



Compartment Review Presentation

Crystal Falls Forest Management Unit

Compartment 12014

Entry Year 2019

Acreage: 2,256

County Dickinson

Management Area: Ralph Ground Moraine

Revision Date: 2017-08-13

Stand Examiner: Deb Goupell

Legal Description:

T44N R28W Sec 7-10, 17-20

Identified Planning Goals:

Manage for best tree species based on Kotar habitat recommendations. Maintain a sustainable, healthy forest with diversity. Optimize sustainable timber production while enhancing and protecting wildlife habitat. Continue to sustainably balance the aspen age class acres. Protect the riparian areas and transition zones during management activity.

Soil and topography:

Rolling uplands with organic lowlands.

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

Entire State ownership within the compartment. Isolated private 40s to the north and east of compartment, otherwise surrounded by State land.

Unique Natural Features:

O'Neil Lake, Van Derlin Lake

Archeological, Historical, and Cultural Features:

Special Management Designations or Considerations:

High quality trout streams

Watershed and Fisheries Considerations:

O'Neil Lake and Van Derlin Lakes; Schwartz Creek is the northern compartment boundary and south boundary is McGregor Creek, both of which are high quality trout streams.

Wildlife Habitat Considerations:

This compartment contains both wildlife purchased lands and deer winter range. Featured species in this Management Area (Ralph Ground Moraine MA) include; deer, bear, grouse, woodcock and northern goshawk. Moose, eagles, osprey, herons, loons and wolves all have been documented in this compartment. Management for Deer winter cover, including transition zones, movement corridors and conifer component throughout the forage stands is critical in this compartment. Aspen age and stand size diversity are important management goals for deer, bear, grouse and woodcock and goshawks. The mature pine component provides both winter cover for deer, and provides ideal habitat for black bears especially as refuge trees for cub rearing. Oak in the compartment provides most important for most of the featured species identified for this MA.

Mineral Resource and Development Concerns and/or Restrictions

The nearest sand/gravel pit is the state-owned Aimone Road pit, located roughly four miles to the southeast. There could be potential for sand and gravel within the compartment. Bedrock consists of igneous and metamorphic rocks that may have value as dimension stone where bedrock is at or near the surface. There has been no metallic mineral mining within ten miles of the compartment. There was previous metallic mineral leasing in the area more than 20 years ago. A mineral well was drilled and a core collected in Section 3, northeast of the compartment. There was some past exploration in this part of the state for diamonds associated with kimberlites. However, no economic deposits have been found. There is no economic oil and gas production in the UP.

Vehicle Access:

McGregor Creek Road and O'Neil Lake Road are the primary access with various two-tracks throughout.

Survey Needs:

None

Recreational Facilities and Opportunities:

Fishing, camping, hunting, trapping.

Fire Protection:

Felch protection area.

Additional Compartment Information:

The following reports from the Inventory are attached:

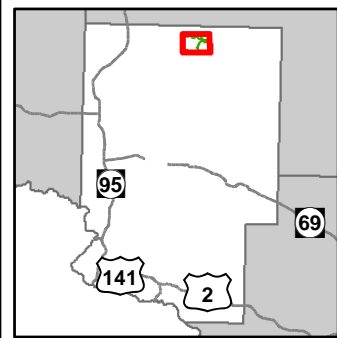
- Total Acres by Cover Type and Age Class**
- Cover Type by Harvest Method**
- Proposed Treatments – No Limiting Factors**
- Proposed Treatments – With Limiting Factors**
- Stand Details (Forested and Nonforested)**
- Dedicated and Proposed Special Conservation Areas**
- Site Condition Details**

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

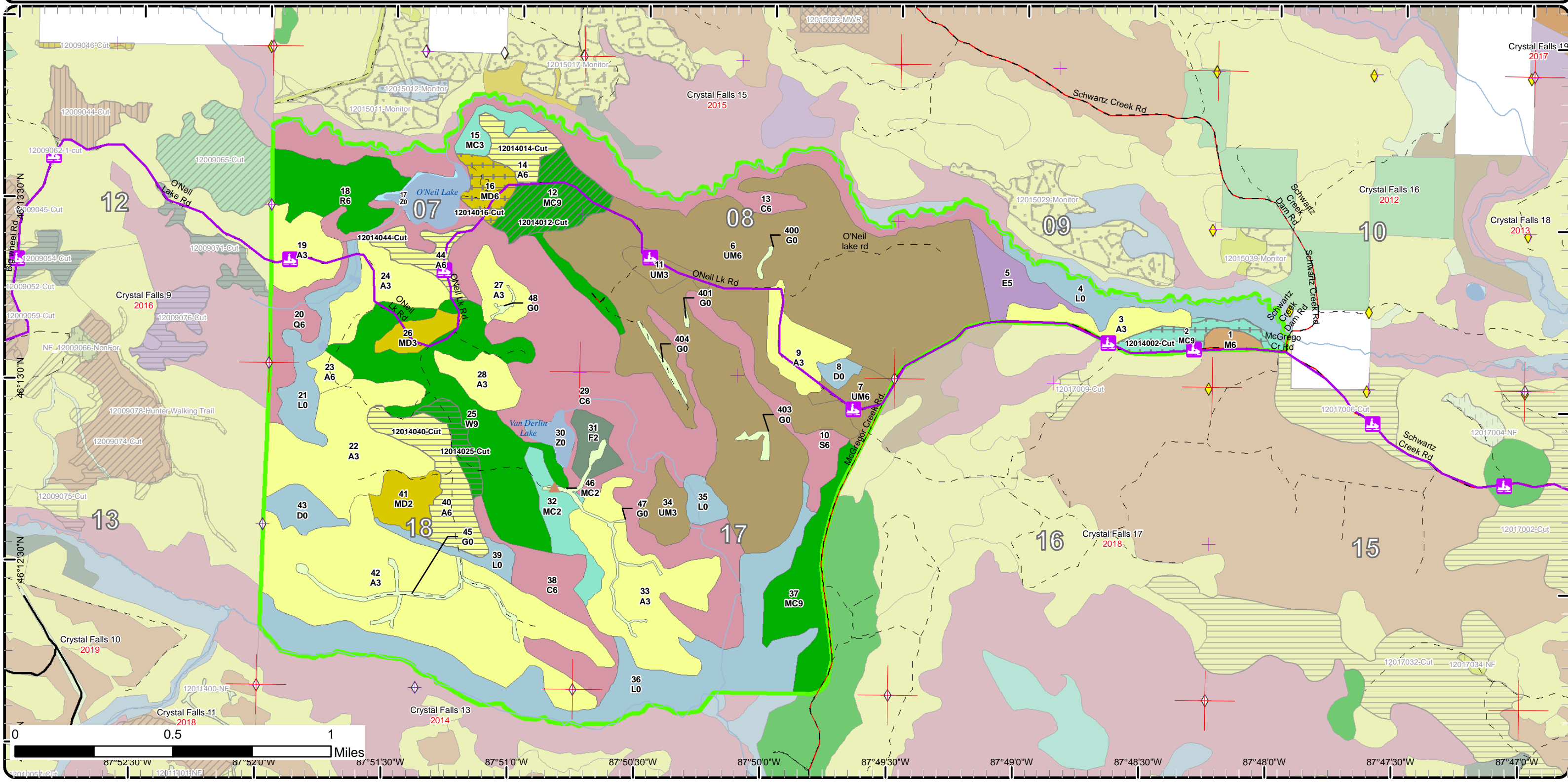
- Base feature information, stand boundaries, cover types, and numbers**
- Proposed treatments**
- Site condition boundaries**
- Details on the road access system**

Cover Type & Treatments Map

Compartment: 14
 T44N, R28W, Sec. 7-10, 17-20
 County: Dickinson
 Unit: Crystal Falls
 Mgmt Area: Ralph Ground
 Moraine
 YOE: 2019
 Acres: 2255.5 GIS Calculated
 Examiner: Deb Goupell
 Map Revised: 11/30/2017
 Map Phase: Post-Review

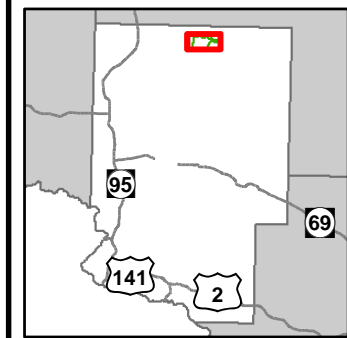


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|--------------------------------|-------------------------------------|-----------------------|
| — Miris Corners | — Compartment Boundary | — 622 - Lowland Shrub |
| — Remonumented Section Corners | — Clearcut (w/Reserves) | — Lakes |
| — Survey Grade GPS Corners | — Harvest, Overstory Removal | |
| — Field Grade GPS Corners | — Thinning (Crown, Low, Systematic) | |
| — Counties | — 411 - Northern Hardwood | |
| — Berms | — 413 - Aspen | |
| — Snowmobile Trails | — 419 - Mixed Upland Deciduous | |
| — Designated Snowmobile Trails | — 422 - Natural Pines | |
| — County Gravel Roads | — 423 - Other Upland Conifers | |
| — County Poor Dirt Roads | — 429 - Mixed Upland Conifers | |
| — Poor Dirt Roads | — 430 - Upland Mixed Forest | |
| — Streams | — 611 - Lowland Deciduous Forest | |
| — Lakes and Rivers All | — 612 - Lowland Coniferous Forest | |
| | — 310 - Herbaceous Openland | |
| | — 500 - Water | |

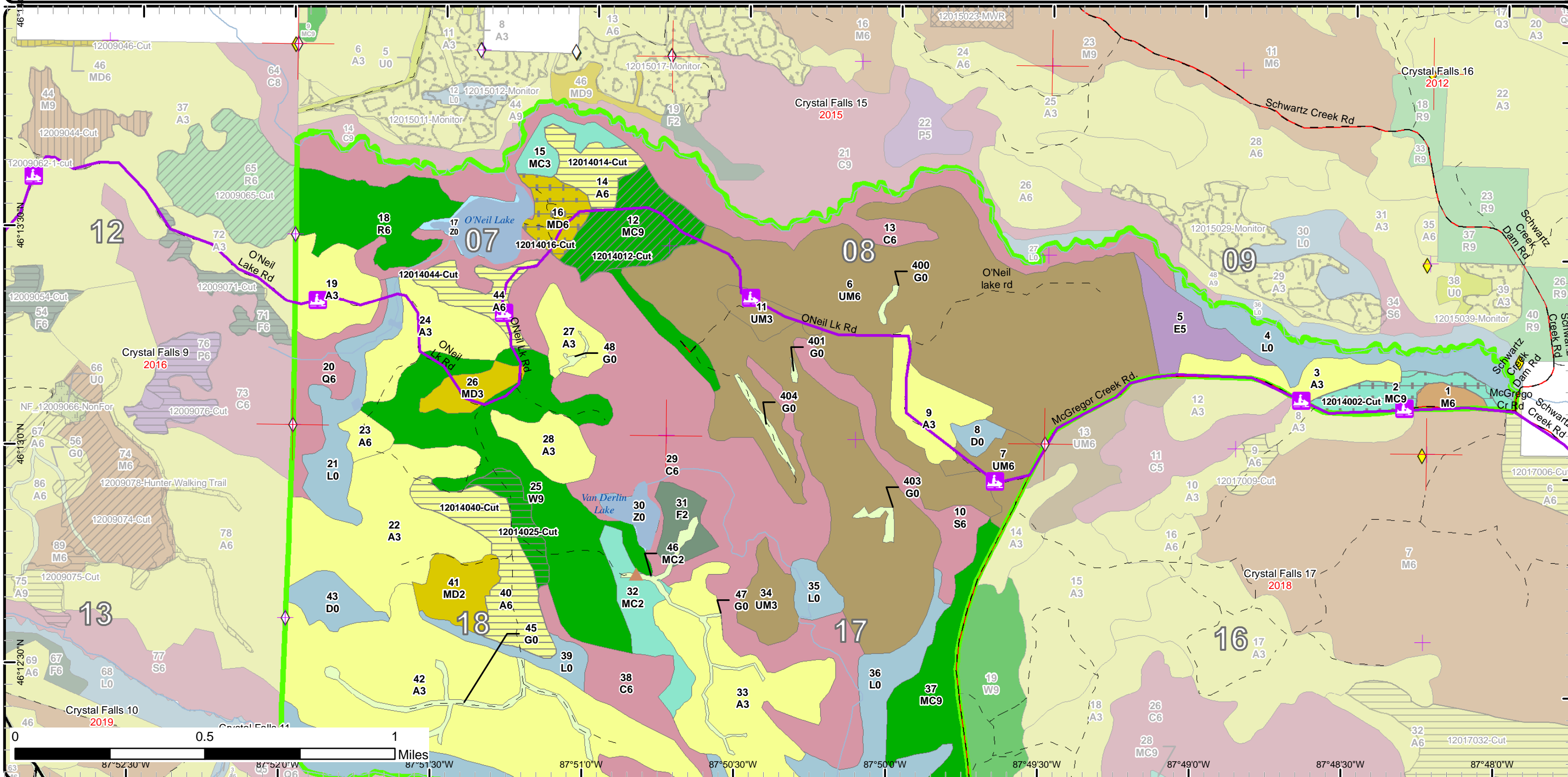


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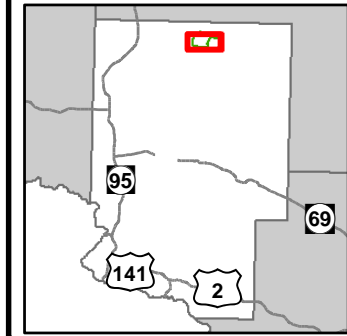


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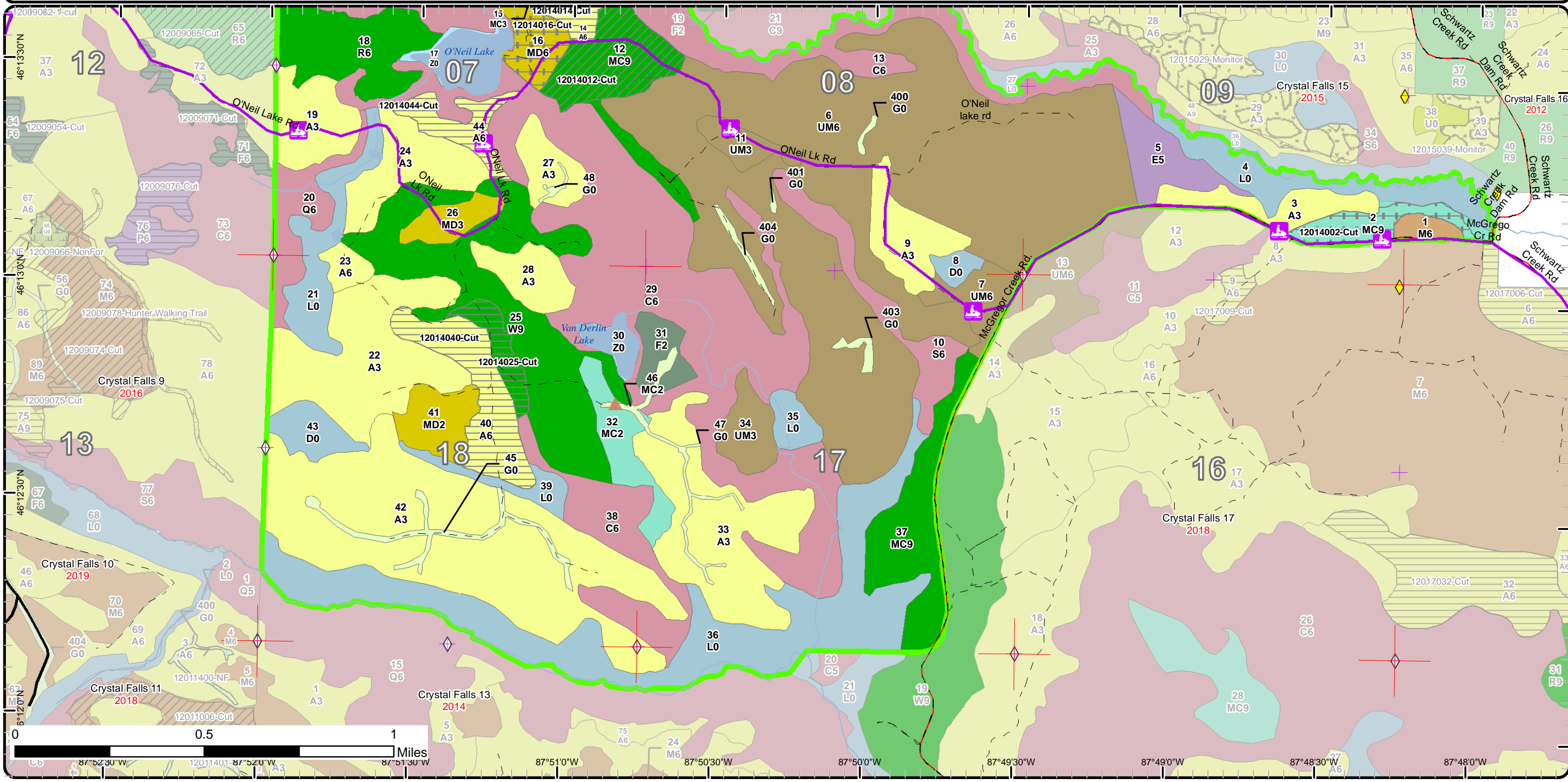


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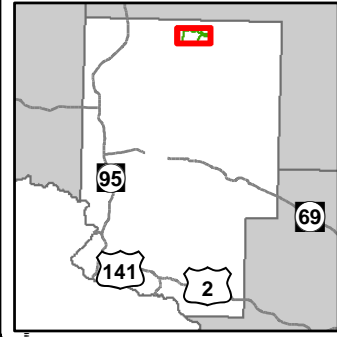


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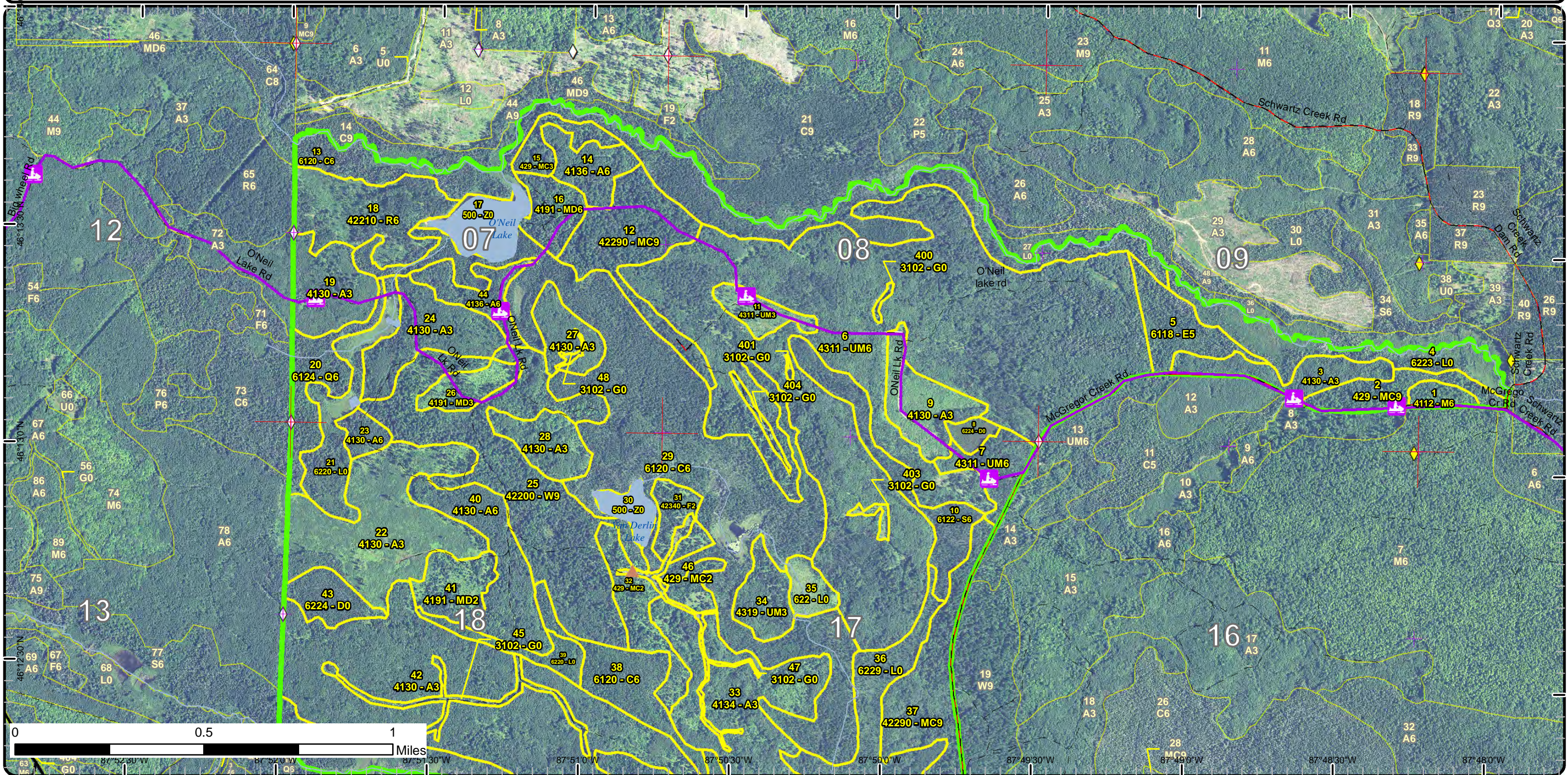


Stand Boundary Map

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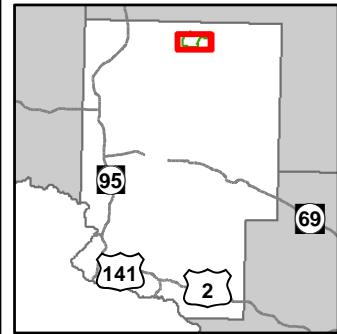


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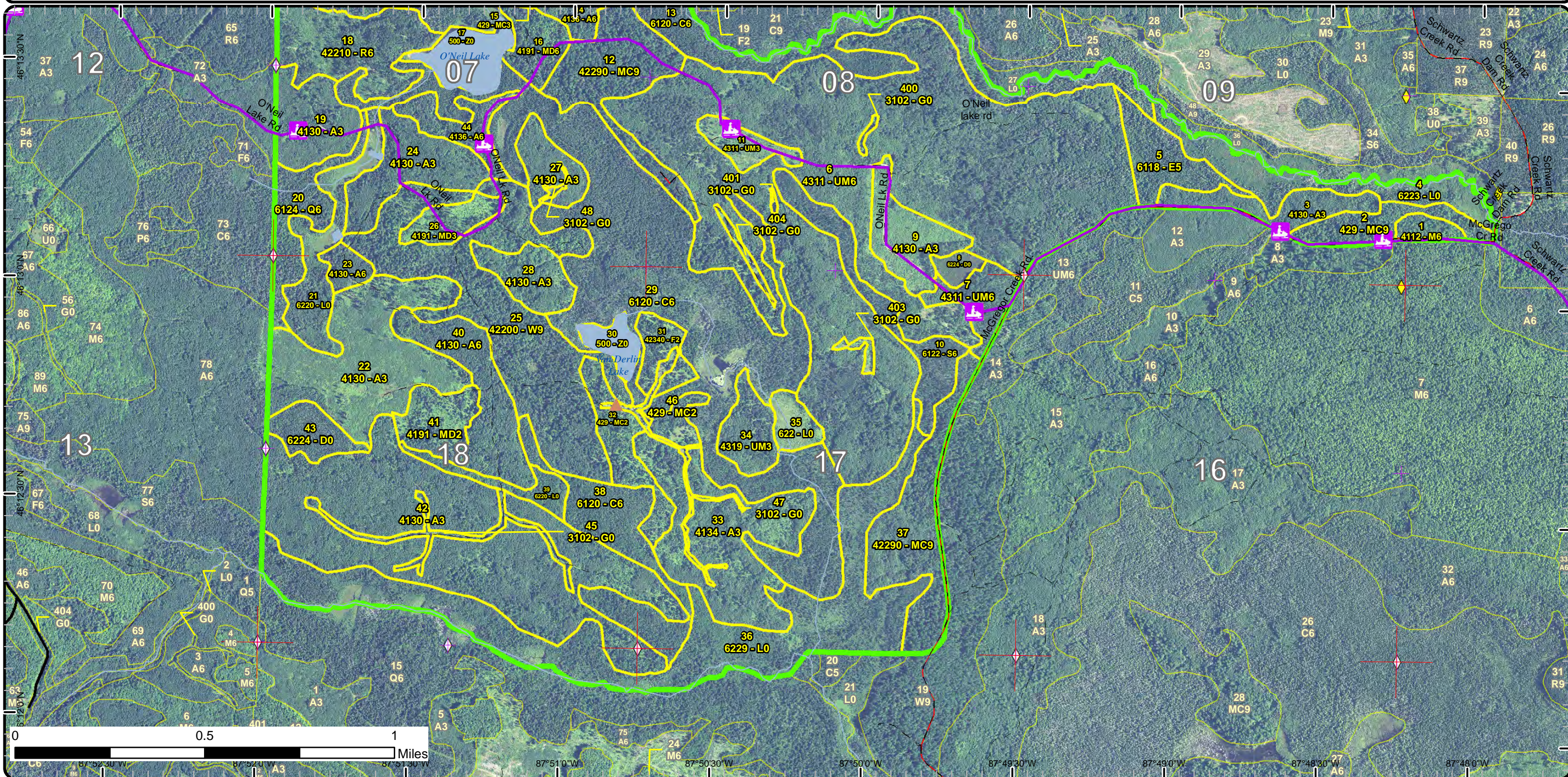


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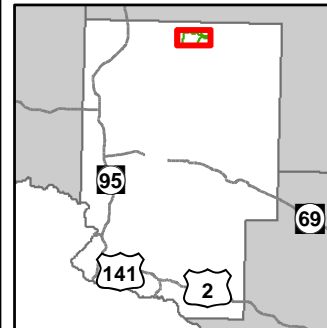


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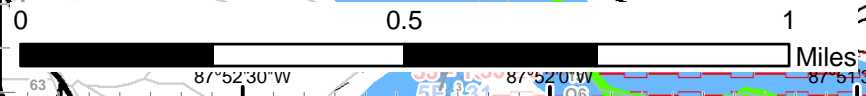
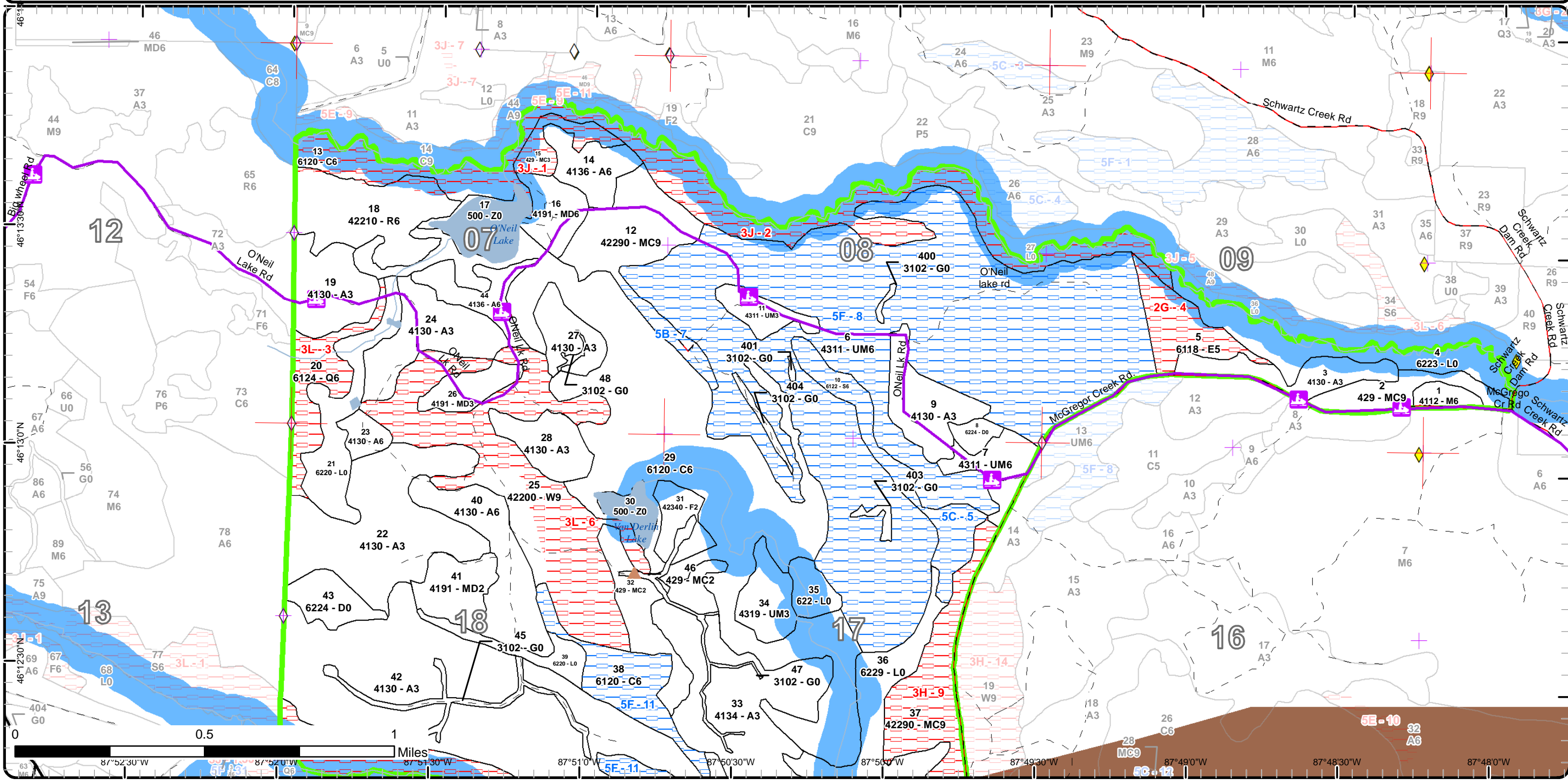


Special Conservation Areas & Site Conditions Map

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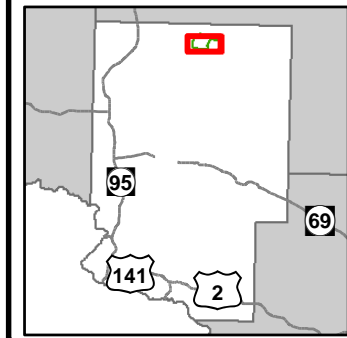


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- Available w/ Constraints
- Unavailable
- 5B: Maintain for regeneration purposes
- 5C: Delay treatment for age/size class diversity or exceptional site quality
- 2G: Too wet (sensitive soils, does not include access issues)
- 3J: Water quality / BMPs (stream, river, or lake)
- 3L: Other wildlife concerns
- Stand Boundaries
- Cold Water Streams
- High Priority Trout Stream Buffer
- Deer Winter Range

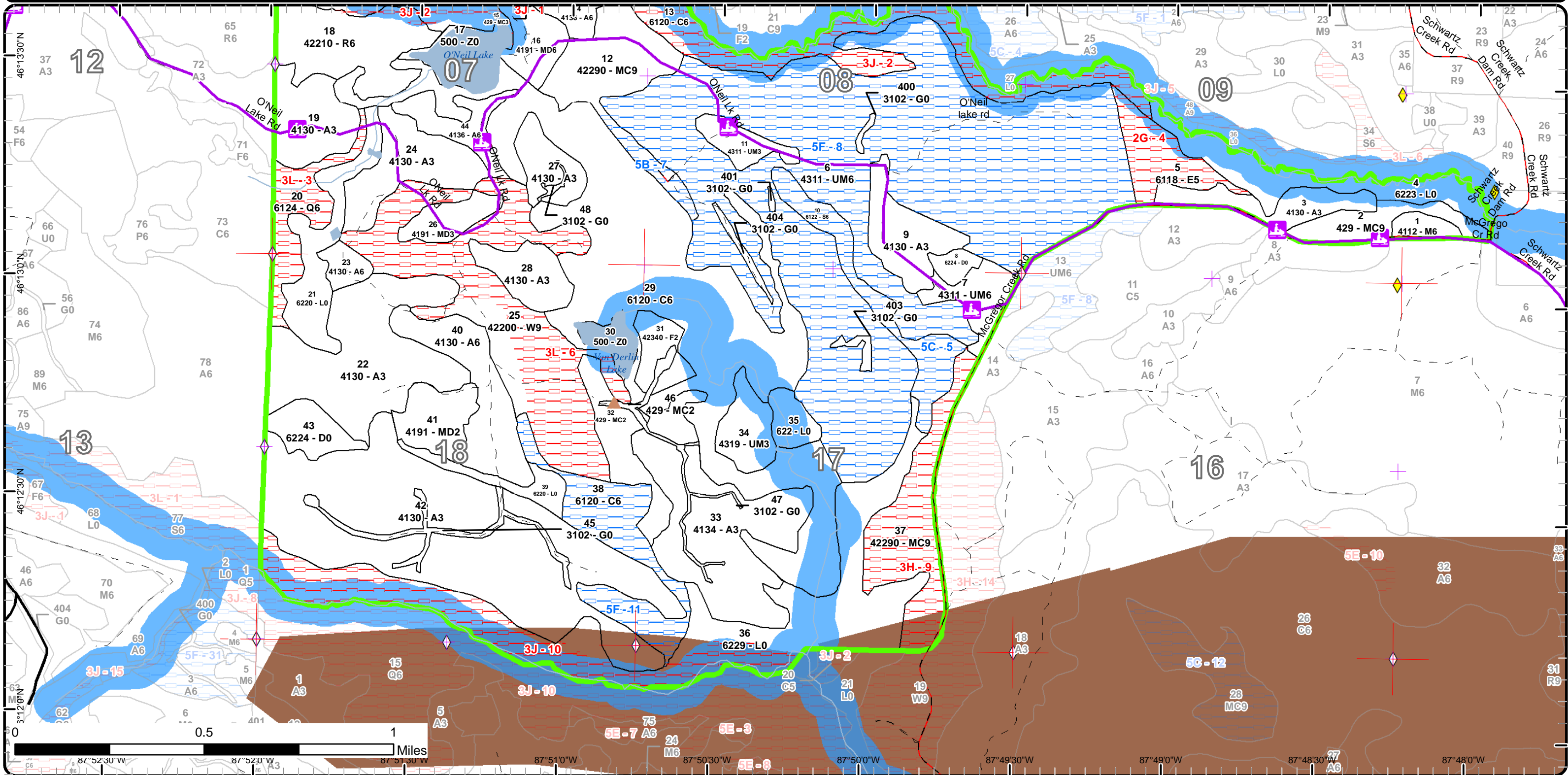


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Report 1 – Total Acres by Cover Type and Age Class



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	109	29	142	223	0	82	0	0	0	0	0	0	0	0	0	0	0	585
Cedar	0	0	0	0	0	0	0	0	0	0	347	47	0	0	0	0	0	0	393
Herbaceous Openland	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26
Lowland Conifers	0	0	0	0	0	0	0	26	0	0	0	0	0	0	0	0	0	0	26
Lowland Deciduous	0	0	0	0	0	0	0	0	0	0	24	0	0	0	0	0	0	0	24
Lowland Shrub	240	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	240
Lowland Spruce/Fir	0	0	0	0	0	0	0	0	0	31	0	0	0	0	0	0	0	0	31
Mixed Upland Deciduous	0	13	0	0	21	0	0	0	0	17	0	0	0	0	0	0	0	0	51
Natural Mixed Pines	0	0	0	0	0	0	0	0	0	0	99	0	0	0	0	0	0	0	99
Northern Hardwood	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	6
Red Pine	0	0	0	0	0	0	0	47	0	0	0	0	0	0	0	0	0	0	47
Treed Bog	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20
Upland Conifers	0	0	0	35	0	0	0	0	0	0	0	20	0	0	0	0	0	0	55
Upland Mixed Forest	0	12	0	18	0	0	18	0	0	0	0	0	0	0	0	0	0	442	490
Upland Spruce/Fir	0	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13
Water	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27
White Pine	0	0	0	0	0	0	0	0	0	0	0	122	0	0	0	0	0	0	122
Total	315	134	29	208	244	0	100	73	0	55	371	288	0	0	0	0	0	442	2255



Report 2 – Treatment Summary

Crystal Falls Mgt. Unit
Year of Entry: 2019

Acres of Harvest

Compartment 14
Total Compartment Acres: 2,256

Commercial Harvest - 190
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	81	0	0	0	0	0	0	0	0	81
Mixed Upland Deciduous	0	0	0	0	0	0	17	0	0	17
Natural Mixed Pines	0	0	0	0	0	38	0	0	0	38
Northern Hardwood	0	0	0	0	0	7	0	0	0	7
Upland Conifers	0	0	0	0	0	0	18	0	0	18
Upland Mixed Forest	18	0	0	0	0	0	0	0	0	18
White Pine	13	0	0	0	0	0	0	0	0	13
Total	112	0	0	0	0	44	34	0	0	190

Proposed and Next Step Treatments by Method

	Harvest	Site Prep	Planting	Seeding	Burning	Pesticide	Monitoring	Other	Non-Forest Mgt.	Total Acres
Current	190	0	0	0	0	0	0	7	0	197
Next Step	0	18	0	18	0	18	128	0	0	181
Total	190	18	0	18	0	18	128	0	7	378



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
1	12014001-Cut	6.5	4112 - Maple, Beech, Cherry Association	Poletimber Well	87	81-110	Harvest	Low Thinning	411 - Northern Hardwood	Even-Aged	Proposal
Habitat Cut: No			Site Condition:								
<u>Prescription</u> Remove poorest quality stems and all white spruce/balsam.											
<u>Specs:</u>											
<u>Next Step</u>											
<u>Treatments:</u>											
<u>Acceptable</u> pine, mixed aspen, mixed hardwood, mixed softwood											
<u>Regen:</u>											
<u>Other</u>											
<u>Comment:</u>											
<u>Proposed Start Date:</u> 10/01/2018											
2	12014002-Cut	17.5	429 - Mixed Upland Conifers	Sawtimber Well	100	51-80	Harvest	Overstory Removal	429 - Mixed Upland Conifers	Two-Aged	Approved Proposal
Habitat Cut: No			Site Condition:								
<u>Prescription</u> Remove aspen, white spruce, balsam and selectively mark red maple or other hardwoods. Encourage non frozen conditions to promote scarification around white pines. Treatment line shows 300 ft buffer from Schwartz Ck. Leave clumps of submerchantable conifer.											
<u>Specs:</u>											
<u>Next Step</u> ; Monitoring, Artificial Regen(1yr)											
<u>Treatments:</u>											
<u>Acceptable</u> pine, mixed hardwood, mixed softwood											
<u>Regen:</u>											
<u>Other</u>											
<u>Comment:</u>											
<u>Proposed Start Date:</u> 10/01/2018											
7	12014007-Cut	17.6	4311 - Pine, Aspen Mix	Poletimber Well	55	Unspecified	Harvest	Clearcut	4212 - Planted Jack Pine	Even-Aged	Proposal
Habitat Cut: No			Site Condition:								
<u>Prescription</u> Final harvest all stems, no retention. Herbicide, trench, plant or seed to jack pine.											
<u>Specs:</u>											
<u>Next Step</u> Pesticide, Hand Application; SitePrep, Trenching; Seeding, Machine Seed											
<u>Treatments:</u>											
<u>Acceptable</u> aspen, mixed softwood, mixed hardwood											
<u>Regen:</u>											
<u>Other</u> Aspen is off site: smaller diameters, small crowns. This site is better for jack pine.											
<u>Comment:</u>											
<u>Proposed Start Date:</u> 10/01/2018											
12	12014012-Cut	37.9	42290 - Natural Mixed Pine	Sawtimber Well	102	81-110	Harvest	Low Thinning	4220 - Natural White Pine	Two-Aged	Approved Proposal
Habitat Cut: No			Site Condition:								
<u>Prescription</u> Remove WS/BF as possible; this will be a very minor component as much of the spruce/fir merchantable/overstory is dead. Remove red maple, birch, aspen that is merchantable. Reserve a few hardwood trees for future snags.											
<u>Specs:</u>											
<u>Next Step</u>											
<u>Treatments:</u>											
<u>Acceptable</u>											
<u>Regen:</u>											
<u>Other</u>											
<u>Comment:</u>											
<u>Proposed Start Date:</u> 10/01/2018											



Stand Name	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
14	12014014-Cut	18.4	4136 - Aspen, Mixed Conifer	Poletimber Well	54	Unspecified	Harvest	Clearcut with Retention	413 - Aspen	Even-Aged	Approved Proposal

Habitat Cut: No**Site Condition:**

Prescription Clearcut all stems 2" dbh and greater except pine and cedar, oak if found. Retention may be centered around wet swale on east that cuts stand.
Specs: SBW is having a devastating effect on all merchantable BF/WS. Leave clumps of live submerchantable spruce/fir.

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

Acceptable Regen: aspen, mixed hardwood, mixed softwood

Other Comment:

Proposed Start Date: 10/01/2018

16	12014016-Cut	16.6	4191 - Mixed Upland Deciduous with Conifer	Poletimber Well	87	51-80	Harvest	Overstory Removal	4199 - Other Mixed Upland Deciduous	Uneven-Aged	Approved Proposal
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Habitat Cut: No**Site Condition:**

Prescription Remove all white spruce, balsam fir; select removal of white birch, red maple, and aspen. Clear around large overstory pine. Keep 100 feet from water edge. Wildlife may scarify for pine recruitment.

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

Acceptable Regen: maple, mixed pine, mixed softwood, birch

Other Comment: SBW is wreaking havoc in this stand. Trying to promote to a hardwood type with pine. Promote scarification around large overstory pine as possible. Harvesting should be during non-snowmobile season.

Proposed Start Date: 10/01/2018

23	12014023-Cut	6.9	4130 - Aspen	Poletimber Well	52	Unspecified	Harvest	Clearcut	413 - Aspen	Even-Aged	Proposal
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Habitat Cut: No**Site Condition:**

Prescription Final harvest all stems 2" dbh and greater except pine. Retention of 100' from stream on northwest edge reflected in treatment boundary, plus all pine.

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

Acceptable Regen: mixed softwood, mixed hardwood, aspen

Other Comment:

Proposed Start Date: 10/01/2018

25	12014025-Cut	12.5	42200 - Natural White Pine	Sawtimber Well	102	81-110	Harvest	Clearcut	4319 - Mixed Upland Forest	Two-Aged	Approved Proposal
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Habitat Cut: No**Site Condition:**

Prescription Clearcut all stems 2" dbh and greater except pine. Encourage bare ground scarification. Because this is a partial cut, the only retention will be the residual overstory pines. Wildlife may scarify around pines to promote pine recruitment post harvest.

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

Acceptable Regen: mixed softwood, aspen, maple, birch

Other Comment:

Proposed Start Date: 10/01/2018



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
40	12014040-Cut	39.0	4130 - Aspen	Poletimber Well	54	Unspec ified	Harvest	Clearcut with Retention	413 - Aspen	Even-Aged	Approved Proposal

Habitat Cut: No**Site Condition:**

Prescription Clearcut all stems 2" dbh and greater except pine. Promote bare ground scarification.

Specs:

Next Step Monitoring, Natural Regen (Re-Inventory)

Treatments:

Acceptable maple, mixed pine, mixed aspen, mixed softwood

Regen:

Other

Comment:

Proposed Start Date: 10/01/2018

44	12014044-Cut	17.1	4136 - Aspen, Mixed Conifer	Poletimber Well	58	Unspec ified	Harvest	Clearcut with Retention	4319 - Mixed Upland Forest	Two-Aged	Approved Proposal
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Habitat Cut: No**Site Condition:**

Prescription Clearcut all stems 2" dbh and greater except pine and cedar. A small black spruce pocket is located near the road. Steep sidehill is also an

Specs: issue. Promote bare ground harvest to encourage scarification.

Next Step Monitoring, Natural Regen (Re-Inventory)

Treatments:

Acceptable mixed softwood, mixed hardwood, aspen

Regen:

Other

Comment:

Proposed Start Date: 10/01/2018

400	12014400-NF	1.1	3102 - Grass	Nonstocked		Unspec ified	NonForestMgt	Other - Specify	3102 - Grass		Proposal
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Habitat Cut: No**Site Condition:**

Prescription Wildlife will maintain opening via mechanical or Rx burn.

Specs:

Next Step

Treatments:

Acceptable

Regen:

Other

Comment:

Proposed Start Date: 10/01/2018

401	12014401-NF	0.5	3102 - Grass	Nonstocked		Unspec ified	NonForestMgt	Other - Specify	3102 - Grass		Proposal
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Habitat Cut: No**Site Condition:**

Prescription Wildlife will maintain opening via mechanical or Rx burn.

Specs:

Next Step

Treatments:

Acceptable

Regen:

Other

Comment:

Proposed Start Date: 10/01/2018



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
403	12014403-NF	2.3	3102 - Grass	Nonstocked		Unspec ified	NonForestMgt	Other - Specify	3102 - Grass		Proposal

Habitat Cut: No**Site Condition:**

Prescription Wildlife will maintain opening via mechanical or Rx burn.

Specs:

Next Step

Treatments:

Acceptable

Regen:

Other

Comment:

Proposed Start Date: 10/01/2018

404	12014404-NF	3.1	3102 - Grass	Nonstocked		Unspec ified	NonForestMgt	Other - Specify	3102 - Grass		Proposal
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Habitat Cut: No**Site Condition:**

Prescription Wildlife will manage as opening via mechanical or Rx burning.

Specs:

Next Step

Treatments:

Acceptable

Regen:

Other

Comment:

Proposed Start Date: 10/01/2018

**Total Treatment
Acreage Proposed: 197.0**

Report 4 – Site Conditions

Crystal Falls Mgt. Unit

Deb Goupell : Examiner

Compartment: 14

Year of Entry: 2019

Availability for Management

Total Acres	Acres Available	Acres Avail With Condition	Acres Not Available
585	585	0	0
393	246	46	101
27	27	0	0
26	0	0	26
24	0	0	24
240	166	0	74
31	0	31	0
51	51	0	0
99	38	9	51
7	7	0	0
47	43	0	4
21	21	0	0
54	42	0	12
489	47	442	0
13	13	0	0
27	27	0	0
122	13	0	109
2,255	1,326	529	401
	59%	23%	18%

Dominant Site Conditions

	Total Acres	Acres Available	Acres Avail With Condition	Acres Not Available	Dominant Site Conditions											
					5B	5C	5F	2G	3H	3J	3L	5E				
585	585	585	0	0	Aspen						0					
393	246	246	46	101	Cedar			46			101					0
27	27	27	0	0	Herbaceous Openland											
26	0	0	0	26	Lowland Conifers								26			
24	0	0	0	24	Lowland Deciduous				24							
240	166	166	0	74	Lowland Shrub						74					
31	0	0	31	0	Lowland Spruce/Fir		31									
51	51	51	0	0	Mixed Upland Deciduous											
99	38	38	9	51	Natural Mixed Pines	9				51						
7	7	7	0	0	Northern Hardwood											
47	43	43	0	4	Red Pine						4					
21	21	21	0	0	Treed Bog											
54	42	42	0	12	Upland Conifers						12					
489	47	47	442	0	Upland Mixed Forest			442								
13	13	13	0	0	Upland Spruce/Fir											
27	27	27	0	0	Water											
122	13	13	0	109	White Pine								109			
2,255	1,326	1,326	529	401	Total Forested Acres	9	31	489	24	51	190	135	0			
					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)	12	5F: Evaluated for Forest Health Considerations	Unspecified	Unspecified	Unspecified
Comments: Majority of stand is in 300 ft buffer to trout water							
2	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	105	1C: Other dept or div proc/practices	5F: Evaluated for Forest Health Considerations	Unspecified	Unspecified
Comments:							

Report 4 – Site Conditions

Crystal Falls Mgt. Unit

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Compartment: 14

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3	Unavailable	3L: Other wildlife concerns	26	Unspecified	Unspecified	Unspecified	Unspecified
Comments: This stand would have to be harvested in winter and concerns with small acreage, major snowplowing effort and snowmobile interface reduce the imperativeness of harvesting this stand. Additionally, the bed and bank in the north half of the stand make for complicated operations.							
4	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	24	Unspecified	Unspecified	Unspecified	Unspecified
Comments: BAM stand							
5	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	31	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Stand is just barely merchantable. Needs at least one more entry for reasonable volume.							
6	Unavailable	3L: Other wildlife concerns	109	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
7	Available	5B: Maintain for regeneration purposes	9	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Solid red pine in this piece, not enough spruce to salvage. Don't know why this was flagged.							
8	Available	5F: Evaluated for Forest Health Considerations	442	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							

Report 4 – Site Conditions

Crystal Falls Mgt. Unit

Deb Goupell : Examiner

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Year of Entry: 2019

9	Unavailable	3H: Deer Wintering Area - habitat is incompatible with harvest at this time	51	5F: Evaluated for Forest Health Considerations	Unspecified	Unspecified	Unspecified
Comments: White Pine stand							
10	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	74	5D: Unproductive Forest Land	Unspecified	Unspecified	Unspecified
Comments:							
11	Available	5F: Evaluated for Forest Health Considerations	47	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	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	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
1	4112 - Maple, Beech, Cherry Association	Poletimber Well	6.5	87	81-110	This is not a pretty hardwood stand nor is it very thick. Light thinning to remove poor formed trees.
2	429 - Mixed Upland Conifers	Sawtimber Well	19.5	100	51-80	Remove aspen, WS/BF, maybe mark some red maple to cut.
3	4130 - Aspen	Sapling Well	22.2	25	Immature	Wheelbarrow TS cut 1992. White birch along road.
5	6118 - Lowland Deciduous with Cedar	Poletimber Medium	24.4	91	51-80	Very wet; barely merchantable timber.
6	4311 - Pine, Aspen Mix	Poletimber Well	442.4	35	51-80	
7	4311 - Pine, Aspen Mix	Poletimber Well	17.6	55	Unspecified	Off-site aspen (small diameters, small crowns); stand should be converted to jack pine, which Kotar habitat supports.
9	4130 - Aspen	Sapling Well	27.3	7	Immature	Rendezvous TS cut 2010. Jackpine mostly beneath aspen and along road. Scattered jackpine stems in understory. Retention was left on east end of sale along treed bog.
10	6122 - Black Spruce	Poletimber Well	30.9	87	Unspecified	Stand is merchantable but barely. More upland on south lobe where spruce is larger in diameter, as expected. Aspen/spruce are also found mostly in the south half. Recommend waiting another entry to add diameter growth.
11	4311 - Pine, Aspen Mix	Sapling Well	11.9	7	Immature	Rendezvous TS cut 2010. Some white pine, balsam, white and jack pine came back better than expected as the FTP to plant or seed was never implemented.
12	42290 - Natural Mixed Pine	Sawtimber Well	47.2	102	81-110	Skinny finger is mostly red pine. SBW in understory conifer, much of the merchantable wood is nearly dead. Consider salvaging what we can.
13	6120 - Lowland Cedar	Poletimber Well	104.5	95	Unspecified	Stand Year Origin was 1922. Majority of stand is within 300 ft of McGregor Ck.
14	4136 - Aspen, Mixed Conifer	Poletimber Well	18.4	54	Unspecified	SBW having a devastating effect on all merchantable BF/WS. Wet swale on east cuts stand in half.
15	429 - Mixed Upland Conifers	Sapling Well	11.9	27	Immature	Campground North TS cut 1990. SBW having a great impact on residual BF.
16	4191 - Mixed Upland Deciduous with Conifer	Poletimber Well	16.6	87	51-80	O'Neil Lk Campground TS cut 1990. SBW wreaking havoc in stand. Remove all WS/BF, most of birch, select red maple and aspen. Scarify around pines, promote to hardwood covertime with pine.
18	42210 - Natural Red Pine	Poletimber Well	47.1	68	51-80	Skyview Hill TS cut 2010. Stand did not thin red pine but removed aspen and other species.



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
19	4130 - Aspen	Sapling Well	29.1	17	Immature	Tight Tops TS, cut 2000
20	6124 - Lowland Spruce-Fir	Poletimber Well	26.2	65	Unspecified	Stand is wet and has a bed/bank in the north half. Much mortality in conifer.
22	4130 - Aspen	Sapling Well	82.0	7	Immature	SKYVIEW HILL TS CUT 2010.
23	4130 - Aspen	Poletimber Well	7.3	52	Unspecified	SBW in understory
24	4130 - Aspen	Sapling Well	34.8	30	Immature	Cut 1987
25	42200 - Natural White Pine	Sawtimber Well	121.9	102	81-110	Stand origin 1915. SBW is evident in understory conifers which are mostly submerchantable. There is a trace amount of white birch. Most of understory is unmerchantable. Small wet pocket in south central portion. Far east finger is red maple/some aspen/balsam fir. BA average is 94. Portion being prescribed for cut is where most of aspen and merchantable birch/red maple are.
26	4191 - Mixed Upland Deciduous with Conifer	Sapling Well	13.2	7	1-50	Skyview TS cut 2010. This was a white birch stand prior to cut but I did not see any WB recruitment.
27	4130 - Aspen	Sapling Well	16.6	27	Immature	Vanderlin Lk TS cut 1990. Pockets of good white pine regeneration.
28	4130 - Aspen	Sapling Well	19.7	27	Immature	Vanderlin Lk TS cut 1990. Pockets of good white pine regen; white pine, balsam and spruce are heavier on edges of stand and along old skid trails.
29	6120 - Lowland Cedar	Poletimber Well	242.2	95	81-110	South half of stand is extremely wet and less stocked.
31	42340 - Upland Spruce/Fir	Sapling Medium	13.2	27	Immature	Vanderlin LK TS cut 1990. SBW hitting BF tops hard hard. More BF/WS on south and west edge.
32	429 - Mixed Upland Conifers	Sapling Medium	22.9	27	Immature	North half of stand was cut Vanderlin LK TS 1990; stand has much diversity with some super canopy WP/RP. South half was cut in 2001 Vanderlin Birch TS but is not regenerating well to aspen or birch; this portion is heavier to BF/WS. Sizes are reflective of both cuts.
33	4134 - Aspen, Spruce/Fir	Sapling Well	83.3	27	Immature	Vanderlin LK TS cut 1990. RP saplings are thick along old roads.
34	4319 - Mixed Upland Forest	Sapling Well	17.5	27	Immature	Vanderlin LK TS cut 1990. SBW in tops of BF & WS. Most of BF/WS is on east half of stand.
37	42290 - Natural Mixed Pine	Sawtimber Well	51.4	101	81-110	Center portion of stand was cut.

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Crystal Falls Mgt. Unit

Report 7 – Forested Stands

Compartment: 14
Year of Entry: 2019

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
38	6120 - Lowland Cedar	Poletimber Well	46.5	104	81-110	Slight higher elevation in south lobe on west side.
40	4130 - Aspen	Poletimber Well	39.0	54	Unspecified	Diameters range from 6-11", ages from 48-53 years. SBW evident in understory.
41	4191 - Mixed Upland Deciduous with Conifer	Sapling Medium	20.7	31	Immature	This is more of an opening or frost pocket slowly trying to fill in. No sale record found but not cut before 1986 photos.
42	4130 - Aspen	Sapling Well	188.3	31	Immature	Stand cut 1986. Far southeast lobe has balsam poplar scattered and bush white pine saplings. Next 3 chains is uncut from slightly low WC/WS/BF to an upland ridge of BF/WS/WP supercanopy (F5 in this southeast lobe)
44	4136 - Aspen, Mixed Conifer	Poletimber Well	17.2	58	Unspecified	Fairly steep sidehill. Small pocket of BS 7" dbh/87 years old in this stand.
46	429 - Mixed Upland Conifers	Sapling Medium	0.0	27	Immature	North half of stand was cut Vanderlin LK TS 1990; stand has much diversity with some super canopy WP/RP. South half was cut in 2001 Vanderlin Birch TS but is not regenerating well to aspen or birch; this portion is heavier to BF/WS. Sizes are reflective of both cuts.



Stand	Cover Type	Acres	Managed Site	General Comments:
4	6223 - Inundated Shrub Swamp	37.7	No	OPIC - FMD: OI Stand Year Origin was
8	6224 - Treed Bog	5.4	No	OPIC - FMD: OI Stand Year Origin was
17	500 - Water	18.6	No	O'Neil Lake
21	6220 - Alder/willow	32.0	No	OPIC - FMD: OI Stand Year Origin was
30	500 - Water	8.3	No	OPIC - FMD: OI Stand Year Origin was
35	622 - Lowland Shrub	9.8	No	OPIC - FMD: OI Stand Year Origin was
36	6229 - Mixed lowland shrub	149.3	No	OPIC - FMD: OI Stand Year Origin was 1913
39	6220 - Alder/willow	11.4	No	OPIC - FMD: OI Stand Year Origin was 1913
43	6224 - Treed Bog	15.1	No	OPIC - FMD: OI Stand Year Origin was
45	3102 - Grass	11.2	No	Hunter Walking Trail
47	3102 - Grass	7.3	No	Hunter Walking Trail
48	3102 - Grass	1.0	No	Grass opening
400	3102 - Grass	1.1	No	OPIC - FMD: OI Stand Year Origin was
401	3102 - Grass	0.5	No	OPIC - FMD: OI Stand Year Origin was
403	3102 - Grass	2.3	No	OPIC - FMD: OI Stand Year Origin was
404	3102 - Grass	3.1	Yes	OPIC - FMD: OI Stand Year Origin was