



**Crystal Falls Forest Management Unit  
Compartment Review Presentation  
Compartment #109                      Entry Year: 2012  
Compartment Acreage: 1124    County: Dickinson**

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**Revision Date:** 6/3/2010

**Stand Examiner:** Otto Jacob

**Legal Description:** Sections 31 and 32, T40N R28W

**Management Goals:** On sites where pine is regenerating, encourage the pine succession. Harvest aspen for age distribution. Encourage oak regeneration. Wet drainages should be protected for water quality and for wildlife habitat.

**Soil and Topography:** The topography is very rough with bluffs and rocky valleys. Soils are often thin over rock, causing droughty conditions.

**Ownership Patterns, Development, and Land Use in and Around the Compartment:** Privately owned lands are to the south and west of the compartment.

**Unique, Natural Features:** Deep rock valleys and drainages.

**Archeological, Historical, and Cultural Features:** None known.

**Special Management Designations or Considerations:** This is a remote, difficult access area which is good for wildlife. Roads built into it should be closed with extra care.

**Watershed and Fisheries Considerations:**

**Wildlife Habitat Considerations:** Compartment 109 is located north of Loretto in southeast Dickinson County. It is a typical compartment for south Dickinson County. It is 2 square miles in size, minus private in-holdings, and has wet lowlands, hilly terrain with rock outcrops. The goal here is to encourage more pine, in these areas, and to restore as much of the white pine component as possible. Care should be taken to keep transitions to the lowland types intact, protect the hemlock and cedar components and buffer drainages and wetlands.

**Mineral Resource and Development Concerns and/or Restrictions: Compartment 109: Sections 31 and 32, T40N-R28W, Dickinson County**

Surface sediments consist of thin to discontinuous glacial sediments over bedrock. Precambrian Archean granite and gneiss outcrop at or near the surface. There is not an economic use for these rocks, although some might have dimension stone potential. The compartment is located two miles north of the Vulcan Iron Formation mines. This compartment was previously leased for metallic exploration. The closest gravel pit is located three miles to the south, but potential appears to be limited. There is no economic oil and gas production in the UP.

**Vehicle Access:** Limited by private land to the west. Very limited road access.

**Survey Needs:** None.

**Recreational Facilities and Opportunities:** Hiking is very good here. The area has good hunting for many species. It is likely a hot spot for grouse and woodcock, with aspen of different ages and many wet drainages.

**Fire Protection:** This is a challenge in the bluffs, but access is fair around them.

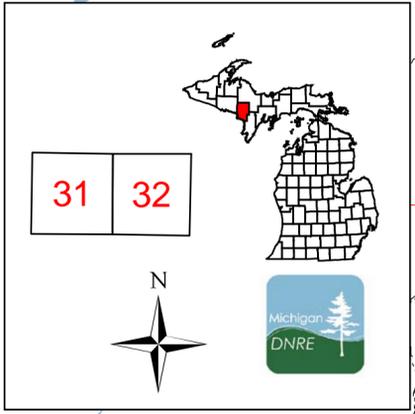
**Additional Compartment Information:** This is a remote rough compartment with limited access.

- **The following 5 reports from the Operations Inventory System (OIPC) are attached:**
  - ◆ **Cover Type by Age Class**
  - ◆ **Cover Type by Management Objective**
  - ◆ **Compartment Volume Summary**
  - ◆ **Proposed Treatments – No Limiting Factors**
  - ◆ **Proposed Treatments – With Limiting Factors**
  
- **The following information is displayed, where pertinent, on the attached compartment maps:**
  - ◆ **Base feature information, stand numbers, cover types**
  - ◆ **Proposed treatments**
  - ◆ **Proposed road access system**
  - ◆ **Suggested potential old growth**

# Cover Type & Treatment Map

Compartment 109  
 T40N, R28W, Sec. 31, 32  
 County: Dickinson  
 Unit: Crystal Falls  
 YOE: 2012  
 Acres: 1,124 GIS Calculated  
 Stand Examiner: Otto Jacob  
 Map Revised: 7/28/2010  
 Map Phase: Pre-Review

Stand #  
 (4120) - A7  
 Level 3 OI  
 Level 4 Code  
 Cover Type Code



**Legend**

- Miris Corners
- Paved Roads
- Poor Dirt Roads
- Closed Roads
- Trails
- ORV Trails
- Motorcycle Trails
- Intermittent Stream/Drain
- Stream
- Lakes and Rivers

**Treatments**

- Clearcut (w/Reserves, Patch/Strip)
- Selection (Group, Single Tree)

**Forest Stands**

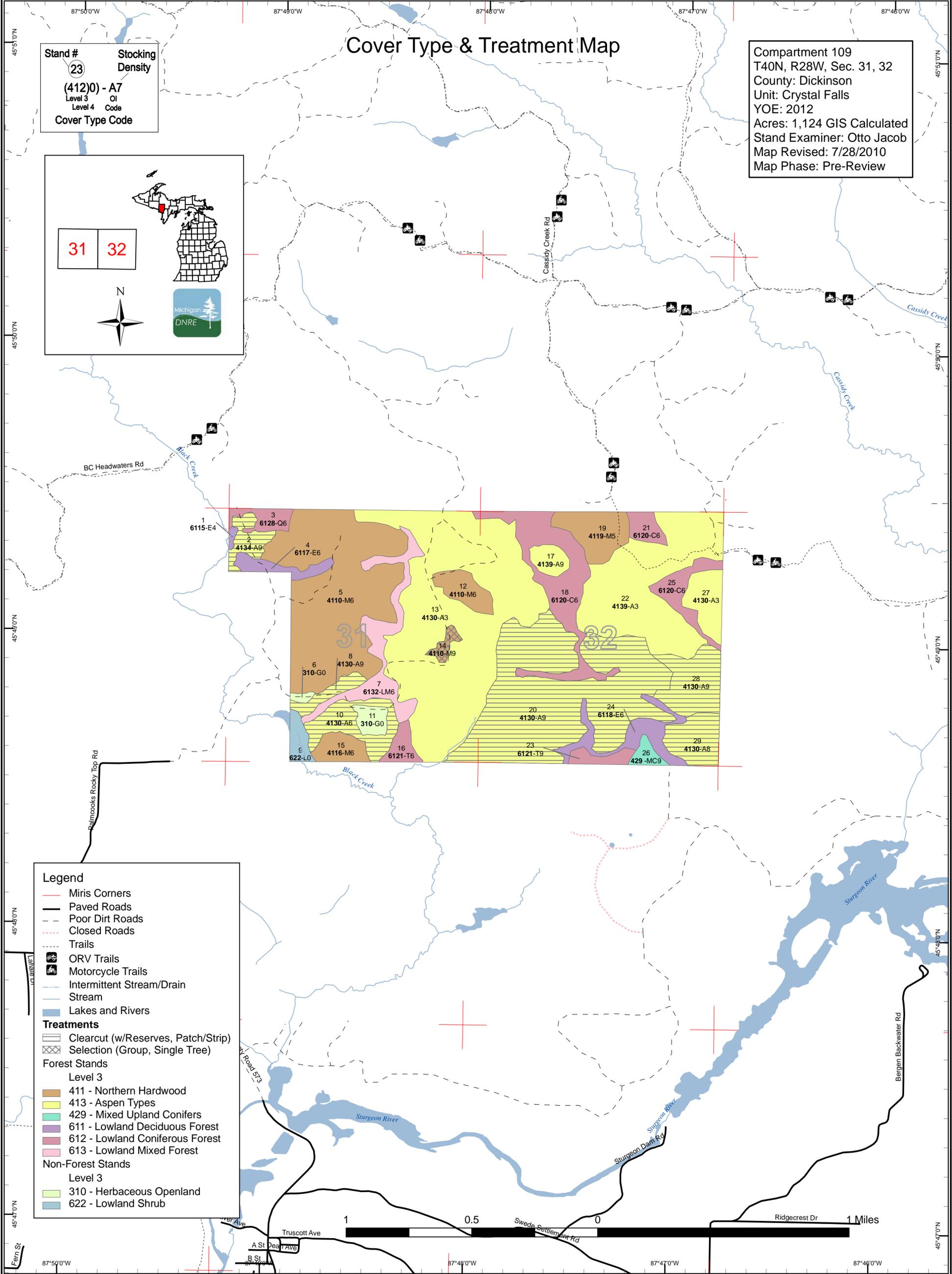
Level 3

- 411 - Northern Hardwood
- 413 - Aspen Types
- 429 - Mixed Upland Conifers
- 611 - Lowland Deciduous Forest
- 612 - Lowland Coniferous Forest
- 613 - Lowland Mixed Forest

**Non-Forest Stands**

Level 3

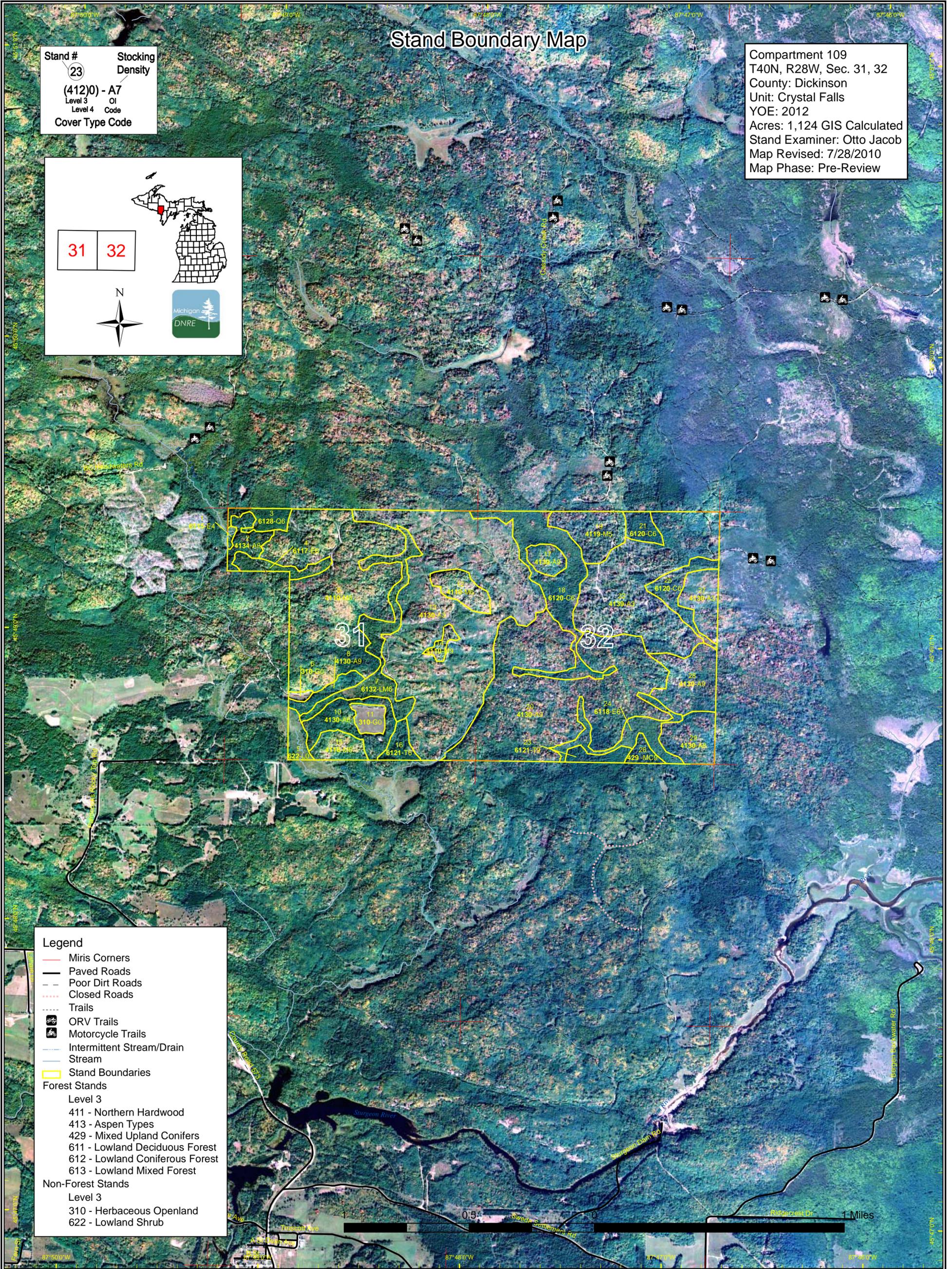
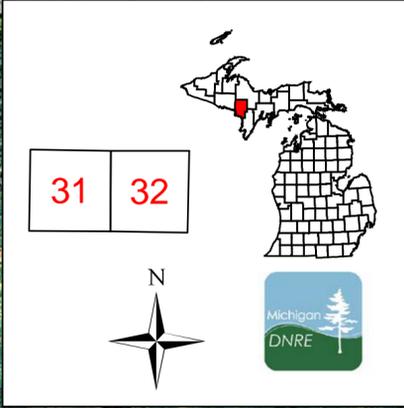
- 310 - Herbaceous Openland
- 622 - Lowland Shrub



# Stand Boundary Map

Stand #  
**23**  
 (4120) - A7  
 Level 3 OI  
 Level 4 Code  
 Cover Type Code

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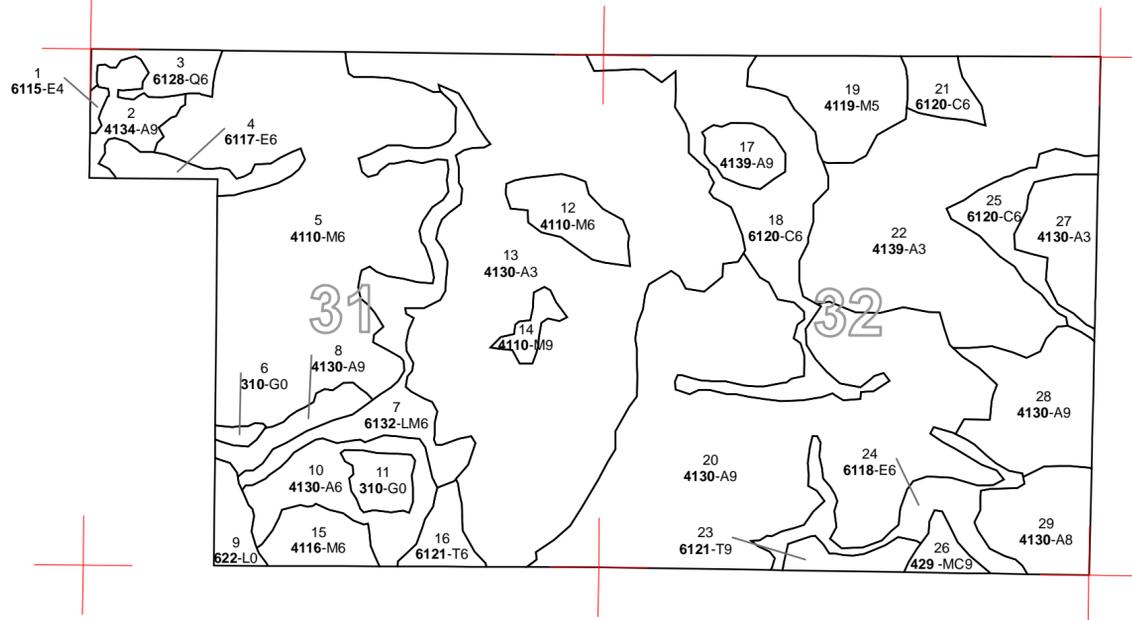
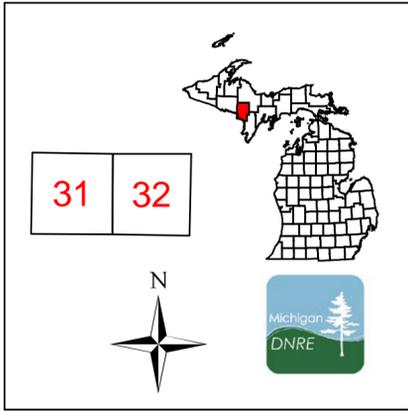
- Legend**
- Miris Corners
  - Paved Roads
  - - - Poor Dirt Roads
  - Closed Roads
  - Trails
  - ORV Trails
  - Motorcycle Trails
  - Intermittent Stream/Drain
  - Stream
  - Stand Boundaries
- Forest Stands**
- Level 3
- 411 - Northern Hardwood
  - 413 - Aspen Types
  - 429 - Mixed Upland Conifers
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  - 613 - Lowland Mixed Forest
- Non-Forest Stands**
- Level 3
- 310 - Herbaceous Openland
  - 622 - Lowland Shrub

0.5 1 Miles

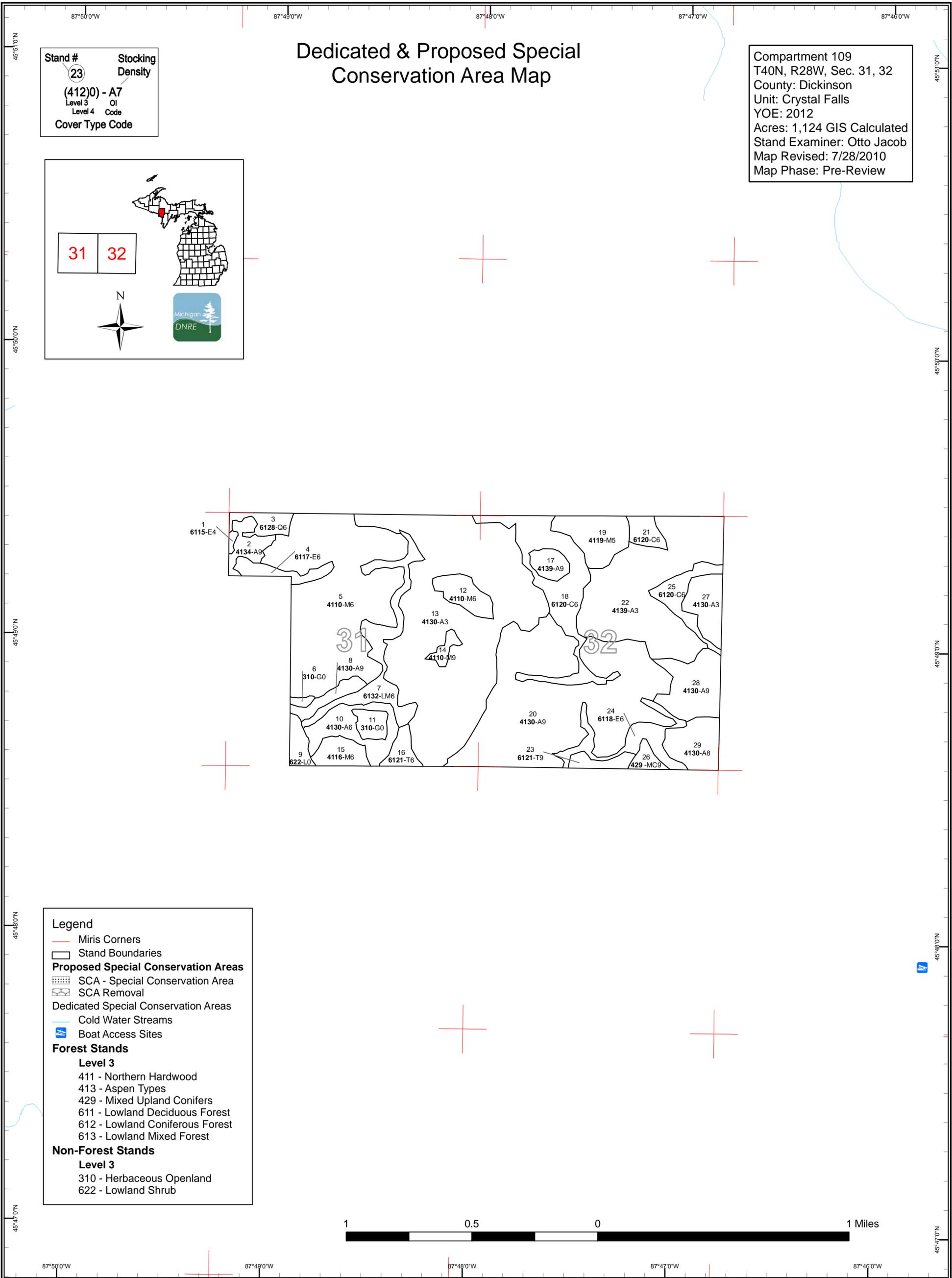
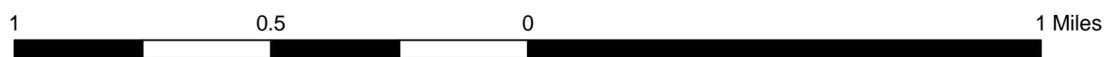
# Dedicated & Proposed Special Conservation Area Map

Stand #  
**(4120) - A7**  
 Level 3 OI  
 Level 4 Code  
 Cover Type Code

Compartment 109  
 T40N, R28W, Sec. 31, 32  
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 YOE: 2012  
 Acres: 1,124 GIS Calculated  
 Stand Examiner: Otto Jacob  
 Map Revised: 7/28/2010  
 Map Phase: Pre-Review



- Legend**
- Miris Corners
  - Stand Boundaries
  - Proposed Special Conservation Areas**
  - ▨ SCA - Special Conservation Area
  - ▩ SCA Removal
  - Dedicated Special Conservation Areas**
  - Cold Water Streams
  - ⚓ Boat Access Sites
  - Forest Stands**
  - Level 3**
  - 411 - Northern Hardwood
  - 413 - Aspen Types
  - 429 - Mixed Upland Conifers
  - 611 - Lowland Deciduous Forest
  - 612 - Lowland Coniferous Forest
  - 613 - Lowland Mixed Forest
  - Non-Forest Stands**
  - Level 3**
  - 310 - Herbaceous Openland
  - 622 - Lowland Shrub



**Table 1 – Total Acres by Cover Type and Age Class**



|                      | Age Class    |          |            |          |          |          |          |            |           |            |            |           |          |          | Total      |             |
|----------------------|--------------|----------|------------|----------|----------|----------|----------|------------|-----------|------------|------------|-----------|----------|----------|------------|-------------|
|                      | Non-Forested | 1-9      | 10-19      | 20-29    | 30-39    | 40-49    | 50-59    | 60-69      | 70-79     | 80-89      | 90-99      | 100-109   | 110-119  | 120 +    |            | Uneven Age  |
| Aspen                | 0            | 0        | 255        | 0        | 0        | 0        | 0        | 0          | 13        | 302        | 0          | 0         | 0        | 0        | 118        | 688         |
| Cedar                | 0            | 0        | 0          | 0        | 0        | 0        | 0        | 0          | 0         | 0          | 82         | 0         | 0        | 0        | 0          | 82          |
| Herbaceous Openland  | 11           | 0        | 0          | 0        | 0        | 0        | 0        | 0          | 0         | 0          | 0          | 0         | 0        | 0        | 0          | 11          |
| Lowland Conifers     | 0            | 0        | 0          | 0        | 0        | 0        | 0        | 0          | 0         | 0          | 0          | 10        | 0        | 0        | 0          | 10          |
| Lowland Deciduous    | 0            | 0        | 0          | 0        | 0        | 0        | 1        | 0          | 0         | 0          | 0          | 0         | 0        | 0        | 35         | 36          |
| Lowland Mixed Forest | 0            | 0        | 0          | 0        | 0        | 0        | 0        | 0          | 0         | 0          | 38         | 0         | 0        | 0        | 0          | 38          |
| Lowland Shrub        | 9            | 0        | 0          | 0        | 0        | 0        | 0        | 0          | 0         | 0          | 0          | 0         | 0        | 0        | 0          | 9           |
| Northern Hardwood    | 0            | 0        | 0          | 0        | 0        | 0        | 0        | 166        | 0         | 15         | 18         | 0         | 0        | 0        | 27         | 227         |
| Tamarack             | 0            | 0        | 0          | 0        | 0        | 0        | 0        | 0          | 0         | 0          | 17         | 0         | 0        | 0        | 0          | 17          |
| Upland Conifers      | 0            | 0        | 0          | 0        | 0        | 0        | 0        | 0          | 0         | 0          | 0          | 0         | 0        | 0        | 6          | 6           |
| <b>Total</b>         | <b>19</b>    | <b>0</b> | <b>255</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>168</b> | <b>13</b> | <b>317</b> | <b>155</b> | <b>10</b> | <b>0</b> | <b>0</b> | <b>186</b> | <b>1124</b> |



## Table 2 – Proposed Treatment Summaries

**Crystal Falls Mgt. Unit**  
**Year of Entry 2012**

**Compartment 109**  
**Total Compartment Acres: 1124**

### Acres by Treatment Type

|                          |                         |                   |                     |           |
|--------------------------|-------------------------|-------------------|---------------------|-----------|
| Commercial Harvest - 310 | Site Prep - 0           | Tree Planting - 0 | Prescribed Burn - 0 | Other - 0 |
| Habitat Cut - 0          | Opening Maintenance - 0 | Tree Seeding - 0  | Pesticide - 0       |           |

### Cover Type by Harvest Method

|                          | <i>Clearcut</i> | <i>Selection</i> | <i>Seed Tree</i> | <i>Shelterwood</i> | <i>Thinning</i> | <i>Other - Specify</i> | <i>Total Acres</i> |
|--------------------------|-----------------|------------------|------------------|--------------------|-----------------|------------------------|--------------------|
| <b>Aspen</b>             | 305             | 0                | 0                | 0                  | 0               | 0                      | <b>305</b>         |
| <b>Northern Hardwood</b> | 0               | 5                | 0                | 0                  | 0               | 0                      | <b>5</b>           |
| <b>Total</b>             | <b>305</b>      | <b>5</b>         | <b>0</b>         | <b>0</b>           | <b>0</b>        | <b>0</b>               | <b>310</b>         |



| S<br>t<br>a<br>n<br>d | Treatment<br>Name | Acres | Stage1<br>CoverType         | Size<br>Density  | Stand<br>Age | Treatment<br>Type | Treatment<br>Method       | Cover Type<br>Objective | Approval<br>Status       |
|-----------------------|-------------------|-------|-----------------------------|------------------|--------------|-------------------|---------------------------|-------------------------|--------------------------|
| 2                     | 12109002-Cut      | 12.9  | 4134 - Aspen,<br>Spruce/Fir | High Density Log | 70           | Harvest           | Clearcut with<br>Reserves | Aspen, Spruce/Fir       | Cmpt. Review<br>Proposal |

Prescription Clearcut all tree except reserve balsam fir under 6 inches and reserve oak,pine, hemlock and cedar if found.

Specs:

Other Adjacent landowner granted likely access permission.

Comments:

Next Check for regen. success.

Steps:

|   |              |     |              |                  |    |         |                           |       |                          |
|---|--------------|-----|--------------|------------------|----|---------|---------------------------|-------|--------------------------|
| 8 | 12109008-Cut | 9.7 | 4130 - Aspen | High Density Log | 80 | Harvest | Clearcut with<br>Reserves | Aspen | Cmpt. Review<br>Proposal |
|---|--------------|-----|--------------|------------------|----|---------|---------------------------|-------|--------------------------|

Prescription Clearcut all species except reserve Balsam under 6 inches and reserve Pine , Hemlock, Oak and Cedar, if found.

Specs:

Other

Comments:

Next Check regen.

Steps:

|    |              |      |              |                   |    |         |                           |       |                          |
|----|--------------|------|--------------|-------------------|----|---------|---------------------------|-------|--------------------------|
| 10 | 12109010-Cut | 26.5 | 4130 - Aspen | High Density Pole | 80 | Harvest | Clearcut with<br>Reserves | Aspen | Cmpt. Review<br>Proposal |
|----|--------------|------|--------------|-------------------|----|---------|---------------------------|-------|--------------------------|

Prescription Clearcut all trees except Pines, Oak, Hemlock and Cedar if found.

Specs:

Other

Comments:

Next Check for regen.

Steps:

|    |              |     |                                   |                  |    |         |                       |                            |                          |
|----|--------------|-----|-----------------------------------|------------------|----|---------|-----------------------|----------------------------|--------------------------|
| 14 | 12109014-Cut | 4.9 | 4110 - Sugar Maple<br>Association | High Density Log | 93 | Harvest | Single Tree Selection | Sugar Maple<br>Association | Cmpt. Review<br>Proposal |
|----|--------------|-----|-----------------------------------|------------------|----|---------|-----------------------|----------------------------|--------------------------|

Prescription Thin to a BA of 80, favoring White pine and white pine regen.

Specs:

Other

Comments:

Next Check regen.

Steps:

|    |              |       |              |                  |    |         |                           |                      |                          |
|----|--------------|-------|--------------|------------------|----|---------|---------------------------|----------------------|--------------------------|
| 20 | 12109020-Cut | 198.1 | 4130 - Aspen | High Density Log | 83 | Harvest | Clearcut with<br>Reserves | Aspen, Mixed Conifer | Cmpt. Review<br>Proposal |
|----|--------------|-------|--------------|------------------|----|---------|---------------------------|----------------------|--------------------------|

Prescription Clearcut with reserves. Save Pine,Cedar,Black ash, Hemlock and Oak. Leave some hardwood patches and line out largest wet areas. Aspen

Specs: may be removed from residual hardwood patches.

Other

Comments: This is a rough, rocky site. Some timber may be left in inaccessible areas.

Next Monitor regeneration success at next treatment period.

Steps:

**Table 3 -- Treatments Prescribed  
with No Limiting Factor**

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|    | Treatment Name | Acres | Stage1 CoverType | Size Density     | Stand Age | Treatment Type | Treatment Method       | Cover Type Objective | Approval Status       |
|----|----------------|-------|------------------|------------------|-----------|----------------|------------------------|----------------------|-----------------------|
| 28 | 12109028-Cut   | 34.2  | 4130 - Aspen     | High Density Log | 80        | Harvest        | Clearcut with Reserves | Aspen, Spruce/Fir    | Cmpt. Review Proposal |

Prescription Clearcut, reserving Oak,Pine, Cedar, Hemlock and Black ash.Save clumps of small conifers. Line out major wet areas.

Specs:

Other

Comments:

Next Monitor regeneration success at the next treatment period.

Steps:

|    |              |      |              |                    |    |         |                        |                      |                       |
|----|--------------|------|--------------|--------------------|----|---------|------------------------|----------------------|-----------------------|
| 29 | 12109029-Cut | 23.9 | 4130 - Aspen | Medium Density Log | 80 | Harvest | Clearcut with Reserves | Aspen, Mixed Conifer | Cmpt. Review Proposal |
|----|--------------|------|--------------|--------------------|----|---------|------------------------|----------------------|-----------------------|

Prescription Clearcut, reserving Oak,Cedar, Pines, Black ash, Hemlock and small conifer clumps.

Specs:

Other

This stand is around a big rock outcrop. Some timber may be left in inaccessible areas.

Comments:

Next Monitor regeneration during next treatment period.

Steps:

**Total Treatment  
Acreage Proposed: 310.1**

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| Treatment Name | Acres | Stage1 CoverType | Size Density | Stand Age | Treatment Type | Treatment Method | Cover Type Objective | Approval Status |
|----------------|-------|------------------|--------------|-----------|----------------|------------------|----------------------|-----------------|
|----------------|-------|------------------|--------------|-----------|----------------|------------------|----------------------|-----------------|

#Error

Prescription  
Specs:

Other  
Comment:

Next  
Steps:

Limiting Factor and No  
Treatment Reason

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**Total Treatment**  
**Acreage Proposed: 0**

| Stand | Crystal Falls Mgt. Unit                    |                      | 5 – Forested Stands |            |          | Compartment: 109    | General Comments:   |
|-------|--|----------------------|---------------------|------------|----------|---------------------|---|
|       | Level 4 Cover Type                         | Size Density         | Acres               | Stand Age  | BA Range | Year of Entry: 2012 |   |
| 1     | 6115 - Lowland Ash                         | Low Density Pole     | 1.4                 | 60         |          |                     |   |
| 2     | 4134 - Aspen, Spruce/Fir                   | High Density Log     | 12.9                | 70         | 111-140  |                     | Portions of the fir have fallen out of the stand.   |
| 3     | 6128 - Lowland Coniferous, Mixed Deciduous | High Density Pole    | 10.3                | 100        |          |                     | Short, small diameter trees with thick patches of tag alder scattered in.   |
| 4     | 6117 - Lowland Deciduous, Mixed Coniferous | High Density Pole    | 11.0                | Uneven Age |          |                     |   |
| 5     | 4110 - Sugar Maple Association             | High Density Pole    | 166.3               | 63         | 81-110   |                     | Small, short hardwood on high rock site with valleys to the East. Some areas have had removals of aspen and birch, but the character of the stand is similar enough to keep it as one stand.  |
| 7     | 6132 - Mixed Lowland Forest with Cedar     | High Density Pole    | 38.5                | 90         |          |                     |   |
| 8     | 4130 - Aspen                               | High Density Log     | 9.7                 | 80         | 81-110   |                     |   |
| 10    | 4130 - Aspen                               | High Density Pole    | 26.5                | 80         |          |                     |   |
| 12    | 4110 - Sugar Maple Association             | High Density Pole    | 15.4                | 80         | 81-110   |                     | Aspen was removed during the last year of entry. There are some thick patches, but it should probably be thinned in the next entry period. Found a few Beech trees and some White Pine.   |
| 13    | 4130 - Aspen                               | High Density Sapling | 234.7               | 11         |          |                     | Many rock knobs have a variety of species left from past clearcut.  |
| 14    | 4110 - Sugar Maple Association             | High Density Log     | 4.9                 | 93         |          |                     | Aspen was removed in last cut about 10 years ago. Nice hardwood , too thick in spots. Trace of White pine and Oak. A thin would help White Pine to get established.   |
| 15    | 4116 - Mixed N. Hardwood - Aspen           | High Density Pole    | 13.5                | 93         |          |                     | Thin soils with stunted hardwood and BT aspen. Almost M3.   |
| 16    | 6121 - Tamarack                            | High Density Pole    | 8.9                 | 93         |          |                     |   |
| 17    | 4139 - Aspen, Mixed Deciduous              | High Density Log     | 9.7                 | 80         |          |                     |   |
| 18    | 6120 - Lowland Cedar                       | High Density Pole    | 55.3                | 90         |          |                     | This stand has an unusual mix of drier patches mixed with the primarily cedar and ash lowland. The cedar appears to be growing in higher site conditions and is mostly very vigorous. Part of stand 17 is similar, but drier still. |
| 19    | 4119 - Mixed Northern Hardwoods            | Medium Density Pole  | 27.2                | Uneven Age |          |                     | This stand is quite varied. The aspen was cut out about 5 yrs ago and now it has patches of cedar and hardwoods on an upland site.  |



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Crystal Falls Mgt. Unit

## 5 – Forested Stands

Compartment: 109

Inventory Method: IFMAP

Year of Entry: 2012



|    | Level 4<br>Cover Type                  | Size<br>Density         | Acres | Stand<br>Age | BA<br>Range | General<br>Comments:   |
|----|--|-------------------------|-------|--------------|-------------|--|
| 20 | 4130 - Aspen                           | High Density<br>Log     | 198.1 | 83           |             | Most of the Birch has died. It was about 30% of the stand. Portions of the stand are harvestable, but there is such rough country and drainages all over, that I think this should be left to become hardwoods as much of it is doing. |
| 21 | 6120 - Lowland Cedar                   | High Density<br>Pole    | 9.4   | 93           |             |  |
| 22 | 4139 - Aspen, Mixed<br>Deciduous       | High Density<br>Sapling | 117.8 | Uneven Age   |             |  |
| 23 | 6121 - Tamarack                        | High Density<br>Log     | 7.7   | 93           |             |  |
| 24 | 6118 - Lowland<br>Deciduous with Cedar | High Density<br>Pole    | 23.8  | Uneven Age   |             |  |
| 25 | 6120 - Lowland Cedar                   | High Density<br>Pole    | 17.4  | 93           |             |  |
| 26 | 429 - Mixed Upland<br>Conifers         | High Density<br>Log     | 6.1   | Uneven Age   |             | Nice White pine regen.   |
| 27 | 4130 - Aspen                           | High Density<br>Sapling | 20.4  | 18           |             |  |
| 28 | 4130 - Aspen                           | High Density<br>Log     | 34.2  | 80           | 51-80       | Old aspen on 30 to 50 foot rock bluffs. Surrounded with drainages and v-notch valleys.   |
| 29 | 4130 - Aspen                           | Medium<br>Density Log   | 23.9  | 80           |             | Most of stand is on a 100 ft high rock. Past droughts have killed half of the conifers. Areas surrounding the rock have more aspen and high conifer mortality, but the stand is inoperable overall. Found old Pine stumps.             |



| Stand | Cover Type                | Acres | Gen Cmts: |
|-------|---------------------------|-------|-----------|
| 6     | 310 - Herbaceous Openland | 2.0   |           |
| 9     | 622 - Lowland Shrub       | 8.7   |           |
| 11    | 310 - Herbaceous Openland | 8.7   |           |



### 7 – 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.

Inventory Method: IFMAP

| Stand | SCA Type | SCA Name | Acres | Comments |
|-------|----------|----------|-------|----------|
|       |          |          |       |          |



### 8 – DEDICATED CONSERVATION AREA DETAILS

\* This is a list of Dedicated Biodiversity Areas for this compartment along with a 1/4 mile buffer surrounding the compartment. Refer to Dedicated Conservation Area Map for areas that the below listed Conservation Areas are located.

ERA = Ecological Reference Area  
HCVA = High Conservation Value Area  
SCA = Special Conservation Area

| <b>Conservation Area</b> | <b>Type</b> | <b>Description</b> |
|--------------------------|-------------|--------------------|
|--------------------------|-------------|--------------------|

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