



**GRAYLING FOREST MANAGEMENT UNIT
COMPARTMENT REVIEW PRESENTATION**

COMPARTMENT # 173 ENTRY YEAR: 2009

Compartment Acreage: 1287 County: Crawford

Revision Date: 3/7/07

Stand Examiner: Patrick Cotant

Legal Description: T28NR4W Sections 28, 29,30 North Frederic Township

Management Goals: To maintain species diversity while also addressing sustainability, forest health, productivity, wildlife requirements, aesthetics, best management practices and recreational opportunities throughout the compartment.

Soil and Topography: Topography within this compartment varies from level in the western portions to rolling with some localized areas of steeper terrain present in the east. In terms of land forms present, this compartment consists mainly of upland flats, knolls, small hills and moraine ridges dominated by oak, red pine, white pine, aspen and northern hardwoods. There are no lowland areas within the compartment, however directly to the west a spruce/fir/cedar complex dominates the Manistee River corridor. The major soil complex present within this compartment is Rubicon-Kalkaska-Blue Lake Association. This association is found primarily on broad upland flats, knolls, hills, dissected ridges and side slopes of ridges. Slope ranges from 0-50%. This soil complex is consistently excessively drained with Blue Lake soils considered well drained. The majority of Blue Lake sands within this compartment lie in Section 28. Major management concerns within this soil type association include equipment limitation, seedling mortality and possibility of erosion on steeper slopes.

Ownership Patterns, Development, and Land Use in and Around the Compartment: This compartment lies at the southern edge of the Deward Management Area. Because of the many recreational trails that traverse these sections and the compartment's close proximity to the Manistee River, this area is used heavily for recreation of many kinds. Development is minimal in the area because of the high concentration of state ownership in and around the compartment. Surrounding private lands include much of the Manistee River corridor, along with larger parcels to the north and east. Survey information including set corners and survey records for this compartment is abundant and up to date.

Unique, Natural Features (include only non-site specific and non-sensitive information): This compartment is in close proximity to the Manistee River. The Manistee is a State Natural River and a National Wild and Scenic River with many recreational opportunities to be found along its banks and the adjacent forests. Secretive Locust and Massasauga Rattlesnake have been observed in section 30. MNFI have identified the potential for the following sensitive species to occur in the compartment: Hill's pondweed, goshawk, red-shouldered hawk, dusted skipper, loon, and Kirtland's Warbler.

Archeological, Historical, and Cultural Features (include only non-site specific and non-sensitive information): An old borrow pit is present in the NW corner of Section 29. ORV and snowmobile use is now heavy in this location.

Watershed and Fisheries Considerations: The Manistee River is located on the far west end of the compartment, traversing private lands. It is a designated Natural River and is also classified as a National Wild and Scenic River. Aside from this, there are no water bodies within this compartment.

Wildlife Habitat Considerations: This compartment contains a great deal of mast producing oak along with regenerating stands of oak, aspen and northern hardwoods. Numerous species of wildlife, including deer and turkey, use this area and the above mentioned resources heavily as habitat. Fox, coyote, bald eagle, barred owl and red-shouldered hawk were observed while conducting field work in the area. For the above mentioned reasons, all obvious hollow snags and den trees should be reserved when any management activities take place in the compartment.

Mineral Resource and Development Concerns and/or Restrictions: This area has a number of oil and gas wells within its boundaries. Surface sediments consist of ice-contact and glacial outwash sand and gravel and postglacial alluvium. The glacial drift thickness varies between 600 and 800 feet. Beneath the glacial drift is the Coldwater Shale. The Coldwater does not have a current economic use. A gravel pit is located in Section 29 and potential is excellent on the upland areas. The compartment is leased and partially developed for Antrim Shale gas and Guelph (Niagaran) reefs.

Vehicle Access: Access to this compartment is from Cameron Bridge Road (E/W) to the north and Manistee River road (N/S) to the west, both of which are county maintained roads. A multitude of 2-tracks traverses the three sections of this compartment as well. Some of these 2-tracks are seasonal roads and are impassable much of the winter.

Survey Needs: The interface between public and privately owned land within this compartment is clearly marked and identified. The main portions of private land lie in within sections 28 and 30. In section 28, the northern ½ of the section is private and this boundary is clearly marked with ¼ corners placed the entire length of the E/W line. There is also a corner at Cameron Bridge Rd. marking the NW section corner. In section 28 there are 2 corners placed along the boundary of private/public land, however the southern corner has not been set.

Recreational Facilities and Opportunities: Designated snowmobile trail no. 79 along with a part of the Frederic ORV trail traverse this compartment. The Manistee River presents numerous recreational opportunities including canoeing, kayaking and fly-fishing. A designated foot access site to the river is located off Cameron Bridge Road.

Fire Protection: The majority of this compartment is comprised of upland deciduous species and fire danger is considered minimal in this area.

Additional Compartment Information: Numerous recreational opportunities abound in this compartment. Aesthetic consideration should be addressed along roads and trails.

- **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**

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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: 173

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	420																										420
G Grass					11																						11
X Non Stocked													3														3
O Oak														189													189
R Red Pine																127											127
U Upland Brush																								108			108
M Upland Hdwds																									406		406
W White Pine																										23	23
Total	420				11								3	189		127								108	406	23	1287

AUSABLE STATE FOREST

GRAYLING FOREST MGT UNIT

CRAWFORD COUNTY

COMPARTMENT: **173**

Table 10 - COMPARTMENT VOLUME SUMMARY - ALL STANDS

COMPARTMENT SUMMARY			
TOTAL VOLUME		CUT VOLUME	
Hardwood	9261 Cds	Hardwood	1177 Cds
Hardwood	2379 Mbf	Hardwood	225 Mbf
Softwood	3893 Cds	Softwood	1128 Cds
Softwood	430 Mbf	Softwood	61 Mbf
Sum TotVol	18772 Cds	Sum CutVol	2877 Cds
Total Cmpt Acres		Acres Proposed For Cut.....	218
1287			

Stand	Cover Type	Acres	Age	Site Index	Mgt Obj	Condition	Method Cut	Harvest Priority	Cultural Need	FDf Status
2	R6	28	49	61	red pine	immature	thinning	1		
<p>comnts Fmd : Stand is of better quality than stand 6 to the south. Same age and relatively same location, may have been less quality seed stock, frost damage, etc. Stand was thinned in 2000 and is showing good response to thinning. Could wait another YOE, however by then the hardwood will have basically taken over the understory and the red pine will be showing signs of crowding. Mark to cut leaving a residual of 110 square ft/acre, or remove 1/3 of overall volume. BA fluctuates throughout stand so attempt to maintain consistency where possible. Thin to remove forked, limby or otherwise poorly formed individuals. There is some porcupine damage throughout stand, so as a result, these areas will be thinned heavier and residual BA will be lower than target. Understory regeneration will most likely be damaged during harvest operations. All aspen should be designated for harvest. Larger hardwoods could be left for wildlife habitat and mast production. (old comment) Stand was third row thinned the summer of 2000 under contract # 030-99-01, Combined Pine 28 block.</p>										
3	A6	40	66	56	aspen (upland)	mature	final harvest	1		
<p>comnts Fmd : (no old comment) Variable quality throughout. Stand seems to transition back and forth between an A6/M6 stand, especially in portion that now splits stand 1 and 101. Edge is mixed where aspen and hardwood stands meet. Mixed hardwood throughout. One finger of red pine in southern portion of stand. This area should be left out of the sale, or specs should designate red pine to be left if it is included. Some ironwood and areas where ironwood regeneration is beginning to become quite thick. Variable density throughout as well, however silviculturally this stand is ready to treat. Some aspen have begun to fall providing good DWD and snags that have remained standing are providing good habitat as well. These snags should remain wherever possible following harvest. Occasional large red pine throughout stand, one was found to hold a fairly good size stick nest. As far as specifics regarding harvest: all aspen should be designated for removal. All white pine, red pine and balsam fir should be left, along with clumps of red and sugar maple. This should provide plenty of residual (>10%) following harvest to meet retention requirements. Some aspen should be marked to leave as well. Focus marking large bigtooth aspen in northern portion of stand which should die standing or may fall to enhance both aspects of wildlife habitat.</p>										
9	A6	14	74	59	aspen (upland)	mature	final harvest	1		
<p>comnts Fmd : (no old comment) Lot's of white pine in understory, both sapling and pole-sized. Numerous large remnant white pine stumps in understory, especially near areas of thick white pine regeneration. Some aspen beginning to show signs of decline in localized areas, while other areas show aspen to be growing quite well. Overall aspen is variable in size and quality, and some areas of stand may contain lower stocking of aspen. Southern edge of stand contains largest aspen. Scattered large red oak throughout stand, however little to no natural regeneration is occurring in understory. Paper birch is also major component of this stand and is present in numerous size classes. Lot's of snags and DWD and subsequently a great deal of wildlife seem to be using this stand for habitat. Specifics for harvest include; removing all aspen regardless of size, leaving some to meet retention guidelines and also to increase size class diversity and vertical structure. Leave all red oak, paper birch and white pine for seed source and mast production. Following harvest, regeneration should include big tooth aspen, white pine, red maple and american beech. All old white pine stumps should be left for wildlife cover following harvest, wherever possible, as they were being utilized by a number of bird and mammal species during stand examination.</p>										
11	R6	66	49	66	red pine	immature	thinning	1		
<p>comnts Fmd : Descent quality overall. Hardwoods scattered throughout. Some porky damage is present in pockets, some localized areas worse than others. Thick hardwood understory is going to make marking in some areas frustrating to say the least. A few areas where old gas/oil wells have been removed contain very good red pine regeneration. May want to final harvest 3-5 1 acre parcels, variable in size to encourage natural red pine regeneration while diversifying stand. Overall tree form is good with some crooks/forks and otherwise undesirable individuals present. As a whole, this stand is responding well to the thinning completed in 2000. Stand could be held one more YOE, however the BA is relatively high and trees seem to be responding quite well to thinning based on ring analysis, crown closure and leader growth. Harvesting specifics include; mark to cut by thinning from below. Remove approximately 1/3 of the trees present, with some areas being reduced further because of low quality and porcupine damage. Leave all hardwoods for mast, species diversity and vertical structure. Final harvest 3-5 irregularly shaped 1 acre parcels scattered around stand in an attempt to encourage natural red pine regeneration. Encourage operator to scarify these areas as much as possible during harvest operations. (old comment) Third row thinned the summer of 2000 under contract #040-99-01, Cameron Bridge Rd Pine.</p>										
21	O6	30	86	53	oak	immature	shelterwood-prep	1		
<p>comnts Fmd : Pole sized oak stand, however some areas are almost developing into O9 size class. Scattered sawlogs of descent quality. Little regeneration in understory, mixture of O2/M2. Aspen of both pole and sawlog size class are major components of stand. Topography is rolling and ORV trail traverses stand at eastern edge. Mark to leave 50 BA of the best quality oaks for a seed source as well as size class diversity in the future. Focus leaving a mixture of the best formed white and red oak. In some areas where oak is of better quality, leave residual slightly higher to develop and enhance quality within stand. Do not cut red maple regardless of size unless there are areas where red maple residual would be over 50 BA. This should not be the case within this stand. All aspen should be designated for harvest. Some areas are heavier to aspen and therefore upon removal, BA may be slightly lower in these localized areas. Do not cut the few red pine within stand, and protect advanced regeneration wherever possible, of all species. Topography is rolling to steep in some areas. These steep slopes may need to be avoided during harvest to reduce erosion risks. BA and quality somewhat decrease in some areas of valley's in stand.</p>										

GRAYLING FOREST MGT UNIT

**Proposed Treatments
With NO Limiting Factors**

Compartment: 173 Entry Year: 2009

Stand	Cover Type	Acres	Age	Site Index	Mgt Obj	Condition	Method Cut	Harvest Priority	Cultural Need	fdf Status
23	A6	40	84	66	aspen (upland)	mature	final harvest	1		
<p>comnts Fmd : Fair quality aspen stand. Some areas, mainly at lower elevations on slopes are of less quality. Red maple are in clumps and are of poor quality. Scattered red oak exist throughout with some descent quality, many producing large amounts of mast. Large remnant white pine stumps scattered throughout stand. Maple leaved viburnum in understory on upper reaches of slopes. Mixture of an A6/M6 stand in some areas, however overall the stand typed to be an A6 stand. Lot's of paper birch in stand, some dying/declining. Mark some snags to be cut and laid on the ground to increase DWD. Harvest specifics; remove all aspen and leave majoriy of white birch in pockets. Some birch may need to be removed for operating and to maintain low density to ensure better reproduction of aspen. Leave all oak regardless of form as a seed source and to maintain diversity in stand. Caution should be used on steep slopes during harvest to avoid rutting/erosion problems. Some aspen islands, <1 acre in size should be left scattered throughout stand, no more than 5 acres total. This will again maintain size diversity and also should provide ample retention to meet retention guidelines set forth. Stand is a conglomeration of original stand 23, southern finger of stand 29, western edge of stand 24 and eastern 1/2 of stand 31. These areas typed to be A6 stands and have a very similar composition to that of stand 23, however with some size variation. (old comment) Hold ten years.</p>										
30	X0	3			other non-stocked or non-forest or non-productive	nonstocked		0	other - specify in remarks	
<p>comnts Fmd : Lot's of ORV use in this area. Some trails extend quite a ways into surrounding woods. (old comment) Possible deposit site for sand from the Manistee R. sand traps.</p>										
Total Acres.....		221								

**Proposed Treatments
With Limiting Factors**

Compartment: 173

Entry Year: 2009

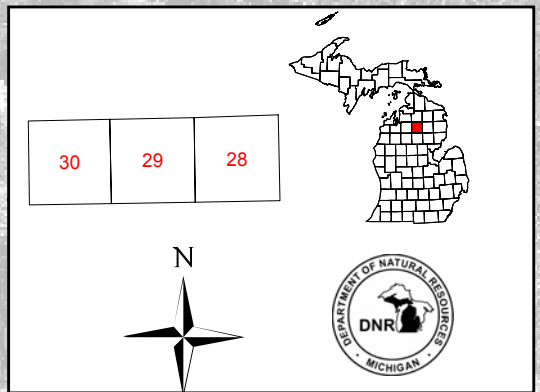
Stand	Cover Type	Acres	Age	Site Index	Mgt Obj	Condition	Method Cut	Harvest Priority	Cultural Need	FD Status
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TREATMENT LIMITING FACTORS:

Total Acres..... 0

Field Map

Compartment 173
 T28N, R04W, Sec. 28-30
 County: Crawford
 Unit: Grayling
 YOE: 2009
 Acres: 1287 GIS Calculated
 Stand Examiner: Patrick Cotant
 Map Revised: 1/26/2007
 Map Phase: Pre-review



Legend

- RLS Corners
- Miris Corners
- County Gravel Roads
- Poor Dirt Roads
- Trails
- Gra173_orv_trails.shp
- Pipelines
- Gas Wells
- Borrow Pits
- ORV Trails
- Snowmobile Trails
- Stand Boundary
- 094 - Other/Bulldozer
- 100 - Final Harvest
- 400 - Thinning
- 700 - Shelterwood-prep

