**GRAYLING FOREST MANAGEMENT UNIT**
**COMPARTMENT REVIEW PRESENTATION**

**COMPARTMENT # 190 ENTRY YEAR: 2008**

**GIS Compartment Acreage: 911 County: Crawford (Beaver Creek Township)**

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**Revision Date:** 7/6/2006

**Stand Examiner:** Lucas Merrick

**Legal Description:** T25N, R04W, Sections 16 and 17

**Management Goals:** To improve forest health, productivity, sustainability, species and structural diversity throughout the State of Michigan by actively managing flora and fauna, while providing for multiple use and visual management. The State ownership is under a 10-year management agreement with the Michigan National Guard. This agreement allows for camping and maneuvers, but does not allow use of heavy equipment or high intensity live ammunition firing. Tracked vehicles are prohibited on these lands except to cross on designated tank trails. Wheeled vehicles are restricted to existing trails and are not to be driven cross country. Michigan Department of Natural Resources management activities take precedence on these lands, though management activities are often tailored to be compatible with National Guard training needs.

**Soils and Topography:** Typical soils are sandy and somewhat to excessively drained. The soils are known as a Graycalm-Grayling Association. This association makes up over a third of Crawford County. The topography is nearly level to slightly rolling, with very steep slopes north of the compartment.

**Ownership Patterns, Development, and Land Use in and Around the Compartment:** The compartment is located in Beaver Creek Township. The majority of the area is in public ownership with a variety of private ownerships concentrated primarily around I-75. This area has extensive oil and gas lease development.

**Unique, Natural Features:** The state threatened rough fescue (Festuca scabrella) and prairie or pale agoseris (Agosersis gluaca) may occur in the area. Hill's thistle (Cirsiunm hillii) and Alleghany plum (Prunus alleghaniensis var. davisii) are two species of special concern with potential to appear in the compartment. These species are most often found in grassy openings and open areas of jack pine. Currently there are no known Ecological Reference Areas in this compartment.

**Archeological, Historical, and Cultural Features:** Beaver Creek Cemetery is found in the southeast of Section 16. Many stands have been influenced by natural disturbances such as fire and tornados.

**Special Management Designations or Considerations:** Exposed gas pipelines in the east half of the compartment will need special consideration for active management and suppression activities. The Fletcher Road Kirtland's Warbler Management Area is to the southwest of the compartment. This area is a High Conservation Value Area (HCVA).

**Watershed and Fisheries Considerations:** None at this time.

**Wildlife Habitat Considerations:** Management activities should try to improve grouse and rabbit habitat where possible. Plans may be modified to address any other wildlife observed (i.e. raptor nests) within the prescribed stands.

**Mineral Resource and Development Concerns and/or Restrictions:** Surface sediments consist of ice-contact and glacial outwash sand and gravel and postglacial alluvium. The glacial drift thickness varies between 400 and 600 feet. Beneath the glacial drift is the Michigan Formation. The Michigan is quarried for gypsum elsewhere in the State. A gravel pit is located in Section 9 and potential is good on the upland areas. The entire compartment is leased for oil and gas and part of it is in the Beaver Creek Field. The field has produced over 21 MBO from the Devonian Richfield and over 5 Bcf gas from the Ordovician Prairie du Chien.

**Vehicle Access:** This compartment is readily accessible, no new roads are needed. County roads, two-tracks, and pipeline access routes encompass the entire compartment. Sandy soils may pose a problem for some two-wheel drive vehicles.

**Survey Needs:** None at this time.

**Recreational Facilities and Opportunities:** Higgins Lake State Park is located a few miles to the southeast of the compartment. Many recreational activities present themselves. These include hunting, gathering, camping, hiking, and nature watching.

**Fire Protection:** Historically, this area has been influenced by fire. Much of the cover type is prone to fire events. Equipment access will not be a problem for suppression. There are several exposed pipelines throughout the compartment which limit control line options.

**Additional Compartment Information:**

- **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 biodiversity/old growth**

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Michigan Department of Natural Resources - Operations Inventory System
Individual Compartment Report

AUSABLE STATE FOREST | GRAYLING FOREST MGT UNIT | CRAWFORD COUNTY | COMPARTMENT: **190**

**Table 3**

(acres shown in boxes)

**STAND AGE CLASS**

| COVER TYPE | Not Coded | 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 | 150-159 | All Aged | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Aspen | | | 35 | | 132 | 75 | | | | | | | | | | | | | 242 |
| Grass | 35 | | | | | | | | | | | | | | | | | | 35 |
| Jack Pine | | | 4 | | | 81 | 4 | 52 | | | | | | | | | | | 141 |
| Local Name | 5 | | | | | | | | | | | | | | | | | | 5 |
| Oak | | | | | | 9 | | | | 102 | 100 | | | | | | | | 211 |
| Red Pine | | | 43 | | | | | 8 | 107 | | | | | | | | | | 158 |
| Upland Brush | 32 | 49 | | | | | | | | | | | | | | | | | 81 |
| Upland Hdwds | | 4 | 11 | | | 23 | | | | | | | | | | | | | 38 |
| Total | 72 | 53 | 93 | | 132 | 188 | 4 | 60 | 107 | 102 | 100 | | | | | | | | 911 |

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Michigan Department of Natural Resources - Operations Inventory System
Individual Compartment Report

AUSABLE STATE FOREST | GRAYLING FOREST MGT UNIT | CRAWFORD COUNTY | COMPARTMENT: **190**

**Table 3A**

(acres shown in boxes)

**MANAGEMENT OBJECTIVE TYPE**

| **COVER TYPE** | A | S | V | C | G | H | J | I | L | P | N | Q | X | O | B | R | K | Y | F | E | T | D | U | M | Z | W | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A Aspen | 242 | | | | | | | | | | | | | | | | | | | | | | | | | | 242 |
| G Grass | | | | | 35 | | | | | | | | | | | | | | | | | | | | | | 35 |
| J Jack Pine | | | | | | | 141 | | | | | | | | | | | | | | | | | | | | 141 |
| I Local Name | | | | | | | | 5 | | | | | | | | | | | | | | | | | | | 5 |
| O Oak | | | | | | | | | | | | | | 211 | | | | | | | | | | | | | 211 |
| R Red Pine | | | | | | | | | | | | | | | | 158 | | | | | | | | | | | 158 |
| U Upland Brush | | | | | | | | | | | | | | | | | | | | | | | 81 | | | | 81 |
| M Upland Hdwds | | | | | | | | | | | | | | | | | | | | | | | | 38 | | | 38 |
| Total | 242 | | | | 35 | | 141 | 5 | | | | | | 211 | | 158 | | | | | | | 81 | 38 | | | 911 |

AUSABLE STATE FOREST | GRAYLING FOREST MGT UNIT | CRAWFORD COUNTY | COMPARTMENT: **190**

***Table 10 - COMPARTMENT VOLUME SUMMARY - ALL STANDS***

COMPARTMENT SUMMARY

| TOTAL VOLUME | | | CUT VOLUME | | |
|---|---|---|---|---|---|
| Hardwood | 4818 | Cds | Hardwood | 2581 | Cds |
| Hardwood | 789 | Mbf | Hardwood | 284 | Mbf |
| Softwood | 2115 | Cds | Softwood | 1438 | Cds |
| Softwood | 836 | Mbf | Softwood | 769 | Mbf |
| Sum TotVol | 10183 | Cds | Sum CutVol | 6125 | Cds |

**Total Cmpt Acres**

911

Acres Proposed For Cut..... 331

**GRAYLING FOREST MGT UNIT** | **Proposed Treatments With NO Limiting Factors** | **Compartment: 190** | **Entry Year: 2008**

| Stand | Cover Type | Acres | Age | Site Index | Mgt Obj | Condition | Method Cut | Harvest Priority | Cultural Need | FDF Status |
|---|---|---|---|---|---|---|---|---|---|---|
| **4** | **J6** | 52 | 59 | 47 | jack pine | mature | final harvest | 2 | | |

**comnts** Fmd **:** Jack pine varies in size, age, and quality. Southern 2/3 of stand involved in fletcher fire (1968). Exposed pipe lines will make it difficult to harvest and/or plant. Pockets of aspen scattered throughout stand. Whole tree and attempt to obtain adequate stocking by natural regen. Any natural regeneration of pine, aspen, oak, or maple which meets minimum stocking is acceptable. Patches of open areas with uplands brush are expected and acceptable. If natural regen is unsuccessful replant to jack pine. Leave white and red pine as a seed source(do not harvest).

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **8** | **O9** | 18 | 89 | 57 | oak | mature | seed tree | 1 | | |

**comnts** Fmd **:** 2006: The residual showed some initial response to the previous prescription( thinning) but growth rings for last couple seasons have begun to slow down. Little to no oak in the understory, aspen and maple have 20 year head start (about 18 - 25' tall). Would like to keep the oak component going in stand. Poorer soils, browse, and decline are concerns. I recommend a seed tree (10-20BA residual) with a small "un cut" islands around an area with healthy looking oak. The maple aspen understory is probably to advanced to be adequatelty treated with a burn. Mechanical applications? Stand has exposed gas line w/in boundary. Management objective is oak but any natural regeneration of maple, aspen, oak, that meets minimum stocking is acceptable. If stand fails to meet minimum regeneration requirements it will be planted to a white/red pine mix. (old comments) 1996: SHELTERWOOD CUT COMPLETED ON STD IN S/90-NO OAK REGEN- ALL RMAPLE+ SOME ASPEN, OLD SI USED

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **10** | **O6** | 55 | 91 | 50 | oak | mature | final harvest | 1 | | |

**comnts** Fmd **:** 2006: Growth rings showed decent response to thining. However there is no oak regen. Stand 11 was final harvested and included in the last sale with this stand. The oak within S11 responded excellent to the treatment, some oak regen already reaching 10' (already above the browse line). I recommend a winter final harvest with leave islands. The management objective is oak but any natural regeneration of oak, maple, aspen, or pine is acceptable.(old comments) 1996: REMOVE ALL ASPEN & MAPLE & THIN REMAINING OAK DOWN TO 60-70 BA-NEED TO MARK, HILLY STD. 2001: STAND WAS THINNED TO 70 BA (SALE # 720459801).

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **12** | **M6** | 23 | 43 | 71 | northern hardwood | mature | final harvest | 2 | | |

**comnts** Fmd **:** 2006: Possible green up issues in the north. Did not find the aspen the previous surveys produced (mostly red maple clumps w/ pockets of aspen) . Stand was treated and oak left in the 60's. Leave all oak over 16"dbh. Management objective is M but any natural regeneration of maple, aspen, and oak which meets minimum stocking is acceptable. If stand fails to meet regeneration standards, the stand will be planted to red pine. Old SI used.

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **15** | **A6** | 38 | 38 | 52 | aspen (upland) | mature | final harvest | 3 | | |

**comnts** Fmd **:** Pockets of sawlog oak and maple (leave oak). Aspen is poor in form and quality. Leave scattered high stumps for drumming and apply "down and dead" spec. Protect any conifer component. Scattered hawthorne and june berry (protect). Management objective is aspen but any combination of aspen, maple, oak, and pine is accepetable. If stocking idoes not meet minimum requirements, the stand will be artificially regenerated to jack pine.

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **17** | **A6** | 3 | 40 | 55 | aspen (upland) | mature | final harvest | 2 | | |

**comnts** Fmd **:** Patchy stand. Plenty of down and dead woody debris present. Treat w/ stand 15. Management objective is aspen but any combination of aspen, maple, oak, and pine is accepetable. If stocking does not meet minimum requirements, the stand will be artificially regenerated to jack pine.

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **20** | **O9** | 17 | 91 | 65 | oak | mature | thinning | 3 | | |

**comnts** Fmd **:** A mixed stand for sure. Would like to keep stand as diverse as possible. Oak is above average in quality. There is a norther hdwd component throughout but the NE corner is a M6. Aspen, red maple, plus white and red pine are also present. Target supressed and poor form 1st. Leave some of the aspen for wildlife and to discurage aspen regen. There is white pine regen in the understory already established.

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **22** | **O9** | 12 | 87 | 60 | oak | mature | final harvest | 2 | | |

**comnts** Fmd **:** Stand does not have the quality of S20 to the north but does contain several species. All of these are expected to be represented in the stand through natural egeneration after harvest. Stand includes an aspen pocket south of Tower Hill Rd. Majority of red pine in stand is just north of the road. Leave some of these red pine for visual. Oak is the desired cover type but any natural regenaration of red maple, oak, aspen, and red or white pine which meets minimum stocking requirements is acceptable. If stand fails to meet regeneration requirements it will be planted to red pine.

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **25** | **J6** | 4 | 55 | 55 | jack pine | mature | final harvest | 2 | | |

**comnts** Fmd **:** Mixed aged jack pine. Cut with aspen to the north. Pocket on the east side has most of the timber. Would like to have natural jack pine regeneration. Any combination of jack pine, aspen, white pine, oak, or red maple which meets minimum stocking is acceptable. If stand does not meet the minimum regeneration requirements it will be planted back to jack pine.

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **27** | **R9** | 107 | 68 | 58 | red pine | mature | final harvest | 1 | planting | |

**comnts** Fmd **:** Several above ground gas lines found in this stand. Jack pine component is of poor quality. Final harvest and replant to red pine. Follow retention guide lines (old comments) 1996:HOLD AND CC IN 10 YRS & REPLANT TO PINE, PINE STARTING TO STAGNATE-HOLD DUE TO HEAVY CUTTING & TORNADO DAMAGE IN AREA

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **35** | **A6** | 1 | 38 | 55 | aspen (upland) | immature | final harvest | 3 | | |

**comnts** Fmd **:** poor quality aspen. Plots taken in stand 36. Stand will regenerate back to aspen but any natural regen of aspen, oak, maple, or jack pine which meets minimum stocking requirements is acceptable. If stand fails to meet regeneration standards it will be planted to jack pine.

| Stand | Cover Type | Acres | Age | Site Index | Mgt Obj | Condition | Method Cut | Harvest Priority | Cultural Need | FDF Status |
|---|---|---|---|---|---|---|---|---|---|---|
| **36** | **A6** | 1 | 38 | 55 | aspen (upland) | immature | final harvest | 3 | | |

**comnts** Fmd **:** poor quality aspen. Stand will regenerate back to aspen but any natural regen of aspen, oak, maple, or jack pine which meets minimum stocking requirements is acceptable. If stand fails to meet regeration standards it will be planted to jack pine.

**Total Acres.....** **331**

## Proposed Treatments With Limiting Factors

**Compartment: 190** **Entry Year: 2008**

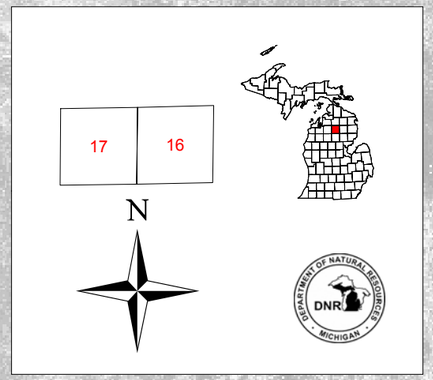
| Stand | Cover Type | Acres | Age | Site Index | Mgt Obj | Condition | Method Cut | Harvest Priority | Cultural Need | FDF Status |
|---|---|---|---|---|---|---|---|---|---|---|

TREATMENT LIMITING FACTORS:

**Total Acres..... 0**

# Field Map

Compartment 190
T25N, R04W, Sec. 16-17
County: Crawford
Unit: Grayling
YOE: 2008
Acres: 911 GIS Calculated
Stand Examiner: Lucas Merrick
Map Revised: 10/17/2006
Map Phase: Pre-review




**Legend**

- Miris Corners
- Gravel Roads
- Poor Dirt Roads
- Stand Boundary
- 100 - Final Harvest
- 116 - Final Harvest/Planting
- 200 - Seed Tree
- 400 - Thinning