



# Compartment Review Presentation

## Roscommon Forest Management Unit

Compartment 156

Entry Year 2015

Acreage: 1,823

County Roscommon

Management Area: Upper Muskegon

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**Revision Date:** 05/22/2013

**Stand Examiner:** Dale Ekdom

**Legal Description:**

T21N R04W Sections 31, 32, and 33

**Identified Planning Goals:**

Compartment is in the Upper Muskegon Mgt. Area. Broad management goals are to maintain current age and species diversity in a range of early and late succession ecosystems.

**Soil and topography:**

Terrain is basically flat to gently rolling with some steep banks along the Muskegon River and Town Line Creek. Soils are mainly Rifle peat in the lowland areas and Grayling and Roselawn sands in the upland areas.

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

Compartment is a solid block of state land except for a 40 acre private parcel in Section 31 and is mostly surrounded by state land except for a few private parcels on the southwest edge of the compartment. The private parcels within and adjacent to the compartment all have seasonal cabins and are used primarily for hunting.

**Unique Natural Features:**

No specific MNFI concerns. There are many ancient meanders and oxbows of the Muskegon River in Section 31. Numerous stands in Sections 31 and 32 are habitat corridor/area SCA's.

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

Historic farmstead recorded in this compartment.

**Special Management Designations or Considerations:**

Habitat corridor/area SCA's along the Muskegon River and Town Line Creek.

**Watershed and Fisheries Considerations:**

The Muskegon River and Town Line Creek flow through Section 31,

**Wildlife Habitat Considerations:**

Maintain ecosystem diversity in the compartment via habitat manipulation to benefit game species such as deer, grouse, rabbits, turkeys, as well as other non-game species.

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

Surface sediments consist of glacial outwash sand and gravel and postglacial alluvium. The glacial drift thickness varies between 400 and 600 feet. Beneath the glacial drift are the Jurassic Ionia Formation and the Pennsylvanian Grand River and Saginaw Formations. The Saginaw is quarried for clay elsewhere in the State. The nearest gravel pit is located one mile just to the east, but potential may be limited. Headquarters Field is located four miles to the east. The field has produced over 11.3 million BO and 4.2 Bcf gas primarily from the Devonian Richfield Formation. It is in secondary recovery operations currently. The entire compartment is leased for oil and gas development.

**Vehicle Access:**

Access to most of the compartment is good via seasonal county roads and state forest two-tracks except the eastern portion of Section 32 and the western portion of Section 33. US 127 bisects Section 33 and there is a culvert out on Hose Road/Mullett Road just south of the compartment in Clare County.

**Survey Needs:**

None necessary at this time.

**Recreational Facilities and Opportunities:**

Recreation opportunities include hunting and fishing as well as dispersed camping associated with these activities. Compartment includes portions of the Leota ORV trail and route, and Leota snowmobile trail and there is an

ORV/snowmobile trailhead just southwest of the compartment in Clare County.

**Fire Protection:**

Fire protection in this compartment should not be a problem due to its combination of fuels and terrain. However, vehicle access and travel time to parts of the compartment are problematic.

**Additional Compartment Information:**

Some evidence of illegal ORV activity as well as illegal firewood cutting was found scattered within this compartment due to the proximity to the village of Leota in Clare County and the many official ORV and snowmobile trails in the area.

**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**

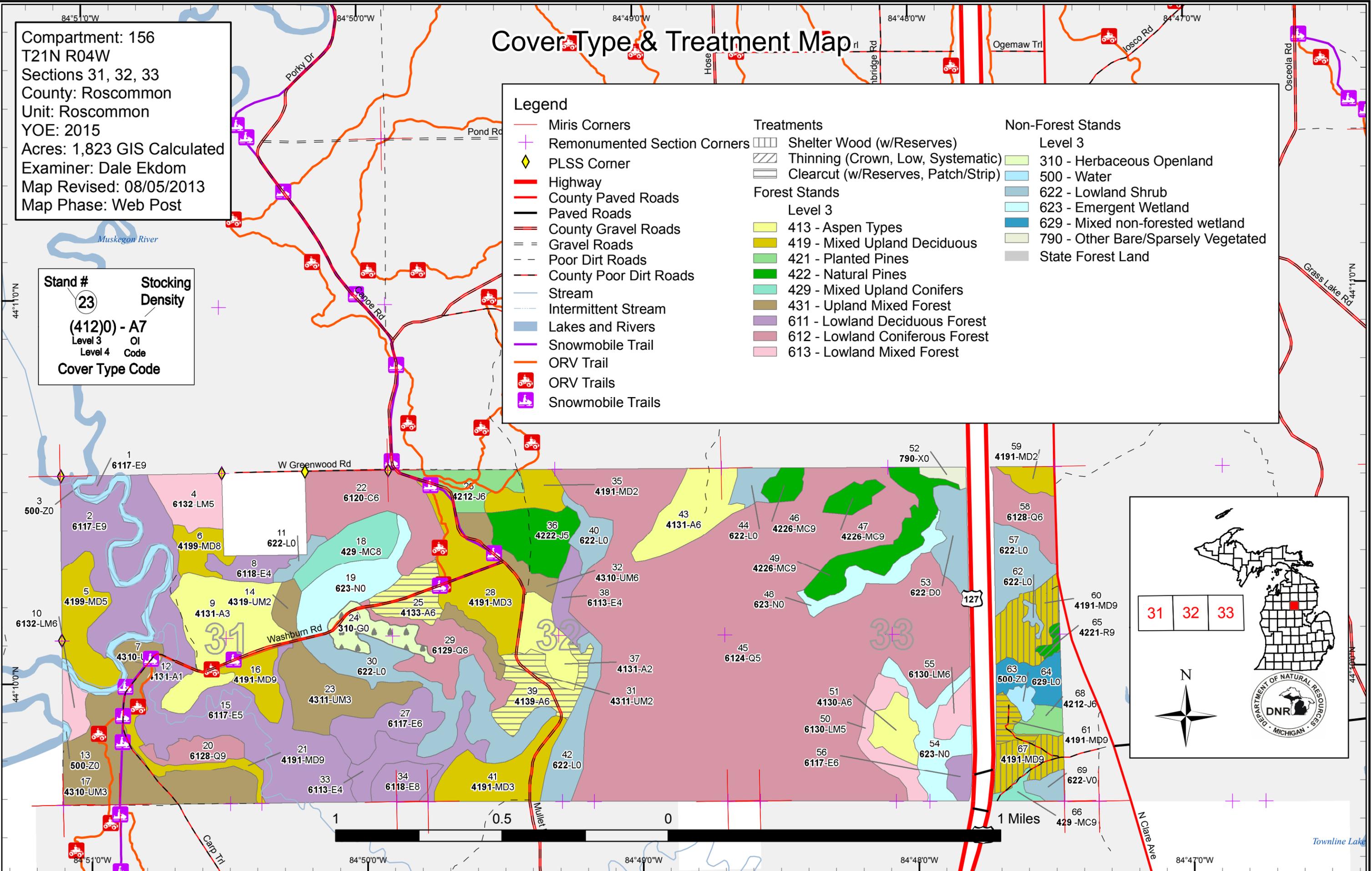
# CoverType & Treatment Map

Compartment: 156  
 T21N R04W  
 Sections 31, 32, 33  
 County: Roscommon  
 Unit: Roscommon  
 YOE: 2015  
 Acres: 1,823 GIS Calculated  
 Examiner: Dale Ekdorn  
 Map Revised: 08/05/2013  
 Map Phase: Web Post

## Legend

- |   |   |   |
|---|---|---|
| <ul style="list-style-type: none"> <li>— Miris Corners</li> <li>+ Remonumented Section Corners</li> <li>◆ PLSS Corner</li> <li>— Highway</li> <li>— County Paved Roads</li> <li>— Paved Roads</li> <li>— County Gravel Roads</li> <li>— Gravel Roads</li> <li>— Poor Dirt Roads</li> <li>— County Poor Dirt Roads</li> <li>— Stream</li> <li>— Intermittent Stream</li> <li>— Lakes and Rivers</li> <li>— Snowmobile Trail</li> <li>— ORV Trail</li> <li>ORV Trails</li> <li>Snowmobile Trails</li> </ul> | <h3>Treatments</h3> <ul style="list-style-type: none"> <li>▨ Shelter Wood (w/Reserves)</li> <li>▨ Thinning (Crown, Low, Systematic)</li> <li>▨ Clearcut (w/Reserves, Patch/Strip)</li> </ul> <h3>Forest Stands</h3> <p>Level 3</p> <ul style="list-style-type: none"> <li>413 - Aspen Types</li> <li>419 - Mixed Upland Deciduous</li> <li>421 - Planted Pines</li> <li>422 - Natural Pines</li> <li>429 - Mixed Upland Conifers</li> <li>431 - Upland Mixed Forest</li> <li>611 - Lowland Deciduous Forest</li> <li>612 - Lowland Coniferous Forest</li> <li>613 - Lowland Mixed Forest</li> </ul> | <h3>Non-Forest Stands</h3> <p>Level 3</p> <ul style="list-style-type: none"> <li>310 - Herbaceous Openland</li> <li>500 - Water</li> <li>622 - Lowland Shrub</li> <li>623 - Emergent Wetland</li> <li>629 - Mixed non-forested wetland</li> <li>790 - Other Bare/Sparsely Vegetated</li> <li>State Forest Land</li> </ul> |
|---|---|---|

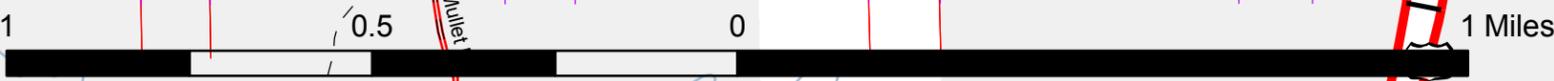
**Stand #**  
 23  
**Stocking Density**  
 (4120) - A7  
 Level 3 OI  
 Level 4 Code  
**Cover Type Code**



31

32

33



84°51'0"W    84°50'0"W    84°49'0"W    84°48'0"W    84°47'0"W

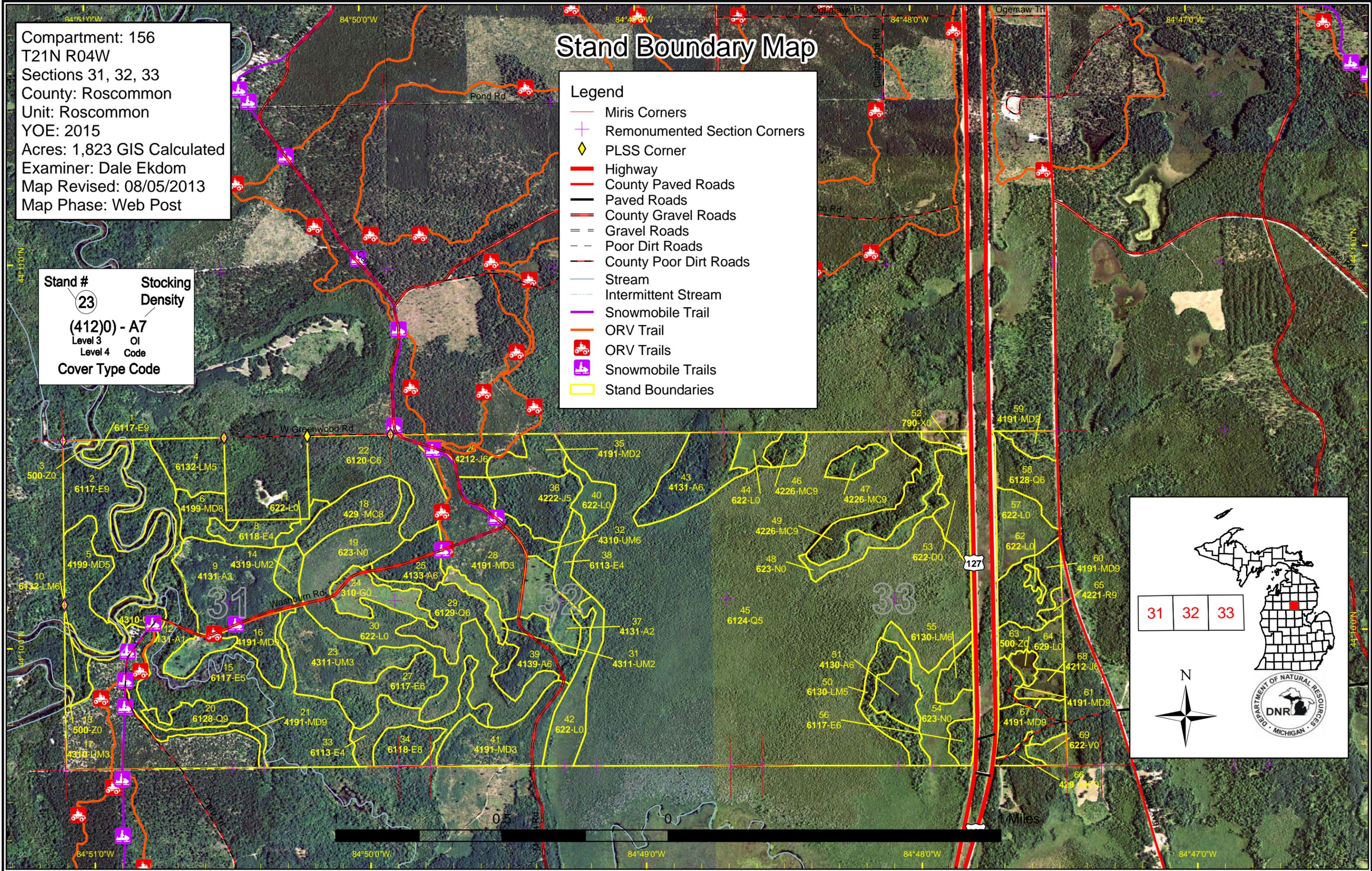
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 Map Revised: 08/05/2013  
 Map Phase: Web Post

# Stand Boundary Map

**Legend**

- Miris Corners
- Remonumented Section Corners
- PLSS Corner
- Highway
- County Paved Roads
- Paved Roads
- County Gravel Roads
- Gravel Roads
- Poor Dirt Roads
- County Poor Dirt Roads
- Stream
- Intermittent Stream
- Snowmobile Trail
- ORV Trail
- ORV Trails
- Snowmobile Trails
- Stand Boundaries

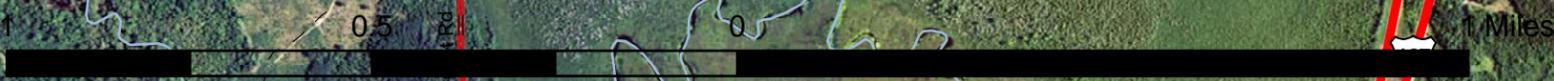
**Stand #**  
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 (4120) - A7  
 Level 3 OI  
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31 32 33

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DEPARTMENT OF NATURAL RESOURCES  
 DNR  
 MICHIGAN



Compartment: 156  
 T21N R04W  
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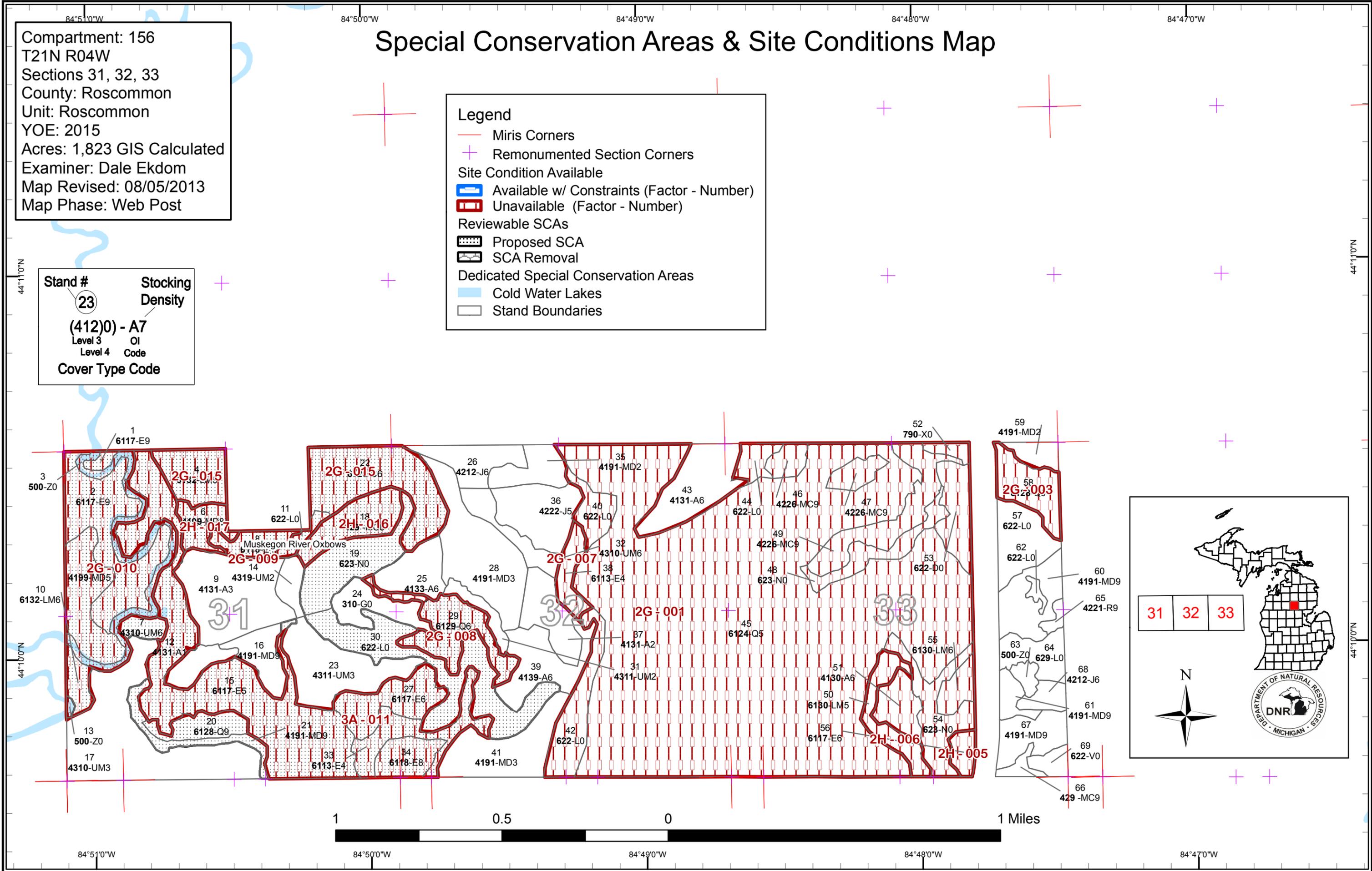
# Special Conservation Areas & Site Conditions Map

**Legend**

- Miris Corners
- Remonumented Section Corners
- Site Condition Available
  - Available w/ Constraints (Factor - Number)
  - Unavailable (Factor - Number)
- Reviewable SCAs
  - Proposed SCA
  - SCA Removal
- Dedicated Special Conservation Areas
  - Cold Water Lakes
  - Stand Boundaries

**Stand #** **Stocking Density**

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



An inset map of Michigan shows the location of sections 31, 32, and 33 in the western part of the state. A red square highlights the area. Below the map is a north arrow and the Michigan Department of Natural Resources (DNR) logo.

Report 1 – Total Acres by Cover Type and Age Class



|                         | Age Class  |            |          |          |           |          |           |          |            |           |          |          |          | Total      |             |
|-------------------------|------------|------------|----------|----------|-----------|----------|-----------|----------|------------|-----------|----------|----------|----------|------------|-------------|
|                         | 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 +    |            | Uneven Age  |
| Aspen                   | 27         | 45         | 0        | 0        | 59        | 0        | 25        | 0        | 0          | 0         | 0        | 0        | 0        | 0          | 157         |
| Bare/Sparsely Vegetated | 4          | 0          | 0        | 0        | 0         | 0        | 0         | 0        | 0          | 0         | 0        | 0        | 0        | 0          | 4           |
| Bog                     | 5          | 0          | 0        | 0        | 0         | 0        | 0         | 0        | 0          | 0         | 0        | 0        | 0        | 0          | 5           |
| Cedar                   | 0          | 0          | 0        | 0        | 0         | 0        | 0         | 0        | 46         | 0         | 0        | 0        | 0        | 0          | 46          |
| Herbaceous Openland     | 16         | 0          | 0        | 0        | 0         | 0        | 0         | 0        | 0          | 0         | 0        | 0        | 0        | 0          | 16          |
| Jack Pine               | 0          | 42         | 0        | 0        | 6         | 0        | 0         | 0        | 0          | 0         | 0        | 0        | 0        | 0          | 48          |
| Lowland Conifers        | 0          | 0          | 0        | 0        | 0         | 0        | 0         | 0        | 19         | 27        | 0        | 0        | 0        | 569        | 616         |
| Lowland Deciduous       | 0          | 0          | 0        | 0        | 0         | 0        | 0         | 0        | 171        | 23        | 0        | 0        | 0        | 48         | 243         |
| Lowland Mixed Forest    | 0          | 0          | 0        | 0        | 8         | 0        | 0         | 7        | 15         | 0         | 0        | 0        | 0        | 19         | 50          |
| Lowland Shrub           | 130        | 0          | 0        | 0        | 0         | 0        | 0         | 0        | 0          | 0         | 0        | 0        | 0        | 0          | 130         |
| Marsh                   | 66         | 0          | 0        | 0        | 0         | 0        | 0         | 0        | 0          | 0         | 0        | 0        | 0        | 0          | 66          |
| Mixed Upland Deciduous  | 7          | 88         | 0        | 0        | 10        | 0        | 0         | 0        | 39         | 20        | 0        | 0        | 0        | 36         | 199         |
| Natural Mixed Pines     | 0          | 0          | 0        | 0        | 0         | 0        | 0         | 0        | 0          | 0         | 7        | 0        | 0        | 34         | 41          |
| Red Pine                | 0          | 0          | 0        | 0        | 0         | 0        | 0         | 0        | 0          | 2         | 0        | 0        | 0        | 0          | 2           |
| Treed Bog               | 17         | 0          | 0        | 0        | 0         | 0        | 0         | 0        | 0          | 0         | 0        | 0        | 0        | 0          | 17          |
| Upland Conifers         | 0          | 0          | 0        | 0        | 0         | 0        | 0         | 0        | 0          | 0         | 0        | 0        | 0        | 24         | 24          |
| Upland Mixed Forest     | 6          | 110        | 0        | 0        | 6         | 0        | 0         | 0        | 0          | 0         | 0        | 0        | 0        | 12         | 134         |
| Water                   | 25         | 0          | 0        | 0        | 0         | 0        | 0         | 0        | 0          | 0         | 0        | 0        | 0        | 0          | 25          |
| <b>Total</b>            | <b>303</b> | <b>285</b> | <b>0</b> | <b>0</b> | <b>89</b> | <b>0</b> | <b>25</b> | <b>7</b> | <b>290</b> | <b>73</b> | <b>7</b> | <b>0</b> | <b>0</b> | <b>743</b> | <b>1823</b> |



## Report 2 – Proposed Treatment Summaries

Roscommon Mgt. Unit  
Year of Entry 2015

Compartment 156  
Total Compartment Acres: 1,823

### Acres by Treatment Type

|                         |                         |           |
|-------------------------|-------------------------|-----------|
| Commercial Harvest - 86 | Tree Planting - 0       | Other - 0 |
| Habitat Cut - 0         | Opening Maintenance - 0 |           |

### Cover Type by Harvest Method

|                        | Clearcut  | Selection | Seed Tree | Shelterwood | Thinning | Other - Specify | Total Acres |
|------------------------|-----------|-----------|-----------|-------------|----------|-----------------|-------------|
| Aspen Types            | 41        | 0         | 0         | 0           | 0        | 0               | 41          |
| Mixed Upland Deciduous | 6         | 0         | 0         | 36          | 0        | 0               | 43          |
| Natural Pines          | 0         | 0         | 0         | 0           | 2        | 0               | 2           |
| <b>Total</b>           | <b>47</b> | <b>0</b>  | <b>0</b>  | <b>36</b>   | <b>2</b> | <b>0</b>        | <b>86</b>   |



| Stand   | Treatment Name | Acres | CoverType  | Size Density            | Stand Age | BA Range | Treatment Type | Treatment Method              | Cover Type Objective                             | Approval Status          |
|---|----------------|-------|--|-------------------------|-----------|----------|----------------|-------------------------------|--|--------------------------|
| 25  | 71156025-Cut   | 16.4  | 4133 - Aspen,<br>Mixed Pine                      | High<br>Density<br>Pole | 42        | 81-110   | Harvest        | Clearcut with<br>Reserves     | 4139 - Aspen,<br>Mixed Deciduous                 | Cmpt. Review<br>Proposal |
| <p><u>Prescription</u> final harvest to regenerate aspen and promote oak regeneration, cut aspen, red maple, jack pine, balsam fir, black spruce, and unmarked oak,<br/> <u>Specs:</u> mark 10-30 SF of well crowned oak especially WO to leave as mast/seed trees in areas where stand is heavy to oak and/or jack pine, mark oak to leave in clumps as much as possible, leave all R/W pine for diversity</p> <p><u>Other</u> leave buffer on steep banks for retention, mark more oaks around the camping area in the west end of the stand, any amount of regeneration of<br/> <u>Comments:</u> any type is acceptable, sparser areas will act as mini barrens/savannahs, use appropriate sale specs to protect the snowmobile and ORV trails and warn riders of logging operations</p> <p><u>Next</u><br/> <u>Steps:</u></p> <p><u>Proposed</u><br/> <u>Start Date:</u> 10/01/2014</p> |                |       |  |                         |           |          |                |                               |  |                          |
| 39  | 71156039-Cut   | 24.8  | 4139 - Aspen,<br>Mixed Deciduous                 | High<br>Density<br>Pole | 62        |          | Harvest        | Clearcut with<br>Reserves     | 4130 - Aspen                                     | Cmpt. Review<br>Proposal |
| <p><u>Prescription</u> final harvest and manage for aspen, mark a few oaks and R/W pine for mast and diversity<br/> <u>Specs:</u></p> <p><u>Other</u> leave NE arm and wet potholes for retention or cut thru potholes if dry enough to create wildlife habitat per request of WLD, aspen should<br/> <u>Comments:</u> regenerate w/o a problem, any combination of HWs and pine to a fully stocked stand is acceptable</p> <p><u>Next</u><br/> <u>Steps:</u></p> <p><u>Proposed</u><br/> <u>Start Date:</u> 10/01/2014</p>   |                |       |  |                         |           |          |                |                               |  |                          |
| 60  | 71156060-Cut   | 20.5  | 4191 - Mixed<br>Upland Deciduous<br>with Conifer | High<br>Density<br>Log  | 82        | 81-110   | Harvest        | Shelter Wood<br>with Reserves | 4191 - Mixed<br>Upland Deciduous<br>with Conifer | Cmpt. Review<br>Proposal |
| <p><u>Prescription</u> seed tree leaving 10-30 SF of oak (esp. WO) and all R/W pine as seed sources, extend cut to Old 27 to the east into 71157 and access off Old 27<br/> <u>Specs:</u></p> <p><u>Other</u> leave buffer on swamp/"L" types as needed AND paint out any wet potholes within stand for retention, any combination of HW's pine to a fully<br/> <u>Comments:</u> stocked stand is acceptable, trench/plant RP if large areas do not regenerate due to visual concerns on Old 27 and US127</p> <p><u>Next</u> regen check<br/> <u>Steps:</u></p> <p><u>Proposed</u><br/> <u>Start Date:</u> 10/01/2014</p>   |                |       |  |                         |           |          |                |                               |  |                          |
| 61  | 71156061-Cut   | 6.2   | 4191 - Mixed<br>Upland Deciduous<br>with Conifer | High<br>Density<br>Log  | 92        |          | Harvest        | Clearcut with<br>Reserves     | 4133 - Aspen,<br>Mixed Pine                      | Cmpt. Review<br>Proposal |
| <p><u>Prescription</u> final harvest and regenerate aspen, mark a few well-crowned oak and healthy R/W pine for mast, diversity, and visual along US-127,<br/> <u>Specs:</u></p> <p><u>Other</u> buffer pond to the NE and leave any other wet potholes out of the sale, dormant season cut due to the aged of the stand, any combination of<br/> <u>Comments:</u> HW's and pine to a fully stocked stand is acceptable, trench/plant JP if large areas do not regenerate to a fully stocked stand</p> <p><u>Next</u> regen check<br/> <u>Steps:</u></p> <p><u>Proposed</u><br/> <u>Start Date:</u> 10/01/2014</p>  |                |       |  |                         |           |          |                |                               |  |                          |

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| Treatment Name  | Acres | CoverType                | Size Density     | Stand Age | BA Range | Treatment Type | Treatment Method | Cover Type Objective                      | Approval Status       |
|-----------------|-------|--------------------------|------------------|-----------|----------|----------------|------------------|---|-----------------------|
| 65 71156065-Cut | 2.4   | 42210 - Natural Red Pine | High Density Log | 98        | 141-170  | Harvest        | Low Thinning     | 42211 - Natural Red Pine, Mixed Deciduous | Cmpt. Review Proposal |

Prescription thin from below to 90 SF residual and scarify to expose mineral soil

Specs:

Other mark a few well crowned oaks to leave as a hard mast option for wildlife and for diversity, no retention due to stand size and treatment type,

Comments: evaluate whole tree skidding option when the sale is set up

Next

Steps:

Proposed

Start Date: 10/01/2014

|                 |      |  |                  |    |         |         |                            |                  |                       |
|-----------------|------|--|------------------|----|---------|---------|----------------------------|------------------|-----------------------|
| 67 71156067-Cut | 15.9 | 4191 - Mixed Upland Deciduous with Conifer | High Density Log | 92 | 111-140 | Harvest | Shelter Wood with Reserves | 4122 - Oak, Pine | Cmpt. Review Proposal |
|-----------------|------|--|------------------|----|---------|---------|----------------------------|------------------|-----------------------|

Prescription shelterwood seed tree cut by cutting everything except R/W pine and marked oak, mark well crowned oak (esp. WO) to 10-30 SF residual

Specs:

Other retention will be buffers on any wet areas and possibly along the highway to the west and the WP stand to the south, stand should regenerate to

Comments: a mix of aspen, red maple, oak, and pine, any combination of HW's and pine to a fully stocked stand is acceptable

Next

regen check

Steps:

Proposed

Start Date: 10/01/2014

**Total Treatment  
Acreage Proposed: 86.1**

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

#Type!

Prescription  
Specs:

Other  
Comment:

Next  
Steps:

Proposed  
Start Date: #Type!

Limiting Factor

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

## Report 5 – Site Conditions

Roscommon Mgt. Unit

Compartment 156

Dale Ekdorn : Examiner

Year of Entry 2015

### Availability for Management

| Total<br>Acres | Acres     |               | Dominant Site Conditions | Dominant Site Conditions |     |     |    |     |
|----------------|-----------|---------------|--------------------------|--------------------------|-----|-----|----|-----|
|                | Available | Not Available |                          | Un                       | No  | 3A  | 2H | 2G  |
| 156            | 143       | 13            | Aspen                    |                          | 143 |     |    | 13  |
| 46             | 0         | 46            | Cedar                    |                          | 0   |     |    | 46  |
| 48             | 48        |               | Jack Pine                |                          | 48  |     |    |     |
| 615            | 12        | 603           | Lowland Conifers         |                          | 12  |     |    | 603 |
| 241            | 0         | 241           | Lowland Deciduous        | 0                        | 0   | 166 | 6  | 69  |
| 50             |           | 50            | Lowland Mixed Forest     |                          |     |     | 15 | 34  |
| 199            | 160       | 39            | Mixed Upland Deciduous   |                          | 160 |     | 12 | 27  |
| 41             |           | 41            | Natural Mixed Pines      |                          |     |     |    | 41  |
| 2              | 2         |               | Red Pine                 |                          | 2   |     |    |     |
| 24             | 4         | 21            | Upland Conifers          |                          | 4   |     | 21 |     |
| 134            | 134       | 0             | Upland Mixed Forest      |                          | 134 |     |    | 0   |
| 1,556          | 503       | 1,053         | Total Forested Acres     | 0                        | 503 | 166 | 53 | 833 |
|                | 32%       | 68%           | Relative Percent         |                          |     |     |    |     |

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

| Site No.         | Dominant Site Cond Availability | Dominant Site Condition                                       | Acres | Other Site Condition   | Other Site Condition | Other Site Condition | Other Site Condition |
|------------------|---------------------------------|---|-------|--|----------------------|----------------------|----------------------|
| 001              | Not Available                   | 2G: Too wet (sensitive soils, does not include access issues) | 718   | 2H: Blocked by physical obstacle (e.g. upland stand in a lowland area) |                      |                      |                      |
| <b>Comments:</b> |                                 |   |       |  |                      |                      |                      |
| 003              | Not Available                   | 2G: Too wet (sensitive soils, does not include access issues) | 19    |  |                      |                      |                      |
| <b>Comments:</b> |                                 |   |       |  |                      |                      |                      |

## Report 5 – Site Conditions

Roscommon Mgt. Unit

Compartment 156

Dale Ekdorn : Examiner

Year of Entry 2015

|   |               |  |     |  |
|---|---------------|--|-----|--|
| 005   | Not Available | 2H: Blocked by physical obstacle (e.g. upland stand in a lowland area) | 6   |  |
| <b>Comments:</b>                                    |               |  |     |  |
| 006   | Not Available | 2H: Blocked by physical obstacle (e.g. upland stand in a lowland area) | 16  |  |
| <b>Comments:</b>                                    |               |  |     |  |
| 007   | Not Available | 2G: Too wet (sensitive soils, does not include access issues)          | 10  |  |
| <b>Comments:</b>                                    |               |  |     |  |
| 008   | Not Available | 2G: Too wet (sensitive soils, does not include access issues)          | 27  |  |
| <b>Comments:</b>                                    |               |  |     |  |
| 009   | Not Available | 2G: Too wet (sensitive soils, does not include access issues)          | 10  | 2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)   |
| <b>Comments:</b><br>steep bank and private property |               |  |     |  |
| 010   | Not Available | 2G: Too wet (sensitive soils, does not include access issues)          | 104 | 2G: Too wet (sensitive soils, does not include access issues)      2F: Too steep      2H: Blocked by physical obstacle (e.g. upland stand in a lowland area) |
| <b>Comments:</b>                                    |               |  |     |  |

## Report 5 – Site Conditions

Roscommon Mgt. Unit

Compartment 156

Dale Ekdorn : Examiner

Year of Entry 2015

|  |                      |   |     |   |  |
|--|----------------------|---|-----|---|--|
| 011  | <b>Not Available</b> | <b>3A: Potential old growth / biodiversity</b>                                | 168 | 2G: Too wet (sensitive soils, does not include access issues) | 2H: Blocked by physical obstacle (e.g. upland stand in a lowland area) |
| <b>Comments:</b>   |                      |   |     |   |  |
| 015  | <b>Not Available</b> | <b>2G: Too wet (sensitive soils, does not include access issues)</b>          | 69  |   |  |
| <b>Comments:</b>   |                      |   |     |   |  |
| 016  | <b>Not Available</b> | <b>2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)</b> | 21  |   |  |
| <b>Comments:</b>   |                      |   |     |   |  |
| 017  | <b>Not Available</b> | <b>2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)</b> | 12  |   |  |
| <b>Comments:</b>   |                      |   |     |   |  |
| blocked by private property to east, wet terrain to north, muskegon river to the west, and a steep bank to the south |                      |   |     |   |  |



**Report 6 – PROPOSED SPECIAL CONSERVATION AREA\* (SCA) DETAILS**

\* This is a partial list of SCAs for this compartment. Not included are those areas identified under other Department initiatives (Natural Rivers, Deer Wintering Areas, etc.). Those will be identified in separate, future map and report products.

| SCA Name  | SCA Category               | Detail Type      | Recommendation | Acres |
|---|----------------------------|------------------|----------------|-------|
| <b>Muskegon River Oxbows</b>                        | Habitat Areas or Corridors | Habitat Corridor | <b>SCA</b>     | 513.8 |
| <b>Comments</b>                                     |                            |                  |                |       |
| Habitat corridor based on Muskegon River and Oxbows |                            |                  |                |       |



**Report 7 – 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

| Conservation Area | Type                | Description   |
|-------------------|---------------------|---|
| SCA               | Archaeological Site | An aquatic or terrestrial area of the State that contains physical remains of human occupation. These are sites of cultural and historical significance that may occur upon terrestrial areas and Great Lakes bottomlands. They include thousands of Native American settlements and burial sites, as well as French and British outposts, nineteenth century logging camps, mines and homesteads. Beneath the waters of the Great Lakes, there are shipwrecks and other remains documenting the maritime trade. Such sites may be identified by Natural heritage data from the State Historic Preservation Office. Proposed treatments in this compartment will be implemented in such a manner as to maintain the integrity of these sites. Due to the sensitive nature of this information, no further detail about location is available. |
| 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.   |



|    | Level 4<br>Cover Type                            | Size<br>Density         | Acres | Stand<br>Age | BA<br>Range | General<br>Comments:  |
|----|--|-------------------------|-------|--------------|-------------|---|
| 1  | 6117 - Lowland<br>Deciduous, Mixed<br>Coniferous | High Density<br>Log     | 2.3   | Uneven Age   |             | island in muskegon river surrounded by Muskegon river and<br>oxbow of river, no access, data from PI Stand #2   |
| 2  | 6117 - Lowland<br>Deciduous, Mixed<br>Coniferous | High Density<br>Log     | 46.0  | Uneven Age   |             | Stand is within floodplain of Muskegon River, terrain is<br>intermixed high-low ground, no access except from west down a<br>steep bank and across a broad drainage, stand is regenerating<br>well on its own, potential old growth   |
| 4  | 6132 - Mixed Lowland<br>Forest with Cedar        | Medium<br>Density Pole  | 19.3  | Uneven Age   |             | dry hummocky ground with numerous wet areas/drainages,<br>stand is on a bench above the Muskegon river and is converting<br>to swamp conifers, lots of blowdown, HW O/S with cedar/BF/WP<br>poles and BF/WP saps in the U/S good stand to leave for old<br>growth as it connects with surrounding stands in a large corridor<br>along the river |
| 5  | 4199 - Other Mixed<br>Upland Deciduous           | Medium<br>Density Pole  | 26.8  | 80           |             | stand is on bench above Muskegon river floodplain, only access<br>is from the west down a steep bank and across a broad<br>drainage, oak is falling apart and blowing down but stand starting<br>to fill in with WP   |
| 6  | 4199 - Other Mixed<br>Upland Deciduous           | Medium<br>Density Log   | 11.8  | 89           |             | stand is on a bench above the Muskegon River and has a few<br>intermittent drainages, BTA is dying and falling out of the stand,<br>only access is down a steep bank or possibly thru PVT property<br>which was refused in 2005, allow stand to convert to RM/BF/WP,<br>possibly add to old growth SCA along Muskegon River corridor            |
| 7  | 4310 - Pine, Oak Mix                             | High Density<br>Pole    | 5.5   | 49           | 141-170     | stand is at the confluence of the Muskegon river and Townline<br>Creek, hardwood O/S with conifer U/S, steep banks to the river<br>and several benches/with banks to the creek, should convert to<br>WP if left alone   |
| 8  | 6118 - Lowland<br>Deciduous with Cedar           | Low Density<br>Pole     | 10.1  | 87           |             | stand is on a flat bench above the Muskegon River and is cut by<br>numerous intermittent drainages, possible add to old growth<br>SCA along Muskegon River corridor   |
| 9  | 4131 - Aspen, Oak                                | High Density<br>Sapling | 45.4  | 16           |             | Cut 1996, well stocked BTA on south end, sparser TA/O/JP on<br>north end, scattered R/W pine and balsam fir saps/poles thru-<br>out stand   |
| 10 | 6132 - Mixed Lowland<br>Forest with Cedar        | High Density<br>Pole    | 7.2   | 72           |             | Stand has a steep bank to the floodplain of the Muskegon River<br>with oak/RM/BTA O/S and WP/BF U/S, floodplain of the river is<br>cedar and RM, retain as buffer for the Muskegon River and add<br>to old growth corridor (SCA) along the river  |
| 12 | 4131 - Aspen, Oak                                | Low Density<br>Sapling  | 9.2   | 5            |             | cut 2007, fairly sparse but should be well stocked next YOE   |
| 14 | 4319 - Mixed Upland<br>Forest                    | Medium<br>Density       | 7.0   | 16           |             | stand was A1 last YOE, now W5W2, lots of wet pockets within<br>stand esp. on edges, stand is a transition zone between dry A/O<br>stand to the west and the wetter L/N to the east, lots of weeviling<br>on the WP as it is open grown  |



| Stand | Level 4 Cover Type                         | Size Density         | Acres | Stand Age  | BA Range | General Comments:  |
|-------|--|----------------------|-------|------------|----------|--|
| 15    | 6117 - Lowland Deciduous, Mixed Coniferous | Medium Density Pole  | 111.0 | 87         | 81-110   | Stand is in the flood plain of Townline Creek and the Muskegon river and on a few lower benches along these watercourses, stand ranges from a higher/drier 2 aged stand with RM P-L's and WP u.s. to true "E" type in the lower areas with RM, Silver Maple, Basswood, Black Ash, SWO, etc., poor access/no access to most of the stand due to steep banks on the edges and wetter terrain in the interior, very wet in spots esp. during spring runoff, some spots are heavy to cedar, possibly add to old growth SCA along the corridor of these watercourses                            |
| 16    | 4191 - Mixed Upland Deciduous with Conifer | High Density Log     | 13.5  | 95         | 81-110   | 2aged oak/pine stand with older oak/pine over W6W3, scattered RM/BTA/JP poles/logs also, south tip of the stand has some bigger R/W pine XL's with a less dense WP U/S on the south part of the stand, heavy WP U/S on the north part of the stand, camping area on the north end, more A6 in the NW corner, possibly thin stand by removing all A/RM/JP and marking some of the smaller oak to cut - this would open up the canopy and limit damage to the W3 U/S,  |
| 17    | 4310 - Pine, Oak Mix                       | High Density Sapling | 67.7  | 16         |          | cut 1996 and regenerated naturally, well stocked JP/Oak stand, south end is mostly JP mixed with oak, north end is more an equal mix of JP and oak but sparser, scattered RM/PC saps as well as WP saps/poles thru-out   |
| 18    | 429 - Mixed Upland Conifers                | Medium Density Log   | 20.6  | Uneven Age | 81-110   | Stand is an upland knob surrounded by lower ground (old oxbows) and was J9 last YOE, JP component is now mostly gone or on the way out as a component of the stand, stand is now oak/RM XL's over BS/BF/WP P-L's and has lots of conifer saplings in the U/S, lots of blowdown ( mostly JP/BF/BTA) and lots of wildlife sign/scat with good u.s. cover and abundant water sources near-by, stand is a mix of ages/species/sizes, poor access/no access without a major road building project, better to leave as part of the old growth SCA along the Muskegon River for the above reasons |
| 20    | 6128 - Lowland Coniferous, Mixed Deciduous | High Density Log     | 11.9  | Uneven Age | 141-170  | stand is on a bench in the floodplain of Townline Creek, only access is down a steep bank to the south and across a broad drainage, lots of blowdown and wildlife activity/sign, potential OG with WP XL's and RM SL O/S and WP/BF/NWC poles and saps in the U/S   |
| 21    | 4191 - Mixed Upland Deciduous with Conifer | High Density Log     | 9.9   | 40         | 141-170  | Stand is a long narrow strip on a steep bank between high ground and the Muskegon river floodplain, poor operability due to steep terrain, allow to convert to WP, possible old growth stand   |
| 22    | 6120 - Lowland Cedar                       | High Density Pole    | 46.1  | 87         |          | wet cedar swamp with BS poles scattered thru-out, NW corner/north edge along road is an inclusion of O7W5W2 which is a long narrow stand with steep banks going down to the swamp  |
| 23    | 4311 - Pine, Aspen Mix                     | High Density Sapling | 35.3  | 15         |          | stand was regenerated in 1997, now natural A/JP regeneration mixed with oak and RM regeneration, scattered WP poles and a few wet potholes/drains especially the north edge  |



|    | Level 4<br>Cover Type                            | Size<br>Density         | Acres | Stand<br>Age | BA<br>Range | General<br>Comments:  |
|----|--|-------------------------|-------|--------------|-------------|---|
| 25 | 4133 - Aspen, Mixed<br>Pine                      | High Density<br>Pole    | 16.4  | 42           | 81-110      | 2 aged oak/aspens stand, oak is mature/over-mature, aspen is younger and maller, also scattered R/W pine poles/logs and jack pine poles, bulk of the stand is BTA/Oak but some areas are heavy to either oak, jack pine, or both, oak/JP are going downhill but the aspen could hold 10 more years, recommend that stand should be cut to regenerate aspen but mark some oak to leave for mast and leave R/W pine for diversity, steep banks down to the swamp/marsh should be avoided, BA's are from spots heavy to oak and are not within the A6 clones |
| 26 | 42121 - Planted Jack<br>Pine, Mixed Deciduous    | High Density<br>Pole    | 16.4  | 19           |             | natural and planted JP with natural HW regeneration   |
| 27 | 6117 - Lowland<br>Deciduous, Mixed<br>Coniferous | High Density<br>Pole    | 23.4  | 92           | 171-200     | wet "E" Type with scattered conifers, east side is heavier to BF-BS, some blowdown of older RM and BF, a few small islands of marginally higher ground with oak/aspens but small and hard to access, wettest spots are heavy to "L" and "N", good stand to leave for wildlife   |
| 28 | 4191 - Mixed Upland<br>Deciduous with Conifer    | High Density<br>Sapling | 43.4  | 16           |             | cut 1996 and regenerated naturally, north part is heavier to JP and south part is heavier to A/O  |
| 29 | 6129 - Mixed<br>Coniferous Lowland<br>Forest     | High Density<br>Pole    | 27.5  | 92           |             | cedar swamp mixed with BS & BF, fairly wet with some blowdown & Spaghnum moss ground cover  |
| 31 | 4311 - Pine, Aspen Mix                           | Medium<br>Density       | 6.5   | 5            |             | cut 2007 and regenerated well to TA/JP/Oak where those species were present, scattered WP saplings also, mostly aspen on south end and JP/Oak on the north end, approx. 1/3rd of stand is fairly sparse but is functioning well as an opening adjacent to the swamp so no need to supplemental plant  |
| 32 | 4310 - Pine, Oak Mix                             | High Density<br>Pole    | 12.2  | Uneven Age   | 81-110      | strip left from when stands to the east were cut, part of strip has been cut also with some JP being removed in 1983-1989, mix of , very variable stand with parts heavy to JP/oakpoles-logs (north) and other parts heavy to RP/WP/Oak L-X's with W# U/S, stand is at least 2 aged and probably multi-aged, extreme SE corner of stand is lower/wetter than the rest of the stand and is heavy to WP logs, hold until at least next YOE and then poss. this south 1/2 and CC north 1/2   |
| 33 | 6113 - Lowland Maple                             | Low Density<br>Pole     | 21.3  | 87           |             | Broad drainage area with lowland HW species, tag alder and marsh grass ground cover/u.s., HW's are very slow growing, with very little black ash left, stand is very wet now due to spring runoff with flowing water in spots   |
| 34 | 6118 - Lowland<br>Deciduous with Cedar           | Medium<br>Density Log   | 12.8  | 87           |             | wet aspen stand last YOE, aspen falling out of stand but RM filling in nicely, poss. add to OG SCA to west/north  |
| 35 | 4191 - Mixed Upland<br>Deciduous with Conifer    | Medium<br>Density       | 13.4  | 16           |             | natural jack pine and hardwood regeneration from 1996 cut, scattered WP poles also  |
| 36 | 42221 - Natural Jack<br>Pine, Mixed Deciduous    | Medium<br>Density Pole  | 25.4  | 19           |             | natural and planted jack pine with natural hardwood regeneration, stump sprout oak is almost pole-size, there is one nice A3 clone in the east central part of the stand, rest of the aspen is solitary aspen scattered thru-out the stand  |



|    | Level 4<br>Cover Type                            | Size<br>Density         | Acres | Stand<br>Age | BA<br>Range | General<br>Comments:   |
|----|--|-------------------------|-------|--------------|-------------|--|
| 37 | 4131 - Aspen, Oak                                | Medium<br>Density       | 18.3  | 5            |             | M6 which was cut in 2007, east and south part is nice A3 regeneration, north and west part is sparser with oak and jack pine and scattered A/RM, scattered larger pine and oak XL's    |
| 38 | 6113 - Lowland Maple                             | Low Density<br>Pole     | 10.1  | 88           |             | low, wet buffer of hardwoods between cut to the west and conifer swamp to the east, not worth cutting due to low stocking and low/wet ground   |
| 39 | 4139 - Aspen, Mixed<br>Deciduous                 | High Density<br>Pole    | 24.8  | 62           |             | aspen/hardwood knob mostly surrounded by lower/wetter terrain, edges of knob which are lower are TA, higher/drier terrain is BTA, final harvest to regenerate aspen                    |
| 41 | 4191 - Mixed Upland<br>Deciduous with Conifer    | High Density<br>Sapling | 31.3  | 14           |             | cut 1997 and planted to JP in 1998, fairly equal mix of A/O/J consisting of aspen clones distributed among areas heavy to O/J saps   |
| 43 | 4131 - Aspen, Oak                                | High Density<br>Pole    | 29.7  | 47           |             | BTA clones separated and interspersed with areas heavy to Oak poles/logs and WP saps/poles, should hold until next YOE no problem  |
| 45 | 6124 - Lowland Spruce-<br>Fir                    | Medium<br>Density Pole  | 557.2 | Uneven Age   |             | wet swamp conifer stand, west side is heavier to tamarack but west side also has lots of dead trees, scattered WP XL's in spots  |
| 46 | 42260 - Natural Pine,<br>Mixed Deciduous         | High Density<br>Log     | 6.4   | Uneven Age   |             | possible Old Growth SCA  |
| 47 | 42260 - Natural Pine,<br>Mixed Deciduous         | High Density<br>Log     | 7.4   | 102          |             | Potential for OG SCA, records found that they removed RM-A-WB in 1972 with a habitat cut   |
| 49 | 42260 - Natural Pine,<br>Mixed Deciduous         | High Density<br>Log     | 27.1  | Uneven Age   |             |  |
| 50 | 6130 - Fir, Aspen, Maple                         | Medium<br>Density Pole  | 15.4  | 87           |             | habitat cut in 1971 by removing RM-A-WB, no other access due to terrain and the highway  |
| 51 | 4130 - Aspen                                     | High Density<br>Pole    | 12.8  | 41           |             | habitat cut in 1971 by removing A-RM-WB  |
| 55 | 6130 - Fir, Aspen, Maple                         | High Density<br>Pole    | 8.0   | 41           |             | RM overtopping BF, no access due to terrain and highway, found records that they habitat cut in 1971 removing RM/Aspen/WB/Sugar Maple and left basswood, ash, BF, and BS               |
| 56 | 6117 - Lowland<br>Deciduous, Mixed<br>Coniferous | High Density<br>Pole    | 5.9   | 87           |             | RM and scattered WB/TA overtopping BF, no access due to terrain and highway  |
| 58 | 6128 - Lowland<br>Coniferous, Mixed<br>Deciduous | High Density<br>Pole    | 19.0  | 87           |             | wet cedar stand with scattered HW P-L's and WP XL's, good wildlife stand   |
| 59 | 4191 - Mixed Upland<br>Deciduous with Conifer    | Medium<br>Density       | 6.7   | 6            |             | stand was part of a cut to the north in compartment 71155, cut in 2006 and removed all A/M/J, most oak, and left R/W pine, now stand is W5O2M2 with scattered oak SL left also, 2 aged |



|    | Level 4<br>Cover Type                         | Size<br>Density      | Acres | Stand<br>Age | BA<br>Range | General<br>Comments:   |
|----|---|----------------------|-------|--------------|-------------|--|
| 60 | 4191 - Mixed Upland<br>Deciduous with Conifer | High Density<br>Log  | 20.5  | Uneven Age   | 81-110      | very variable stand with areas heavy to A and/or RM poles and other areas heavy to Oak L-XL's with WP poles underneath (esp east side adjacent to Old 27), some steeper terrain in parts of the stand, could seed tree but leave R/W pine and 10-20 SF of well-crowned oak (esp. WO) as a seed source, stand should regenerate OK to A/RM in areas heavy to those species, areas which do not regenerate to a fully stocked could be trenched/planted to RP, extend cut to Old 27 to the east into adj. compt, good access to stand off of Old 27. |
| 61 | 4191 - Mixed Upland<br>Deciduous with Conifer | High Density<br>Log  | 6.2   | 92           |             | mix of aspen, oak, and red maple, oldest aspen is 1920 YOO and declining, some younger aspen also, scattered pine poles and logs also, several small wet potholes with "L" also on US 127, north end has a small inclusion of J6 which should be regenerated also if stand is treated  |
| 65 | 42210 - Natural Red<br>Pine                   | High Density<br>Log  | 2.4   | 98           | 141-170     | natural R9 stand which was prescribed burned last YOE in order to get natural RP regeneration, not too successful, fairly open u.s. now, stand has 2 wet potholes in SW part and some steeper terrain also in parts, could try thinning from below to open up canopy, probably could whole tree skid most of cut trees except for larger oaks if operator was careful  |
| 66 | 429 - Mixed Upland<br>Conifers                | High Density<br>Log  | 3.7   | Uneven Age   | 171-200     | stand is R/W pine XL's with RM poles underneath, scattered Hemlock P-L's, fairly open u.s. underneath the HW mid-story with lots of blowdown due to shallow soils, probably should leave as any more opening of the canopy could create more blowdown, parts of this stand are wetter, possible old growth stand   |
| 67 | 4191 - Mixed Upland<br>Deciduous with Conifer | High Density<br>Log  | 15.9  | Uneven Age   | 111-140     | stand is overall O8W7R7 with areas heavy to W/R pine XL's separated by O/M/A L-X's, stand should be treated by removing A/M/J which is declining, also could mark some O/P to cut an those areas where density of those species is higher, east edge will be at "Y" in 2T, stand is wet in spots which will have to be checked when the line is put in to see if they need to be eliminated from the sale  |
| 68 | 42120 - Planted Jack<br>Pine                  | High Density<br>Pole | 6.4   | 48           |             | JP planted 1962-1964, scattered solitary BTA and other HW's, u.s. is WP/BF seedlings/saplings, parts of this stand are wet swales with standing water during snow-melt   |



| Stand | Cover Type                         | Acres | Managed Site  | Management Priority (Objective) | General Comments:                      |
|-------|------------------------------------|-------|---------------|---------------------------------|--|
| 3     | 50 - Water                         | 20.3  | N/A           | Unspecified                     |  |
| 11    | 6229 - Mixed lowland shrub         | 4.0   | No            | Unspecified                     |  |
| 13    | 50 - Water                         | 0.8   | N/A           | Unspecified                     |  |
| 19    | 623 - Emergent Wetland             | 28.0  | N/A           | Unspecified                     |  |
| 24    | 3102 - Grass                       | 16.0  | Natural Regen | Mixed Upland Deciduous          | stand cut in 2007 and not yet forested |
| 30    | 622 - Lowland Shrub                | 50.8  | No            | Unspecified                     |  |
| 40    | 622 - Lowland Shrub                | 10.6  | N/A           | Unspecified                     |  |
| 42    | 6229 - Mixed lowland shrub         | 21.8  | N/A           | Unspecified                     |  |
| 44    | 622 - Lowland Shrub                | 7.1   | N/A           | Unspecified                     |  |
| 48    | 623 - Emergent Wetland             | 14.1  | N/A           | Unspecified                     |  |
| 52    | 790 - Other Bare/Sparsely Vegetate | 3.7   | No            | Unspecified                     | barrow pit with rim of planted JP      |
| 53    | 6224 - Treed Bog                   | 16.8  | No            | Unspecified                     |  |
| 54    | 623 - Emergent Wetland             | 24.0  | N/A           | Unspecified                     |  |
| 57    | 622 - Lowland Shrub                | 20.2  | N/A           | Unspecified                     |  |
| 62    | 622 - Lowland Shrub                | 1.9   | N/A           | Unspecified                     |  |
| 63    | 50 - Water                         | 3.8   | N/A           | Unspecified                     |  |
| 64    | 629 - Mixed non-forested wetland   | 13.6  | N/A           | Unspecified                     |  |
| 69    | 6225 - Bog                         | 5.1   | No            | Unspecified                     |  |