



# Compartment Review Presentation

Crystal Falls Forest Management Unit

Compartment 12112

Entry Year 2019

Acreage: 2,178

County Dickinson

Management Area: Cassidy Creek

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**Revision Date:** 2017-08-30

**Stand Examiner:** Eric Brolin

**Legal Description:**

T40N-R28W Sections 26, 27, 34, 35

T39N-R28W Sections 2, 3

**Identified Planning Goals:**

This compartment is broken into many diverse stands. Cover types within this compartment include aspen, swam conifer, hardwood, cedar, and other mixed upland/lowland types. Management goals are to promote species and age diversity, maintain recreation and hunting opportunities, and enhance forest health through sustainable timber management.

**Soil and topography:**

This area has contains flat sandy terrain with occasional rock outcrops and shallow water tables. Areas at higher elevations tend to have better quality hardwood sites.

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

Lands within and around this compartment are primarily owned by small private landowners. The entire south border of this compartment borders the Sturgeon River which also meanders up through the eastern edge of state property.

**Unique Natural Features:**

The Sturgeon River and Cassidy Creek are located in this compartment.

**Archeological, Historical, and Cultural Features:**

There is an ORV trailhead parking lot in the center of this compartment corresponding with the ORV and snowmobile trails. No archeological sites are present within this compartments boundaries.

**Special Management Designations or Considerations:**

This compartment is easily accessible which makes it a high use area for hunters and recreation users.

**Watershed and Fisheries Considerations:**

Multiple waterbodies are within this compartment. Sturgeon River, Cassidy Creek, Lost Creek and unnamed tributaries to Cassidy Creek. Sturgeon River and Cassidy Creek should have a 100 foot buffer. Lost Creek and the unnamed tribs to Cassidy Creek should have a 300 foot buffer. For all other riparian areas, including vernal pools and intermittent streams, BMPs should be followed to maintain canopy cover and prevent erosion into waterbodies.

**Wildlife Habitat Considerations:**

This compartment falls within the Cassidy Creek Management Area whose featured species include; blackburnian warbler, northern goshawk, deer, wood duck and woodcock. Functional cover for wintering deer is very important is this portion of the conditional deer winter range. In additional mature forest habitat primarily conifer provides habitat critical for blackburnian warblers, and refuge trees for black bears. A complex of small openings was developed for deer, woodcock and various other wildlife species. Riparian habitat corridors provide habitat for woodducks. Aspen age class and stand size is a management goal in this compartment, as is encouragement of mesic conifers to provide cover for deer to access winter forage, grouse and snowshoe hare. Mature forest areas will also be retained to provide nesting and hunting need of northern goshawks. Lowland hardwood and conifer stands, swales and drainages are used extensively by many wildlife species and are particularly important for black bears.

**Mineral Resource and Development Concerns and/or Restrictions**

The nearest active sand/gravel pits are located more than three miles to the south and southwest. There appears to be some sand and gravel potential within the compartment. Abandoned iron mines are located just over three miles to the southwest, but there does not appear to be any iron ore potential within the compartment. Potential for other metallic minerals also appears to be low. However, part of this compartment was previously leased for metallic mineral exploration. There is no economic oil and gas production in the UP. The state does not own the mineral rights beneath parts of this compartment.

**Vehicle Access:**

Most of this compartment has excellent vehicle access.

**Survey Needs:**

One corner is needed located in T40N-R28W, section 26 to determine the accurate private/state property line.

**Recreational Facilities and Opportunities:**

This compartment offers opportunities such as a trailhead parking lot with restroom facilities, ORV/snowmobile trails, fishing, trapping, and hunting.

**Fire Protection:**

Good access across this compartment along with more of a hardwood cover type makes this area less of a threat to larger wildfires.

**Additional Compartment Information:**

This compartment was one of the first areas that had aspen harvests in the Norway management area. When markets permitted, many small cuts prevailed and broke up the larger stand sizes.

**The following reports from the Inventory are attached:**

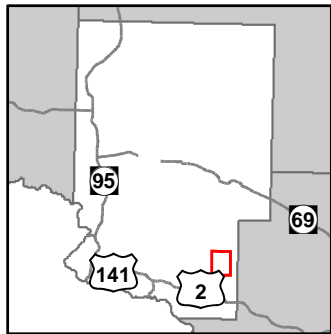
- Total Acres by Cover Type and Age Class**
- Cover Type by Harvest Method**
- Proposed Treatments – No Limiting Factors**
- Proposed Treatments – With Limiting Factors**
- Stand Details (Forested and Nonforested)**
- Dedicated and Proposed Special Conservation Areas**
- Site Condition Details**

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

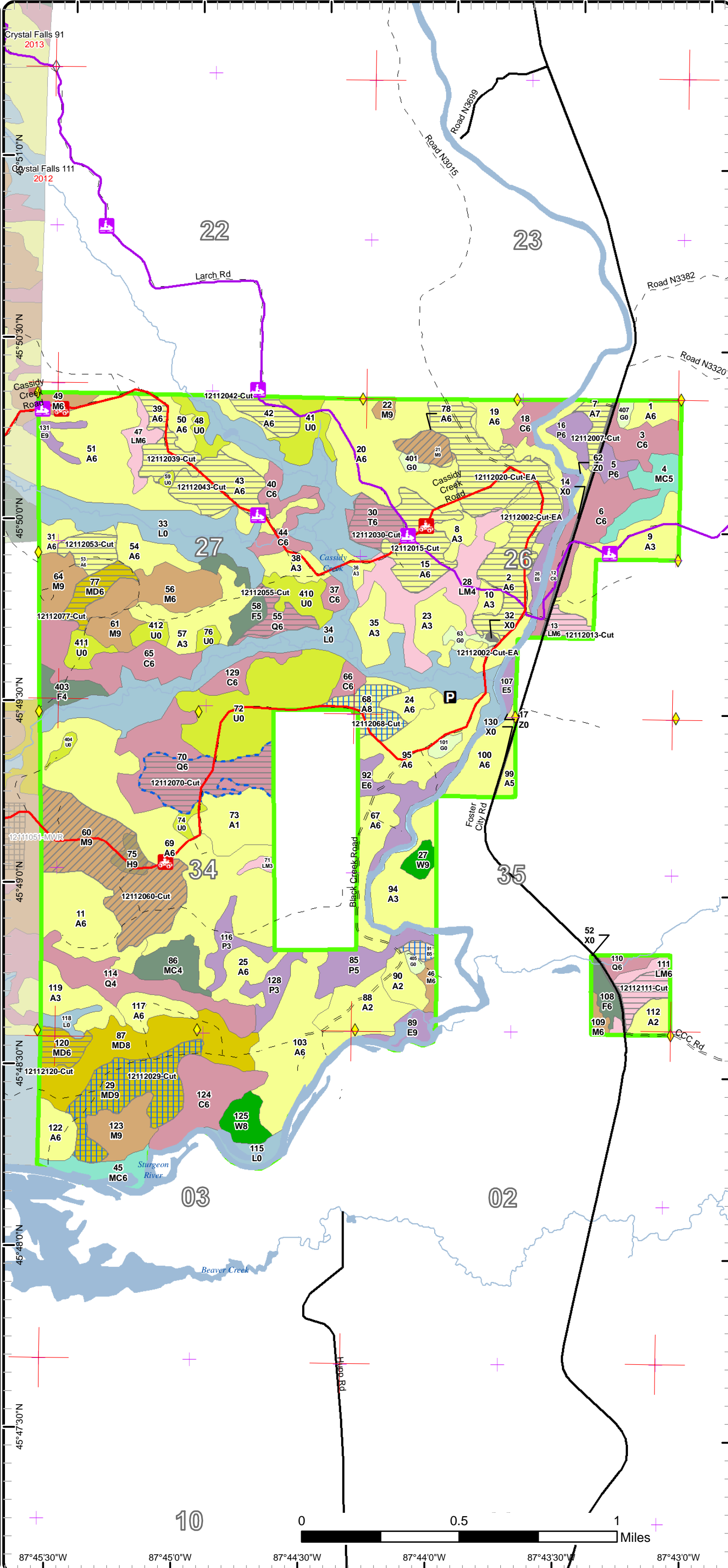
- Base feature information, stand boundaries, cover types, and numbers**
- Proposed treatments**
- Site condition boundaries**
- Details on the road access system**

# Cover Type & Treatments Map

Compartment: 112  
 T40N, R28W, Sec. 26, 27, 34, 35  
 County: Dickinson  
 Unit: Crystal Falls  
 Mgmt Area: Cassidy Creek  
 YOE: 2019  
 Acres: 2178.4 GIS Calculated  
 Examiner: Eric Brolin  
 Map Revised: 11/30/2017  
 Map Phase: Post-Review



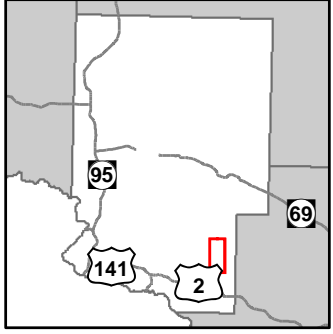
- Miris Corners
- Remonumented Section Corners
- Survey Grade GPS Corners
- Counties
- Parking Lot
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- Snowmobile Trails
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- Lakes and Rivers All
- Compartment Boundary
- Treatments with Site Conditions
- Clearcut (w/Reserves)
- Seed Tree (w/Reserves)
- Thinning (Crown, Low, Systematic)
- 411 - Northern Hardwood
- 413 - Aspen
- 414 - Other Upland Deciduous
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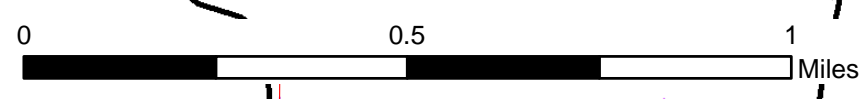
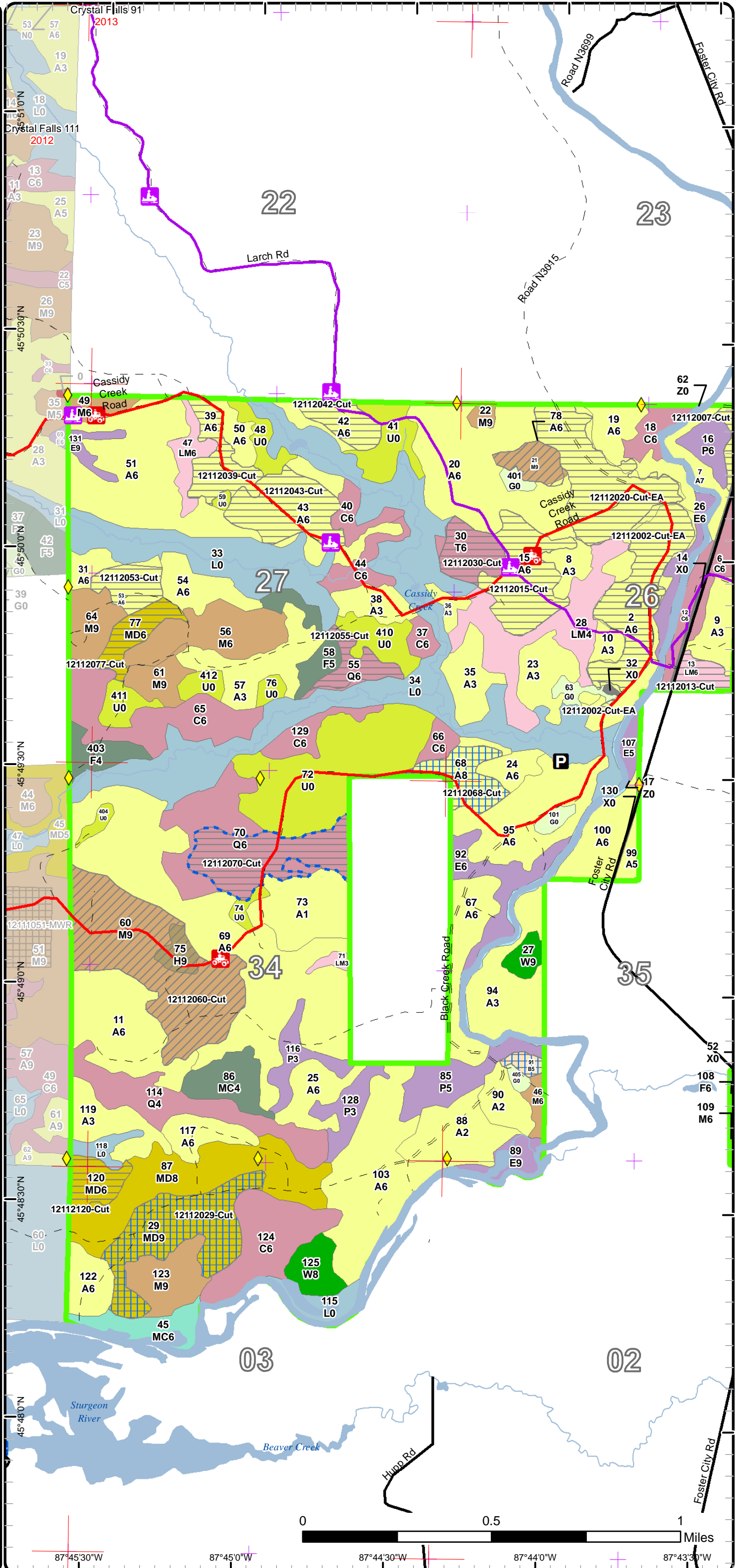
87°45'30"W    87°45'0"W    87°44'30"W    87°44'0"W    87°43'30"W    87°43'0"W

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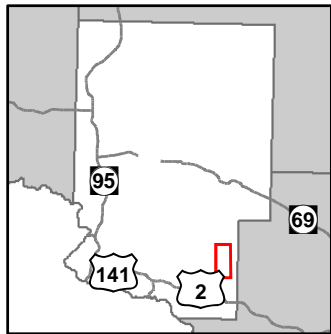
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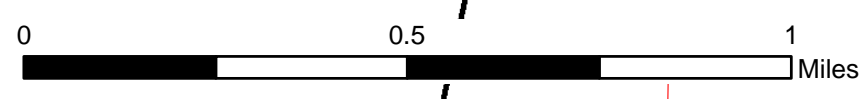
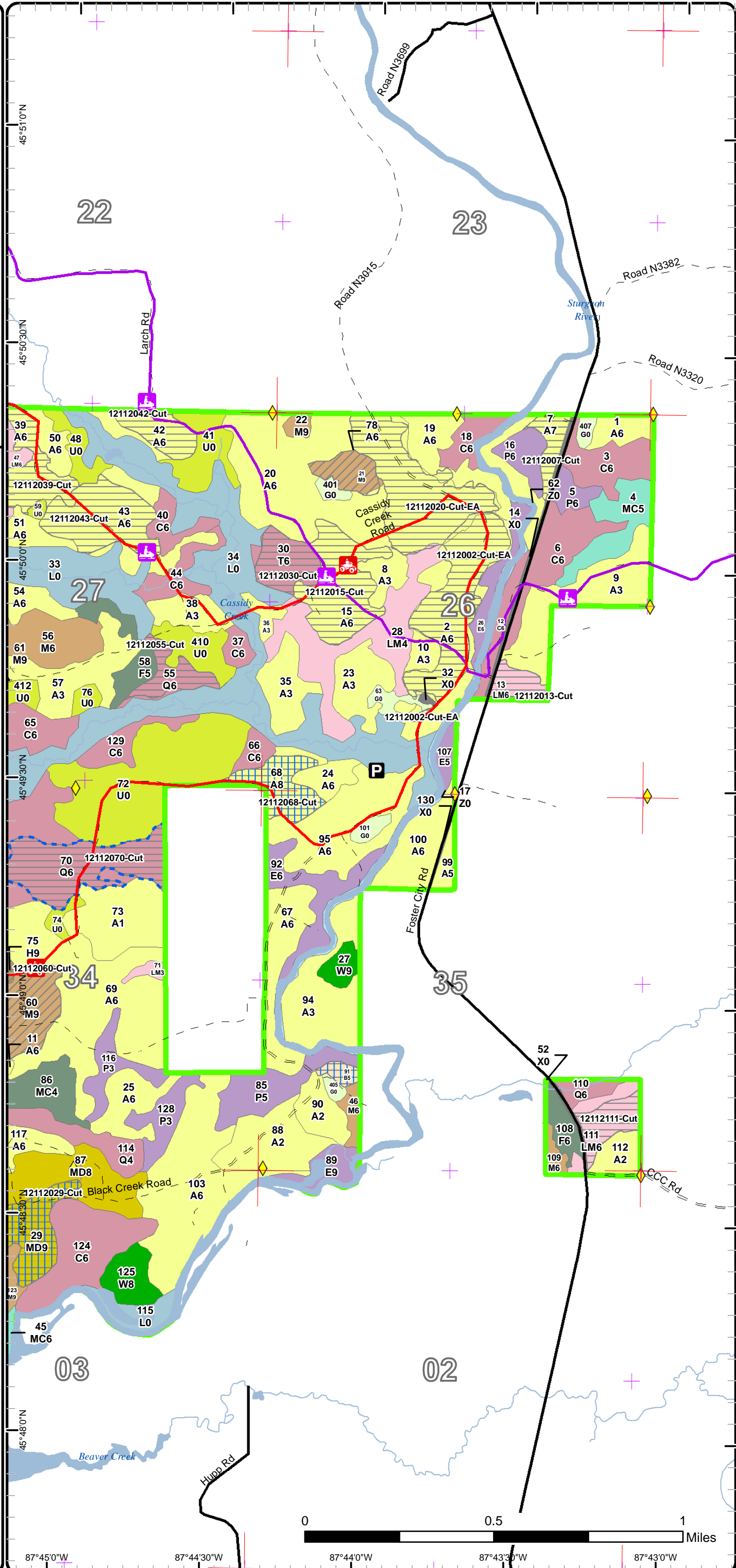
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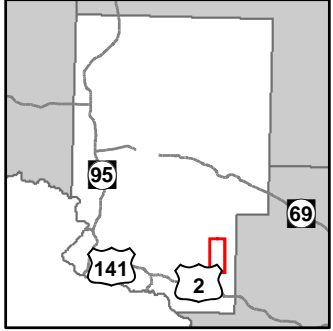
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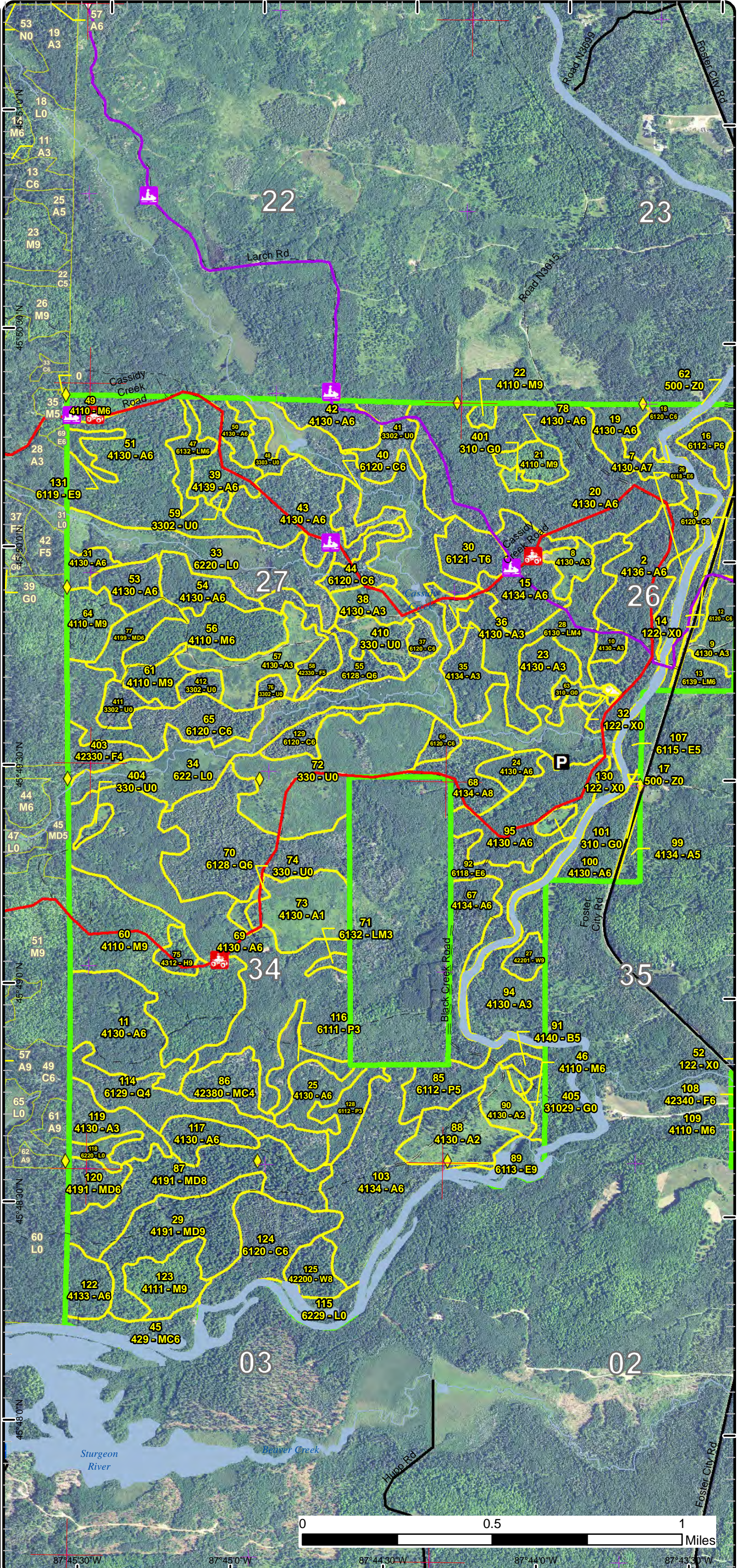
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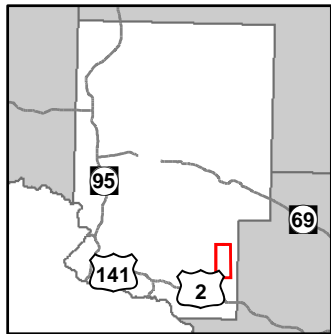


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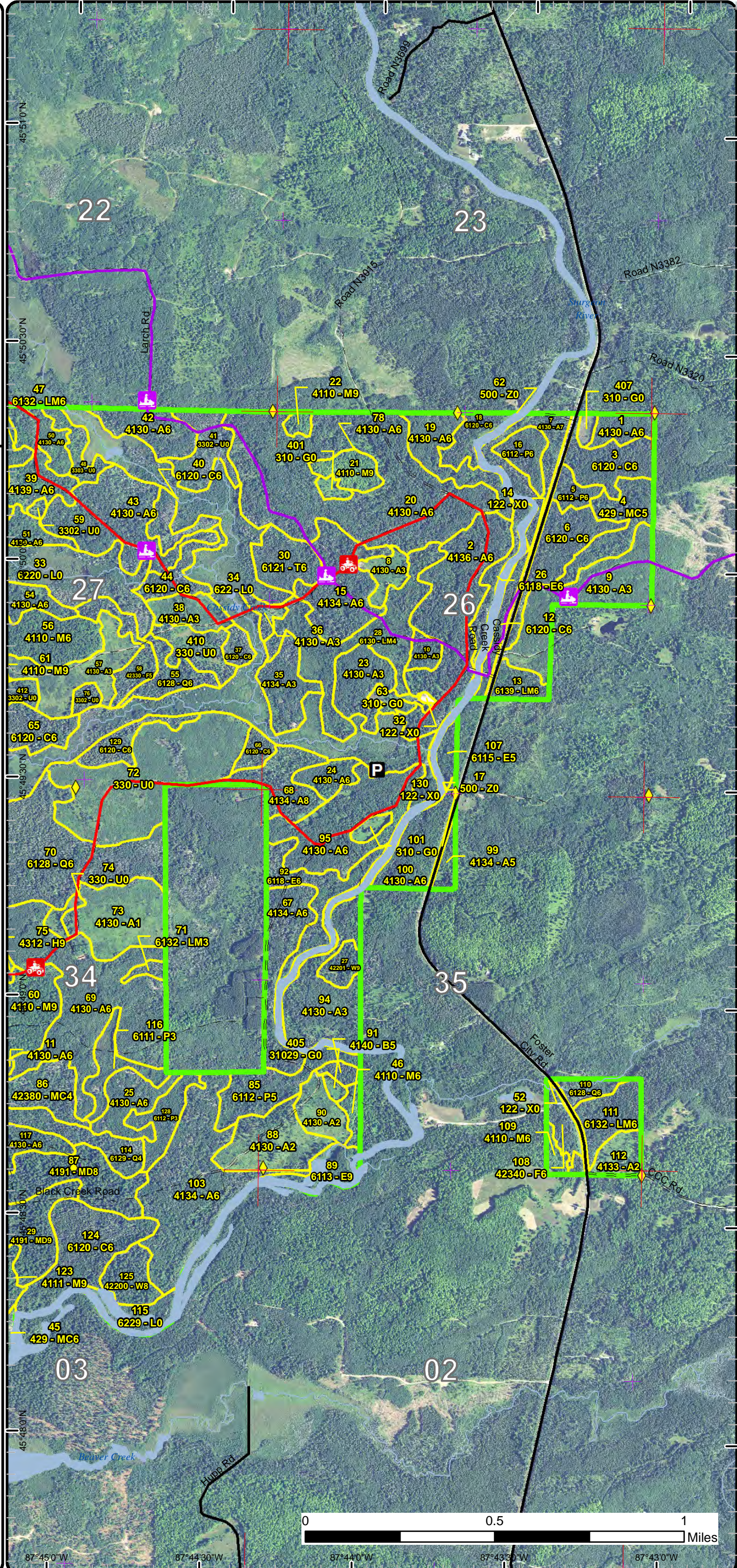


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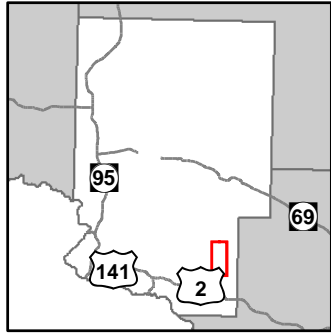


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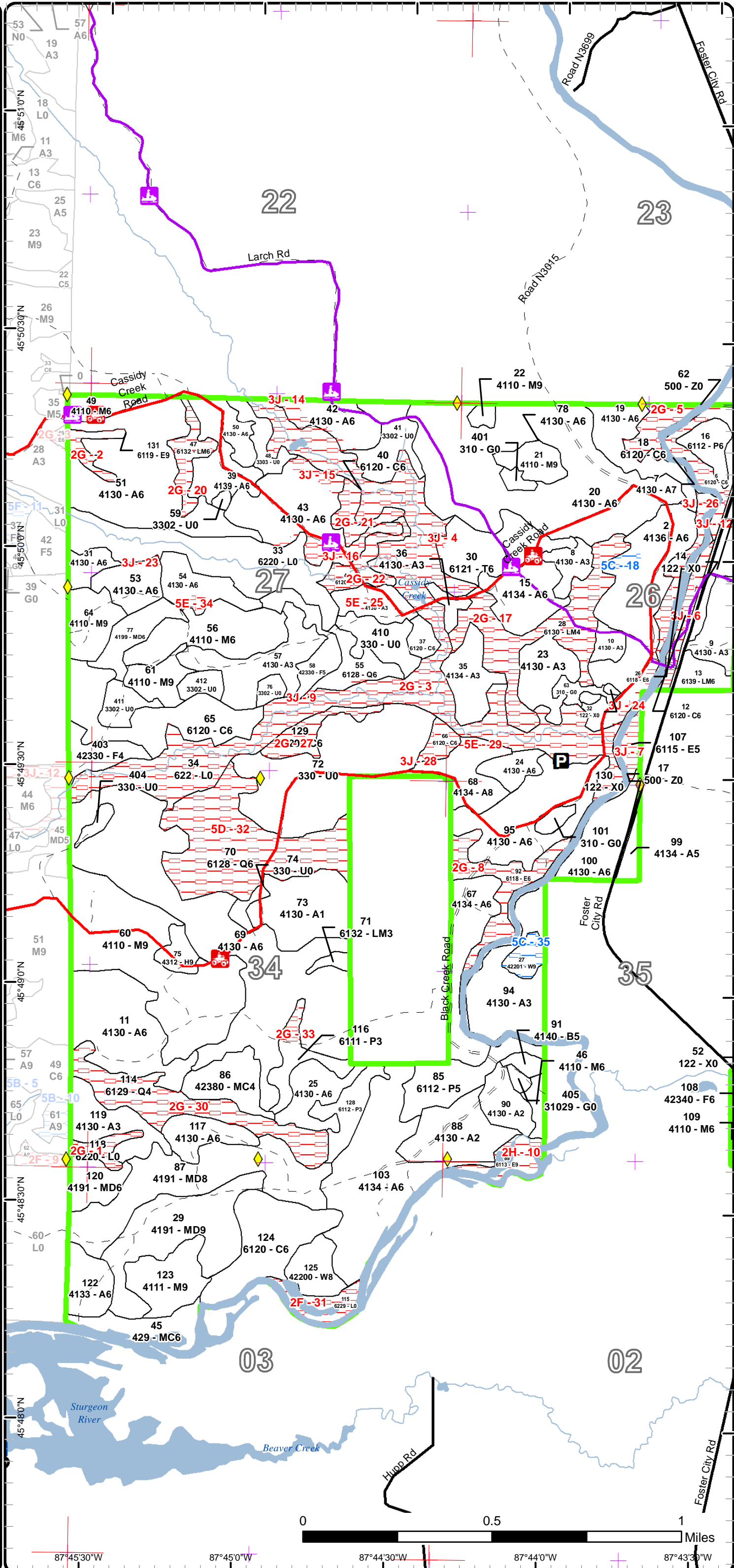


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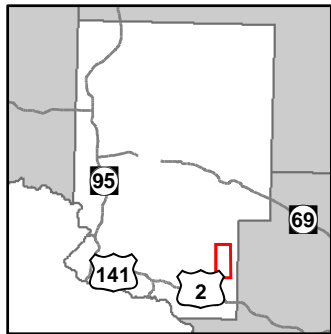
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- Available w/ Constraints
- Unavailable
- 5C: Delay treatment for age/size class diversity or exceptional site quality
- 2F: Too steep
- 2G: Too wet (sensitive soils, does not include access issues)
- 2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)
- 3J: Water quality / BMPs (stream, river, or lake)
- 5D: Unproductive Forest Land
- 5E: Long-Term Retention
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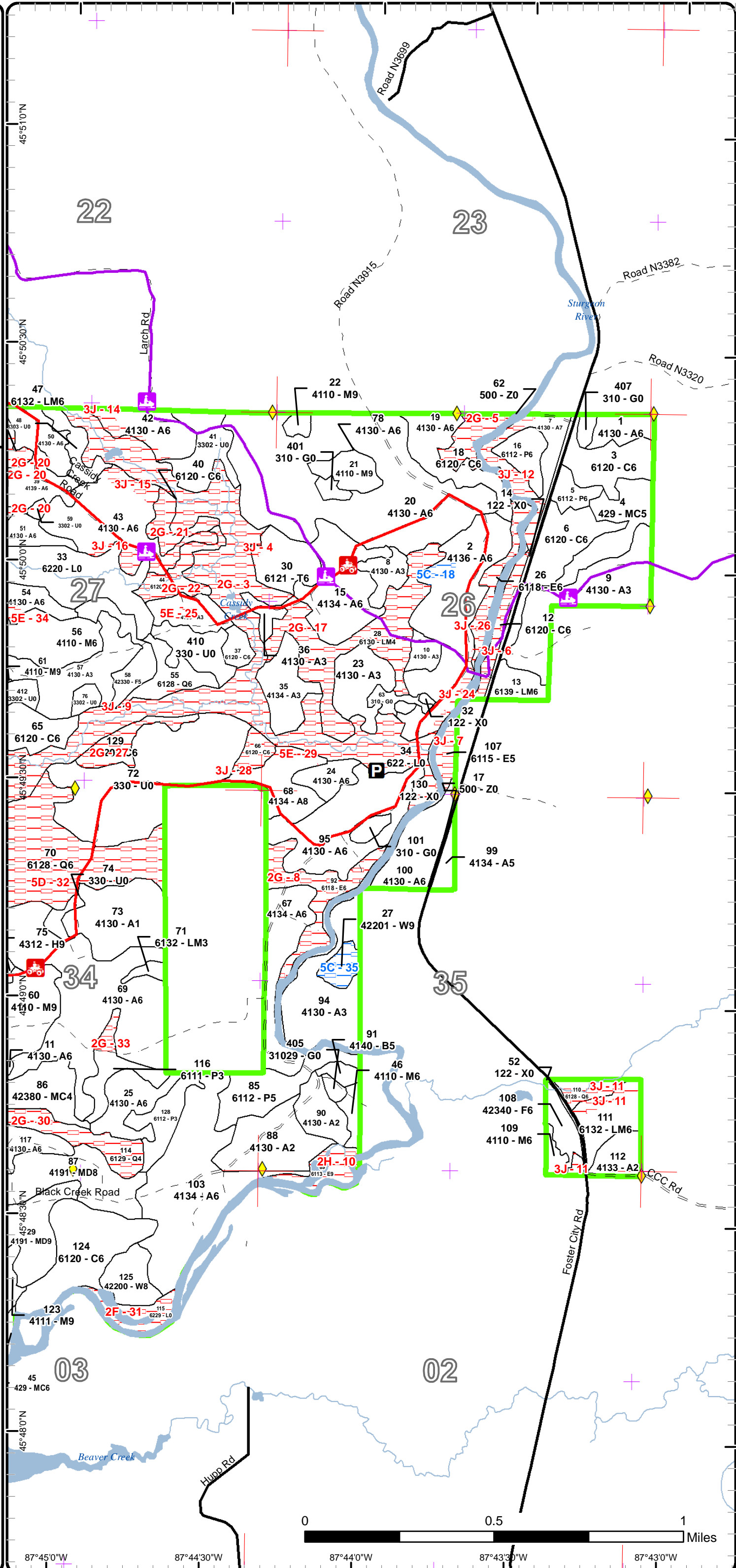


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Report 1 – Total Acres by Cover Type and Age Class



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          | 148        | 29        | 99         | 310        | 148        | 201        | 12        | 17        | 0          | 16        | 0          | 0        | 0        | 0        | 0        | 0        | 0           | 979         |
| Cedar                       | 0          | 0          | 0         | 0          | 0          | 0          | 0          | 0         | 9         | 62         | 16        | 67         | 0        | 0        | 0        | 0        | 0        | 0           | 153         |
| Hemlock                     | 0          | 0          | 0         | 0          | 0          | 0          | 0          | 0         | 0         | 6          | 0         | 0          | 0        | 0        | 0        | 0        | 0        | 0           | 6           |
| Herbaceous Openland         | 13         | 0          | 0         | 0          | 0          | 0          | 0          | 0         | 0         | 0          | 0         | 0          | 0        | 0        | 0        | 0        | 0        | 0           | 13          |
| Low-Density Trees           | 119        | 0          | 0         | 0          | 0          | 0          | 0          | 0         | 0         | 0          | 0         | 0          | 0        | 0        | 0        | 0        | 0        | 0           | 119         |
| Lowland Aspen/Balsam Poplar | 0          | 0          | 0         | 0          | 49         | 6          | 0          | 0         | 0         | 0          | 0         | 0          | 0        | 0        | 0        | 0        | 0        | 0           | 55          |
| Lowland Conifers            | 0          | 0          | 0         | 0          | 0          | 0          | 5          | 0         | 70        | 33         | 0         | 0          | 0        | 0        | 0        | 0        | 0        | 0           | 108         |
| Lowland Deciduous           | 0          | 0          | 0         | 0          | 0          | 0          | 0          | 0         | 26        | 0          | 20        | 0          | 0        | 0        | 0        | 0        | 0        | 0           | 45          |
| Lowland Mixed Forest        | 0          | 0          | 0         | 0          | 2          | 15         | 0          | 7         | 0         | 39         | 0         | 9          | 0        | 0        | 0        | 0        | 0        | 0           | 72          |
| Lowland Shrub               | 202        | 0          | 0         | 0          | 0          | 0          | 0          | 0         | 0         | 0          | 0         | 0          | 0        | 0        | 0        | 0        | 0        | 0           | 202         |
| Mixed Upland Deciduous      | 0          | 0          | 0         | 0          | 0          | 0          | 91         | 22        | 0         | 0          | 0         | 0          | 0        | 0        | 0        | 0        | 0        | 0           | 113         |
| Northern Hardwood           | 0          | 0          | 0         | 0          | 0          | 0          | 4          | 0         | 0         | 108        | 0         | 0          | 0        | 0        | 0        | 0        | 0        | 52          | 164         |
| Paper Birch                 | 0          | 0          | 0         | 0          | 0          | 0          | 0          | 3         | 0         | 0          | 0         | 0          | 0        | 0        | 0        | 0        | 0        | 0           | 3           |
| Tamarack                    | 0          | 0          | 0         | 0          | 0          | 0          | 14         | 0         | 0         | 0          | 0         | 0          | 0        | 0        | 0        | 0        | 0        | 0           | 14          |
| Upland Conifers             | 0          | 0          | 0         | 0          | 18         | 0          | 17         | 0         | 0         | 16         | 0         | 0          | 0        | 0        | 0        | 0        | 0        | 0           | 50          |
| Upland Spruce/Fir           | 0          | 0          | 0         | 7          | 11         | 0          | 0          | 0         | 0         | 0          | 0         | 0          | 0        | 0        | 0        | 0        | 0        | 10          | 28          |
| Urban                       | 9          | 0          | 0         | 0          | 0          | 0          | 0          | 0         | 0         | 0          | 0         | 0          | 0        | 0        | 0        | 0        | 0        | 0           | 9           |
| Water                       | 25         | 0          | 0         | 0          | 0          | 0          | 0          | 0         | 0         | 0          | 0         | 0          | 0        | 0        | 0        | 0        | 0        | 0           | 25          |
| White Pine                  | 0          | 0          | 0         | 0          | 0          | 0          | 0          | 0         | 0         | 0          | 0         | 17         | 0        | 0        | 0        | 0        | 0        | 0           | 17          |
| <b>Total</b>                | <b>368</b> | <b>148</b> | <b>29</b> | <b>106</b> | <b>390</b> | <b>169</b> | <b>332</b> | <b>44</b> | <b>96</b> | <b>290</b> | <b>32</b> | <b>113</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>62</b>   | <b>2175</b> |



## Report 2 – Treatment Summary

Crystal Falls Mgt. Unit  
Year of Entry: 2019

Acres of Harvest

Compartment 112  
Total Compartment Acres: 2,178

Commercial Harvest - 386  
Harvests with Site Condition - 33  
Next Step Harvest - 18  
Habitat Cut - 18

### Cover Type by Harvest Method

|                        | Clearcut   | Selection | Patch Clearcut | Seed Tree | Shelterwood | Thinning  | Overstory Removal | Salvage  | Other    | Total Acres |
|------------------------|------------|-----------|----------------|-----------|-------------|-----------|-------------------|----------|----------|-------------|
| Aspen                  | 180        | 0         | 0              | 16        | 0           | 0         | 0                 | 0        | 0        | 195         |
| Lowland Conifers       | 43         | 0         | 0              | 0         | 0           | 0         | 0                 | 0        | 0        | 43          |
| Lowland Mixed Forest   | 18         | 0         | 0              | 0         | 0           | 0         | 0                 | 0        | 0        | 18          |
| Mixed Upland Deciduous | 22         | 0         | 0              | 41        | 0           | 0         | 0                 | 0        | 0        | 63          |
| Northern Hardwood      | 0          | 0         | 0              | 0         | 0           | 83        | 0                 | 0        | 0        | 83          |
| Paper Birch            | 0          | 0         | 0              | 3         | 0           | 0         | 0                 | 0        | 0        | 3           |
| Tamarack               | 13         | 0         | 0              | 0         | 0           | 0         | 0                 | 0        | 0        | 13          |
| <b>Total</b>           | <b>276</b> | <b>0</b>  | <b>0</b>       | <b>60</b> | <b>0</b>    | <b>83</b> | <b>0</b>          | <b>0</b> | <b>0</b> | <b>419</b>  |

### Proposed and Next Step Treatments by Method

|              | Harvest    | Site Prep | Planting | Seeding  | Burning  | Pesticide | Monitoring | Other    | Non-Forest Mgt. | Total Acres |
|--------------|------------|-----------|----------|----------|----------|-----------|------------|----------|-----------------|-------------|
| Current      | 419        | 0         | 0        | 0        | 0        | 0         | 0          | 42       | 0               | 460         |
| Next Step    | 18         | 0         | 0        | 0        | 0        | 0         | 327        | 0        | 0               | 344         |
| <b>Total</b> | <b>436</b> | <b>0</b>  | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>327</b> | <b>0</b> | <b>42</b>       | <b>805</b>  |



| S<br>t<br>a<br>n<br>d | Treatment<br>Name   | Acres | Stand<br>CoverType | Size<br>Density    | Stand<br>Age | BA<br>Range | Treatment<br>Type | Treatment<br>Method        | Cover Type<br>Objective | Age<br>Structure | Approval<br>Status |
|-----------------------|---------------------|-------|--------------------|--------------------|--------------|-------------|-------------------|----------------------------|-------------------------|------------------|--------------------|
| 20                    | 12112002-Cut-<br>EA | 38.0  | 4130 - Aspen       | Poletimber<br>Well | 53           | 81-110      | Harvest           | Clearcut with<br>Retention | 413 - Aspen             | Even-Aged        | Field Boundary     |

**Habitat Cut: No****Site Condition:**

Prescription Harvest to 4" specification. Leave cedar, hemlock, red pine, white pine, and black Cherry. Leave a 100' buffer along the Sturgeon River and 300' buffer along Cassidy Creek to the south.

Specs:

Next Step Monitoring, Natural Regen (Re-Inventory)

Treatments:

Acceptable aspen, red maple, spruce, fir

Regen:

Other A small patch of young aspen sapling/poles is site conditioned to be excluded from this stand treatment in stand #2.

Comment:

Proposed Start Date: 07/31/2017

|   |              |     |              |                   |    |       |         |                            |                               |           |                      |
|---|--------------|-----|--------------|-------------------|----|-------|---------|----------------------------|-------------------------------|-----------|----------------------|
| 7 | 12112007-Cut | 6.9 | 4130 - Aspen | Sawtimber<br>Poor | 96 | 51-80 | Harvest | Clearcut with<br>Retention | 4319 - Mixed<br>Upland Forest | Even-Aged | Approved<br>Proposal |
|---|--------------|-----|--------------|-------------------|----|-------|---------|----------------------------|-------------------------------|-----------|----------------------|

**Habitat Cut: No****Site Condition:**

Prescription Harvest to a 2" specification. Leave all cedar, hemlock, red pine, white pine, cherry, and elm. Leave a 100' buffer along the Sturgeon River. This will reduce the harvestable stand size to approximately 6 acres.

Specs:

Next Step Monitoring, Natural Regen (Re-Inventory)

Treatments:

Acceptable aspen, fir, spruce, birch, maple

Regen:

Other

Comment:

Proposed Start Date: 10/01/2018

|    |              |     |                                |                    |    |        |         |                            |                               |           |                      |
|----|--------------|-----|--------------------------------|--------------------|----|--------|---------|----------------------------|-------------------------------|-----------|----------------------|
| 13 | 12112013-Cut | 7.2 | 6139 - Mixed<br>Lowland Forest | Poletimber<br>Well | 68 | 81-110 | Harvest | Clearcut with<br>Retention | 613 - Lowland<br>Mixed Forest | Even-Aged | Approved<br>Proposal |
|----|--------------|-----|--------------------------------|--------------------|----|--------|---------|----------------------------|-------------------------------|-----------|----------------------|

**Habitat Cut: No****Site Condition:**

Prescription Harvest to 2" specification. Leave cedar, red pine, white pine, cherry, and white birch for seed. Exclude more dense black ash pockets along the highway and possibly dense cedar in the east. Harvest should occur during dry conditions or frozen ground.

Specs:

Next Step Harvest, Clearcut with Retention

Treatments:

Acceptable Aspen, white birch, tamarack, spruce/fir

Regen:

Other Lots of fallen aspen and spruce within stand. Few scattered white birch in good shape yet will be left for seed. Areas excluded will be for long term retention.

Comment:

Proposed Start Date: 10/01/2018

|    |              |      |                             |                    |    |             |         |                            |                             |           |                      |
|----|--------------|------|-----------------------------|--------------------|----|-------------|---------|----------------------------|-----------------------------|-----------|----------------------|
| 15 | 12112015-Cut | 28.9 | 4134 - Aspen,<br>Spruce/Fir | Poletimber<br>Well | 57 | 111-<br>140 | Harvest | Clearcut with<br>Retention | 4134 - Aspen,<br>Spruce/Fir | Even-Aged | Approved<br>Proposal |
|----|--------------|------|-----------------------------|--------------------|----|-------------|---------|----------------------------|-----------------------------|-----------|----------------------|

**Habitat Cut: No****Site Condition:**

Prescription Harvest to 4" specification. Leave cedar, hemlock, and white pine. Some wetter areas along the northeast border may have to be excluded along with an alder patch towards the center of this stand.

Specs:

Next Step Monitoring, Natural Regen (Re-Inventory)

Treatments:

Acceptable aspen, spruce/fir, birch

Regen:

Other

Comment:

Proposed Start Date: 10/01/2018



| Stand | Treatment Name  | Acres | Stand CoverType | Size Density   | Stand Age | BA Range | Treatment Type | Treatment Method        | Cover Type Objective | Age Structure | Approval Status |
|-------|-----------------|-------|-----------------|----------------|-----------|----------|----------------|-------------------------|----------------------|---------------|-----------------|
| 20    | 12112020-Cut-EA | 40.9  | 4130 - Aspen    | Poetimber Well | 53        | 81-110   | Harvest        | Clearcut with Retention | 413 - Aspen          | Even-Aged     | Field Boundary  |

**Habitat Cut: No****Site Condition:**

Prescription Harvest to 4" specification. Leave cedar, hemlock, red pine, white pine, and black Cherry. Leave a 100' buffer along the Sturgeon River and 300' buffer along Cassidy Creek to the south.

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

Acceptable Regen: aspen, spruce, fir

Other Comment: Extra caution to white pine saplings. A small patch of young aspen sapling/poles is site conditioned to be excluded from this stand treatment in stand #2.

Proposed Start Date: 10/01/2018

|    |              |     |                                |                |    |         |         |                |                         |             |                   |
|----|--------------|-----|--------------------------------|----------------|----|---------|---------|----------------|-------------------------|-------------|-------------------|
| 21 | 12112021-Cut | 8.9 | 4110 - Sugar Maple Association | Sawtimber Well | 82 | 111-140 | Harvest | Crown Thinning | 411 - Northern Hardwood | Uneven-Aged | Approved Proposal |
|----|--------------|-----|--------------------------------|----------------|----|---------|---------|----------------|-------------------------|-------------|-------------------|

**Habitat Cut: No****Site Condition:**

Prescription Thin stand to 70-90 BA. Remove high risk and suppressed trees to remove crown competitors and release crop trees. Open up 7' around trees smaller than 8" in diameter. Remove two most important crown competitors for trees larger than 8" in diameter. Leave beech and oak.

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

Acceptable Regen: northern hardwoods

Other Comment:

Proposed Start Date: 10/01/2018

|    |              |      |  |                |    |        |         |                          |   |          |                   |
|----|--------------|------|--|----------------|----|--------|---------|--------------------------|---|----------|-------------------|
| 29 | 12112029-Cut | 41.3 | 4191 - Mixed Upland Deciduous with Conifer | Sawtimber Well | 55 | 81-110 | Harvest | Seed Tree with Retention | 42201 - Natural White Pine, Mixed Deciduous | Two-Aged | Approved Proposal |
|----|--------------|------|--|----------------|----|--------|---------|--------------------------|---|----------|-------------------|

**Habitat Cut: No****Site Condition:**

Prescription Harvest to 2" specification. Leave cedar and hemlock. Green mark white pine leave trees to achieve a 20% canopy cover, approximately 7 large trees per acre (spaced 80' apart). This should leave a residual BA of 40-50. Leave hardwood if possible where white pine is not present to achieve canopy cover. Exclude the lowland wet swale found in the middle of this stand. Use extra caution to not damage advanced white pine regeneration, cedar, and hemlock. Notify WLD prior to starting field work about potential eagle nests in the area.

Next Step Monitoring, Other - Specify  
Treatments:

Acceptable Regen: white pine

Other Comment: This harvest is to release a nearly fully stocked white pine seedling/sapling understory. It is on the verge of converting to more of a hardwood stand without treatment. The white pine understory needs more sunlight to succeed. This stand is very similar to the adjacent stand to the north. Average seedling/sapling height for white pine is 5' tall. This stand will be good to watch in the future for regenerating and/or releasing similar white pine stands in the area.

Proposed Start Date: 10/01/2018

|    |              |      |                 |                |    |         |         |                         |                 |           |                   |
|----|--------------|------|-----------------|----------------|----|---------|---------|-------------------------|-----------------|-----------|-------------------|
| 30 | 12112030-Cut | 13.4 | 6121 - Tamarack | Poetimber Well | 58 | 111-140 | Harvest | Clearcut with Retention | 6121 - Tamarack | Even-Aged | Approved Proposal |
|----|--------------|------|-----------------|----------------|----|---------|---------|-------------------------|-----------------|-----------|-------------------|

**Habitat Cut: No****Site Condition:**

Prescription Harvest to 4" spec. Leave cedar, hemlock, red pine, and white pine. Leave pockets along the stand line located on the west-northwest-north border of this stand for seed and retention. Buffer stream to the west 300'.

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

Acceptable Regen: tamarack, black spruce, cedar, balsam fir

Other Comment:

Proposed Start Date: 10/01/2018



| S<br>t<br>a<br>n<br>d | Treatment Name | Acres | Stand CoverType               | Size Density    | Stand Age | BA Range | Treatment Type | Treatment Method        | Cover Type Objective          | Age Structure | Approval Status   |
|-----------------------|----------------|-------|-------------------------------|-----------------|-----------|----------|----------------|-------------------------|-------------------------------|---------------|-------------------|
| 39                    | 12112039-Cut   | 16.1  | 4139 - Aspen, Mixed Deciduous | Poletimber Well | 56        | 81-110   | Harvest        | Clearcut with Retention | 4139 - Aspen, Mixed Deciduous | Even-Aged     | Approved Proposal |

**Habitat Cut: No****Site Condition:**

Prescription Harvest to 2" specification. Leave cedar, hemlock, red pine, white pine, oak if present, and non-merchantable spruce and balsam fir.  
Specs:

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

Acceptable aspen, red maple, birch, cherry, spruce/fir  
Regen:

Other Harvest this stand with the adjacent stand 42 but put a splitter line between them due to a measureable difference in species composition.  
Comment:

Proposed Start Date: 10/01/2018

|    |              |      |              |                 |    |        |         |                         |             |           |                   |
|----|--------------|------|--------------|-----------------|----|--------|---------|-------------------------|-------------|-----------|-------------------|
| 42 | 12112042-Cut | 11.2 | 4130 - Aspen | Poletimber Well | 50 | 81-110 | Harvest | Clearcut with Retention | 413 - Aspen | Even-Aged | Approved Proposal |
|----|--------------|------|--------------|-----------------|----|--------|---------|-------------------------|-------------|-----------|-------------------|

**Habitat Cut: No****Site Condition:**

Prescription Harvest to 2" specification. Leave red pine, white pine, and non-merchantable spruce and balsam fir. Leave a 300' buffer along the stream to the west of this stand.  
Specs:

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

Acceptable aspen, fir, spruce  
Regen:

Other  
Comment:

Proposed Start Date: 10/01/2018

|    |              |      |              |                 |    |       |         |                         |             |           |                   |
|----|--------------|------|--------------|-----------------|----|-------|---------|-------------------------|-------------|-----------|-------------------|
| 43 | 12112043-Cut | 26.7 | 4130 - Aspen | Poletimber Well | 56 | 51-80 | Harvest | Clearcut with Retention | 413 - Aspen | Even-Aged | Approved Proposal |
|----|--------------|------|--------------|-----------------|----|-------|---------|-------------------------|-------------|-----------|-------------------|

**Habitat Cut: No****Site Condition:**

Prescription Harvest to a 2" specification. Leave cedar, hemlock, red pine, white pine, cherry, and oak if present. Maintain a 300' buffer for the streams to the east and the south.  
Specs:

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

Acceptable aspen, spruce, fir, cherry, birch  
Regen:

Other Harvest this stand with the adjacent stand 39 but put a splitter line breaking the two up due to a measureable change in species composition.  
Comment:

Proposed Start Date: 10/01/2018

|    |              |      |              |                 |    |         |         |                         |             |           |                   |
|----|--------------|------|--------------|-----------------|----|---------|---------|-------------------------|-------------|-----------|-------------------|
| 53 | 12112053-Cut | 11.0 | 4130 - Aspen | Poletimber Well | 64 | 111-140 | Harvest | Clearcut with Retention | 413 - Aspen | Even-Aged | Approved Proposal |
|----|--------------|------|--------------|-----------------|----|---------|---------|-------------------------|-------------|-----------|-------------------|

**Habitat Cut: No****Site Condition:**

Prescription Harvest to 4" specification. Leave cedar, hemlock, red pine, white pine, and cherry. Retain a 300' buffer along the stream to the north.  
Specs:

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

Acceptable Aspen, spruce, fir, mixed hardwoods.  
Regen:

Other  
Comment:

Proposed Start Date: 10/01/2018



| S<br>t<br>a<br>n<br>d | Treatment<br>Name | Acres | Stand<br>CoverType                               | Size<br>Density    | Stand<br>Age | BA<br>Range | Treatment<br>Type | Treatment<br>Method        | Cover Type<br>Objective                      | Age<br>Structure | Approval<br>Status   |
|-----------------------|-------------------|-------|--|--------------------|--------------|-------------|-------------------|----------------------------|--|------------------|----------------------|
| 55                    | 12112055-Cut      | 9.5   | 6128 - Lowland<br>Coniferous, Mixed<br>Deciduous | Poletimber<br>Well | 78           | 81-110      | Harvest           | Clearcut with<br>Retention | 6129 - Mixed<br>Coniferous<br>Lowland Forest | Even-Aged        | Approved<br>Proposal |

**Habitat Cut: No****Site Condition:**

Prescription Harvest to 4" spec. Leave cedar, hemlock, red pine, and white pine. Buffer Cassidy Creek to the south 100'.

Specs:

Next Step Monitoring, Natural Regen (Re-Inventory)

Treatments:

Acceptable spruce, fir, aspen, tamarack

Regen:

Other

Comment:

Proposed Start Date: 10/01/2018

|    |             |     |                                     |            |  |                 |              |                 |              |  |          |
|----|-------------|-----|-------------------------------------|------------|--|-----------------|--------------|-----------------|--------------|--|----------|
| 59 | 12112059-NF | 1.2 | 3302 - Low Density<br>Conifer Trees | Nonstocked |  | Unspec<br>ified | NonForestMgt | Other - Specify | 3102 - Grass |  | Proposal |
|----|-------------|-----|-------------------------------------|------------|--|-----------------|--------------|-----------------|--------------|--|----------|

**Habitat Cut: No****Site Condition:**

Prescription Wildlife will maintain this opening via mechanical or Rx burn.

Specs:

Next Step

Treatments:

Acceptable

Regen:

Other

Comment:

Proposed Start Date: 10/01/2018

|    |              |      |                                   |                   |    |             |         |                |                            |                 |                      |
|----|--------------|------|-----------------------------------|-------------------|----|-------------|---------|----------------|----------------------------|-----------------|----------------------|
| 60 | 12112060-Cut | 74.5 | 4110 - Sugar Maple<br>Association | Sawtimber<br>Well | 87 | 111-<br>140 | Harvest | Crown Thinning | 411 - Northern<br>Hardwood | Uneven-<br>Aged | Approved<br>Proposal |
|----|--------------|------|-----------------------------------|-------------------|----|-------------|---------|----------------|----------------------------|-----------------|----------------------|

**Habitat Cut: No****Site Condition:**

Prescription Thin stand to 70-90 BA. Remove high risk and suppressed trees to remove crown competitors and release crop trees. Open up 7' around trees

Specs: smaller than 8" in diameter. Remove two most important crown competitors for trees larger than 8" in diameter. Clean up old canopy gaps to maintain a 30' - 40' diameter to establish regeneration. Leave cedar, hemlock, white pine, beech, and oak if present.

Next Step

Treatments:

Acceptable northern hardwoods

Regen:

Other

Comment:

Proposed Start Date: 10/01/2018

|    |              |      |                             |                     |    |        |         |                             |                        |           |                      |
|----|--------------|------|-----------------------------|---------------------|----|--------|---------|-----------------------------|------------------------|-----------|----------------------|
| 68 | 12112068-Cut | 15.5 | 4134 - Aspen,<br>Spruce/Fir | Sawtimber<br>Medium | 72 | 81-110 | Harvest | Seed Tree with<br>Retention | 4137 - Aspen,<br>Birch | Even-Aged | Approved<br>Proposal |
|----|--------------|------|-----------------------------|---------------------|----|--------|---------|-----------------------------|------------------------|-----------|----------------------|

**Habitat Cut: No****Site Condition:**

Prescription Harvest to 2" specification. Leave cedar, hemlock, and white pine. Leave 3 to 10 "healthy" paper birch per acre where possible for seed. Leave a

Specs: 100' buffer along the stream to the north.

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

Treatments:

Acceptable aspen, birch, spruce, fir

Regen:

Other

Comment:

Proposed Start Date: 10/01/2018



S  
t  
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| Treatment Name  | Acres | Stand CoverType                            | Size Density    | Stand Age | BA Range | Treatment Type | Treatment Method        | Cover Type Objective            | Age Structure | Approval Status   |
|-----------------|-------|--|-----------------|-----------|----------|----------------|-------------------------|---------------------------------|---------------|-------------------|
| 70 12112070-Cut | 33.4  | 6128 - Lowland Coniferous, Mixed Deciduous | Poletimber Well | 79        | 81-110   | Harvest        | Clearcut with Retention | 612 - Lowland Coniferous Forest | Even-Aged     | Approved Proposal |

**Habitat Cut: No**                      **Site Condition: Unproductive**

Prescription Harvest to 4" specification. Leave cedar and white pine. Retain an approximate one chain buffer bordering recent aspen clear-cuts either to the north or south, whichever makes more sense on the ground. Harvest during frozen ground.

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

Acceptable mixed lowland conifer  
Regen:

Other Approximate treatment was created based off of photos where cedar becomes too dense.  
Comment:

Proposed Start Date: 10/01/2018

|                |     |                         |            |  |             |              |                 |              |  |          |
|----------------|-----|-------------------------|------------|--|-------------|--------------|-----------------|--------------|--|----------|
| 74 12112074-NF | 3.1 | 330 - Low-Density Trees | Nonstocked |  | Unspecified | NonForestMgt | Other - Specify | 3102 - Grass |  | Proposal |
|----------------|-----|-------------------------|------------|--|-------------|--------------|-----------------|--------------|--|----------|

**Habitat Cut: No**                      **Site Condition:**

Prescription Wildlife will maintain this opening via mechanical or Rx burn.  
Specs:

Next Step  
Treatments:

Acceptable  
Regen:

Other  
Comment:

Proposed Start Date: 10/01/2018

|                |     |                                  |            |  |  |              |                 |              |  |          |
|----------------|-----|----------------------------------|------------|--|--|--------------|-----------------|--------------|--|----------|
| 76 12112076-NF | 3.0 | 3302 - Low Density Conifer Trees | Nonstocked |  |  | NonForestMgt | Other - Specify | 3102 - Grass |  | Proposal |
|----------------|-----|----------------------------------|------------|--|--|--------------|-----------------|--------------|--|----------|

**Habitat Cut: No**                      **Site Condition:**

Prescription Wildlife will maintain this opening via mechanical or Rx burn.  
Specs:

Next Step  
Treatments:

Acceptable  
Regen:

Other  
Comment:

Proposed Start Date: 10/01/2018

|                 |      |                                     |                 |    |        |         |                         |                     |           |                   |
|-----------------|------|-------------------------------------|-----------------|----|--------|---------|-------------------------|---------------------|-----------|-------------------|
| 77 12112077-Cut | 11.5 | 4199 - Other Mixed Upland Deciduous | Poletimber Well | 66 | 81-110 | Harvest | Clearcut with Retention | 4137 - Aspen, Birch | Even-Aged | Approved Proposal |
|-----------------|------|-------------------------------------|-----------------|----|--------|---------|-------------------------|---------------------|-----------|-------------------|

**Habitat Cut: No**                      **Site Condition:**

Prescription Harvest to 2" specification. Leave cedar, hemlock, and white pine. Harvest during dry conditions or frozen ground.  
Specs:

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

Acceptable aspen, birch, mixed conifer  
Regen:

Other  
Comment:

Proposed Start Date: 10/01/2018





| S<br>t<br>a<br>n<br>d | Treatment<br>Name | Acres | Stand<br>CoverType               | Size<br>Density      | Stand<br>Age | BA<br>Range | Treatment<br>Type | Treatment<br>Method         | Cover Type<br>Objective | Age<br>Structure | Approval<br>Status   |
|-----------------------|-------------------|-------|----------------------------------|----------------------|--------------|-------------|-------------------|-----------------------------|-------------------------|------------------|----------------------|
| 91                    | 12112091-Cut      | 3.1   | 4140 - Other<br>Upland Deciduous | Poletimber<br>Medium | 66           | 81-110      | Harvest           | Seed Tree with<br>Retention | 4193 - Birch,<br>Aspen  | Even-Aged        | Approved<br>Proposal |

**Habitat Cut: No****Site Condition:**

Prescription Harvest using 2" specification. Leave white pine. Leave 3-10 healthy paper birch per acre where possible for seed. Leave a 100' buffer along the Sturgeon River.

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

Acceptable white birch, spruce/fir, aspen  
Regen:

Other  
Comment:

Proposed Start Date: 10/01/2018

|     |             |     |                              |            |  |                 |              |                 |              |  |          |
|-----|-------------|-----|------------------------------|------------|--|-----------------|--------------|-----------------|--------------|--|----------|
| 101 | 12112101-NF | 3.0 | 310 - Herbaceous<br>Openland | Nonstocked |  | Unspec<br>ified | NonForestMgt | Other - Specify | 3102 - Grass |  | Proposal |
|-----|-------------|-----|------------------------------|------------|--|-----------------|--------------|-----------------|--------------|--|----------|

**Habitat Cut: No****Site Condition:**

Prescription Wildlife will maintain this opening via mechanical or Rx burn.

Next Step  
Treatments:

Acceptable  
Regen:

Other  
Comment:

Proposed Start Date: 10/01/2018

|     |              |      |  |                    |    |       |         |                            |                               |           |                      |
|-----|--------------|------|--|--------------------|----|-------|---------|----------------------------|-------------------------------|-----------|----------------------|
| 111 | 12112111-Cut | 10.3 | 6132 - Mixed<br>Lowland Forest with<br>Cedar | Poletimber<br>Well | 49 | 51-80 | Harvest | Clearcut with<br>Retention | 613 - Lowland<br>Mixed Forest | Even-Aged | Approved<br>Proposal |
|-----|--------------|------|--|--------------------|----|-------|---------|----------------------------|-------------------------------|-----------|----------------------|

**Habitat Cut: No****Site Condition:**

Prescription Harvest to 2" specification. Retain dense cedar pocket in NE/E portion of stand, may be up to 1/3 of actual stand. Leave cedar and hemlock.

Specs: Leave a 300' buffer along Lost Creek to the north. Harvest during dry conditions or frozen ground.

Next Step Harvest, Clearcut with Retention  
Treatments:

Acceptable Aspen, tamarack, cherry, spruce/fir  
Regen:

Other Areas excluded will be for long term retention.  
Comment:

Proposed Start Date: 10/01/2018

|     |              |      |  |                    |    |        |         |                            |                               |           |                      |
|-----|--------------|------|--|--------------------|----|--------|---------|----------------------------|-------------------------------|-----------|----------------------|
| 120 | 12112120-Cut | 10.6 | 4191 - Mixed<br>Upland Deciduous<br>with Conifer | Poletimber<br>Well | 63 | 81-110 | Harvest | Clearcut with<br>Retention | 4319 - Mixed<br>Upland Forest | Even-Aged | Approved<br>Proposal |
|-----|--------------|------|--|--------------------|----|--------|---------|----------------------------|-------------------------------|-----------|----------------------|

**Habitat Cut: No****Site Condition:**

Prescription Harvest to 4" specification. Leave cedar, hemlock, red pine, white pine, cherry, and oak if present.

Specs:

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

Acceptable aspen, spruce/fir, birch, maple  
Regen:

Other  
Comment:

Proposed Start Date: 10/01/2018



| S<br>t<br>a<br>n<br>d | Treatment<br>Name | Acres | Stand<br>CoverType           | Size<br>Density | Stand<br>Age | BA<br>Range | Treatment<br>Type | Treatment<br>Method | Cover Type<br>Objective | Age<br>Structure | Approval<br>Status |
|-----------------------|-------------------|-------|------------------------------|-----------------|--------------|-------------|-------------------|---------------------|-------------------------|------------------|--------------------|
| 401                   | 12112401-NF       | 2.4   | 310 - Herbaceous<br>Openland | Nonstocked      |              |             | NonForestMgt      | Other - Specify     | 3102 - Grass            |                  | Proposal           |

**Habitat Cut: No****Site Condition:**

Prescription Wildlife will maintain this opening via mechanical or Rx burn.

Specs:

Next Step

Treatments:

Acceptable

Regen:

Other

Comment:

Proposed Start Date: 10/01/2018

|     |             |     |                            |            |  |                 |              |                 |              |  |          |
|-----|-------------|-----|----------------------------|------------|--|-----------------|--------------|-----------------|--------------|--|----------|
| 404 | 12112404-NF | 2.7 | 330 - Low-Density<br>Trees | Nonstocked |  | Unspec<br>ified | NonForestMgt | Other - Specify | 3102 - Grass |  | Proposal |
|-----|-------------|-----|----------------------------|------------|--|-----------------|--------------|-----------------|--------------|--|----------|

**Habitat Cut: No****Site Condition:**

Prescription Wildlife will maintain this opening via mechanical or Rx burn.

Specs:

Next Step

Treatments:

Acceptable

Regen:

Other

Comment:

Proposed Start Date: 10/01/2018

|     |             |     |                    |            |  |  |              |                 |              |  |          |
|-----|-------------|-----|--------------------|------------|--|--|--------------|-----------------|--------------|--|----------|
| 405 | 12112405-NF | 1.8 | 31029 - Grass (OI) | Nonstocked |  |  | NonForestMgt | Other - Specify | 3102 - Grass |  | Proposal |
|-----|-------------|-----|--------------------|------------|--|--|--------------|-----------------|--------------|--|----------|

**Habitat Cut: No****Site Condition:**

Prescription Wildlife will maintain this opening via mechanical or Rx burn.

Specs:

Next Step

Treatments:

Acceptable

Regen:

Other

Comment:

Proposed Start Date: 10/01/2018

|     |             |      |                            |            |  |  |              |                 |              |  |          |
|-----|-------------|------|----------------------------|------------|--|--|--------------|-----------------|--------------|--|----------|
| 410 | 12112410-NF | 12.3 | 330 - Low-Density<br>Trees | Nonstocked |  |  | NonForestMgt | Other - Specify | 3102 - Grass |  | Proposal |
|-----|-------------|------|----------------------------|------------|--|--|--------------|-----------------|--------------|--|----------|

**Habitat Cut: No****Site Condition:**

Prescription Wildlife will maintain this opening via mechanical or Rx burn.

Specs:

Next Step

Treatments:

Acceptable

Regen:

Other

Comment:

Proposed Start Date: 10/01/2018



| S<br>t<br>a<br>n<br>d | Treatment<br>Name | Acres | Stand<br>CoverType | Size<br>Density | Stand<br>Age | BA<br>Range | Treatment<br>Type | Treatment<br>Method | Cover Type<br>Objective | Age<br>Structure | Approval<br>Status |
|-----------------------|-------------------|-------|--------------------|-----------------|--------------|-------------|-------------------|---------------------|-------------------------|------------------|--------------------|
|-----------------------|-------------------|-------|--------------------|-----------------|--------------|-------------|-------------------|---------------------|-------------------------|------------------|--------------------|

|     |             |     |                                     |            |  |  |              |                 |              |  |          |
|-----|-------------|-----|-------------------------------------|------------|--|--|--------------|-----------------|--------------|--|----------|
| 411 | 12112411-NF | 7.2 | 3302 - Low Density<br>Conifer Trees | Nonstocked |  |  | NonForestMgt | Other - Specify | 3102 - Grass |  | Proposal |
|-----|-------------|-----|-------------------------------------|------------|--|--|--------------|-----------------|--------------|--|----------|

**Habitat Cut: No**

**Site Condition:**

Prescription Wildlife will maintain this opening via mechanical or Rx burn.

Specs:

Next Step

Treatments:

Acceptable

Regen:

Other

Comment:

Proposed Start Date: 10/01/2018

|     |             |     |                                     |            |  |  |              |                 |              |  |          |
|-----|-------------|-----|-------------------------------------|------------|--|--|--------------|-----------------|--------------|--|----------|
| 412 | 12112412-NF | 4.8 | 3302 - Low Density<br>Conifer Trees | Nonstocked |  |  | NonForestMgt | Other - Specify | 3102 - Grass |  | Proposal |
|-----|-------------|-----|-------------------------------------|------------|--|--|--------------|-----------------|--------------|--|----------|

**Habitat Cut: No**

**Site Condition:**

Prescription Wildlife will maintain this opening via mechanical or Rx burn.

Specs:

Next Step

Treatments:

Acceptable

Regen:

Other

Comment:

Proposed Start Date: 10/01/2018

**Total Treatment  
Acreage Proposed: 460.4**

## Report 4 – Site Conditions

Crystal Falls Mgt. Unit

Eric Brolin : Examiner

Compartment: 112

Year of Entry: 2019

### Availability for Management

| Total Acres | Acres Available | Acres Available With Condition | Acres Not Available |
|-------------|-----------------|--------------------------------|---------------------|
| 979         | 945             | 3                              | 32                  |
| 154         | 107             | 0                              | 47                  |
| 6           | 6               | 0                              | 0                   |
| 13          | 13              | 0                              | 0                   |
| 119         | 119             | 0                              | 0                   |
| 55          | 52              | 0                              | 3                   |
| 108         | 10              | 0                              | 98                  |
| 46          | 0               | 0                              | 46                  |
| 73          | 20              | 0                              | 52                  |
| 202         | 49              | 0                              | 153                 |
| 114         | 114             | 0                              | 0                   |
| 164         | 164             | 0                              | 0                   |
| 3           | 3               | 0                              | 0                   |
| 14          | 13              | 0                              | 1                   |
| 49          | 49              | 0                              | 0                   |
| 28          | 28              | 0                              | 0                   |
| 9           | 9               | 0                              | 0                   |
| 25          | 25              | 0                              | 0                   |
| 17          | 11              | 6                              | 0                   |
| 2,178       | 1,738           | 9                              | 432                 |
|             | 80%             | 0%                             | 20%                 |

### Dominant Site Conditions

|                             | Dominant Site Conditions |           |            |           |           |           |          |
|-----------------------------|--------------------------|-----------|------------|-----------|-----------|-----------|----------|
|                             | 5C                       | 2F        | 2G         | 2H        | 3J        | 5D        | 5E       |
| Aspen                       | 3                        |           | 0          |           | 27        |           | 4        |
| Cedar                       |                          |           | 35         |           | 12        |           |          |
| Hemlock                     |                          |           |            |           |           |           |          |
| Herbaceous Openland         |                          |           |            |           |           |           |          |
| Low-Density Trees           |                          |           |            |           |           |           |          |
| Lowland Aspen/Balsam Poplar |                          |           | 3          |           |           |           |          |
| Lowland Conifers            |                          |           | 33         |           | 6         | 59        |          |
| Lowland Deciduous           |                          |           | 23         | 10        | 13        |           |          |
| Lowland Mixed Forest        |                          |           | 48         |           | 5         |           |          |
| Lowland Shrub               |                          | 11        | 142        |           |           |           |          |
| Mixed Upland Deciduous      |                          |           |            |           |           |           |          |
| Northern Hardwood           |                          |           |            |           |           |           |          |
| Paper Birch                 |                          |           |            |           |           |           |          |
| Tamarack                    |                          |           |            |           | 1         |           |          |
| Upland Conifers             |                          |           |            |           |           |           |          |
| Upland Spruce/Fir           |                          |           |            |           |           |           |          |
| Urban                       |                          |           |            |           |           |           |          |
| Water                       |                          |           |            |           |           |           |          |
| White Pine                  | 6                        |           |            |           |           |           |          |
| <b>Total Forested Acres</b> | <b>9</b>                 | <b>11</b> | <b>283</b> | <b>10</b> | <b>64</b> | <b>59</b> | <b>4</b> |
| <b>Relative Percent</b>     |                          |           |            |           |           |           |          |

*\*Due to limitations in the current Site Conditions Analysis tool, all nonforested acres are considered available. Future development will enable analysis of nonforested types.*

| Site No.         | Dominant Site Cond Availability | Dominant Site Condition                                       | Acres | Other Site Condition | Other Site Condition | Other Site Condition | Other Site Condition |
|------------------|---------------------------------|---|-------|----------------------|----------------------|----------------------|----------------------|
| 1                | Unavailable                     | 2G: Too wet (sensitive soils, does not include access issues) | 5     | Unspecified          | Unspecified          | Unspecified          | Unspecified          |
| <b>Comments:</b> |                                 |   |       |                      |                      |                      |                      |
|                  |                                 |   |       |                      |                      |                      |                      |

## Report 4 – Site Conditions

Crystal Falls Mgt. Unit

Eric Brolin : Examiner

Compartment: 112

Year of Entry: 2019

|                  |                    |   |     |   |                    |             |             |
|------------------|--------------------|---|-----|---|--------------------|-------------|-------------|
| 2                | <b>Unavailable</b> | 2G: Too wet (sensitive soils, does not include access issues) | 5   | Unspecified   | <b>Unspecified</b> | Unspecified | Unspecified |
| <b>Comments:</b> |                    |   |     |   |                    |             |             |
| 3                | <b>Unavailable</b> | 2G: Too wet (sensitive soils, does not include access issues) | 137 | 3J: Water quality / BMPs (stream, river, or lake)             | <b>Unspecified</b> | Unspecified | Unspecified |
| <b>Comments:</b> |                    |   |     |   |                    |             |             |
| 4                | <b>Unavailable</b> | 3J: Water quality / BMPs (stream, river, or lake)             | 1   | 5E: Long-Term Retention                                       | <b>Unspecified</b> | Unspecified | Unspecified |
| <b>Comments:</b> |                    |   |     |   |                    |             |             |
| 5                | <b>Unavailable</b> | 2G: Too wet (sensitive soils, does not include access issues) | 9   | 3J: Water quality / BMPs (stream, river, or lake)             | <b>Unspecified</b> | Unspecified | Unspecified |
| <b>Comments:</b> |                    |   |     |   |                    |             |             |
| 6                | <b>Unavailable</b> | 3J: Water quality / BMPs (stream, river, or lake)             | 7   | 2G: Too wet (sensitive soils, does not include access issues) | <b>Unspecified</b> | Unspecified | Unspecified |
| <b>Comments:</b> |                    |   |     |   |                    |             |             |
| 7                | <b>Unavailable</b> | 3J: Water quality / BMPs (stream, river, or lake)             | 5   | 2G: Too wet (sensitive soils, does not include access issues) | <b>Unspecified</b> | Unspecified | Unspecified |
| <b>Comments:</b> |                    |   |     |   |                    |             |             |

## Report 4 – Site Conditions

Crystal Falls Mgt. Unit

Eric Brolin : Examiner

Compartment: 112

Year of Entry: 2019

|   |                    |   |    |   |                         |             |             |
|---|--------------------|---|----|---|-------------------------|-------------|-------------|
| 8   | <b>Unavailable</b> | <b>2G: Too wet (sensitive soils, does not include access issues)</b>          | 18 | 3J: Water quality / BMPs (stream, river, or lake)             | Unspecified             | Unspecified | Unspecified |
| <b>Comments:</b>                                      |                    |   |    |   |                         |             |             |
| 9   | <b>Unavailable</b> | <b>3J: Water quality / BMPs (stream, river, or lake)</b>                      | 1  | 5E: Long-Term Retention                                       | Unspecified             | Unspecified | Unspecified |
| <b>Comments:</b>                                      |                    |   |    |   |                         |             |             |
| 10  | <b>Unavailable</b> | <b>2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)</b> | 10 | 3J: Water quality / BMPs (stream, river, or lake)             | Unspecified             | Unspecified | Unspecified |
| <b>Comments:</b>                                      |                    |   |    |   |                         |             |             |
| 11  | <b>Unavailable</b> | <b>3J: Water quality / BMPs (stream, river, or lake)</b>                      | 10 | 2G: Too wet (sensitive soils, does not include access issues) | 5E: Long-Term Retention | Unspecified | Unspecified |
| <b>Comments:</b><br>300' buffer along Lost Creek.     |                    |   |    |   |                         |             |             |
| 12  | <b>Unavailable</b> | <b>3J: Water quality / BMPs (stream, river, or lake)</b>                      | 9  | 5E: Long-Term Retention                                       | Unspecified             | Unspecified | Unspecified |
| <b>Comments:</b><br>100' buffer along Sturgeon River. |                    |   |    |   |                         |             |             |
| 14  | <b>Unavailable</b> | <b>3J: Water quality / BMPs (stream, river, or lake)</b>                      | 4  | 5E: Long-Term Retention                                       | Unspecified             | Unspecified | Unspecified |
| <b>Comments:</b><br>300' buffer                       |                    |   |    |   |                         |             |             |

## Report 4 – Site Conditions

Crystal Falls Mgt. Unit

Eric Brolin : Examiner

Compartment: 112

Year of Entry: 2019

|  |                    |   |    |   |             |             |             |
|--|--------------------|---|----|---|-------------|-------------|-------------|
| 15   | <b>Unavailable</b> | <b>3J: Water quality / BMPs (stream, river, or lake)</b>                            | 4  | Unspecified                                       | Unspecified | Unspecified | Unspecified |
| <b>Comments:</b><br>300' buffer  |                    |   |    |   |             |             |             |
| 16   | <b>Unavailable</b> | <b>3J: Water quality / BMPs (stream, river, or lake)</b>                            | 7  | 5E: Long-Term Retention                           | Unspecified | Unspecified | Unspecified |
| <b>Comments:</b><br>300' buffer  |                    |   |    |   |             |             |             |
| 17   | <b>Unavailable</b> | <b>2G: Too wet (sensitive soils, does not include access issues)</b>                | 39 | Unspecified                                       | Unspecified | Unspecified | Unspecified |
| <b>Comments:</b><br>Lowland alder, conifer mix.  |                    |   |    |   |             |             |             |
| 18   | <b>Available</b>   | <b>5C: Delay treatment for age/size class diversity or exceptional site quality</b> | 3  | Unspecified                                       | Unspecified | Unspecified | Unspecified |
| <b>Comments:</b><br>This area is a clone of young aspen sapling/poles that should be excluded from a potential upcoming harvest. |                    |   |    |   |             |             |             |
| 20   | <b>Unavailable</b> | <b>2G: Too wet (sensitive soils, does not include access issues)</b>                | 9  | Unspecified                                       | Unspecified | Unspecified | Unspecified |
| <b>Comments:</b>   |                    |   |    |   |             |             |             |
| 21   | <b>Unavailable</b> | <b>2G: Too wet (sensitive soils, does not include access issues)</b>                | 7  | 3J: Water quality / BMPs (stream, river, or lake) | Unspecified | Unspecified | Unspecified |
| <b>Comments:</b>   |                    |   |    |   |             |             |             |

## Report 4 – Site Conditions

Crystal Falls Mgt. Unit

Eric Brolin : Examiner

Compartment: 112

Year of Entry: 2019

|                  |                    |  |    |   |             |             |             |
|------------------|--------------------|--|----|---|-------------|-------------|-------------|
| 22               | <b>Unavailable</b> | <b>2G: Too wet (sensitive soils, does not include access issues)</b> | 10 | 3J: Water quality / BMPs (stream, river, or lake)             | Unspecified | Unspecified | Unspecified |
| <b>Comments:</b> |                    |  |    |   |             |             |             |
| 23               | <b>Unavailable</b> | <b>3J: Water quality / BMPs (stream, river, or lake)</b>             | 1  | 5E: Long-Term Retention                                       | Unspecified | Unspecified | Unspecified |
| <b>Comments:</b> |                    |  |    |   |             |             |             |
| 24               | <b>Unavailable</b> | <b>3J: Water quality / BMPs (stream, river, or lake)</b>             | 3  | 5E: Long-Term Retention                                       | Unspecified | Unspecified | Unspecified |
| <b>Comments:</b> |                    |  |    |   |             |             |             |
| 25               | <b>Unavailable</b> | <b>5E: Long-Term Retention</b>                                       | 1  | Unspecified   | Unspecified | Unspecified | Unspecified |
| <b>Comments:</b> |                    |  |    |   |             |             |             |
| 26               | <b>Unavailable</b> | <b>3J: Water quality / BMPs (stream, river, or lake)</b>             | 9  | 2G: Too wet (sensitive soils, does not include access issues) | Unspecified | Unspecified | Unspecified |
| <b>Comments:</b> |                    |  |    |   |             |             |             |
| 27               | <b>Unavailable</b> | <b>2G: Too wet (sensitive soils, does not include access issues)</b> | 9  | 3J: Water quality / BMPs (stream, river, or lake)             | Unspecified | Unspecified | Unspecified |
| <b>Comments:</b> |                    |  |    |   |             |             |             |



## Report 4 – Site Conditions

Crystal Falls Mgt. Unit

Eric Brolin : Examiner

Compartment: 112

Year of Entry: 2019

|                  |             |   |    |   |             |             |             |
|------------------|-------------|---|----|---|-------------|-------------|-------------|
| 28               | Unavailable | 3J: Water quality / BMPs (stream, river, or lake)             | 5  | 2G: Too wet (sensitive soils, does not include access issues) | Unspecified | Unspecified | Unspecified |
| <b>Comments:</b> |             |   |    |   |             |             |             |
| 29               | Unavailable | 5E: Long-Term Retention                                       | 2  | 3J: Water quality / BMPs (stream, river, or lake)             | Unspecified | Unspecified | Unspecified |
| <b>Comments:</b> |             |   |    |   |             |             |             |
| 30               | Unavailable | 2G: Too wet (sensitive soils, does not include access issues) | 33 | Unspecified   | Unspecified | Unspecified | Unspecified |
| <b>Comments:</b> |             |   |    |   |             |             |             |
| 31               | Unavailable | 2F: Too steep   | 11 | 3J: Water quality / BMPs (stream, river, or lake)             | Unspecified | Unspecified | Unspecified |
| <b>Comments:</b> |             |   |    |   |             |             |             |
| 32               | Unavailable | 5D: Unproductive Forest Land                                  | 59 | 2G: Too wet (sensitive soils, does not include access issues) | Unspecified | Unspecified | Unspecified |
| <b>Comments:</b> |             |   |    |   |             |             |             |

## Report 4 – Site Conditions

Crystal Falls Mgt. Unit

Eric Brolin : Examiner

Compartment: 112

Year of Entry: 2019

|   |                    |   |   |   |             |             |             |
|---|--------------------|---|---|---|-------------|-------------|-------------|
| 33  | <b>Unavailable</b> | <b>2G: Too wet (sensitive soils, does not include access issues)</b>                | 3 | 5A: Not able to obtain desirable regeneration | Unspecified | Unspecified | Unspecified |
| <b>Comments:</b>  |                    |   |   |   |             |             |             |
| 34  | <b>Unavailable</b> | <b>5E: Long-Term Retention</b>  | 2 | Unspecified                                   | Unspecified | Unspecified | Unspecified |
| <b>Comments:</b><br>Retention left from stand 54.   |                    |   |   |   |             |             |             |
| 35  | <b>Available</b>   | <b>5C: Delay treatment for age/size class diversity or exceptional site quality</b> | 6 | Unspecified                                   | Unspecified | Unspecified | Unspecified |
| <b>Comments:</b><br>Aspen was harvested with adjacent stand and is growing up well underneath the existing white pine canopy. |                    |   |   |   |             |             |             |

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

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**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.                               |



| Stand | Level 4 Cover Type          | Size Density      | Acres | Stand Age | BA Range    | General Comments:   |
|-------|-----------------------------|-------------------|-------|-----------|-------------|---|
| 1     | 4130 - Aspen                | Poletimber Well   | 7.7   | 37        | Unspecified | Fully stocked aspen pole stand with dense understory of fir saplings/poles.   |
| 2     | 4136 - Aspen, Mixed Conifer | Poletimber Well   | 50.6  | 47        | 111-140     | Aspen stand with spruce/fir that has died out. Very few live spruce still remain in stand. The north portion of the stand has a little better quality aspen. Dense balsam saplings across a majority of the stand. White pine saplings across parts of the stand. Scattered larger diameter white pine. |
| 3     | 6120 - Lowland Cedar        | Poletimber Well   | 16.6  | 87        | 171-200     | Dense cedar stand. Scattered white birch has died out of stand. Inoperable due to cedar. Very saturated ground.   |
| 4     | 429 - Mixed Upland Conifers | Poletimber Medium | 17.5  | 36        | 51-80       | Scattered clones of dense aspen poles. Abundant fir and white pine large saplings. Larger remnant balsam scattered within stand with very few white birch and cherry. Also open fern patches found throughout.  |
| 5     | 6112 - Lowland Aspen        | Poletimber Well   | 5.5   | 41        | 81-110      | Lowland aspen. Very wet. Cedar and black ash mixed in. Healthy aspen. Stream along north side which runs NE. OPIC - FMD: Well stocked stand of nice poles   |
| 6     | 6120 - Lowland Cedar        | Poletimber Well   | 19.7  | 87        | 171-200     | Dense cedar stand. Scattered white birch has died out of stand. Inoperable due to cedar. Very saturated ground.   |
| 7     | 4130 - Aspen                | Sawtimber Poor    | 15.7  | 96        | 51-80       | Large degrading aspen and white spruce. Much of the stand has fallen over already.  |
| 8     | 4130 - Aspen                | Sapling Well      | 7.0   | 4         | Immature    | Stand is nearly fully stocked with aspen saplings. Scattered cherry poles within stand. OPIC - FMD: Wet site is better for spruce fir than for aspen. Retain patches of conifer regen and any pine. Protect ORV and Snowmobile trails. Stand harvested with Sniggle Aspen sale #12-009-09-01 in 2013.   |
| 9     | 4130 - Aspen                | Sapling Well      | 33.7  | 5         | Immature    | Well stocked aspen sapling stand. Cedar, hemlock, and pines were retained. Scattered spruce/fir saplings and poles found within stand. Stand was harvested in 2013. Black ash swale approx. 2 acres in center of stand.   |
| 10    | 4130 - Aspen                | Sapling Well      | 4.6   | 19        | 51-80       | Small stand-alone aspen sapling stand.  |
| 11    | 4130 - Aspen                | Poletimber Well   | 39.6  | 36        | 111-140     | Young aspen stand. Scattered fir in under story. Center has a more open patch with some maple that has seeded in and large remnant sugar maple trees scattered. Stand also contains a few scattered clones of bam aspen.  |
| 12    | 6120 - Lowland Cedar        | Poletimber Well   | 7.4   | 95        | 81-110      | Cedar stand along river. A strip of this stand was left as a buffer along the highway from adjoining aspen harvest.   |
| 13    | 6139 - Mixed Lowland Forest | Poletimber Well   | 7.2   | 68        | 81-110      | Degrading aspen/lowland mix. Larger trees are falling apart within stand. Small pockets of black ash found. Upland strip across middle of stand surrounded by lowland. A few scattered white birch found still in excellent shape.  |



|    | Level 4<br>Cover Type                          | Size<br>Density    | Acres | Stand<br>Age | BA<br>Range | General<br>Comments:  |
|----|--|--------------------|-------|--------------|-------------|---|
| 15 | 4134 - Aspen,<br>Spruce/Fir                    | Poletimber<br>Well | 28.9  | 57           | 111-140     | Older aspen stand with fir under story. Wetter areas transition to more tamarack/black spruce along the west and north border may need to be excluded. Alder patch in center also needs to be excluded. Historic Info: OI Stand Year Origin was 1960                          |
| 16 | 6112 - Lowland Aspen                           | Poletimber<br>Well | 8.6   | 37           | Unspecified | Well stocked aspen poles. Saturated ground, very wet. Fir under story. OPIC - FMD: OI Stand Year Origin was 1980  |
| 18 | 6120 - Lowland Cedar                           | Poletimber<br>Well | 8.6   | 96           | 141-170     | Solid cedar stand along river. Inoperable due to dense cedar, soils, and river buffer.  |
| 19 | 4130 - Aspen                                   | Poletimber<br>Well | 17.0  | 28           | 81-110      | Small aspen pole stand. Section bordering river has open patches with fir saplings. OPIC - FMD: OI Stand Year Origin was 1980   |
| 20 | 4130 - Aspen                                   | Poletimber<br>Well | 103.3 | 53           | 81-110      | Not much variability across stand. Scattered fir within stand average 2 sticks. Fir and large white pine become more abundant on NE portion of stand. Similar to stand 2 to the south but a little older in age and a more uniform aspen cover.                               |
| 21 | 4110 - Sugar Maple<br>Association              | Sawtimber<br>Well  | 8.7   | 82           | 111-140     | Nice small log sugar maple stand. Crowns need to be opened up. No regen or understory except for Dirca. Historic Info: Thinning done in 2000. Porcupine damage in areas.  |
| 22 | 4110 - Sugar Maple<br>Association              | Sawtimber<br>Well  | 2.5   | 83           | 51-80       | Open canopy. Poorer quality maple stand. No regen or understory.  |
| 23 | 4130 - Aspen                                   | Sapling Well       | 16.4  | 28           | Immature    | Young aspen stand. Fir under story more dense in patches. Solid fir patch in southern tip of stand. A 1 acre patch is part of this stand but is detached to the east across the open area. Scattered spruce are grown up into the canopy along with a few remnant white pine. |
| 24 | 4130 - Aspen                                   | Poletimber<br>Well | 7.4   | 18           | Immature    | Aspen sapling stand. Has a strip of sugar maple poles across stand.   |
| 25 | 4130 - Aspen                                   | Poletimber<br>Well | 14.3  | 30           | Immature    | Aspen stand with some low areas along with rolling rocky outcrops. Some bam aspen found in lower areas.   |
| 26 | 6118 - Lowland<br>Deciduous with Cedar         | Poletimber<br>Well | 8.5   | 86           | 81-110      | OPIC - FMD: River floodplain is often flooded. Some silver maple may be found with the more conventional swamp hwdws  |
| 27 | 42201 - Natural White<br>Pine, Mixed Deciduous | Sawtimber<br>Well  | 5.7   | 100          | 81-110      | Large white pine dominate this stand. Aspen from previous harvest is growing up where the canopy openings allow. White pine saplings average 10' high, more dominant around edges. OPIC - FMD: OI Stand Year Origin was 1989  |
| 28 | 6130 - Fir, Aspen, Maple                       | Poletimber<br>Poor | 38.9  | 85           | 1-50        | Alder swales with scattered hardwood and conifer. Very wet in most areas. OPIC - FMD: This stand is highly variable. The close water table makes the site somewhat wet throughout. Regen is spotty.   |



| Stand | Level 4 Cover Type                         | Size Density    | Acres | Stand Age | BA Range | General Comments:   |
|-------|--|-----------------|-------|-----------|----------|---|
| 29    | 4191 - Mixed Upland Deciduous with Conifer | Sawtimber Well  | 41.3  | 55        | 81-110   | White pine super canopy. Sub-canopy of hardwood mix. Near fully stocked with white pine saplings average 5 feet tall in most areas. More hardwood is mixed in the southern portion of stand.  |
| 30    | 6121 - Tamarack                            | Poletimber Well | 14.1  | 58        | 111-140  | Lowland tamarack. Transitions to more cedar, spruce/fir around the edges.   |
| 31    | 4130 - Aspen                               | Poletimber Well | 6.0   | 34        | 81-110   | Aspen pole stand. Some softer ground in areas. Transitions to lowland conifer species along north side of the stand.  |
| 35    | 4134 - Aspen, Spruce/Fir                   | Sapling Well    | 14.8  | 28        | Immature | Young healthy aspen stand. Access is very limited, mainly to one area which crosses an alder drainage to the east from adjacent stand 23 which was flooded during winter inventory. Transitions to lowland spruce/fir around the edges and is completely surrounded by lowlands or streams. Ground within appears to be somewhat saturated. A 300' buffer is needed on the creek running north/south of Cassidy Creek and only a 100' buffer north of Cassidy Creek itself. OPIC - FMD: . The close water table makes the site somewhat wet throughout. |
| 36    | 4130 - Aspen                               | Sapling Well    | 3.9   | 4         | Immature | Patches of aspen regen along with open grass patches. Scattered cedar was left from previous harvest. OPIC - FMD: This is several small islands with a few trees on each. It maybe considered as being all a transition zone and not worth a harvest. If they are present in the stand, retain pines, oak, cedar, cherry and good den trees. Protect ORV and Snowmobile trails. Stand harvested with Sniggle Aspen sale #12-009-09-01 in 2013.  |
| 37    | 6120 - Lowland Cedar                       | Poletimber Well | 4.3   | 82        | 81-110   | Solid cedar with alder around the edges. OPIC - FMD: OI Stand Year Origin was 1934  |
| 38    | 4130 - Aspen                               | Sapling Well    | 10.2  | 4         | Immature | Aspen sapling stand. Scattered cherry poles and white pine within. Retention patch in center. OPIC - FMD: This stand was sold and not cut around 2000. About half of the fir has fallen since then. SAVE PINE AND CEDAR. Protect transition . Protect ORV and Snowmobile trails. Stand harvested with Sniggle Aspen sale #12-009-09-01 in 2013.   |
| 39    | 4139 - Aspen, Mixed Deciduous              | Poletimber Well | 16.1  | 56        | 81-110   | This stand is the same age as the adjacent aspen stand to the southeast. The spruce/fir understory in this stand is dense but mostly dead from spruce budworm. This stand should be cut with stand 43 but split separate from it due to a different composition of species. Black ash drainage across center of the stand should be excluded.   |
| 40    | 6120 - Lowland Cedar                       | Poletimber Well | 7.4   | 82        | 81-110   | Lowland drainage mostly cedar with tamarack mixed in. Very dense under story of fir and alder. Inoperable due to saturated soil and stream buffer. OPIC - FMD: OI Stand Year Origin was 1934  |
| 42    | 4130 - Aspen                               | Poletimber Well | 14.9  | 50        | 81-110   | More of an open aspen stand due to budworm die out. Somewhat patchy in center of stand. OPIC - FMD: OI Stand Year Origin was 1967   |



| Stand | Level 4 Cover Type                         | Size Density    | Acres | Stand Age | BA Range | General Comments:   |
|-------|--|-----------------|-------|-----------|----------|---|
| 43    | 4130 - Aspen                               | Poletimber Well | 37.7  | 56        | 51-80    | Older aspen stand. Dense spruce/fir understory has mostly died out from budworm but is still standing. This stand should be cut with adjacent stand 39 but split due to a different species composition. Historic Info: DENSE CONIFER UNDERSTORY.   |
| 44    | 6120 - Lowland Cedar                       | Poletimber Well | 9.6   | 82        | 81-110   | Lowland drainage mostly cedar with tamarack mixed in. Very dense under story of fir and alder. Inoperable due to soils and stream buffer. OPIC - FMD: OI Stand Year Origin was 1934   |
| 45    | 429 - Mixed Upland Conifers                | Poletimber Well | 16.5  | 52        | 51-80    | Scattered super canopy white pines. Co-dominant canopy of white pine, red maple, and dead white birch which is 52 years old. More hemlock is mixed in the eastern half of the stand along with some difficult terrain in areas. Dense under story of white pine approximately 30 years old. Could not find south west corner.   |
| 46    | 4110 - Sugar Maple Association             | Poletimber Well | 4.1   | 51        | 51-80    | Small hardwood pole stand with some logs. Stocking level is not ready to be thinned yet.  |
| 47    | 6132 - Mixed Lowland Forest with Cedar     | Poletimber Well | 9.0   | 104       | 81-110   | Lowland with cedar, spruce, black ash, and areas of alder. Very saturated ground. Bam and black ash is falling apart. Cedar is larger and may be older than dominant age of stand.  |
| 49    | 4110 - Sugar Maple Association             | Poletimber Well | 6.6   | 82        | 81-110   | Hardwood pole stand with few poorer quality logs. BA averaged 90, crowns still have room to grow. Survey corner present.  |
| 50    | 4130 - Aspen                               | Poletimber Well | 6.8   | 26        | Immature | Aspen sapling stand.  |
| 51    | 4130 - Aspen                               | Poletimber Well | 59.6  | 48        | 111-140  | Healthy aspen stand. Abundant fir under story. Cedar drainage E/W across north end of stand, an old raised skid trail does cross it for access from the north to the southern portion of stand if not in frozen conditions. Fairly gentle terrain does have some small rock ledges. Aspen more dense in south. Cedar and black ash found within stand. Exclude dense cedar and black ash pockets. |
| 53    | 4130 - Aspen                               | Poletimber Well | 11.8  | 64        | 111-140  | Mature aspen stand. Scattered maple mixed in southern portion of stand. Dense fir under story in areas 2-3 sticks.  |
| 54    | 4130 - Aspen                               | Poletimber Well | 14.0  | 28        | Immature | Fully stocked aspen pole stand. Fir saplings found along stand transition. OPIC - FMD: OI Stand Year Origin was 1989  |
| 55    | 6128 - Lowland Coniferous, Mixed Deciduous | Poletimber Well | 10.5  | 78        | 81-110   | This stand is more of a lowland drainage between streams to the north and south. Scattered large degrading aspen and dead/degrading tamarack are scattered within. Large swales of alder heavy in areas. White birch mixed in southern portion.   |
| 56    | 4110 - Sugar Maple Association             | Poletimber Well | 28.0  | 83        | 81-110   | No under story. Patches of ironwood regeneration. OPIC - FMD: If they are present in the stand, retain pines, oak, cedar, cherry and good den trees. Protect ORV and Snowmobile trails. Stand harvested with Sniggle Aspen sale #12-009-09-01 in 2013.  |





|    | Level 4<br>Cover Type             | Size<br>Density      | Acres | Stand<br>Age | BA<br>Range | General<br>Comments:   |
|----|-----------------------------------|----------------------|-------|--------------|-------------|--|
| 57 | 4130 - Aspen                      | Sapling Well         | 24.0  | 4            | Immature    | Aspen sapling stand. Well stocked except for a few open patches. Scattered cherry and white pine were left. Stand harvested with Sniggle Aspen sale #12-009-09-01 in 2013.   |
| 58 | 42330 - Upland Fir                | Poletimber<br>Medium | 11.4  | 30           | Immature    | Patchy fir stand with a little aspen mixed in. Most fir has barely 1-2 sticks.   |
| 60 | 4110 - Sugar Maple<br>Association | Sawtimber<br>Well    | 68.5  | 87           | 111-140     | Hardwood log stand. No regen in under story except ironwood. A small wet area borders the denser hemlock area towards the center of the stand. White birch is found along the NE border.<br>OPIC - FMD: Thinning done in 2000.   |
| 61 | 4110 - Sugar Maple<br>Association | Sawtimber<br>Well    | 9.8   | 83           | 81-110      | Northern hardwood log stand. Poorer log quality than adjacent stand 56. Some fir saplings scattered in understory.   |
| 64 | 4110 - Sugar Maple<br>Association | Sawtimber<br>Well    | 13.9  | 83           | 81-110      | BA of 90. No under story besides Dirca. Few scattered balsam.<br>OPIC - FMD: Thinned in 2000. Nice tall hardwood.  |
| 65 | 6120 - Lowland Cedar              | Poletimber<br>Well   | 34.2  | 107          | 81-110      | Mainly a solid cedar stand with black spruce and white pine speckled in. Turns to more alder and degrading/dead black ash to the west.   |
| 66 | 6120 - Lowland Cedar              | Poletimber<br>Well   | 4.7   | 88           | 141-170     | Cedar stand along stream.  |
| 67 | 4134 - Aspen,<br>Spruce/Fir       | Poletimber<br>Well   | 22.6  | 38           | 111-140     | Three different drainages (alder/willow, black ash, tamarack) cut through this stand that will need to be excluded from future harvest. Natural red pine regen between river and private where stand narrows. Black ash along river. Some older aged aspen is mixed in the northern portion of this stand. Older aspen was also left along the northeast line. This stand should be ready for harvest in 2029. OPIC - FMD: The stand has a high component of fir especially in the southern part. The aspen varies considerably in quality and stocking. The understory of hazel and cherry has been browsed back to pencil diameter size under this stand in areas. |
| 68 | 4134 - Aspen,<br>Spruce/Fir       | Sawtimber<br>Medium  | 17.3  | 72           | 81-110      | Stand has more white birch mixed in to the east side of stand and transitions heavy to aspen in the west 2/3 of stand. Fir under story present, more dense in open areas of stand.   |
| 69 | 4130 - Aspen                      | Poletimber<br>Well   | 114.9 | 30           | Immature    | Young aspen stand. Scattered fir in under story. Good future access road in north half comes from adjacent compartment, will have to cross drainage stream from cedar patch. Access from south would be from the center road or the road that crosses over through private. Stand also contains scattered clones of bam aspen. A couple of alder swales may need to be excluded in the north half of the stand stemming out from the lowland conifer stand. A small ridge of white pine borders private land.  |



| Stand | Level 4 Cover Type                               | Size Density      | Acres | Stand Age | BA Range | General Comments:   |
|-------|--|-------------------|-------|-----------|----------|---|
| 70    | 6128 - Lowland Coniferous, Mixed Deciduous       | Poletimber Well   | 59.3  | 79        | 81-110   | Lowland mixed conifer stand. Has a patch of dense tamarack to the east. Cedar dominates around some of the edges. Cedar will have to be excluded from the treatment in inoperable areas. The 2014 NAIP CIR photo helps show roughly which areas are too dense to cedar to harvest. Stand turns to more of a tamarack/birch/red maple mix on the west side of the road. Actual treatment size will be 35-40 acres in size. OPIC - FMD: OI Stand Year Origin was 1938   |
| 71    | 6132 - Mixed Lowland Forest with Cedar           | Sapling Well      | 2.3   | 36        | 51-80    | Scattered dominant cedar and aspen. Dense under story of fir, tamarack, and aspen saplings. Possibly harvest with adjacent stand in the future. OPIC - FMD: OI Stand Year Origin was 1980   |
| 73    | 4130 - Aspen                                     | Sapling Poor      | 26.9  | 5         | Immature | Aspen sapling stand. Harvested in 2012. Scattered cherry and fir saplings. Aspen regeneration is patchy in areas.   |
| 75    | 4312 - Hemlock, Mixed Deciduous                  | Sawtimber Well    | 6.0   | 87        | 111-140  | Hardwood log stand. No regen in under story except ironwood. A small wet area borders the denser hemlock area towards the center of the stand. White birch is found along the NE border. OPIC - FMD: Thinning done in 2000.   |
| 77    | 4199 - Other Mixed Upland Deciduous              | Poletimber Well   | 11.6  | 66        | 81-110   | Lowland mixed hardwood drainage. Some of the aspen is beginning to fall apart. Aspen to the north appears to be a little bit healthier and may be a little younger than the stand average. Birch is in good shape yet. Birch transition up into the hardwoods may be a good seed source. Fir under story with a few patches of alder. Some black ash and cedar mixed in more in the south end of stand. Historic Info: This is a spring bed. The southern end has mostly dead timber resulting from past flooding. The north end grades into fir and has the source of the springs. |
| 78    | 4130 - Aspen                                     | Poletimber Well   | 0.0   | 53        | 81-110   | Not much variability across stand. Scattered fir within stand average 2 sticks. Fir and large white pine become more abundant on NE portion of stand. Similar to stand 2 to the south but a little older in age and a more uniform aspen cover.   |
| 85    | 6112 - Lowland Aspen                             | Poletimber Medium | 18.4  | 38        | 51-80    | Lowland scattered aspen and tamarack within stand. Drains to a black ash swale towards the river. OPIC - FMD: This stand has areas that are wet. The types, may be p3 or grass ,which are scattered throughout.   |
| 86    | 42380 - Non Pine Upland Conifer, Mixed Deciduous | Poletimber Poor   | 15.5  | 80        | 1-50     | Stand is dead spruce/fir. Very few scattered live white and black spruce across stand. Most of the spruce/fir is broken off 15'-20' up or laying on the ground. Large rolling rock outcrops with lowland cedar/alder/black ash swales pockets in between them across stand. Access across this stand would be very limited if any in a majority of stand. Very low volume of live aspen are degrading within stand.   |
| 87    | 4191 - Mixed Upland Deciduous with Conifer       | Sawtimber Medium  | 50.1  | 55        | 81-110   | White pine super canopy. Sub-canopy of hardwood mix and dense spruce/fir. Moderately stocked with white pine saplings up to 20'+ tall in more open areas. Similar to adjoining southern stand except less hardwood understory (more dense to spruce/fir) and taller white pine regen. Stand has numerous rock outcrops more across the eastern portion of this stand.   |



| Stand | Level 4 Cover Type                  | Size Density      | Acres | Stand Age | BA Range | General Comments:  |
|-------|-------------------------------------|-------------------|-------|-----------|----------|--|
| 88    | 4130 - Aspen                        | Sapling Medium    | 23.0  | 5         | Immature | Areas that are stocked have acceptable regeneration. Many open areas with fir and cherry seedlings. Red pine patch on north stand line. OPIC - FMD: This is a stand that is best suited for spruce and fir. The budworm damage is high and the aspen poor and short. Save the Pine and the conifer regen. If the fir does not regenerate, aspen is an acceptable alternative. When setting up the sale, watch for vernal ponds and treat accordingly. Protect ORV and Snowmobile trails. SNIGGLE ASPEN SALE HARVESTED 2012 #12-013-09-01 |
| 89    | 6113 - Lowland Maple                | Sawtimber Well    | 10.3  | 100       | 141-170  | Silver maple flood plain. Can not access wooded stand, surrounded by running water. Used edge call.  |
| 90    | 4130 - Aspen                        | Sapling Medium    | 10.5  | 5         | Immature | Areas that are stocked have acceptable regeneration. Many open areas with fir and cherry seedlings. OPIC - FMD: I split this stand off the original that included stand 88. It is better aspen and should be treated to regen. Aspen as the primary goal. If they are present in the stand, retain pines, oak, cedar, cherry and good den trees. Retain wet timber type patches. Protect ORV and Snowmobile trails. SNIGGLE ASPEN SALE HARVESTED 2012 #12-013-09-01  |
| 91    | 4140 - Other Upland Deciduous       | Poletimber Medium | 3.1   | 66        | 81-110   | Large white spruce and some white birch are declining in stand. Has good number of healthy white birch yet. Stand should be regenerated before loss.   |
| 92    | 6118 - Lowland Deciduous with Cedar | Poletimber Well   | 17.9  | 86        | 81-110   | Floodplain along river. Lowland drains into river from the private land. OPIC - FMD: River floodplain is often flooded. Some silver maple may be found with the more conventional swamp hdwds  |
| 94    | 4130 - Aspen                        | Sapling Well      | 30.3  | 28        | Immature | Young aspen stand. Spruce/fir nearly all died out from SBW. Trace of cedar found along rivers edge. OPIC - FMD: Ol Stand Year Origin was 1989  |
| 95    | 4130 - Aspen                        | Poletimber Well   | 38.2  | 41        | 111-140  | Nice aspen stand. Dense fir under story. Some hardwood mixed in northern half of stand.  |
| 99    | 4134 - Aspen, Spruce/Fir            | Poletimber Medium | 4.3   | 36        | 1-50     | More of an open grown sugar maple and fir stand to the south with increasing small aspen poles to the north of this stand. SE corner found was an 8" sugar maple with 4 directional blazes on it.  |
| 100   | 4130 - Aspen                        | Poletimber Well   | 18.4  | 39        | 1-50     | Aspen pole stand with small component of white birch, sugar maple, and spruce/fir. Stand has scattered remnant of large white spruce.  |
| 103   | 4134 - Aspen, Spruce/Fir            | Poletimber Well   | 57.3  | 32        | Immature | Young aspen stand with mixed conifers. Patch of red pine on north border of stand. Patchy aspen in areas where fir is more dense.  |
| 107   | 6115 - Lowland Ash                  | Poletimber Medium | 4.5   | 101       | 111-140  | Lowland black ash marsh.   |



| Stand | Level 4 Cover Type                         | Size Density    | Acres | Stand Age | BA Range    | General Comments:   |
|-------|--|-----------------|-------|-----------|-------------|---|
| 108   | 42340 - Upland Spruce/Fir                  | Poletimber Well | 6.8   | 28        | 81-110      | Dense spruce/fir mix 1-2 sticks. Open patches occupied by black cherry saplings. Scattered aspen within stand range from 2-4 sticks.  |
| 109   | 4110 - Sugar Maple Association             | Poletimber Well | 3.2   | 66        | 51-80       | Sugar maple pole stand. Crowns have room to grow yet. Not ready to thin, possible next entry. Found SW corner of stand in open field. No regen in understory.   |
| 110   | 6128 - Lowland Coniferous, Mixed Deciduous | Poletimber Well | 5.2   | 56        | Unspecified | Stand is lowland along a 100' + wide creek. Buffer would eliminate entire stand from harvest. OI Stand Year Origin was 1938   |
| 111   | 6132 - Mixed Lowland Forest with Cedar     | Poletimber Well | 15.1  | 49        | 51-80       | Degrading aspen and tamarack. Mainly lowland with upland patches. NE portion of stand not operable due to dense cedar.  |
| 112   | 4133 - Aspen, Mixed Pine                   | Sapling Medium  | 8.3   | 4         | Immature    | Stand if fairly open with scattered balsam seedlings and patches of aspen saplings. Scattered mature cherry, white pine, and hemlock were left as reserve trees from the previous harvest.  |
| 114   | 6129 - Mixed Coniferous Lowland Forest     | Poletimber Poor | 32.6  | 80        | 1-50        | Lowland conifer/alder drainage.   |
| 116   | 6111 - Lowland Balsam Poplar               | Sapling Well    | 11.0  | 30        | Immature    | Lowland aspen stand. Very wet ground with alder/willow shrubs scattered within. The northern triangle is solid to an alder/willow cover.  |
| 117   | 4130 - Aspen                               | Poletimber Well | 11.7  | 33        | 81-110      | Young aspen stand. Dense fir sapling underscore across majority of stand.   |
| 119   | 4130 - Aspen                               | Sapling Well    | 17.4  | 18        | Immature    | Young aspen stand with fir and pine saplings mixed in.  |
| 120   | 4191 - Mixed Upland Deciduous with Conifer | Poletimber Well | 10.6  | 63        | 81-110      | Old mixed aspen stand. Birch nearly all dead. Large scattered white pine.   |
| 122   | 4133 - Aspen, Mixed Pine                   | Poletimber Well | 12.6  | 35        | 111-140     | Aspen mixed with older white pine canopy. Patchy dense pockets of white pine saplings. Dense pockets of balsam saplings where aspen did not regenerate well.  |
| 123   | 4111 - S.Maple, Hard Mast Association      | Sawtimber Well  | 18.7  | 86        | 81-110      | Hardwood stand not ready for thinning. Average BA of 80. Very few scattered large white pine within stand. Pine is found more around the edges transitioning into hardwood with very dense white pine seedlings in the understory edges. Black ash swale in center of stand south of the road should be excluded in future treatments. A trace of beech and red oak is present in this stand. Stand transitions to more white birch and hemlock along the south border. |
| 124   | 6120 - Lowland Cedar                       | Poletimber Well | 32.3  | 100       | 111-140     | Lowland stand very dense to cedar in most areas.  |



|     | Level 4<br>Cover Type                    | Size<br>Density     | Acres | Stand<br>Age | BA<br>Range | General<br>Comments:  |
|-----|--|---------------------|-------|--------------|-------------|---|
| 125 | 42200 - Natural White<br>Pine            | Sawtimber<br>Medium | 11.1  | 100          | 81-110      | Large white pine stand. Wp averages 22". Under story is nearly fully stocked with wp saplings averaging 10'-15' tall. Crown closure is too dense in majority of stand to release wp regeneration. Overstory appears to be 100+ years old. Under story approximately 26 years old. Lots of wp regeneration along edges as well pushing into aspen stand. |
| 128 | 6112 - Lowland Aspen                     | Sapling Well        | 11.2  | 33           | Immature    | Lowland aspen mixed with tamarack. OPIC - FMD: This stand has areas that are wet. The types, may be p3 or grass, which are scattered throughout.  |
| 129 | 6120 - Lowland Cedar                     | Poletimber<br>Well  | 9.3   | 79           | 111-140     | Lowland conifer along stream.   |
| 131 | 6119 - Mixed Lowland<br>Deciduous Forest | Sawtimber<br>Well   | 5.0   | 106          | 81-110      | Lowland fingers. Cedar in the west transitions to black ash.  |
| 403 | 42330 - Upland Fir                       | Poletimber<br>Poor  | 9.9   | 20           | Immature    | Old opening grown in with fir poles. Mixed hardwood patches along edges. Mixed aspen saplings within fir and smaller poles along edges. Hard to determine an average age for this stand due to so much variability.   |



| Stand | Cover Type                       | Acres | Managed Site | General Comments:   |
|-------|----------------------------------|-------|--------------|---|
| 14    | 122 - Road/Parking Lot           | 5.7   | No           | OPIC - FMD: North portion of highway 569  |
| 17    | 500 - Water                      | 15.1  | No           | OPIC - FMD: The Sturgeon River  |
| 32    | 122 - Road/Parking Lot           | 0.6   | No           | ORV trailhead parking lot. OPIC - FMD: This is a newly established O.R.V. parking facility.   |
| 33    | 6220 - Alder/willow              | 48.1  | No           | Lowland alder drainage.   |
| 34    | 622 - Lowland Shrub              | 137.9 | No           | Alder drainage along stream.  |
| 41    | 3302 - Low Density Conifer Trees | 14.9  | No           | Stand is all standing dead tamarack as far as the eye can see from the edges. Very few scattered live black spruce can be seen from the edges. Small patch of dense cedar/black spruce along north border. OPIC - FMD: OI Stand Year Origin was 1920  |
| 48    | 3303 - Mixed Low Density Trees   | 7.4   | No           | Lowland transition. Fir, cherry, and aspen saplings scattered. OPIC - FMD: lowland around north pond  |
| 52    | 122 - Road/Parking Lot           | 1.9   | No           | OPIC - FMD: South portion of highway 569  |
| 59    | 3302 - Low Density Conifer Trees | 1.2   | No           | Opening with fir growing in.  |
| 62    | 500 - Water                      | 10.1  | No           | OPIC - FMD: The Sturgeon River  |
| 63    | 310 - Herbaceous Openland        | 3.6   | No           | Opening with scattered cherry and fir saplings along with some aspen poles.   |
| 72    | 330 - Low-Density Trees          | 62.5  |              | Excellent aspen regeneration. Lowland conifer strip in center of stand. OPIC - FMD: If they are present in the stand, retain pines, oak, cedar, cherry and good den trees. Retain wet timber type patches. Protect ORV and Snowmobile trails. SNIGGLE ASPEN SALE HARVESTED 2012 #12-013-09-01 |
| 74    | 330 - Low-Density Trees          | 3.1   | No           | Grass opening. Scattered cherry and aspen seedlings and saplings. Fir and aspen poles also scattered within stand.  |
| 76    | 3302 - Low Density Conifer Trees | 3.0   | No           | Opening growing in with non merchantable fir. Scattered hardwood mixed in. OPIC - FMD: MAINTAIN OPENINGS WITH MECHANICAL MEANS.   |
| 101   | 310 - Herbaceous Openland        | 3.0   | No           | Opening with fir saplings scattered within.   |
| 115   | 6229 - Mixed lowland shrub       | 10.8  | No           | River floodplain. Silver maple along rivers edge.   |



| Stand | Cover Type                       | Acres | Managed Site | General Comments:  |
|-------|----------------------------------|-------|--------------|--|
| 118   | 6220 - Alder/willow              | 5.2   | No           | Alder drainage.  |
| 130   | 122 - Road/Parking Lot           | 1.2   | No           | Highway  |
| 401   | 310 - Herbaceous Openland        | 2.4   | No           | Balsam around edges. OPIC - FMD: MAINTAIN OPENINGS WITH MECHANICAL MEANS.  |
| 404   | 330 - Low-Density Trees          | 2.7   | No           | Opening heavy to fir saplings in patches.  |
| 405   | 31029 - Grass (OI)               | 1.8   | No           | Fir and cherry saplings within. Aspen encroaching around edges. OPIC - FMD: MAINTAIN OPENINGS WITH MECHANICAL MEANS.   |
| 407   | 310 - Herbaceous Openland        | 2.3   | No           | OPIC - FMD: MAINTAIN OPENING WITH MECHANICAL MEANS.  |
| 410   | 330 - Low-Density Trees          | 12.3  | No           | Opening with scattered cherry saplings and fir poles. OPIC - FMD: This stand may have gotten some herbicide in years past. The cherry is starting to encroach.   |
| 411   | 3302 - Low Density Conifer Trees | 7.2   | No           | Fir opening. Mixed aspen saplings along with other mixed hardwood poles. This opening may become manageable for timber in the near future.   |
| 412   | 3302 - Low Density Conifer Trees | 4.8   | No           | Opening becoming very grown in non merchantable fir. Can probably be considered forested next entry year as a stand or merged with an adjacent stand. OPIC - FMD: MAINTAIN OPENINGS WITH MECHANICAL MEANS. |