GRAYLING FOREST MANAGEMENT UNIT
COMPARTMENT REVIEW PRESENTATION

COMPARTMENT # 221 **ENTRY YEAR:** 2009

GIS Compartment Acreage: 595 **County:** Crawford

Revision Date: August 28, 2007

Stand Examiner: Joan Charlebois

Legal Description: T26N R3W Sections 20 & 21 South Central Grayling Township

Management Goals: To maintain forest health, productivity, sustainability, species and structural diversity throughout the compartment while providing for multiple use and visual management.

Soils and Topography: Terrain is flat to rolling, with some steep portions, on primarily Grayling Sands.

Ownership Patterns, Development, and Land Use in and Around the Compartment: There is a mixture of state, municipal, private industrial and residential ownership. The compartment is adjacent to the City of Grayling's waste water settling ponds and spray fields. A 100-foot strip of land along the north-south centerline of Section 20 was conveyed to the Township of Grayling in 2003 for a recreational trail corridor. A portion of the compartment is included in a Memorandum of Understanding with local units of government to facilitate disposal for industrial development. A land transaction application is currently being considered for part of the compartment lying west of the railroad tracks.

Unique, Natural Features: The compartment contains a mix of cover types – upland pine, aspen and oak – that are typical of the area and soils. Given the habitat types and adjacent observations, there is the potential for occurrences of goshawk, Kirtland's warbler, prairie warbler, Henry's elfin, Eastern massasagua rattlesnake, red-legged spittlebug, Hill's thistle, Alleghany plum and rough fescue.

Archeological, Historical, and Cultural Features: Evidence of historic logging activity was noted within the compartment.

Special Management Designations or Considerations: See **Ownership** regarding the Memorandum of Understanding.

Watershed and Fisheries Considerations: Municipal waste water treatment facilities border the compartment. This area is over the groundwater aquifer that feeds the Manistee and AuSable Rivers. There are no streams or lakes contained within the compartment.

Wildlife Habitat Considerations: Maintaining the current mix of oak and pine will benefit a variety of game and non-game wildlife.

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 200 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 27 and potential is good. The Compartment is not currently leased for oil and gas development.

Vehicle Access: The compartments' two main blocks can be reached by way of Industrial Drive and Barker Lake Road. There is no legal access to the block of state land bordering I-75, although access has been gained in the past from the adjacent gravel pit owner.

Survey Needs: None at this time.

Recreational Facilities and Opportunities: Hunting and snowmobiling occur within the compartment. No designated recreational trails occur within the compartment. The Beal Plantation, a historical site and interpretive trail, lies just north of this compartment, located in the center of the Grayling Industrial Park.

Fire Protection: Equipment-related fire starts are not uncommon along the railroad grade, but access is good on both sides of the tracks for fire suppression.

LOTS Compartment Acreage: 596

- **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: **221**

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		47	34																81
Jack Pine		11	16					148											175
Non Stocked	6																		6
Oak		30	17		4				175	30	27								283
Upland Hdwds		37	13																50
Total	6	125	80		4			148	175	30	27								595

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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: **221**

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	81																										81
J Jack Pine							175																				175
X Non Stocked													6														6
O Oak														283													283
M Upland Hdwds																								50			50
Total	81						175						6	283										50			595

AUSABLE STATE FOREST | GRAYLING FOREST MGT UNIT | CRAWFORD COUNTY | COMPARTMENT: **221**

Table 10 - COMPARTMENT VOLUME SUMMARY - ALL STANDS

COMPARTMENT SUMMARY

TOTAL VOLUME		CUT VOLUME	
Hardwood	1859 Cds	Hardwood	1237 Cds
Hardwood	563 Mbf	Hardwood	385 Mbf
Softwood	1599 Cds	Softwood	334 Cds
Softwood	105 Mbf	Softwood	31 Mbf
Sum TotVol	4794 Cds	Sum CutVol	2403 Cds

Total Cmpt Acres

595

Acres Proposed For Cut..... 198

GRAYLING FOREST MGT UNIT | **Proposed Treatments With NO Limiting Factors** | **Compartment: 221** | **Entry Year: 2009**

Stand	Cover Type	Acres	Age	Site Index	Mgt Obj	Condition	Method Cut	Harvest Priority	Cultural Need	FDF Status
5	**J5**	37	64	49	jack pine	two aged	final harvest	3	natural regeneration	

comnts Fmd **:** Low volume, poor quality over-mature JP saw component that is senescing, ~60 year old mature poles, and younger smaller poles and large saps. Scattered throughout are also poor-form and quality NPO cull saw and poles, few BTA to the south and a mix of size classes of RP also in the S1/2. O/J 1 in scraggly small oak saplings and seedlings, suppressed JP small saps, but also near-merchantable JP large saps. The stand is basically a multiple-age mix of pine and oak with over- and under-mature components. J1 is a composite of the oak and JP regen. The stand is nearly a mile long, and narrow, paralleling the railroad tracks. Harvest all merchantable JP, oak and aspen. Retain the younger, healthy RP component and protect the existing regen. The goal is to secure a mix of natural regen, although this may take longer than the certification standard of 5 years. These stands on poorer soils that regenerated naturally without a stand-replacement level fire typically took decades to fill in to a fully-stocked condition. Dropped extremely low SI as not representative (SI 34), and used second SI (49) that was more in line with the previous SI of 48.

7	**O6**	84	76	54	oak	mature	final harvest	1	natural regeneration	

comnts Fmd **:** Was thinned in 2002, all aspen, RM & marked oak, under #720419901. Stand has large pole/small saw hybridized RO and large pole suppressed WO, with an understory of scattered RM stump sprout clumps and some aspen sprouts. Most of the oak stump sprouts have been impacted by browsing. The stand occupies a series of ridges that have some steeper sides. The previous SI was 58. Per Pre-Review discussion: if the area is not disposed of under the industrial park MOU, final harvest now, given the oak's age, applying standard retention specs.

8	**O6**	6	76	46	oak	low quality	final harvest	2	natural regeneration	

comnts Fmd **:** On shallow ridge: shorter hybridized RO saw with wide contorted crowns, but mostly short gnarly poor-quality RO poles. More to W1/2: also very overmature BTA singly and in clumps of a few trees. To the E1/2: RP seeding in. Final harvest to regenerate the oak and aspen through sprouting. Leave the RP & WP and WO. Create an ISR island, consider extending it from the stand's N center edge, down at a SE'ly angle, and cross into stand 9. Treat at the same time as stand 9. A mix of oak, aspen & pine regen is the long-term goal. Previous comments: "OPEN STAND WITH SCATTERED OAK."

9	**O8**	38	74	58	oak	mature	final harvest	2	natural regeneration	

comnts Fmd **:** Fair-decent quality hybridized RO, generally suppressed WO poles, with 20-30' tall RM stump sprouts and BTA sprouts. M2 is a composite of the RM & aspen regen. PArVHa. Was thinned in '90-91 under #720348901, cutting all marked oak, and other species 2" and up. Remove the overstory in order to regenerate the oak through sprouting before the 16 year old aspen & RM regen begins to close over. Leave the WO. Consider requiring the contractor to mow down the current RM saps during harvesting. For ISR: leave islands, such as 5, 1-ac islands. Treat at the same time as stand 8 and connect the north retention island with stand 8's retention island. Previous SI was 70.

22	**O6**	22	85	47	oak	low quality	final harvest	2	natural regeneration	

comnts Fmd **:** Higher ground island of oak surrounded by outwash plain JP (stand 23). Dying back NPO, with poor form/health BTA in scattered small clones, WO saw growing very slowly (SI 34) but holding up better than the NPO and seeding in regen, and JP represented by a variety of size/age classes, including pockets of lg. poles/sm. saw. O1 understory is a composite of all regen. Kept the previous NPO SI since my SI on the WO wasn't representative. Final harvest with reserves: cut all merchantable JP, NPO, RM and aspen. Leave all WO for additional seed. The goal is to regenerate the NPO and aspen before they senesce out of the stand. A mix of pine, oak and aspen is expected. Treat at the same time as stand 25. Given this stand's relatively small acreage, its high amount of edge relative to its area, and the NPO's declining condition, I would prefer to not increase the amount of ISR beyond leaving the WO.

25	**O9**	7	76	48	oak	low quality	final harvest	2	natural regeneration	

comnts Fmd **:** Small stand on higher ground than the surrounding JP stand 23. Poor-quality breaking up NPO, better health WO, a mix of size-classes of JP & RP poles, over oak seedlings & saplings (O1 achieved by combining the oak and JP regen). Small RM component in the stand. Final harvest with reserves: Cut all merchantable JP, NPO & RM. Leave all WO for additional seed. The goal is to regenerate the NPO before it senesces out of the stand. A mix of pine & oak is expected. Treat at the same time as stand 22. Given this stand's relatively small acreage, its high amount of edge relative to its area, and the NPO's declining condition, I would prefer to not increase the amount of ISR beyond leaving the WO.

26	**J5**	4	59	45	jack pine	two aged	final harvest	2	natural regeneration	

comnts Fmd **:** 2+ aged JP stand with a minor overmature saw component that is dying out, scattered scraggly NPO, and a majority in 2-4 stick JP poles over large sap/just merchantable JP, and oak seedlings/saplings in O0-O2. The stand has over- & under-mature components. SI averaged between this and the previous inventory. Previous comments: "STAND IS ALONG BARKER LAKE ROAD. Two aged stand, 3-5 inch and 7-9 inch DBH. Include that portion of the stand that is east of Barker Lake Road to cut with Compartment 233, stand 21 to the east. Leave red pine and oak along Barker Lake Road along a three chain wide strip for visual concerns. This portion of the stand has been given a new stand number, #26. This was part of stand 23. Replant to jack pine those areas that do not regenerate naturally to oak and jack pine. 09/08/2006 mm"

Total Acres..... **198**

Proposed Treatments With Limiting Factors

Compartment: 221 **Entry Year: 2009**

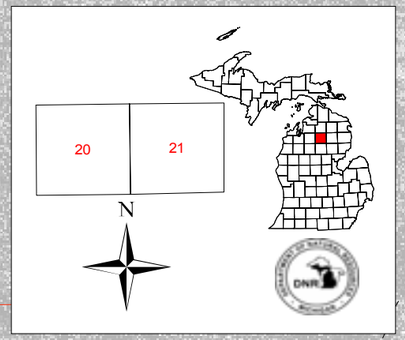
Stand	Cover Type	Acres	Age	Site Index	Mgt Obj	Condition	Method Cut	Harvest Priority	Cultural Need	FDF Status

TREATMENT LIMITING FACTORS:

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

Field Map

Compartment 221
T26N, R3W, Sec. 20, 21
County: Crawford
Unit: Grayling
YOE: 2009
Acres: 595 GIS Calculated
Stand Examiner: Joan Charlebois
Map Revised: 8/30/2007
Map Phase: Pre-review



Legend
- RLS Corners
- Miris Corners
- Pipelines
- Powerlines
- Railroads
- Highways
- County Paved Roads
- Paved Roads
- County Gravel Roads
- Gravel Roads
- Poor Dirt Roads
- Interstate Highway
- Stand Boundary
- 100 - Final Harvest
- 146 - Final Harvest/Natural Regeneration

I 75 BL
Industrial Dr.
Barker Lake Rd.
Grayling Municipal Waste Water Settling Ponds
Grayling Municipal Waste Water Spray Fields
75
Gar
N I 75
.3 Mi
School Section

2 O2
4 O7
5 J5 146
6 O3
7 O6 146
17 O9
18 X0
19 A3
8 O6 146
16 M2
9 O8 146
10 M3
11 A3
110 O3
116 O2
15 O5
1 J3
20 O6
24 J2
23 J5
26 J5 146
25 O9 146
22 O6 146

1 0.5 0 1 Miles