



Compartment Review Presentation

Crystal Falls Forest Management Unit

Compartment 12025

Entry Year 2018

Acreage: 2,021

County Dickinson

Management Area: Ralph Ground Moraine

Revision Date: 2016-08-24

Stand Examiner: Andrew Church

Legal Description:

T44N R27W Sections 24, 25, 26, 35, 36

Identified Planning Goals:

Optimize sustainable timber production while enhancing and protecting wildlife habitat. Protect riparian areas during management activity implementing Best Management Practices guidelines. Respond to Forest Health risks accordingly.

Soil and topography:

This compartment is primarily Carbondale/Cathro mucks in the lowlands while Pemenee/Rousseau fine sands are present in the uplands. Terrain is lowland with small rolling hills. A couple Eskers are present in the middle of compartment.

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

Mainly contiguous State of Michigan ownership with the exception of private land in Section 26. Hunting, fishing, trapping and camping are the main recreational use patterns.

Unique Natural Features:

West Branch of Escanaba River and Lake 36.

Archeological, Historical, and Cultural Features:

None known.

Special Management Designations or Considerations:

Cold water stream designation on West Branch of Escanaba River. Lake 36 Flooding State Wildlife Management Area in Sections 25 & 36.

Watershed and Fisheries Considerations:

Wildlife Habitat Considerations:

This compartment is in the Ralph Ground Moraine Management Area which has the following featured species: American woodcock, black bear, northern goshawk, ruffed grouse, and white-tailed deer. 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. 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, and grouse. This compartment includes Lake 36 and was once a flooded impoundment. It still provides excellent wetland habitat without a water control structure. This compartment provides excellent bear, deer, spruce grouse and moose habitat within the lowland conifer complex. Mature conifer forest habitat is important wildlife habitat providing complex structure, age and species diversity. Deer spend considerable time in the lowland conifer complex during summer, fall and winter. Extensive State Game Fund land provides recreational opportunities for consumptive and non-consumptive wildlife users.

Mineral Resource and Development Concerns and/or Restrictions

Surface sediments consist primarily of peat and muck and minor medium-textured till. There is insufficient data to determine the glacial drift thickness. The Cambrian Trempealeau and Munising Formations subcrop below the glacial drift. The Trempealeau could be used for stone. Abandoned iron mines are located approximately ten miles to the northeast. A gravel pit is located just to the east and there should be potential on the drumlins. Most of the Compartment was previously leased for metallic exploration and potential may still exist. There is no economic oil and gas production in the UP.

Vehicle Access:

County Road 581 in the North is the main point of access. Poor dirt roads and trails stem off this road. Vehicle access to

the interior portions of compartment is poor. Closed roads from the South are accessed from County Road 426 and the Schultz Logging Road.

Survey Needs:

Corners may be needed.

Recreational Facilities and Opportunities:

Fire Protection:

Fire response will be from Norway or Crystal Falls DNR stations.

Additional Compartment Information:

The following reports from the Inventory are attached:

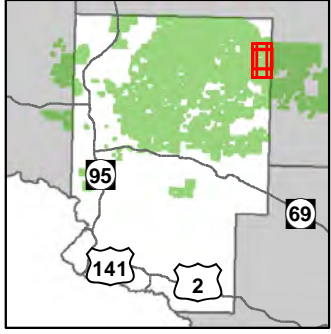
- Total Acres by Cover Type and Age Class**
- Cover Type by Harvest Method**
- Proposed Treatments – No Limiting Factors**
- Proposed Treatments – With Limiting Factors**
- Stand Details (Forested and Nonforested)**
- Dedicated and Proposed Special Conservation Areas**
- Site Condition Details**

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

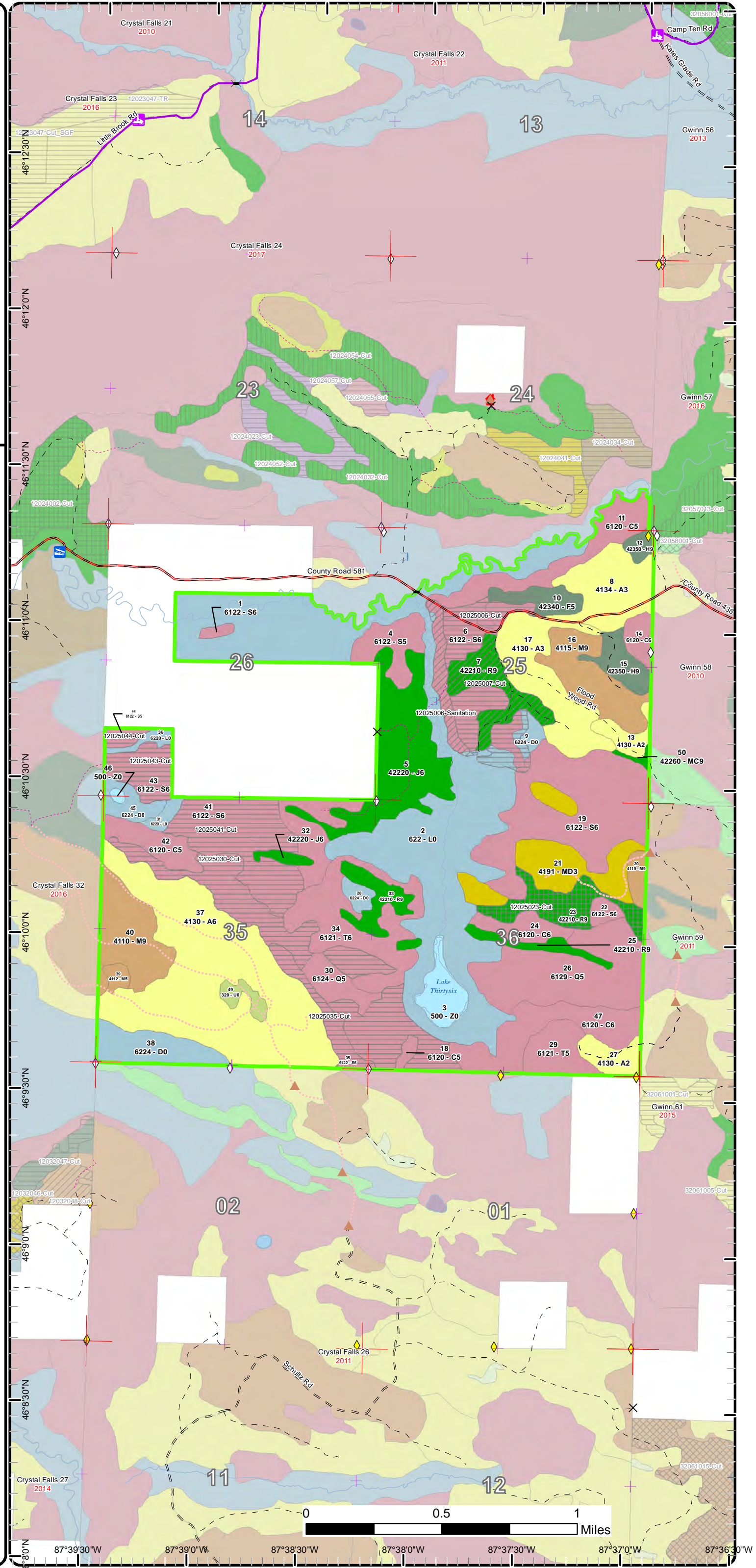
- Base feature information, stand boundaries, cover types, and numbers**
- Proposed treatments**
- Site condition boundaries**
- Details on the road access system**

Cover Type & Treatments Map

Compartment: 25
 T44N R27W Sec. 24-26, 35, 36
 County: Dickinson
 Unit: Crystal Falls
 Mgmt Area: Ralph Ground Moraine
 YOE: 2018
 Acres: 2,021 GIS Calculated
 Examiner: Andrew Church
 Map Revised: 11/21/2016
 Map Phase: Post-Review

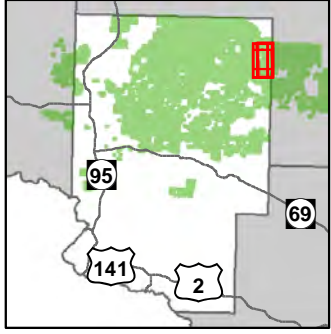


- Miris Corners
- Remonumented Section Corners
- ◆ Survey Grade GPS Corners
- ◇ Field Grade GPS Corners
- ✕ Gate
- ▲ Berms
- Bridges
- Culverts
- Boating Access Site
- County Gravel Roads
- Poor Dirt Roads
- Trail (Non-Recreation)
- Closed Roads
- Rivers
- Compartment Boundary
- Clearcut (w/Reserves)
- Thinning (Crown, Low, Systematic)
- Seed Tree (w/Reserves)
- 411 - Northern Hardwood
- 413 - Aspen
- 419 - Mixed Upland Deciduous
- 422 - Natural Pines
- 423 - Other Upland Conifers
- 612 - Lowland Coniferous Forest
- 320 - Upland Shrub
- 500 - Water
- 622 - Lowland Shrub
- Lakes

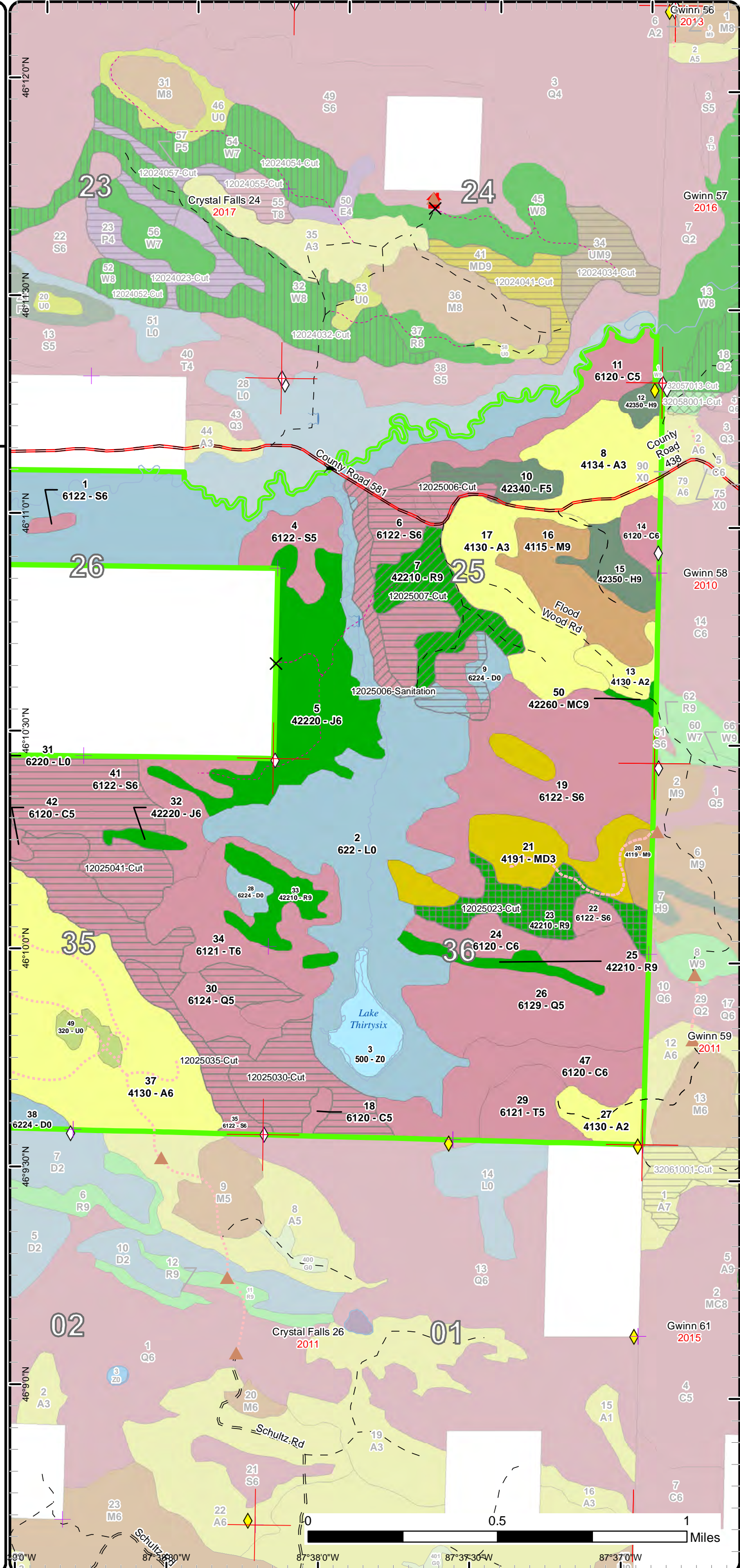


Cover Type & Treatments Map

Compartment: 25
 T44N R27W Sec. 24-26, 35, 36
 County: Dickinson
 Unit: Crystal Falls
 Mgmt Area: Ralph Ground Moraine
 YOE: 2018
 Acres: 2,021 GIS Calculated
 Examiner: Andrew Church
 Map Revised: 11/21/2016
 Map Phase: Post-Review

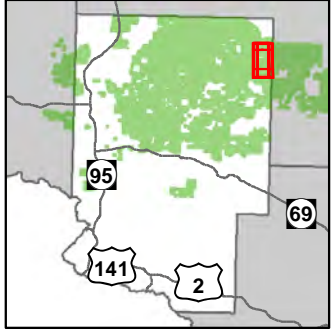


- Miris Corners
- + Remonumented Section Corners
- ◆ Survey Grade GPS Corners
- ◇ Field Grade GPS Corners
- ✕ Gate
- ▲ Berms
- Bridges
- Culverts
- Cabin
- County Gravel Roads
- Gravel Roads
- - Poor Dirt Roads
- - - Trail (Non-Recreation)
- - - Closed Roads
- Rivers
- Compartment Boundary
- Clearcut (w/Reserves)
- ▨ Thinning (Crown, Low, Systematic)
- ▩ Seed Tree (w/Reserves)
- 411 - Northern Hardwood
- 413 - Aspen
- 419 - Mixed Upland Deciduous
- 422 - Natural Pines
- 423 - Other Upland Conifers
- 612 - Lowland Coniferous Forest
- 320 - Upland Shrub
- 500 - Water
- 622 - Lowland Shrub
- Lakes

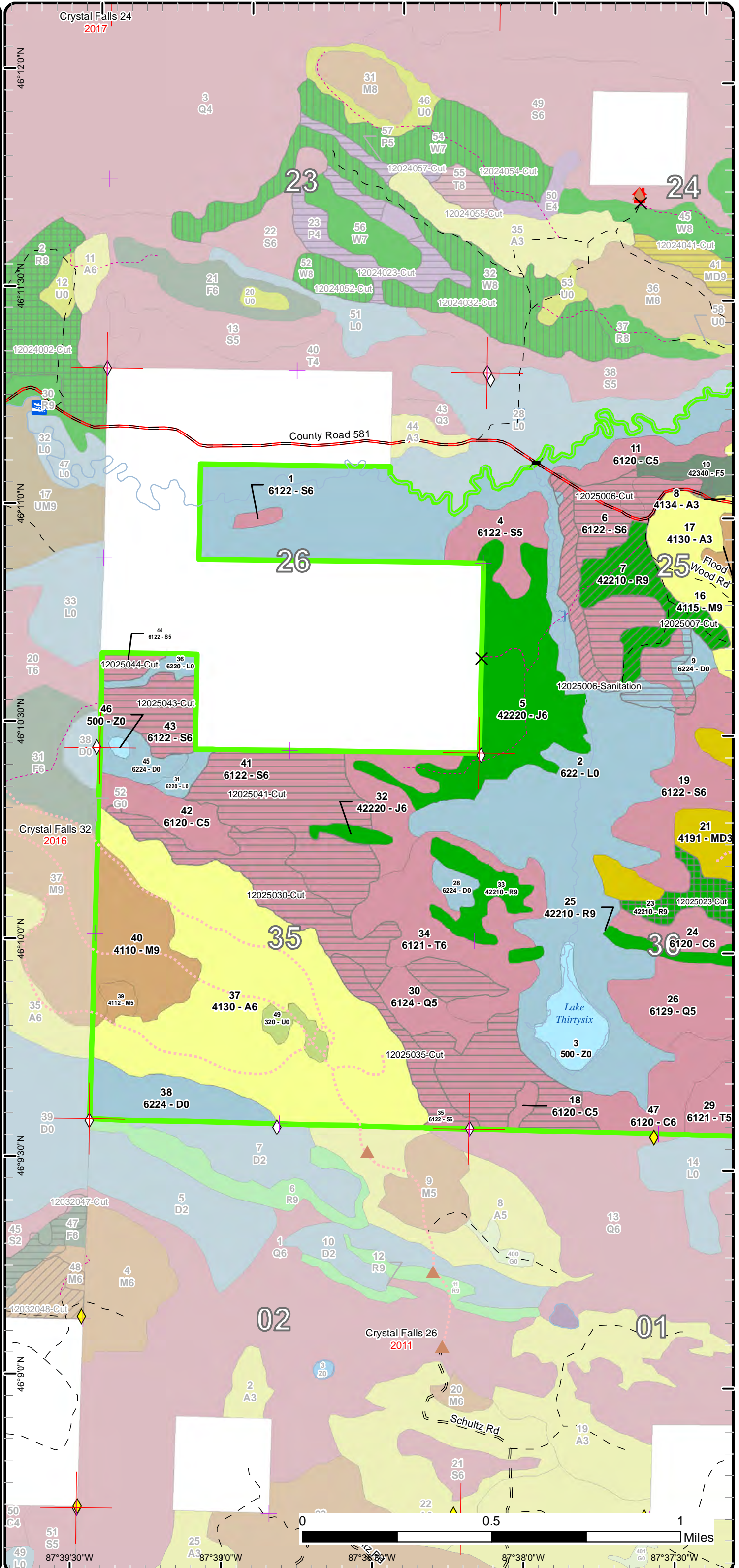


Cover Type & Treatments Map

Compartment: 25
 T44N R27W Sec. 24-26, 35, 36
 County: Dickinson
 Unit: Crystal Falls
 Mgmt Area: Ralph Ground Moraine
 YOE: 2018
 Acres: 2,021 GIS Calculated
 Examiner: Andrew Church
 Map Revised: 11/21/2016
 Map Phase: Post-Review

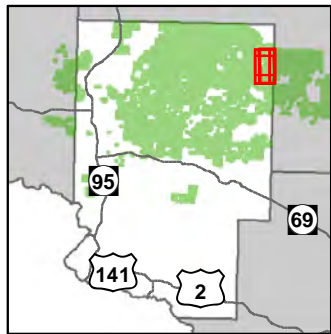


- Miris Corners
- + Remonumented Section Corners
- ◆ Survey Grade GPS Corners
- ◇ Field Grade GPS Corners
- ✕ Gate
- ▲ Berms
- Bridges
- Culverts
- Cabin
- f Boating Access Site
- County Gravel Roads
- Gravel Roads
- - Poor Dirt Roads
- - - Trail (Non-Recreation)
- - - Closed Roads
- Rivers
- ▭ Compartment Boundary
- ▭ Clearcut (w/Reserves)
- ▭ Thinning (Crown, Low, Systematic)
- ▭ Seed Tree (w/Reserves)
- ▭ 411 - Northern Hardwood
- ▭ 413 - Aspen
- ▭ 419 - Mixed Upland Deciduous
- ▭ 422 - Natural Pines
- ▭ 423 - Other Upland Conifers
- ▭ 612 - Lowland Coniferous Forest
- ▭ 320 - Upland Shrub
- ▭ 500 - Water
- ▭ 622 - Lowland Shrub
- ▭ Lakes

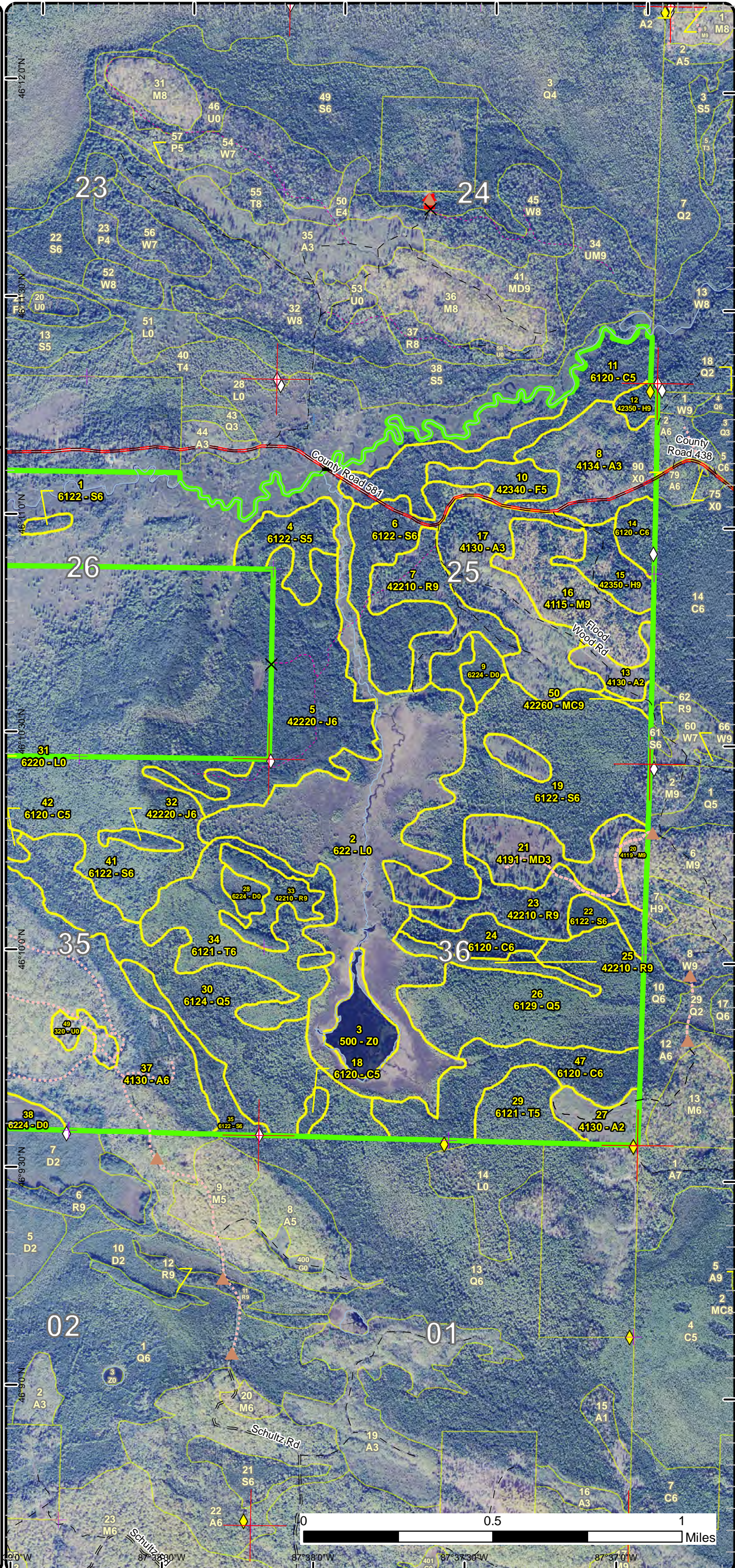


Stand Boundary Map

Compartment: 25
 T44N R27W Sec. 24-26, 35, 36
 County: Dickinson
 Unit: Crystal Falls
 Mgmt Area: Ralph Ground Moraine
 YOE: 2018
 Acres: 2,021 GIS Calculated
 Examiner: Andrew Church
 Map Revised: 11/21/2016
 Map Phase: Post-Review

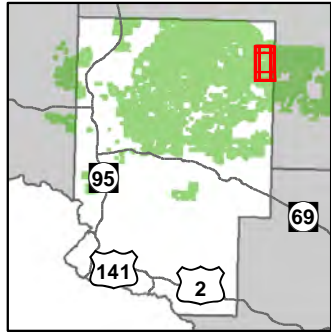


- Miris Corners
- + Remonumented Section Corners
- ◆ Survey Grade GPS Corners
- ◇ Field Grade GPS Corners
- ✕ Gate
- ▲ Berms
- Bridges
- Culverts
- Cabin
- County Gravel Roads
- Gravel Roads
- - Poor Dirt Roads
- - - Trail (Non-Recreation)
- - - Closed Roads
- Rivers
- Compartment Boundary
- Stand Boundaries
- 411 - Northern Hardwood
- 413 - Aspen
- 419 - Mixed Upland Deciduous
- 422 - Natural Pines
- 423 - Other Upland Conifers
- 612 - Lowland Coniferous Forest
- 320 - Upland Shrub
- 500 - Water
- 622 - Lowland Shrub

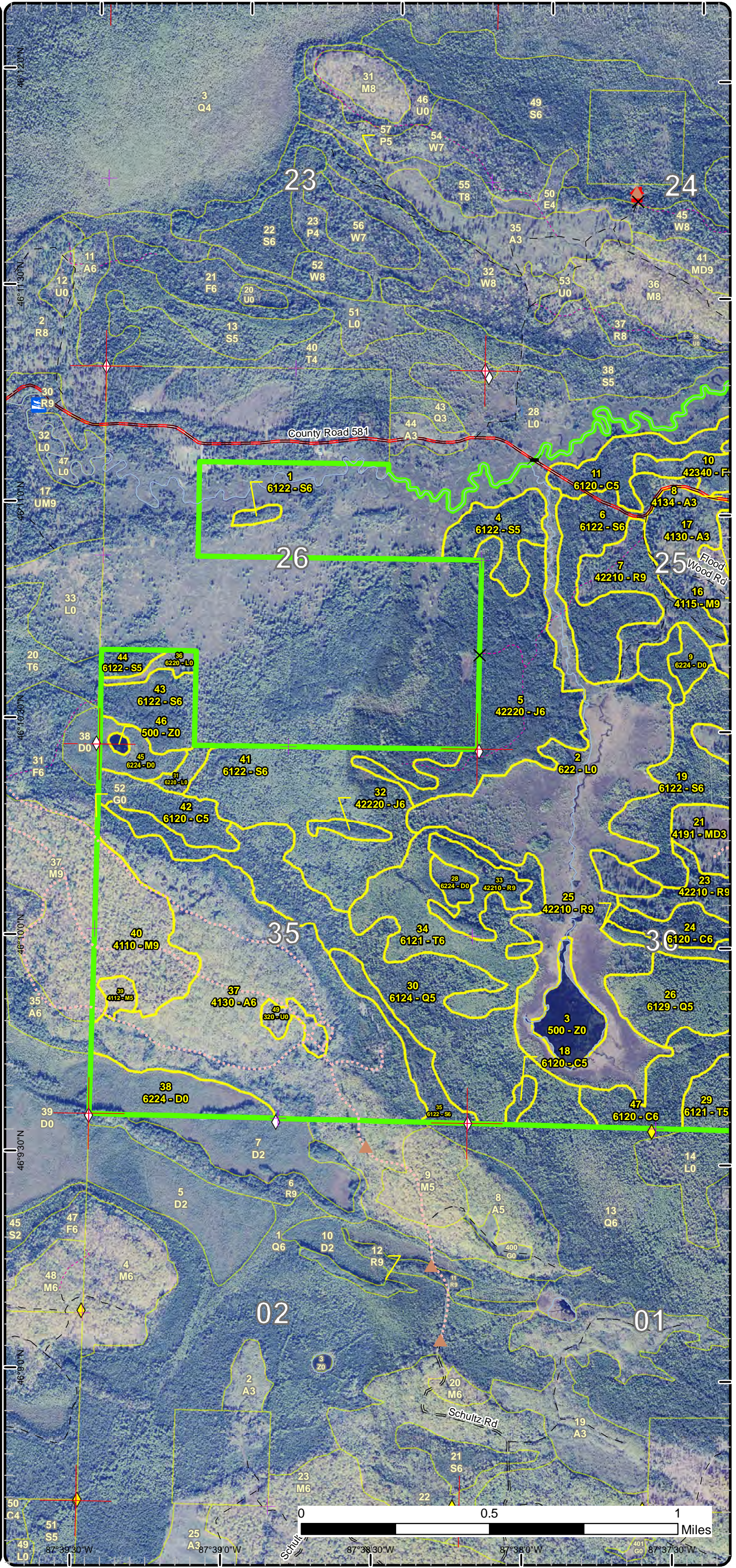


Stand Boundary Map

Compartment: 25
 T44N R27W Sec. 24-26, 35, 36
 County: Dickinson
 Unit: Crystal Falls
 Mgmt Area: Ralph Ground Moraine
 YOE: 2018
 Acres: 2,021 GIS Calculated
 Examiner: Andrew Church
 Map Revised: 11/21/2016
 Map Phase: Post-Review

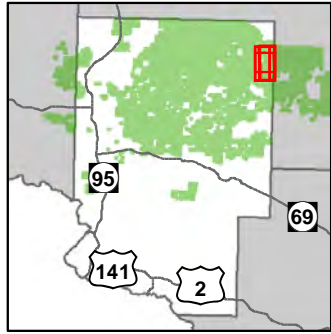


- Miris Corners
- + Remonumented Section Corners
- ◆ Survey Grade GPS Corners
- ◇ Field Grade GPS Corners
- X Gate
- ▲ Berms
- Bridges
- Culverts
- Cabin
- Boating Access Site
- County Gravel Roads
- Gravel Roads
- Poor Dirt Roads
- Trail (Non-Recreation)
- Closed Roads
- Rivers
- Compartment Boundary
- Stand Boundaries
- 411 - Northern Hardwood
- 413 - Aspen
- 419 - Mixed Upland Deciduous
- 422 - Natural Pines
- 423 - Other Upland Conifers
- 612 - Lowland Coniferous Forest
- 320 - Upland Shrub
- 500 - Water
- 622 - Lowland Shrub

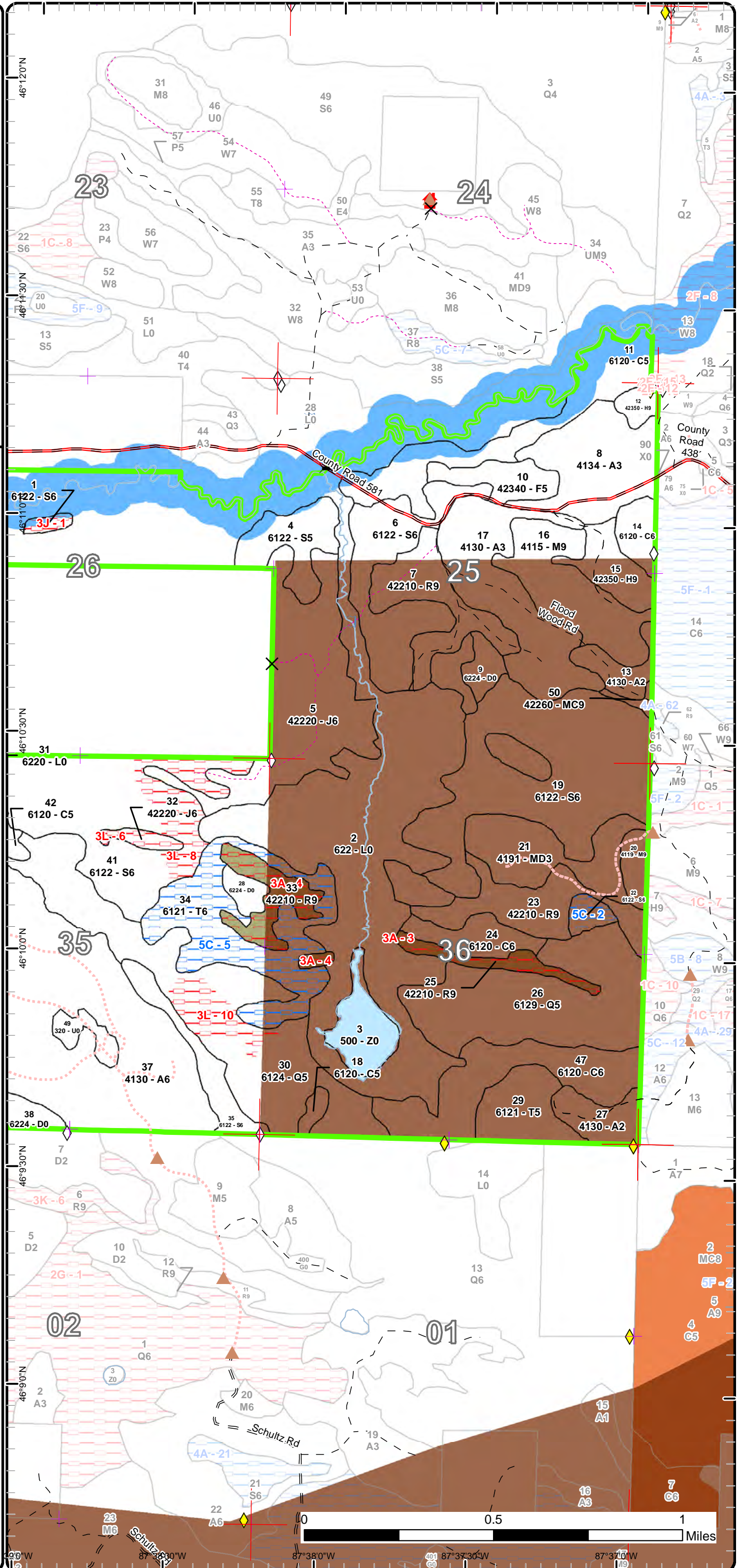


Special Conservation Areas & Site Conditions Map

Compartment: 25
 T44N R27W Sec. 24-26, 35, 36
 County: Dickinson
 Unit: Crystal Falls
 Mgmt Area: Ralph Ground Moraine
 YOE: 2018
 Acres: 2,021 GIS Calculated
 Examiner: Andrew Church
 Map Revised: 11/21/2016
 Map Phase: Post-Review

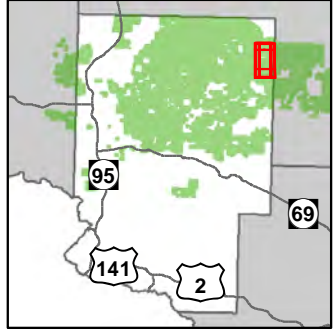


- Miris Corners
- + Remonumented Section Corners
- ◆ Survey Grade GPS Corners
- ◇ Field Grade GPS Corners
- ✕ Gate
- ▲ Berms
- Bridges
- Culverts
- Cabin
- County Gravel Roads
- Gravel Roads
- - - Poor Dirt Roads
- - - Trail (Non-Recreation)
- - - Closed Roads
- Rivers
- Compartment Boundary
- Available w/ Constraints
- Unavailable
- 5C: Delay treatment for age/size class diversity or exceptional site quality
- 3A: Potential old growth / biodiversity
- 3J: Water quality / BMPs (stream, river, or lake)
- 3L: Other wildlife concerns
- Stand Boundaries
- Cold Water Streams
- Cold Water Lakes
- High Priority Trout Stream Buffer
- Deer Winter Range
- Wildlife Management Areas
- Other Habitat Area
- Potential Old Growth

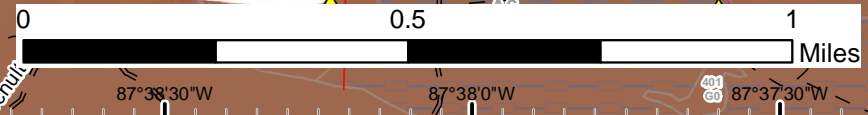
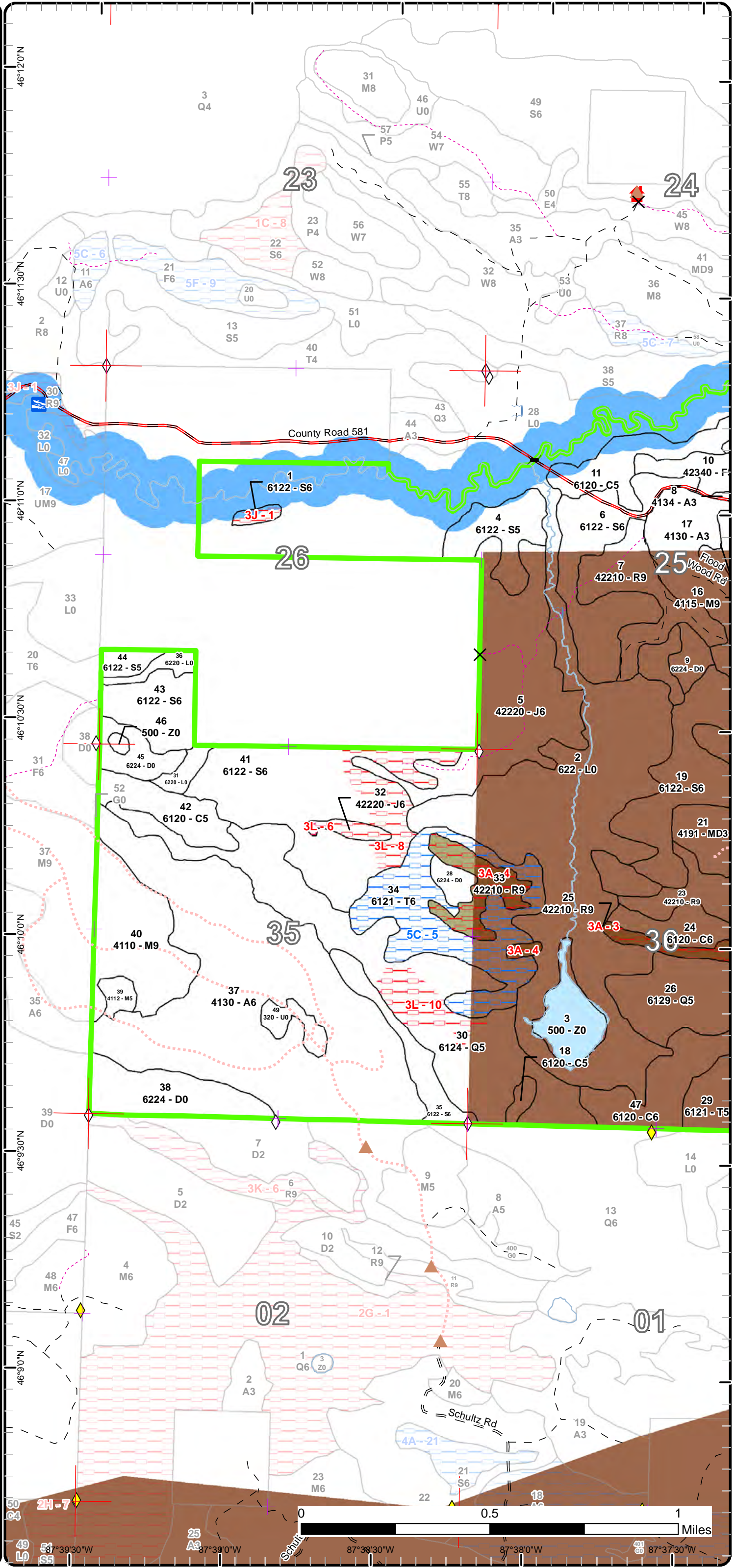


Special Conservation Areas & Site Conditions Map

Compartment: 25
 T44N R27W Sec. 24-26, 35, 36
 County: Dickinson
 Unit: Crystal Falls
 Mgmt Area: Ralph Ground Moraine
 YOE: 2018
 Acres: 2,021 GIS Calculated
 Examiner: Andrew Church
 Map Revised: 11/21/2016
 Map Phase: Post-Review



- Miris Corners
- + Remonumented Section Corners
- ◆ Survey Grade GPS Corners
- ◇ Field Grade GPS Corners
- X Gate
- ▲ Berms
- Bridges
- Culverts
- Cabin
- f Boating Access Site
- County Gravel Roads
- Gravel Roads
- - Poor Dirt Roads
- - - Trail (Non-Recreation)
- - - Closed Roads
- Rivers
- ▭ Compartment Boundary
- Available w/ Constraints
- Unavailable
- 5C: Delay treatment for age/size class diversity or exceptional site quality
- 3A: Potential old growth / biodiversity
- 3J: Water quality / BMPs (stream, river, or lake)
- 3L: Other wildlife concerns
- Stand Boundaries
- Cold Water Streams
- Cold Water Lakes
- High Priority Trout Stream Buffer
- Deer Winter Range
- Wildlife Management Areas
- Potential Old Growth



87°39'30"W 87°39'0"W 87°38'30"W 87°38'0"W 87°37'30"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	28	62	51	213	0	0	0	0	0	0	0	0	0	0	0	0	0	353
Cedar	0	0	0	0	0	0	0	0	0	26	0	0	0	0	0	0	0	131	157
Hemlock	0	0	0	0	0	0	0	0	0	0	0	0	24	0	0	0	0	0	24
Jack Pine	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	93	93
Lowland Conifers	0	0	0	0	0	0	0	91	0	0	0	0	0	0	0	0	0	125	216
Lowland Shrub	346	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	346
Lowland Spruce/Fir	0	0	0	0	0	0	122	0	0	25	0	0	0	0	0	0	0	221	368
Mixed Upland Deciduous	0	54	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	54
Natural Mixed Pines	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	2
Northern Hardwood	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	103	108
Red Pine	0	0	0	0	0	0	0	0	0	0	35	0	68	0	0	0	0	0	103
Tamarack	0	0	0	0	0	0	26	0	0	66	0	0	0	0	0	0	0	0	92
Treed Bog	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	60
Upland Shrub	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
Upland Spruce/Fir	0	0	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	16
Water	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22
Total	436	82	62	51	229	5	148	91	0	117	35	3	68	24	0	0	0	673	2022



Report 2 – Treatment Summary

Crystal Falls Mgt. Unit
Year of Entry: 2018

Acres of Harvest

Compartment 25
Total Compartment Acres: 2,021

Commercial Harvest - 383
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
Lowland Conifers	107	0	0	0	0	0	0	0	0	107
Lowland Spruce/Fir	189	0	0	0	16	0	0	0	0	206
Red Pine	0	0	0	35	0	35	0	0	0	70
Total	297	0	0	35	0	51	0	0	0	383

Proposed and Next Step Treatments by Method

	Harvest	Site Prep	Planting	Seeding	Burning	Pesticide	Monitoring	Other	Non-Forest Mgt.	Total Acres
Current	383	0	0	0	0	0	0	0	0	383
Next Step	0	35	0	313	0	0	348	0	0	696
Total	383	35	0	313	0	0	348	0	0	1078



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
6	12025006-Cut	64.5	6122 - Black Spruce	Poletimber Well	103	Unspecified	Harvest	Clearcut	6122 - Black Spruce	Even-Aged	Draft Field Boundary

Habitat Cut: No**Site Condition:**

Prescription Final Harvest using 2" spec. Leave Red Pine, White Pine and Cedar for wildlife considerations. No retention. Winter operations required.

Specs: Roundwood only for retention of seed source.

Next Step Monitoring, Natural Regen (Re-Inventory); Seeding, Aerial Seed

Treatments:

Acceptable Regen: Aspen, Pine, Tamarack, Mixed Conifer, Mixed Hardwoods

Other

No retention due to Forest Health concerns of Eastern Dwarf Mistletoe. Where adjacent Spruce present, expand harvest 2 chains past stand boundary to mitigate future infestation on regenerating stand.

Comment:

WLD: Featured Species: Deer, Bear, Other wildlife species: Moose, Waterfowl, Marten, Spruce Grouse. This stand provides both riparian corridor and winter/summer cover. Retention of this stand as black spruce is recommended. Retention of other conifer species and buffer to creek recommended as travel corridor and lowland conifer habitat.

Proposed Start Date: 10/01/2017

6	12025006-Sanitation	16.3	6122 - Black Spruce	Poletimber Well	103	Unspecified	Harvest	Low Thinning	6122 - Black Spruce	Even-Aged	Draft Field Boundary
---	---------------------	------	---------------------	-----------------	-----	-------------	---------	--------------	---------------------	-----------	----------------------

Habitat Cut: No**Site Condition:**

Prescription Harvest Spruce only using 2" spec. No cut buffer trib on West side 25 feet. No cut buffer on Escanaba River 150 feet. Winter operations

Specs: required. Roundwood only for retention of seed source. Tops must be evenly scattered.

Next Step Monitoring, Natural Regen (Re-Inventory); Seeding, Aerial Seed

Treatments:

Acceptable Regen: Aspen, Pine, Tamarack, Mixed Conifer, Mixed Hardwoods

Other

No retention and small riparian buffers due to Forest Health concerns of Eastern Dwarf Mistletoe. Where adjacent Spruce present, expand harvest 2 chains past stand boundary to mitigate future infestation on regenerating stand.

Comment:

WLD: Featured Species: Deer, Bear, Other wildlife species: Moose, Waterfowl, Marten, Spruce Grouse. This stand provides both riparian corridor and winter/summer cover. Retention of this stand as black spruce is recommended. Retention of other conifer species and buffer to creek recommended as travel corridor and lowland conifer habitat.

Proposed Start Date: 10/01/2017

7	12025007-Cut	34.7	42210 - Natural Red Pine	Sawtimber Well	95	111-140	Harvest	Crown Thinning	42210 - Natural Red Pine	Even-Aged	Draft Field Boundary
---	--------------	------	--------------------------	----------------	----	---------	---------	----------------	--------------------------	-----------	----------------------

Habitat Cut: No**Site Condition:**

Prescription Thin targeting residual BA of 80 (outside of existing regen gaps). For wildlife considerations; favor White Pine, leave Cedar if found, and leave

Specs: Hemlock if found.

Next Step

Treatments:

Acceptable Regen:

Other

WLD: Featured Species- Bear, Deer, 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. 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



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
23	12025023-Cut	35.0	42210 - Natural Red Pine	Sawtimber Well	111	141-170	Harvest	Seed Tree with Retention	42290 - Natural Mixed Pine	Even-Aged	Draft Field Boundary

Habitat Cut: No**Site Condition:**

Prescription Leave 20 BA of seed trees. The seed trees will be a mix of White Pine and Red Pine favoring White Pine. Leave all Cedar and Hemlock if found. Cut all other species using 2" spec.

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

Acceptable Regen: Pine, Aspen, Mixed Hardwoods, Mixed Conifers

Other Comment: WLD: Featured species: Grouse, Deer, Bear. Maintenance of diverse species for structural diversity such as refuge, cover and den and nest trees is important numerous wildlife species in addition to the featured species named. Retention of White Pine in this stand recommended for the above reasons. Natural regeneration would provide for greatest species diversity for wildlife use.

Proposed Start Date: 10/01/2017

30	12025030-Cut	107.3	6124 - Lowland Spruce-Fir	Poletimber Medium	103	Unspecified	Harvest	Clearcut	612 - Lowland Coniferous Forest	Even-Aged	Draft Field Boundary
----	--------------	-------	---------------------------	-------------------	-----	-------------	---------	----------	---------------------------------	-----------	----------------------

Habitat Cut: No**Site Condition:**

Prescription Final harvest using 2" spec. Leave all cedar, white pine, red pine for wildlife considerations. Frozen ground operations. Roundwood only.

Next Step Monitoring, Natural Regen (Re-Inventory); Seeding, Aerial Seed
Treatments:

Acceptable Regen: Mixed softwoods, mixed hardwood, tamarack, pine, aspen

Other Comment: No black spruce retention due to dwarf mistletoe. WLD: Featured Species: Deer, Bear, Other wildlife species: Moose, Waterfowl, Marten, Spruce Grouse. This stand provides both winter and summer cover. Retention of this stand as black spruce is recommended. Movement corridors and lowland conifer habitat should be retained wherever possible while addressing disease aspects.

Proposed Start Date: 10/01/2017

35	12025035-Cut	18.7	6122 - Black Spruce	Poletimber Well	88	Unspecified	Harvest	Clearcut	612 - Lowland Coniferous Forest	Even-Aged	Draft Field Boundary
----	--------------	------	---------------------	-----------------	----	-------------	---------	----------	---------------------------------	-----------	----------------------

Habitat Cut: No**Site Condition:**

Prescription Final harvest using 2" spec. Leave all cedar, white pine, red pine for wildlife considerations. Frozen ground operations. Roundwood only.

Next Step Monitoring, Natural Regen (Re-Inventory); Seeding, Aerial Seed
Treatments:

Acceptable Regen: Mixed hardwoods, mixed softwoods, aspen, pine, tamarack

Other Comment: No black spruce retention due to mistletoe. WLD: Featured Species: Deer, Bear, Other wildlife species: Moose, Waterfowl, Marten, Spruce Grouse. This stand provides winter/summer cover. Retention of this stand as black spruce is recommended during discussion of disease concerns.

Proposed Start Date: 10/01/2017



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
41	12025041-Cut	74.5	6122 - Black Spruce	Poletimber Well	94	Unspec ified	Harvest	Clearcut	612 - Lowland Coniferous Forest	Even-Aged	Draft Field Boundary

Habitat Cut: No**Site Condition:**

Prescription Final harvest using 2" spec. Leave all Cedar, White Pine, Red Pine for wildlife considerations. Frozen ground operations. Roundwood only.
Specs:

Next Step Monitoring, Natural Regen (Re-Inventory); Seeding, Aerial Seed
Treatments:

Acceptable Mixed Hardwoods, Mixed Conifers, Tamarack, Pine, Aspen
Regen:

Other No retention of Black Spruce due to Dwarf Mistletoe.

Comment: WLD: Featured Species: Deer, Bear, Other wildlife species: Moose, Waterfowl, Marten, Spruce Grouse. This stand provides both winter and summer cover. Retention of this stand as black spruce is recommended as disease concerns are addressed.

Proposed Start Date: 10/01/2017

43	12025043-Cut	25.5	6122 - Black Spruce	Poletimber Well	97	Unspec ified	Harvest	Clearcut	6122 - Black Spruce	Even-Aged	Draft Field Boundary
----	--------------	------	---------------------	--------------------	----	-----------------	---------	----------	------------------------	-----------	-------------------------

Habitat Cut: No**Site Condition:**

Prescription Final harvest using 2" spec. Leave all Cedar, White Pine, Red pine for wildlife considerations. Frozen ground operations. Roundwood only.
Specs:

Next Step Monitoring, Natural Regen (Re-Inventory); Seeding, Aerial Seed
Treatments:

Acceptable Mixed Hardwoods, Mixed Conifers, Tamarack, Pine, Aspen
Regen:

Other No retention of Black Spruce due to Mistletoe.

Comment: WLD: Featured Species: Deer, Bear, Other wildlife species: Moose, Waterfowl, Marten, Spruce Grouse. This stand provides both winter and summer cover. Retention of this stand as black spruce is recommended as disease concerns are addressed.

Proposed Start Date: 10/01/2017

44	12025044-Cut	6.1	6122 - Black Spruce	Poletimber Medium	97	Unspec ified	Harvest	Clearcut	6122 - Black Spruce	Even-Aged	Draft Field Boundary
----	--------------	-----	---------------------	----------------------	----	-----------------	---------	----------	------------------------	-----------	-------------------------

Habitat Cut: No**Site Condition:**

Prescription Final harvest using 2" spec. Leave all Cedar, White Pine, Red pine for wildlife considerations. Frozen ground operations. Roundwood only.
Specs:

Next Step Monitoring, Natural Regen (Re-Inventory); Seeding, Aerial Seed
Treatments:

Acceptable Mixed Hardwoods, Mixed Conifers, Tamarack, Pine, Aspen
Regen:

Other No retention of Black Spruce due to Mistletoe.

Comment: WLD: Featured Species: Deer, Bear, Other wildlife species: Moose, Marten, Spruce Grouse. This stand provides both winter and summer cover. Retention of this stand as black spruce is recommended as disease concerns are addressed.

Proposed Start Date: 10/01/2017

**Total Treatment
Acreage Proposed: 382.6**

Report 4 – Site Conditions

Crystal Falls Mgt. Unit
Andrew Church : Examiner

Compartment: 25
Year of Entry: 2018

Availability for Management

Total Acres	Acres Available	Acres Avail		Dominant Site Conditions	Dominant Site Conditions			
		With Condition	Not Available		5C	3A	3J	3L
353	353	0	0	Aspen				
157	157	0	0	Cedar				
24	24	0	0	Hemlock				
93	88	0	5	Jack Pine				5
216	198	0	18	Lowland Conifers				18
346	346	0	0	Lowland Shrub				
367	331	6	30	Lowland Spruce/Fir	6		3	27
54	54	0	0	Mixed Upland Deciduous				
2	2	0	0	Natural Mixed Pines				
108	108	0	0	Northern Hardwood				
102	70	0	33	Red Pine		33		
92	26	66	0	Tamarack	66			
60	60	0	0	Treed Bog				
8	8	0	0	Upland Shrub				
16	16	0	0	Upland Spruce/Fir				
22	22	0	0	Water				
2,021	1,863	72	86	Total Forested Acres	72	33	3	50
	92%	4%	4%	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)	3	2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)	Unspecified	Unspecified	Unspecified
Comments: Within river buffer							

Report 4 – Site Conditions

Crystal Falls Mgt. Unit
Andrew Church : Examiner

Compartment: 25
Year of Entry: 2018

2	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	6	Unspecified	Unspecified	Unspecified	Unspecified
Comments: LOW site index. Mostly 2 stick trees. Recommend holding for 1-2 rotations.							
3	Unavailable	3A: Potential old growth / biodiversity	12	3K: Rare or unique landforms	Unspecified	Unspecified	Unspecified
Comments: Does not meet age criteria for Type 1 old growth but evidence of fire is present. No evidence of harvesting.							
4	Unavailable	3A: Potential old growth / biodiversity	21	3K: Rare or unique landforms	Unspecified	Unspecified	Unspecified
Comments: Does not meet age criteria for Type 1 old growth but evidence of fire is present. Evidence of harvesting on about 2 acres in NW finger.							
5	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	66	Unspecified	Unspecified	Unspecified	Unspecified
Comments: This stand took 85 years to get 3 sticks of merchantability. Rotation age should be closer to 100-110 due to poor soils.							
6	Unavailable	3L: Other wildlife concerns	5	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
8	Unavailable	3L: Other wildlife concerns	27	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							

Report 4 – Site Conditions

Crystal Falls Mgt. Unit
Andrew Church : Examiner

Compartment: 25
Year of Entry: 2018

10	Unavailable	3L: Other wildlife concerns	18	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
----------	--------------	-------------	----------------	-------

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 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.



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
1	6122 - Black Spruce	Poletimber Well	3.1	100	Unspecified	Stand within river buffer
4	6122 - Black Spruce	Poletimber Medium	25.1	44	Unspecified	Many portions harvested 1972. Small pockets of older, mature timber but for the most part stand is just starting to reach pole timber size and is filling in nicely. Mostly 2 stick trees.
5	42220 - Natural Jack Pine	Poletimber Well	87.6	41	Unspecified	Mostly upland with several wet areas (with lower stocking) throughout. Pine growing well. Several large diameter Red Pines.
6	6122 - Black Spruce	Poletimber Well	59.1	103	Unspecified	Mistletoe observed within stand. Younger Spruce to South. Most of stand is lowland but small uplands are present.
7	42210 - Natural Red Pine	Sawtimber Well	34.7	95	111-140	Thinned to 120 residual BA with regen gaps created in 2009. Pine, Spruce, Fir regen in some but not all of the regen gaps.
8	4134 - Aspen, Spruce/Fir	Sapling Well	50.5	23	Immature	Many supercanopy trees left from last harvest.
10	42340 - Upland Spruce/Fir	Poletimber Medium	16.2	39	Unspecified	Unbelievably thick Spruce/Fir stand of 1-2 stick trees. Poor site index. Mix of upland and lowland. Some supercanopy Pines throughout.
11	6120 - Lowland Cedar	Poletimber Medium	50.0	94	Unspecified	Thick, brushy stand. Some Pine found in supercanopy. Some small western portions harvested in 1973.
12	42350 - Upland Hemlock	Sawtimber Well	6.1	122	Unspecified	
13	4130 - Aspen	Sapling Medium	11.8	6	Immature	Harvested 2010. Supercanopy Hemlocks throughout. Small wet areas present, regen lighter to West.
14	6120 - Lowland Cedar	Poletimber Well	11.0	103	Unspecified	Any management should be with swamp complex in Comp 58 of Gwinn Unit.
15	42350 - Upland Hemlock	Sawtimber Well	18.0	122	Unspecified	Some portions of this stand were harvested in 1993. The harvested portions are regenerating to Aspen/Spruce/Fir under a Hemlock canopy.
16	4115 - Y.Birch, Hemlock NH	Sawtimber Well	45.6	98	81-110	Thinned 2010. Much Maple regen. Raspberries throughout.
17	4130 - Aspen	Sapling Well	61.7	17	Unspecified	Many Spruce/Fir/Pine/Hemlock trees unharvested when last treated.
18	6120 - Lowland Cedar	Poletimber Medium	3.8	88	Unspecified	
19	6122 - Black Spruce	Poletimber Well	121.6	55	Unspecified	More Tamarack towards middle of stand. Healthy, slow growing swamp. Most of Cedar is found on Southern reaches of stand. A few small upland islands holding Pine/Maple/Fir.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
20	4119 - Mixed Northern Hardwoods	Sawtimber Well	8.3	99	81-110	All management should be with Gwinn Comp 59.
21	4191 - Mixed Upland Deciduous with Conifer	Sapling Well	54.3	6	Immature	Harvested 2010. Many supercanopy Pines not harvested with last treatment. Some small wet areas within stand.
22	6122 - Black Spruce	Poletimber Well	6.1	84	Unspecified	Healthy Spruce stand. Growing slow (site index = 35) due to soil conditions. Trees averaging 2-3 sticks with edge trees taller. Should be treated with stand to South when mature.
23	42210 - Natural Red Pine	Sawtimber Well	35.0	111	141-170	Stand treated in 2010. A few Pine and other species removed. Pine growing very well on this site. Stocking levels vary from 70-200+ BA.
24	6120 - Lowland Cedar	Poletimber Well	16.8	82	Unspecified	
25	42210 - Natural Red Pine	Sawtimber Well	11.5	118	171-200	Evidence of fire. Stand is located on esker land form. Pine is high quality. Tall and straight.
26	6129 - Mixed Coniferous Lowland Forest	Poletimber Medium	90.9	68	Unspecified	A couple small uplands within stand holding Pine/Maple/Fir. Harvested in late 40's- early 50's. 1-2 stick trees. Black Spruce and Tamarack are healthy and filling in nicely. Slow growing trees due to soil conditions.
27	4130 - Aspen	Sapling Medium	15.9	6	Unspecified	Harvested 2010. Very Healthy Aspen. Mixed hardwoods well represented under the taller Aspen regen.
29	6121 - Tamarack	Poletimber Medium	25.6	51	Unspecified	Trees just starting to reach pole size. Black Spruce and Tamarack are healthy and filling in nicely. Slow growing trees due to soil conditions.
30	6124 - Lowland Spruce-Fir	Poletimber Medium	124.6	103	Unspecified	Not much volume in overstory. Mistletoe observed. Much mortality throughout stand. Varying stocking levels within stand. Pure cedar pockets, pure spruce pockets, pure tamarack pockets.
32	42220 - Natural Jack Pine	Poletimber Well	5.1	74	Unspecified	Upland ridge in middle of lowland swamp.
33	42210 - Natural Red Pine	Sawtimber Well	21.3	118	141-170	Stand is positioned on an esker. High quality Red Pine. Tall and straight. Northern reaches of stand are more Aspen/Fir/White Pine.
34	6121 - Tamarack	Poletimber Well	66.3	85	Unspecified	Stand is old, but only averages 3 sticks and has small diameters due to poor soils. More Spruce along Northeastern side.
35	6122 - Black Spruce	Poletimber Well	18.7	88	Unspecified	Mostly lowland with long narrow upland ridge. Dwarf mistletoe is heavily affecting black spruce.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
37	4130 - Aspen	Poletimber Well	213.0	35	Unspecified	Scattered supercanopy Pines throughout. Western edge is solid Spruce/Fir/Tamarack along swamp. Hard Maple in understory well represented near Northern Hardwood edges. Some small lowland areas are present within stand.
39	4112 - Maple, Beech, Cherry Association	Poletimber Medium	5.0	46	51-80	Just starting to reach pole size.
40	4110 - Sugar Maple Association	Sawtimber Well	49.2	94	81-110	Thinned 2011
41	6122 - Black Spruce	Poletimber Well	101.8	94	Unspecified	Dwarf Mistletoe throughout entire stand. Tamarack is younger. North side of stand is smaller diameter trees. More Spruce along Southern boundary. Small upland inclusion located on far Western side of stand.
42	6120 - Lowland Cedar	Poletimber Medium	22.5	88	Unspecified	Low stocking of overstory Cedars. Thick subcanopy is filling in any canopy gaps. Western portion has little to no stocking. Very small upland inclusion.
43	6122 - Black Spruce	Poletimber Well	25.5	97	Unspecified	Dwarf Mistletoe observed. Lower stocking around edges. Small upland inclusions in middle and West side holding Pine, Spruce, and Fir.
44	6122 - Black Spruce	Poletimber Medium	6.1	97	Unspecified	Dwarf Mistletoe observed. Much mortality throughout entire stand. Western half of stand is upland and holds a dense Spruce/Fir stand with supercanopy Red and White Pines.
47	6120 - Lowland Cedar	Poletimber Well	53.0	101	Unspecified	Pure Cedar with some small pockets of Spruce. More Spruce to East. Much of Spruce is falling out of stand due to Mistletoe and being replaced by Fir and Tamarack.
50	42260 - Natural Pine, Mixed Deciduous	Sawtimber Well	2.5	100	51-80	Retention for harvest to North



Stand	Cover Type	Acres	Managed Site	General Comments:
2	622 - Lowland Shrub	334.9	No	Stand data was accidentally deleted and then re-entered by Kim Kennedy. This was an OI L type stand.
3	500 - Water	20.8	No	Lake 36
9	6224 - Treed Bog	7.9	No	OPIC - FMD: OI Stand Year Origin was 1935
28	6224 - Treed Bog	6.2	No	OPIC - FMD: Stand is of harvestable age, but only averages 3 sticks; delaying for additional growth
31	6220 - Alder/willow	5.6	No	OPIC - FMD: OI Stand Year Origin was 1937
36	6220 - Alder/willow	5.7	No	OPIC - FMD: OI Stand Year Origin was 1937
38	6224 - Treed Bog	32.5	No	
45	6224 - Treed Bog	13.1	No	Mistletoe observed. Stand is not merchantable for harvest to mitigate parasite. This stand will most likely never grow merchantable trees due to disease and poor soils.
46	500 - Water	1.5	No	OPIC - FMD: pond/bog
49	320 - Upland Shrub	8.1	No	OPIC - FMD: OI Stand Year Origin was