

County Dickinson

Management Area: Ralph Ground Moraine

Revision Date: 2015-08-27

Stand Examiner: Ed Rice

Legal Description:

T43N R29W sections 4, 6 - 11, 14 - 17

Identified Planning Goals:

Optimize sustainable timber production while enhancing and protecting wildlife habitat. Continue to sustainably balance the aspen age class acres. Get the hardwood stands on a 20 year alternating cutting cycle towards regulation. Protect the riparian areas and transition zones during management activity.

Soil and topography:

Fine sandy loams, sands, and muck soils. The eastern end of the compartment has a higher incidence of wet soils.

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

Private lands intersperse the compartment, both private individuals and industrial forest. Active forest management has occurred and will continue within and surrounding the compartment.

Unique Natural Features:

None identified

Archeological, Historical, and Cultural Features:

None recorded

Special Management Designations or Considerations:

None recorded

Watershed and Fisheries Considerations:

Ford River and Two Mile Creek. Both are cold water trout streams requiring 300 foot buffers for aspen management. 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:

The abundance of lowland conifer coupled with the interspersed aspen and hardwoods provides good habitat for ruffed grouse and snowshoe hare. This area is also highly important for black bear due to the black ash stands throughout. The three rivers, the Ford River, Turner Creek and Two Mile Creek comprising the north, south and west boundaries of this compartment provide excellent habitat for many aquatic furbearers such as beaver, otter, mink and muskrat, as well as, several species of turtles, salamanders and frogs.

Mineral Resource and Development Concerns and/or Restrictions

Surface sediments consist of medium-textured glacial till, peat and muck, and glacial outwash sand and gravel and postglacial alluvium. There is insufficient data to determine the glacial drift thickness or it varies between 50 to 100 feet. The Precambrian Michigamme Formation, Archean Granite/Gneiss, and Cambrian Munising Group subcrop below the glacial drift. Iron formation within the Menominee Group is mapped in the eastern end of the compartment, and the Naganee Iron Formation occurs just to the north. There is not a current economic use for the Granite/gneiss, although it has building/dimension stone potential. The Groveland Mine (iron) is located approximately ten miles to the south. Gravel pits are not indicated in this area, but there appears to be potential on uplands. Most of this area was previously leased for metallic mineral exploration. There is no economic oil and gas production in the UP.

Vehicle Access:

Access is good to fair depending on the area of the compartment. There are several blocks within the compartment that have poor to no access.

Survey Needs:

T43N R29W SW 1/16 sec 9, W 1/16 sec 8,17. NW 1/16 sec 16 N 1/16 sec 17,18 N1/16 sec 17 *depending on access, may need S 1/16 sec 4, 5

Recreational Facilities and Opportunities:

Snowmobile trail runs through compartment

Fire Protection:

A small acreage of red pine fuel type exists in the NW of the compartment. There are sparse ladder fuels in this type however so the possibility of fire escaping control is unlikely. Several stands of mixed black spruce and fir are throughout the stand. Fire equipment access is fairly good. Water sources are abundant.

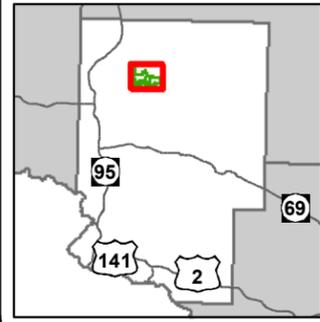
Additional Compartment Information:**The following reports from the Inventory are attached:**

- 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**

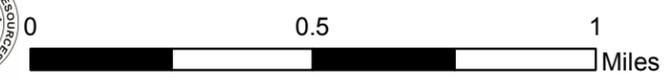
The following information is displayed, where pertinent, on the attached compartment maps:

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

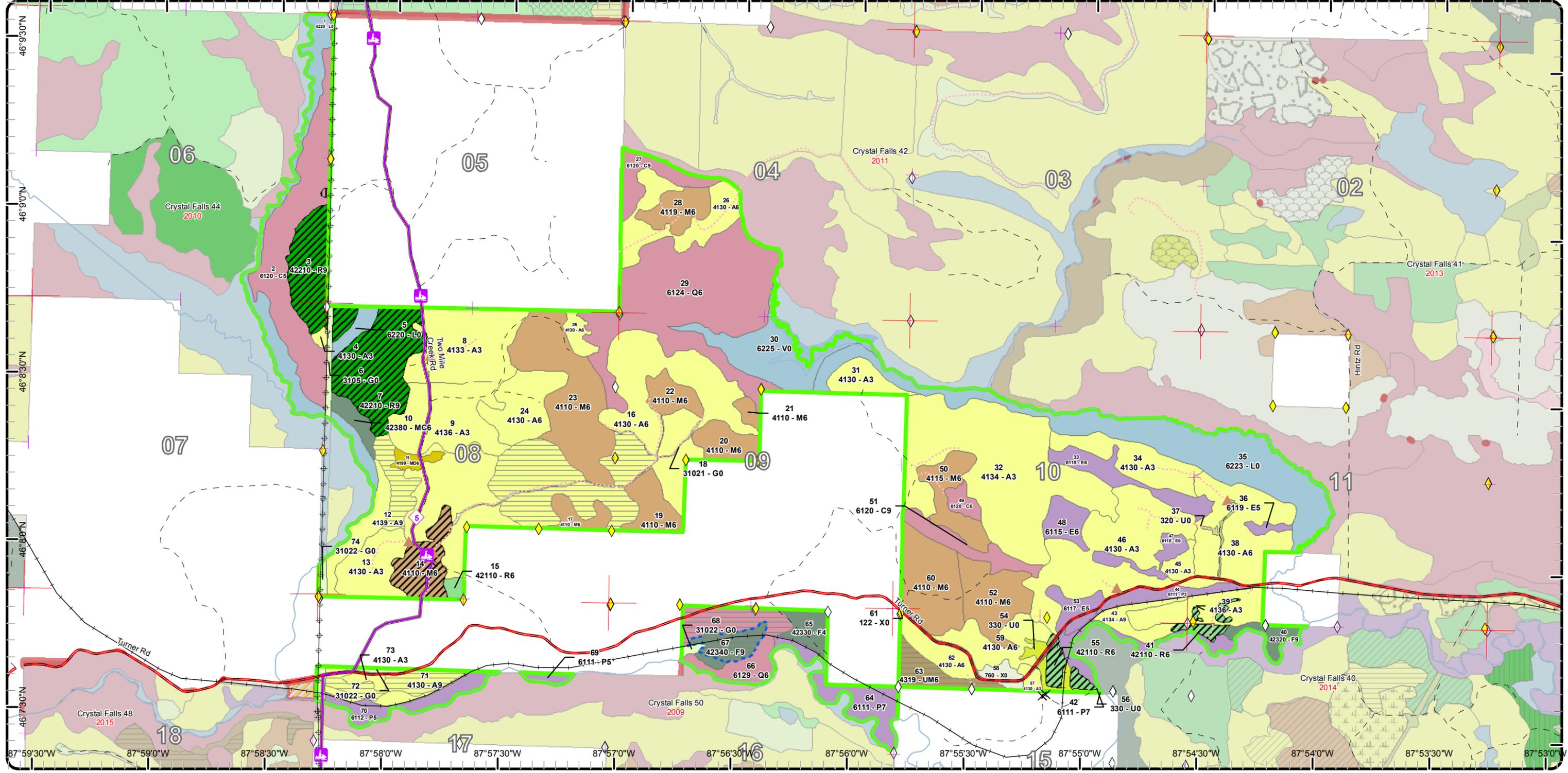
Cover Type & Treatments



Compartment: 43
 T43N R29W 04, 06-11, 14-17
 County: Dickinson
 Unit: Crystal Falls
 Mgmt Area: Ralph Ground Moraine
 YOE: 2017
 Acres: 1948 GIS Calculated
 Examiner: Ed Rice
 Map Revised: 8/28/2015
 Map Phase: Pre-Review

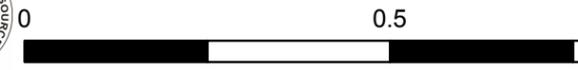
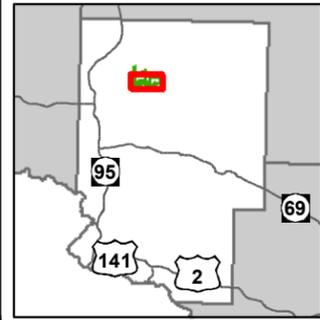


- ✚ Remonumented Section Corners
- ◆ Survey Grade GPS Corners
- ◇ Field Grade GPS Corners
- Miris Corners
- County Gravel Roads
- - Poor Dirt Roads
- ⋯ Closed Roads
- Snowmobile
- ✕ Gate
- ▲ Berms
- 🚙 Snowmobile Trails
- Railroads
- Rivers
- Lakes
- ⚡ Powerline
- ▨ Treatments with Site Conditions
- ▭ Clearcut (w/Reserves)
- ▨ Thinning (Crown, Low, Systematic)
- ▭ Shelter Wood (w/Reserves)
- Forest Covertype
- 413 - Aspen
- 419 - Mixed Upland Deciduous
- 421 - Planted Pines
- 422 - Natural Pines
- 423 - Other Upland Conifers
- 430 - Upland Mixed Fores
- 611 - Lowland Deciduous Forest
- 612 - Lowland Coniferous Forest
- Non-Forest Covertype
- 122 - Roads/Parking Lot
- 310 - Herbaceous Openland
- 320 - Upland Shrub
- 330 - Low Density Trees
- 622 - Lowland Shrub
- 790 - Other Bare/Sparsely Vegetated



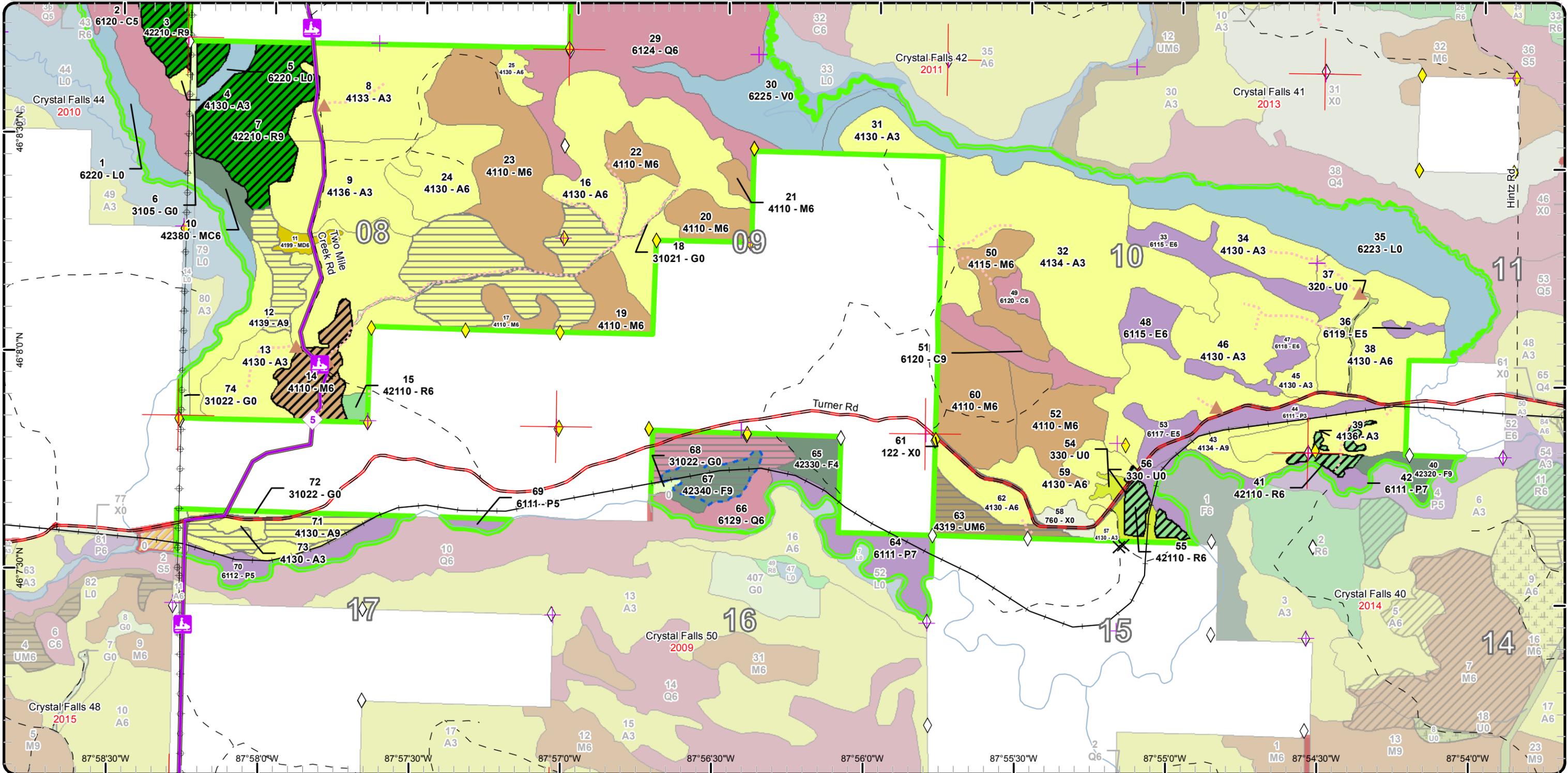
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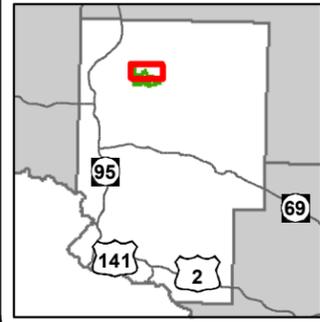


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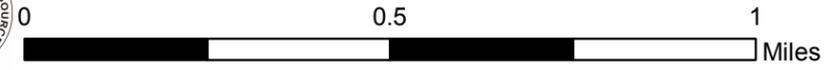
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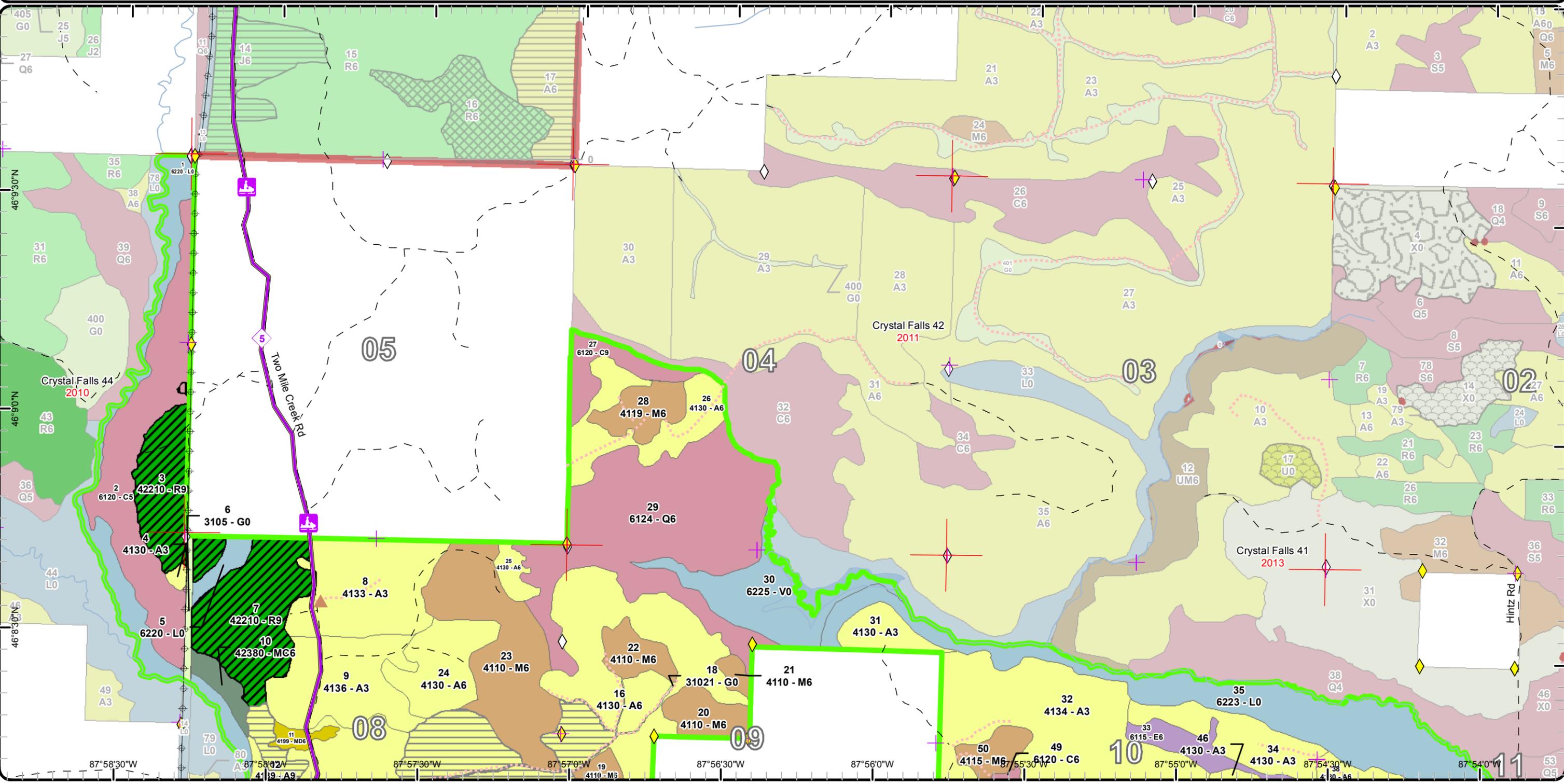
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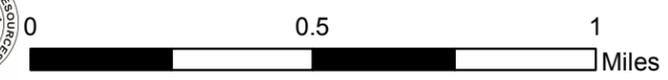
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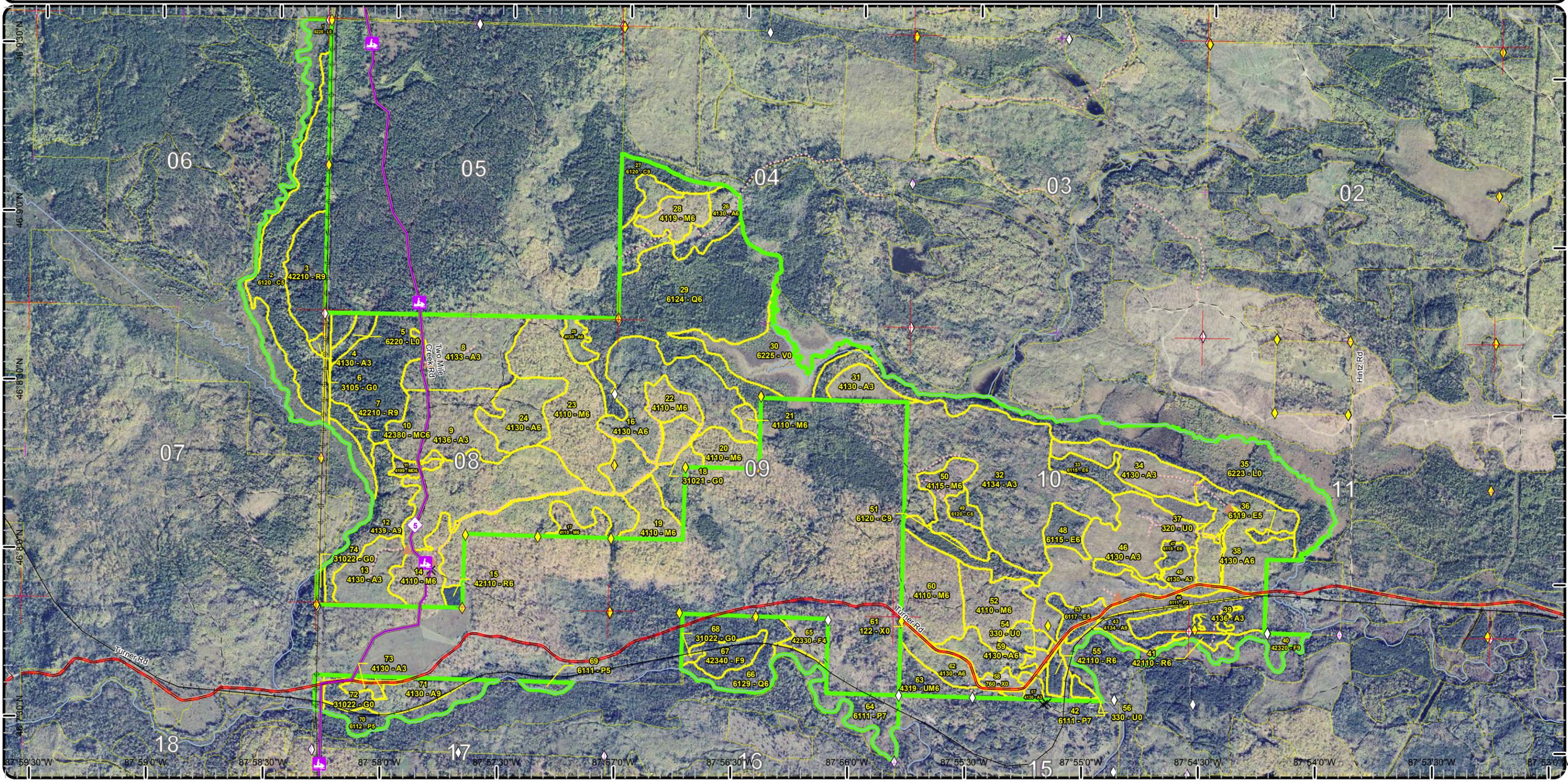
Stand Boundary Map



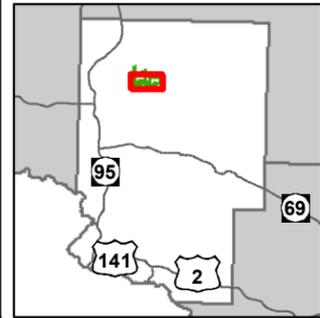
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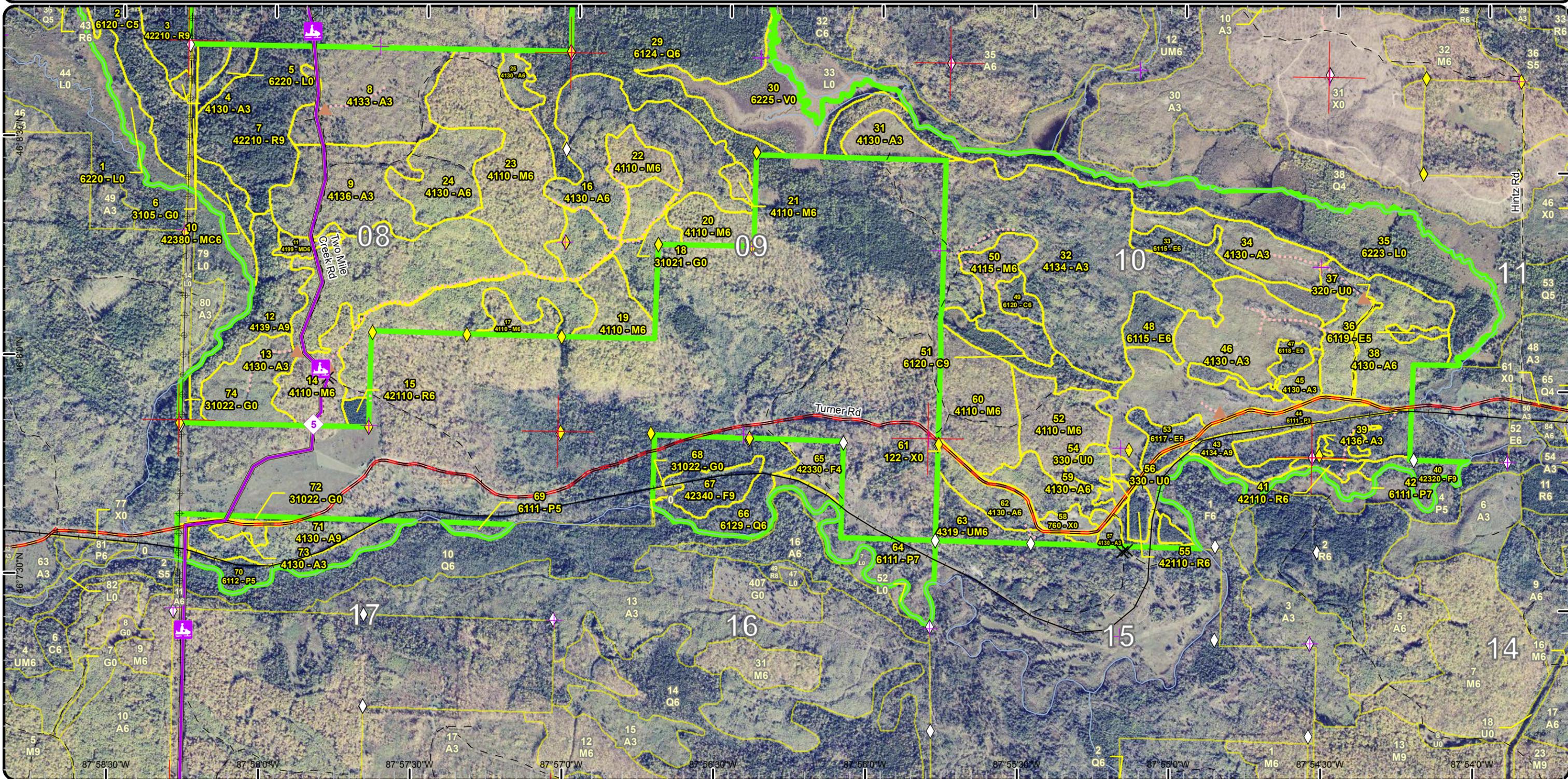
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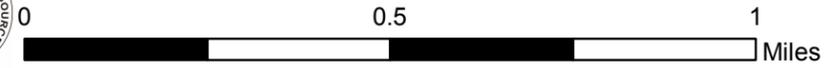
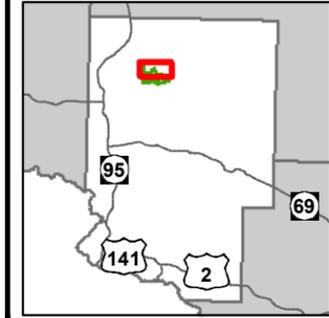


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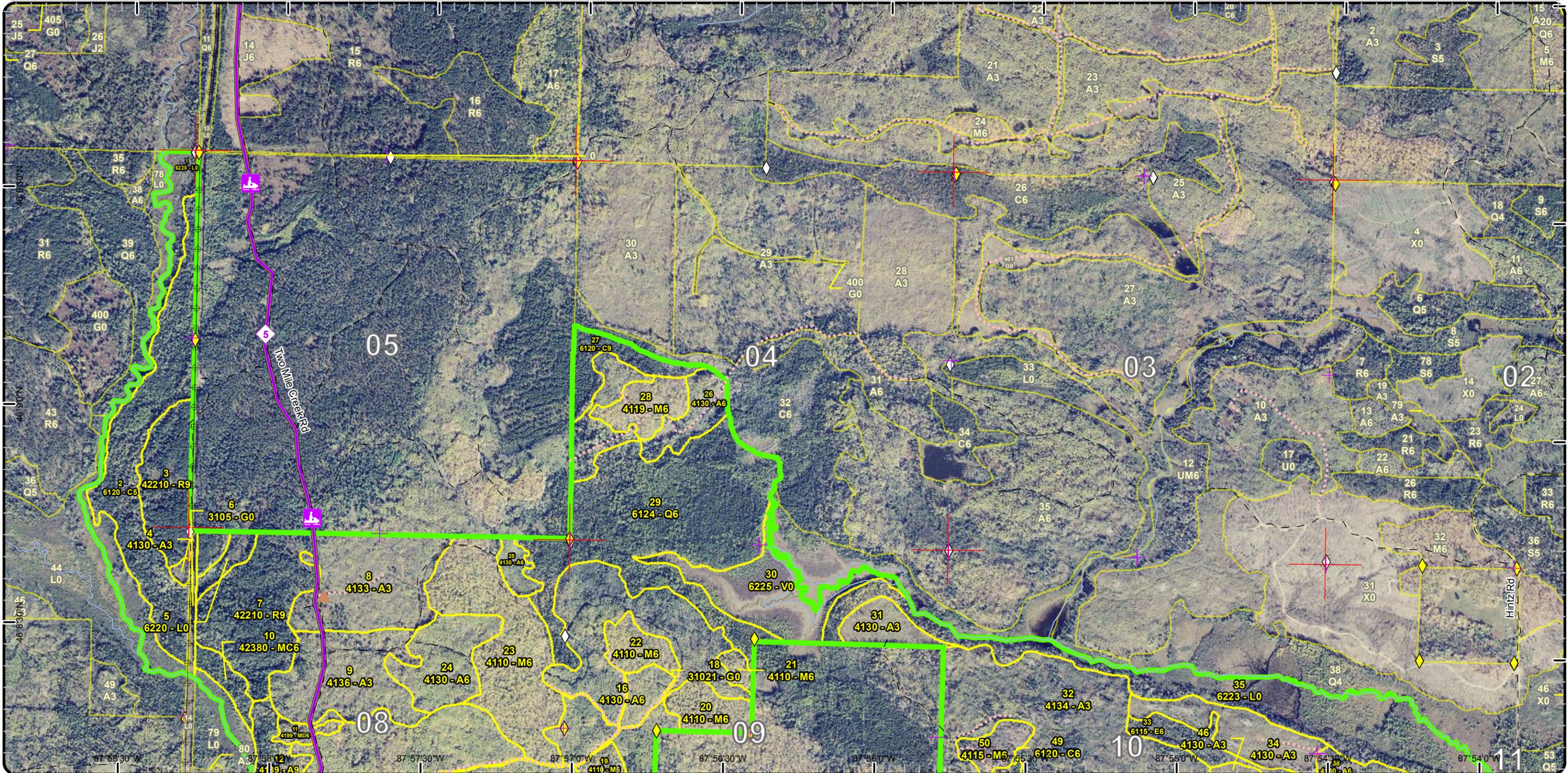


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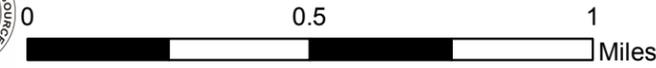
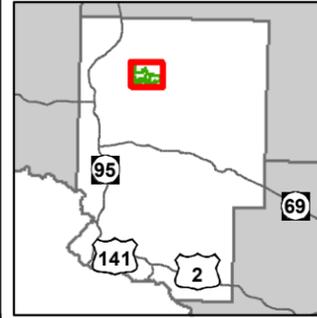


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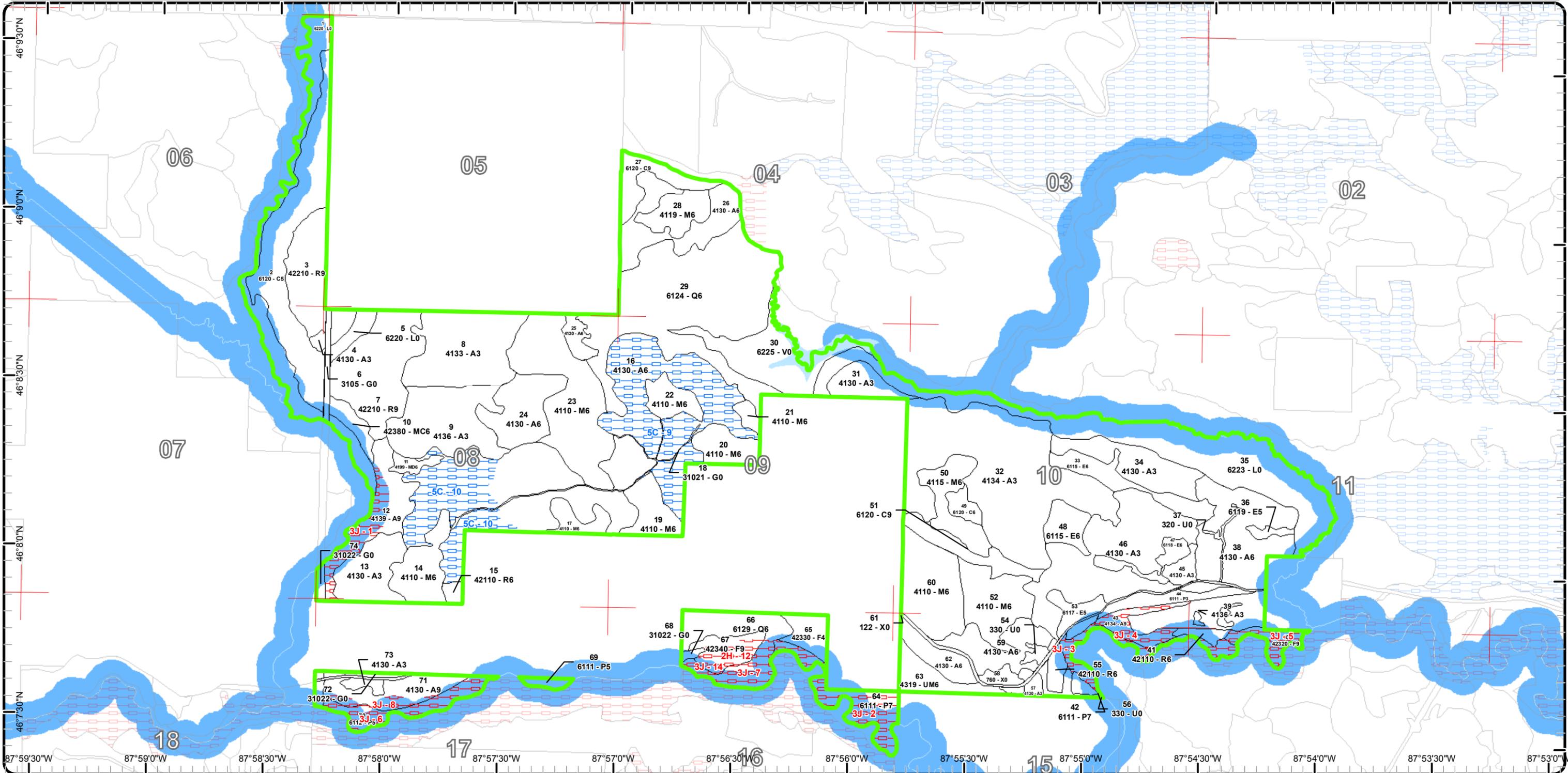


Special Conservation Areas & Site Conditions Map

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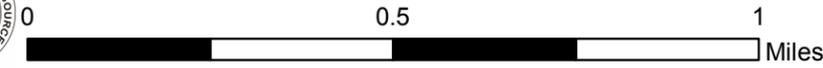
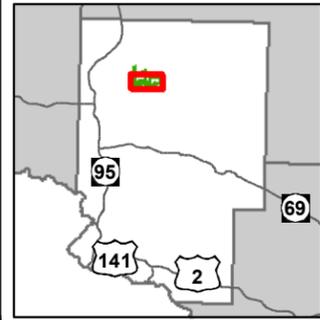


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- Site Condition
- Available w/ Constraints
- Unavailable
- Available Factors W/ Constraints
- 5C: Delay treatment for age/size class diversity or exceptional site quality
- Unavailable Factors
- 2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)
- 3J: Water quality / BMPs (stream, river, or lake)
- Special Conservation Areas
- Cold Water Streams
- Cold Water Lakes
- High Priority Trout Stream Buffer

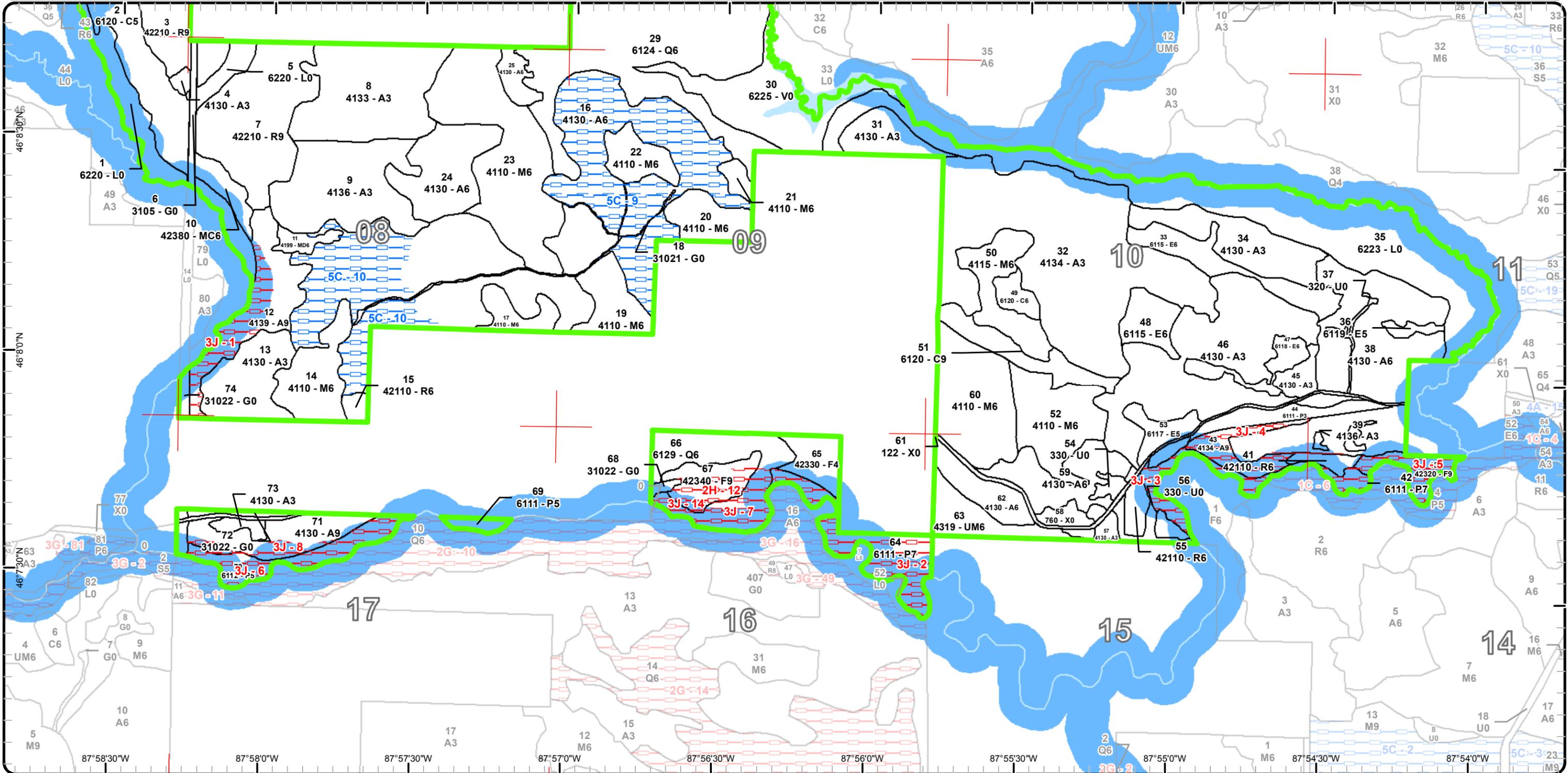


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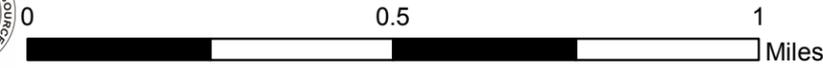
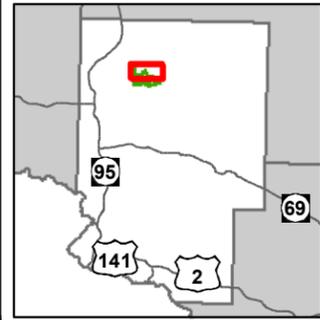


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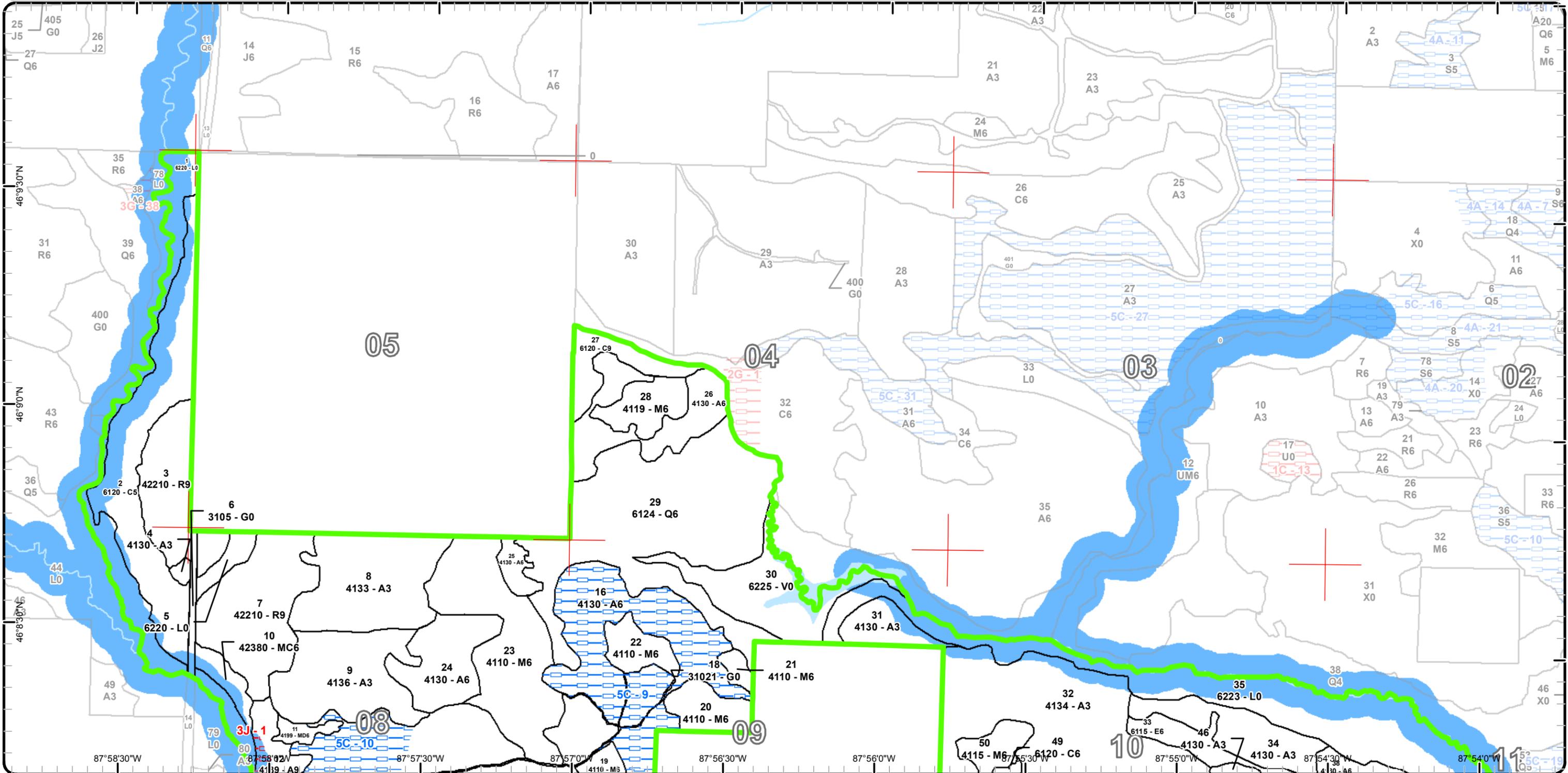
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Report 1 – Total Acres by Cover Type and Age Class



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	124	125	279	71	0	212	34	31	0	0	0	0	0	0	0	0	0	876
Bare/Sparsely Vegetated	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Bog	41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41
Cedar	0	0	0	0	0	0	0	0	0	0	106	0	0	0	0	0	0	6	112
Herbaceous Openland	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15
Low-Density Trees	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
Lowland Aspen/Balsam Poplar	0	11	0	0	0	0	0	48	15	0	0	0	0	0	0	0	0	0	74
Lowland Conifers	0	0	0	0	0	0	0	35	134	0	0	0	0	0	0	0	0	0	169
Lowland Deciduous	0	0	0	0	23	12	10	0	0	0	0	0	0	0	0	0	0	10	55
Lowland Shrub	154	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	154
Mixed Upland Deciduous	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	5
Northern Hardwood	0	0	0	0	0	0	74	185	0	0	0	0	0	0	0	0	0	0	259
Red Pine	0	0	0	0	3	15	36	0	54	0	0	0	0	0	0	0	0	0	108
Upland Conifers	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	8
Upland Mixed Forest	0	0	0	0	0	0	0	16	0	0	0	0	0	0	0	0	0	0	16
Upland Shrub	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Upland Spruce/Fir	0	0	0	0	0	11	10	0	0	15	0	0	0	0	0	0	0	0	36
Urban	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
Total	233	135	125	279	97	38	350	318	239	15	106	0	0	0	0	0	0	16	1951



Report 2 – Treatment Summary

Crystal Falls Mgt. Unit
Year of Entry: 2017

Acres of Harvest

Compartment 43
Total Compartment Acres: 1,948

Commercial Harvest - 265
Harvests with Site Condition - 13
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	100	0	0	0	0	0	0	0	0	100
Cedar	0	0	0	0	1	0	0	0	0	1
Lowland Conifers	20	0	0	0	0	0	0	0	0	20
Northern Hardwood	0	0	0	0	0	24	0	0	0	24
Red Pine	0	0	0	0	0	105	0	0	0	105
Upland Mixed Forest	16	0	0	0	0	0	0	0	0	16
Upland Spruce/Fir	13	0	0	0	0	0	0	0	0	13
Total	149	0	0	0	1	128	0	0	0	278

Proposed and Next Step Treatments by Method

	Harvest	Site Prep	Planting	Seeding	Burning	Pesticide	Monitoring	Other	Non-Forest Mgt.	Total Acres
Current	278	0	0	0	0	0	0	0	0	278
Next Step	0	0	0	0	0	0	149	0	0	149
Total	278	0	0	0	0	0	149	0	0	427



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
2	12043002-Cut	0.6	6120 - Lowland Cedar	Poetimber Medium	98	Unspec ified	Harvest	Shelterwood	613 - Lowland Mixed Forest	Even-Aged	Proposal

Habitat Cut: No**Site Condition:**

Prescription small area of mixed red pine, aspen, white pine. shelterwood/seed tree cut r pine to 40 BA if need be (pine may already be near that density).
Specs: cut merchantable aspen and upland b spruce. leave w pine and w birch. keep cut on upland area, do not push into swamp edge.

Next Step
Treatments:

Acceptable aspen, pine, spruce/fir
Regen:

Other if winter cut, use snowmobile trail VMS sale contract specifications Old next step comments:
Comment:

Proposed Start Date: 10/1 /2016

3	12043003-Cut	35.5	42210 - Natural Red Pine	Sawtimber Well	57	111- 140	Harvest	Crown Thinning	42290 - Natural Mixed Pine	Two-Aged	Proposal
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Habitat Cut: No**Site Condition:**

Prescription thin to 120 BA or remove 1/3 BA whichever occurs first. try to target utility poles for removal if present. create gaps adjacent to w pine. keep
Specs: older aged, large diameter (wolf tree) r pine for future seed source. do not cut w pine unless necessary for equipment access, leave w birch.

Next Step
Treatments:

Acceptable w pine, r pine
Regen:

Other if winter cut, use snowmobile trail VMS sale contract specifications Old next step comments:
Comment:

Proposed Start Date: 10/1 /2016

7	12043007-Cut	54.5	42210 - Natural Red Pine	Sawtimber Well	72	141- 170	Harvest	Crown Thinning	42290 - Natural Mixed Pine	Two-Aged	Proposal
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Habitat Cut: No**Site Condition:**

Prescription thin to approx. 120 BA or 1/3 BA whichever occurs first. create gaps for pine regen. leave w pine except for equipment access. leave larger
Specs: diameter r pine wolf trees.

Next Step
Treatments:

Acceptable w pine, r pine
Regen:

Other if winter cut, use snowmobile trail VMS sale contract specs. Old next step comments:
Comment:

Proposed Start Date: 10/1 /2016

12	12043012-Cut	14.7	4139 - Aspen, Mixed Deciduous	Sawtimber Well	78	Unspec ified	Harvest	Clearcut with Retention	4319 - Mixed Upland Forest	Even-Aged	Proposal
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Habitat Cut: No**Site Condition:**

Prescription cut merchantable aspen and r maple. cut spruce/fir 1 stick and larger. leave scattered r maple for diversity. no r pine, w pine or w birch. if
Specs: needed buffer creek 300 feet

Next Step
Treatments:

Acceptable aspen, spruce/fir, maple
Regen:

Other if winter cut use snowmobile trail VMS sale contract specs Old next step comments:
Comment:

Proposed Start Date: 10/1 /2016



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
14	12043014-Cut	23.6	4110 - Sugar Maple Association	Poletimber Well	58	111- 140	Harvest	Crown Thinning	411 - Northern Hardwood	Uneven- Aged	Proposal

Habitat Cut: No**Site Condition:**

Prescription thin to 70 BA. capture basswood sawtimber value. leave scattered culls for wildlife trees. leave cherry, w birch, y birch or conifer
Specs:

Next Step
Treatments:

Acceptable northern hardwood
Regen:

Other if winter cut, use snowmobile trail VMS sale contract specifications. Old next step comments:
Comment:

Proposed Start Date: 10/1 /2016

16	12043016-13- New	69.0	4130 - Aspen	Poletimber Well	57	Unspec ified	Harvest	Clearcut with Retention	4319 - Mixed Upland Forest	Even-Aged	Proposal
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Habitat Cut: No**Site Condition:**

Prescription cut merchantable aspen and maple. cut spruce/fir 2 sticks tall and larger. leave 1 maple per cruise point for diversity and potential seed source.
Specs: leave birch, cherry, w pine, r pine. protect advanced maple regen as much as possible

Next Step
Treatments:

Acceptable aspen, hardwood, spruce/fir
Regen:

Other Old next step comments:
Comment:

Proposed Start Date: 10/1 /2016

41	12043041-Cut	6.3	42110 - Planted Red Pine	Poletimber Well	46	201+	Harvest	Systematic Thinning	42290 - Natural Mixed Pine	Even-Aged	Proposal
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Habitat Cut: No**Site Condition:**

Prescription row thin, removing approx. 1/3 of stand. take every third row if possible. If rows are too narrow, cut 2 rows, leave 3.
Specs:

Next Step
Treatments:

Acceptable
Regen:

Other follow BMP guidelines for thinnings Old next step comments:
Comment:

Proposed Start Date: 10/1 /2016

55	12043055-Cut	8.2	42110 - Planted Red Pine	Poletimber Well	44	141- 170	Harvest	Crown Thinning	42210 - Natural Red Pine	Even-Aged	Proposal
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Habitat Cut: No**Site Condition:**

Prescription thin to 110 - 120 BA. leave edge aspen within 300 foot fishery buffer to Ford River
Specs:

Next Step
Treatments:

Acceptable
Regen:

Other follow BMP guidelines for thinnings. Old next step comments:
Comment:

Proposed Start Date: 10/1 /2016



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
63	12043063-Cut	16.0	4319 - Mixed Upland Forest	Poletimber Well	60	81-110	Harvest	Clearcut with Retention	4319 - Mixed Upland Forest	Even-Aged	Proposal

Habitat Cut: No**Site Condition:**

Prescription cut merchantable aspen, spruce/fir 1 stick and larger. leave w pine, r pine, cherry and birch.

Specs:

Next Step

Treatments:

Acceptable aspen, spruce/fir

Regen:

Other Old next step comments:

Comment:

Proposed Start Date: 10/1 /2016

66	12043066-Cut	19.9	6129 - Mixed Coniferous Lowland Forest	Poletimber Well	67	Unspec ified	Harvest	Clearcut with Retention	613 - Lowland Mixed Forest	Even-Aged	Proposal
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Habitat Cut: No**Site Condition:**

Prescription cut merchantable b spruce, tamarack, fir. in purer b spruce areas, leave 40 foot diameter seed tree patches every 3 chains. avoid entering

Specs: cedar areas - leave all cedar. 300 foot buffer for potential adjacent aspen upland harvest would affect this stand.

access across railroad tracks needed if cut S of tracks

Next Step

Treatments:

Acceptable b spruce, tamarack

Regen:

Other Old next step comments:

Comment:

Proposed Start Date: 10/1 /2016

67	12043067-Cut	12.6	42340 - Upland Spruce/Fir	Sawtimber Well	81	Unspec ified	Harvest	Clearcut with Retention	4319 - Mixed Upland Forest	Even-Aged	Proposal
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Habitat Cut: No**Site Condition: Blocked by Obstacle**

Prescription cut merchantable aspen, tamarack and associated r maple. cut spruce/fir 1 stick and larger. In W end of stand where b spruce predominates

Specs: leave 1 b spruce seed tree patch towards E end. leave birch, cherry, w pine. W end of stand should be limited to dry summer or winter cut.

access? - old railroad tracks to cross

Next Step

Treatments:

Acceptable aspen, spruce/fir

Regen:

Other Old next step comments:

Comment:

Proposed Start Date: 10/1 /2016

71	12043071-Cut	16.6	4130 - Aspen	Sawtimber Well	61	Unspec ified	Harvest	Clearcut with Retention	4319 - Mixed Upland Forest	Even-Aged	Proposal
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Habitat Cut: No**Site Condition:**

Prescription cut merchantable aspen and maple. cut spruce/fir 2 sticks tall and larger. leave w birch, w pine, r pine, oak. apply 300 foot aspen buffer to Ford

Specs: River or stay at top of hill, whichever occurs first

Next Step

Treatments:

Acceptable aspen, maple, spruce/fir

Regen:

Other Old next step comments:

Comment:

Proposed Start Date: 10/1 /2016

**Total Treatment
Acreage Proposed: 277.6**

Report 5 – Site Conditions

Crystal Falls Mgt. Unit
Ed Rice : Examiner

Compartment: 43
Year of Entry: 2017

Availability for Management

Total Acres	Acres Available	Acres Avail		Dominant Site Conditions	Dominant Site Conditions			
		With Condition	Not Available		5C	2G	2H	3J
875	699	143	34	Aspen	143	0		34
5	5	0	0	Bare/Sparsely Vegetated				
41	41	0	0	Bog				
112	112	0	0	Cedar				
15	15	0	0	Herbaceous Openland				
7	7	0	0	Low-Density Trees				
73	14	0	59	Lowland Aspen/Balsam Poplar				59
169	154	0	15	Lowland Conifers		0		15
55	55	0	0	Lowland Deciduous				
154	154	0	0	Lowland Shrub				
5	5	0	0	Mixed Upland Deciduous				
259	259	0	0	Northern Hardwood				
108	108	0	0	Red Pine				
8	8	0	0	Upland Conifers				
16	16	0	0	Upland Mixed Forest				
2	2	0	0	Upland Shrub				
36	16	0	20	Upland Spruce/Fir			8	12
9	9	0	0	Urban				
1,948	1,678	143	128	Total Forested Acres	143	0	8	120
	86%	7%	7%	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)	16	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
2	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	26	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							

Report 5 – Site Conditions

Crystal Falls Mgt. Unit
Ed Rice : Examiner

Compartment: 43
Year of Entry: 2017

3	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	15	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
4	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	12	Unspecified	Unspecified	Unspecified	Unspecified
Comments: recommended buffer to Ford River takes most of this stand out of production							
5	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	10	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
6	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	19	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
7	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	15	2B: Unknown if access through adjacent landowner(s) is possible	Unspecified	Unspecified	Unspecified
Comments: BMP to buffer Ford River access across railroad tracks							
8	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	6	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							

Report 5 – Site Conditions

Crystal Falls Mgt. Unit

Ed Rice : Examiner

Compartment: 43

Year of Entry: 2017

9	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	86	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
10	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	56	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
12	Unavailable	2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)	8	Unspecified	Unspecified	Unspecified	Unspecified
Comments: access to S of rail road tracks may be possible							
14	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	2	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							

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
SCA	Cold Water Lake	A coldwater lake has temperature and dissolved oxygen conditions that allow naturally-reproduced or stocked trout populations and those of other coldwater fish species to persist from year to year. Suitable conditions for coldwater fishes may occur in Michigan lakes if they are relatively deep, have substantial groundwater inflows, or are located in colder (northern) areas of the state. Such lakes are established by Director's action and designated as trout resources by Fisheries Order 200.
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	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.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
2	6120 - Lowland Cedar	Poletimber Medium	72.7	98	Unspecified	mixed lowland conifer stand. areas heavier to cedar with transitional areas more highly stocked to b spruce with tag alder thickets in between. in N end, small inclusion of upland r pine sawtimber with associated aspen and upland b spruce. should be cut with stand 3. *winter deer use
3	42210 - Natural Red Pine	Sawtimber Well	35.5	57	111-140	just about pure r pine stand with upland b spruce understory
4	4130 - Aspen	Sapling Well	1.7	14	Immature	
7	42210 - Natural Red Pine	Sawtimber Well	54.5	72	141-170	two ages of r pine 12- 16" dbh class and 6 - 9" dbh class. good w pine regen in more open holes from previous thinning. S end more hills and open - has a higher percentage of w pine. pockets of weak aspen saplings 20 tall
8	4133 - Aspen, Mixed Pine	Sapling Well	55.3	16	Immature	aspen 1 - 3" diameter growing under scattered r pine. ground is better suited for pine. fair component of r pine.
9	4136 - Aspen, Mixed Conifer	Sapling Well	49.3	21	Immature	occasional aspen 3 - 4" dbh. very widely scattered w pine and spruce/fir. small inclusion of r pine in NW corner
10	42380 - Non Pine Upland Conifer, Mixed Deciduous	Poletimber Well	8.0	53	81-110	
11	4199 - Other Mixed Upland Deciduous	Poletimber Well	4.7	70	51-80	mixed stand with low quality - maple is short to first limbs. w birch fairly healthy showing little top dieback.
12	4139 - Aspen, Mixed Deciduous	Sawtimber Well	30.9	78	Unspecified	mature aspen. r maple very low quality. hills throughout
13	4130 - Aspen	Sapling Well	26.8	15	Immature	scattered w birch along road edges
14	4110 - Sugar Maple Association	Poletimber Well	23.6	58	111-140	good form on maples, 25 - 30' clear boles to first limbs. some defect present. scattered h maple sawtimber 12 - 16" dbh. N end lower site quality as stand transitions to adjacent aspen. Ironwood and w ash regen, little to no maple saplings
15	42110 - Planted Red Pine	Poletimber Well	3.1	31	111-140	1 - 2 stick trees. not quite ready to thin - lower branches not self pruning.
16	4130 - Aspen	Poletimber Well	211.7	57	Unspecified	Aspen is healthy. scattered clumps of fir poletimber and saplings. NE part of stand has lower ground pockets with springy ground 0 some tag alder and balm. in this area also good h maple saplings 10 - 20' tall.
17	4110 - Sugar Maple Association	Poletimber Well	9.9	64	51-80	recently thinned. well formed basswood. some epicormic branching on h maple



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
19	4110 - Sugar Maple Association	Poletimber Well	17.2	59	81-110	basswood 14 - 18" dbh, small pockets of advanced h maple saplings notable along S end of stand. scattered w ash, y birch, spruce/fir
20	4110 - Sugar Maple Association	Poletimber Well	15.2	67	81-110	good form on h maple sawtimber 3 - 4 log height. limited trees in 8 - 10" diameter size classes. very little maple regen. scattered upland cedar
21	4110 - Sugar Maple Association	Poletimber Well	4.1	58	81-110	lower quality - stand beginning transitioning to adjacent aspen/spruce/fir. good amount of h maple regen along N edge. w birch at edges of stand stand lies on hill top with short steep hills.. recently thinned
22	4110 - Sugar Maple Association	Poletimber Well	12.6	59	81-110	stand does not appear to have been thinned recently. scattered w spruce saplings and upland cedar. very scattered h maple saplings 2 - 3" dbh
23	4110 - Sugar Maple Association	Poletimber Well	66.7	61	81-110	very little h maple regen. fair quality with some defect. H maple sawtimber mainly 12 - 14" dbh with scattered 16" trees. basswood sawtimber 12 - 16" dbh. more ironwood in S end
24	4130 - Aspen	Poletimber Well	30.3	35	Unspecified	2 - 3 stick aspen
25	4130 - Aspen	Poletimber Well	6.7	30	Immature	2 - 3 stick trees with pockets of spruce/fir
26	4130 - Aspen	Poletimber Well	34.2	36	Unspecified	about pure aspen 4 - 8" dbh with fir understory 3 - 6". scattered semi open areas. W end transitions to areas of semi open with spruce/fir and scattered larger diameter aspen - notably S of woods road
27	6120 - Lowland Cedar	Sawtimber Well	16.5	98	Unspecified	
28	4119 - Mixed Northern Hardwoods	Poletimber Well	16.7	58	81-110	stand previously marked but not cut due to no access. r maple in rough shape. fair - good quality basswood sawtimber access is needed before stand can be harvested
29	6124 - Lowland Spruce-Fir	Poletimber Well	133.6	72	Unspecified	springs throughout the NW end of stand. cedar becomes more heavily stocked as stand progresses south. good quality tamarack in pockets towards N center of stand 12 - 14" dbh, 8 sticks tall. fair quality b spruce adjacent to tamarack areas. b spruce quality lessens as stand progresses south.
31	4130 - Aspen	Sapling Well	14.4	3	Immature	Aspen regen 8 - 10' tall. residual w birch poletimber scattered throughout the stand. several small areas of open where there is no regen - likely areas of little to no aspen in original stand before cutting
32	4134 - Aspen, Spruce/Fir	Sapling Well	136.3	25	Immature	stand moving into poletimber size class. Aspen 5 - 7" dbh 1 - 3 sticks tall. scattered pockets of low ground having tag alder/balm. interspersed small rock outcrop hills very widely scattered w pine. patches of spruce/fir throughout stand.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
33	6115 - Lowland Ash	Poletimber Well	20.1	35	Unspecified	E end has more scattered trees with a heavier tag alder component. wet - standing water
34	4130 - Aspen	Sapling Well	29.4	5	Immature	scattered small rock outcrop knobs with low quality r maple and spruce residual. stand overall is mainly pure aspen with interspersed wet areas.
36	6119 - Mixed Lowland Deciduous Forest	Poletimber Medium	2.8	35	Unspecified	very wet - springs. very W edge has mall inclusion of slightly higher ground w spruce
38	4130 - Aspen	Poletimber Well	56.1	26	Immature	Aspen 2 - 3 sticks tall. conifer mainly along road edges
39	4136 - Aspen, Mixed Conifer	Sapling Well	25.3	15	Immature	Aspen saplings 16 - 20' tall with small inclusions of spruce/fir 8 - 12" dbh. heavier r pine component in central and W end of stand.
40	42320 - Upland Spruce	Sawtimber Well	9.6	56	Unspecified	BMP/fisheries buffer strip to Ford River. w spruce 8 - 14" dbh
41	42110 - Planted Red Pine	Poletimber Well	6.3	46	201+	areas very interspersed with aspen saplings 8 - 10' tall
42	6111 - Lowland Balsam Poplar	Sawtimber Poor	14.9	70	Unspecified	semi open. river floodplain! many areas of open lowland shrub throughout
43	4134 - Aspen, Spruce/Fir	Sawtimber Well	11.5	69	Unspecified	Aspen 12 - 16" dbh. rock hill - BMP/fishery 300 foot buffer strip to river makes stand not feasible for cut
44	6111 - Lowland Balsam Poplar	Sapling Well	10.9	5	Immature	many wet, ponded water areas. minor amount of high ground along Turner Rd. very scattered, minor component of cedar
45	4130 - Aspen	Sapling Well	8.5	15	Immature	nearly pure aspen saplings. very scattered 3" dbh trees
46	4130 - Aspen	Sapling Well	80.2	5	Immature	Aspen 1" dbh 8 - 10' tall. scattered small pockets of r maple poletimber and spruce/fir on top of rock knobs. r maple stump sprouts heavily browsed. scattered isolated cedar along edges of the stand
47	6118 - Lowland Deciduous with Cedar	Poletimber Well	9.5	42	Unspecified	stand very wet - marsh marigolds/standing water. overall b ash runs 4 - 8" dbh with scattered 12" trees.
48	6115 - Lowland Ash	Poletimber Well	12.0	42	Unspecified	very wet stand - standing water with drainage. pockets heavier to tag alder in NW
49	6120 - Lowland Cedar	Poletimber Well	6.0	98	Unspecified	good mix of b ash poletimber and cedar sawtimber sized trees. wet throughout. winter deer use.



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
50	4115 - Y.Birch, Hemlock NH	Poletimber Well	22.1	65	51-80	highly variable stand. very low quality r maple mixed with y birch and hemlock. many small rock outcrops with areas of wet ground. pockets of hemlock and cedar. ironwood saplings mainly in N end of stand.
51	6120 - Lowland Cedar	Sawtimber Well	16.4	95	Unspecified	hemlock is mainly at edges of the stand. very NW end is ponded with a leatherleaf bog inclusion.
52	4110 - Sugar Maple Association	Poletimber Well	31.3	64	51-80	stand thinned in previous entry. heavy ironwood saplings regenerating
53	6117 - Lowland Deciduous, Mixed Coniferous	Poletimber Medium	10.3	56	Unspecified	low areas with standing water
55	42110 - Planted Red Pine	Poletimber Well	8.2	44	141-170	row thinned in past thinning scattered aspen 10 - 12" along NW edge
57	4130 - Aspen	Sapling Well	3.5	15	Immature	very scattered w birch
59	4130 - Aspen	Poletimber Well	23.3	26	Immature	stand just at poletimber size class 4 - 6" dbh with scattered 7" trees. small included acreage of 70 yr old aspen, 14" dbh along steep hills adjacent to gravel pit
60	4110 - Sugar Maple Association	Poletimber Well	39.8	64	81-110	very scattered hemlock and occasional elm sawtimber. small pockets of aspen in center of stand with associated w spruce poletimber. very minor w ash component
62	4130 - Aspen	Poletimber Well	13.7	26	Immature	stand just at poletimber size class 4 - 6" dbh with scattered 7 - 8" trees
63	4319 - Mixed Upland Forest	Poletimber Well	16.0	60	81-110	older aspen component 14 - 16" dbh. SBW on spruce/fir. large hill in S center of stand laong S line. SW has very highly stocked fir understory 5 - 10' tall under aspen sawtimber.
64	6111 - Lowland Balsam Poplar	Sawtimber Poor	25.9	65	Unspecified	floodplain to Ford River. semi open areas with dense shrub
65	42330 - Upland Fir	Poletimber Poor	11.4	40	Unspecified	mostly semi open land with open grown b cherry saplings and pockets of aspen clones. NE corner has an inclusion of F6 - being impacted by spruce budworm
66	6129 - Mixed Coniferous Lowland Forest	Poletimber Well	34.9	67	Unspecified	areas with very dense fir understory - heavy spruce budworm impact. pockets of cedar
67	42340 - Upland Spruce/Fir	Sawtimber Well	14.6	81	Unspecified	old timber - aspen is barely holding together. w spruce/fir moderately being impacted by spruce budworm. prevalent windthrow throughout. W end transitions to lowland conifer, though this area is not overly wet to preclude equipment operation - 8 to 10" dbh upland b spruce

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Crystal Falls Mgt. Unit

Report 8 – Forested Stands

Compartment: 43
Year of Entry: 2017



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
69	6111 - Lowland Balsam Poplar	Poletimber Medium	3.2	62	Unspecified	small stand along river floodplain. no access
70	6112 - Lowland Aspen	Poletimber Medium	18.5	63	Unspecified	wet stand along river floodplain
71	4130 - Aspen	Sawtimber Well	22.9	61	Unspecified	nice aspen 8 - 14" dbh 6 - 7 sticks tall. very scattered h maple
73	4130 - Aspen	Sapling Well	3.4	16	Immature	



Stand	Cover Type	Acres	Managed Site	General Comments:
1	6220 - Alder/willow	43.2	No	tag alder/willow adjacent to Two Mile Creek. scattered associated tamarack
5	6220 - Alder/willow	6.5	No	tag alder/willow, swamp grass. open - flooded
6	3105 - Mixed Upland Herbaceous	4.4	No	grass/bracken under transmission line
18	31021 - Cool Season Grass	3.1	No	old hunter walking trail - not maintained. spruce/fir encroachment
30	6225 - Bog	40.9	No	leatherleaf bog with multiple creek/drainage headwaters
35	6223 - Inundated Shrub Swamp	104.5	No	tag alder/swamp grass with old beaver ponds and meadows. creek runs through center.
37	320 - Upland Shrub	1.9	No	old hunter walking trail - turned into two track road with the spurs heavy raspberry
54	330 - Low-Density Trees	2.5	No	semi open edged with spruce/fir, aspen
56	330 - Low-Density Trees	4.5	No	scattered pockets of small diameter r pine poletimber 4 - 6" dbh. open grown b cherry saplings
58	760 - Non-stocked Forest	5.3	No	gravel pit
61	122 - Road/Parking Lot	9.5	No	Turner Road
68	31022 - Warm Season Grass	1.3	No	small opening edged with balm and aspen saplings/small poletimber and fir.
72	31022 - Warm Season Grass	1.5	No	continuation of adjacent field. spruce/fir along road edge
74	31022 - Warm Season Grass	4.3	No	transmission line, hills