TRAVERSE CITY FOREST MANAGEMENT UNIT
COMPARTMENT REVIEW PRESENTATION

COMPARTMENT # 138 ENTRY YEAR: 2008

Compartment Acreage: 1908 County: Kalkaska
Compartment Survey Record Acreage: 1901

Stand Examiner: Ken Rouston

Legal Description: T25N R5W, Sections 7, 8, & 9.

Management Goals: Maintain healthy, diverse vegetation that includes productive timber stands and essential non-timbered habitat for a wide range of plants and animals that are found in this compartment. Diversity should focus upon age class distribution, cover types and species composition within the forested stands and allowance for a proper mixture of non-forested/semi-open or open areas. Protection and enhancement of natural features should focus upon the rolling hill areas and along travel corridors within the compartment. Timber harvest plans must incorporate protection for the slopes to avoid erosion and development of frost pockets. A large portion of the compartment is forested with aging oak timber of varying degrees of quality. Many oak stands are showing signs of decline and treatment schedules are continuing to focus attention upon better oak sites where regenerating oak is a priority. The Pere Marquette Forest Plan directs a significant reduction in Oak management acres in favor of Aspen. That mandate is difficult to carry out in this compartment since there are only a few stands that have an adequate aspen component. Past clearcuts produced the expected results of mixed composition stands that are dominated by the Aspen and Red Maple. Oak still maintains a presence in these recently treated stands. Prescribed fire will be used to control the Red Maple competition in targeted oak stands that contain better quality Red Oak.

Soil and Topography: The topography in this compartment ranges from flat to slightly rolling. Poor, excessively drained, sandy soils are found in much of this part of Kalkaska County.

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

The entire compartment is wild, state owned land. The only development is the oil/gas activity. The nearest privately owned land is more than 1 mile beyond the perimeter of this compartment. The northern border of this compartment joins the Hanson Military Reserve which is land owned by the Military. The compartment is leased to the military for training purposes under the terms of the 20 year lease agreement.

Public use of the land in the compartment is primarily recreational in nature. Snowmobiling and hunting are the main activities. A fair amount of illegal ORV traffic is occurring especially during the fall hunting seasons. Military training maneuvers cause considerable traffic and activity in the forest and along the roadways for a few weeks during the traditional training period of June - August time frame. There is daily traffic on the forest trails and county roads in section 9 by service crews monitoring of oil/gas facilities within the compartment.

Unique, Natural Features (include only non-site specific and non-sensitive information):

There is a record showing Kirtland's Warbler was in Section 7 during 2004. Questionable credibility - in my opinion since there is no obvious habitat in Section 7.

Archeological, Historical, and Cultural Features (include only non-site specific and non-sensitive information): Numerous abandoned railroad grades can be found in this compartment suggesting that there may be some sites related to early settlers that populated the area.

Special Management Designations or Considerations: This compartment is part of a 20-year lease that has been negotiated with the Department of Military Affairs for use of the area by the Michigan National Guard for troop training. All land management decisions regarding this land base are made by DNR. Information regarding our land management activity is exchanged with the military, so that training conflicts do not arise.

Watershed and Fisheries Considerations: No water bodies in the compartment.

Wildlife Habitat Considerations: :

Mineral Resource and Development Concerns and/or Restrictions: Surface sediments consist of ice-contact outwash sand and gravel. The glacial drift thickness varies between 400 and 600 feet. Beneath the glacial drift is the Mississippian Michigan Formation. The Michigan is quarried for gypsum elsewhere in the State. A gravel pit is located in Section 3 and potential is good. The Garfield 8 Field is located in the Compartment. The field produces from the Devonian Richfield and the Ordovician PdC. Most of the State's minerals are leased.

Vehicle Access: Adequate vehicular access appears to be available with the road system that is already in place. Roads are heavily used in the summer by the military during maneuvers in this compartment. New roads developed for timber harvests will be closed upon completion of the sales.

Survey Needs: Lands surrounding the compartment are all state owned and it appears that all the necessary survey corners are already in place.

Recreational Facilities and Opportunities: Hunting is the main recreational use of the land in this compartment. Some camping activity occurs but it is usually associated with hunting. Berry picking and mushroom hunting activity have been observed in the area. Snowmobiling is a popular activity during winters when adequate amounts of snow are available.

Fire Protection: Response time is a concern since heavy equipment is about 35 minutes away. Response time improves when units are stationed at the traditional standby site but they are still 15 miles away. Fortunately, there is a lack of volatile pine fuels in the area of this compartment so a catastrophic fire is unlikely. During extended dry summer periods, the risk of fire is heightened in the compartment due to the heavy presence of military activity. Spring fires could make some runs through the U-types and in and out of some of the Oak stands consuming a fair number of acres. The fuel load varies in the oak stands based upon the method of harvest. The stands that were whole tree harvested have only small amounts of slash remaining while short wood operations leave heavy fuel loads on the forest floor. The terrain may cause the suppression crews some difficulty but generally, fires should be contained prior to reaching 25 acres in size if suppression forces are able to reach the site with some degree of promptness.

Additional Compartment Information: Several Oak stands were harvested by partial cuts within the last ten years. Those stands now have oak seedlings developing. Deer numbers are down, so browse damage is less of an issue. We need to take advantage of this condition. Some stands need to be burned to ward off competition from red maple and we need to further reduce the overstory in some of the oak stands to release the seedlings so that they can promote to sapling status beyond the browse line.

****** Cover type details, proposed treatments and stands designated as FDF are listed in the attached reports:**

- **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 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

PERE MARQUETTE STATE FOREST | TRAVERSE CITY FOREST MGT UNIT | KALKASKA COUNTY | COMPARTMENT: **138**

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		58	26	184	72														340
Grass	30																		30
Jack Pine							106												106
Oak		60		5			33		151	47	757	90	32						1175
Red Pine								60		6									66
Upland Brush	67																		67
Upland Hdwds			50				72												122
White Pine																		2	2
Total	97	118	76	189	72		211	60	151	53	757	90	32					2	1908

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

PERE MARQUETTE STATE FOREST | TRAVERSE CITY FOREST MGT UNIT | KALKASKA COUNTY | COMPARTMENT: **138**

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	340																										340
G Grass					30																						30
J Jack Pine							28							78													106
O Oak														1110		25										40	1175
R Red Pine														6		60											66
U Upland Brush																							67				67
M Upland Hdwds																								122			122
W White Pine																										2	2
Total	340				30		28							1194		85							67	122		42	1908

PERE MARQUETTE STATE FOREST | TRAVERSE CITY FOREST MGT UNIT | KALKASKA COUNTY | COMPARTMENT: **138**

Table 10 - COMPARTMENT VOLUME SUMMARY - ALL STANDS

COMPARTMENT SUMMARY

TOTAL VOLUME		CUT VOLUME	
Hardwood	16417 Cds	Hardwood	4907 Cds
Hardwood	2858 Mbf	Hardwood	1716 Mbf
Softwood	2533 Cds	Softwood	1192 Cds
Softwood	439 Mbf	Softwood	330 Mbf
Sum TotVol	25544 Cds	Sum CutVol	10191 Cds

Total Cmpt Acres

1908

Acres Proposed For Cut..... 908

TRAVERSE CITY FOREST MGT UNIT | **Proposed Treatments With NO Limiting Factors** | **Compartment: 138** | **Entry Year: 2008**

Stand	Cover Type	Acres	Age	Site Index	Mgt Obj	Condition	Method Cut	Harvest Priority	Cultural Need	FDF Status
3	**O9**	60	98	58	oak	mature	shelterwood-seed	2	cleaning & weeding	

comnts Fmd **:** Thinned in 2001, sale #023-99-01, "Spike-Horn" sale, 100 acres. Pockets that were heavy to red maple and aspen were clearcut. In addition, oak areas were thinned. The residual oak is good quality and is mostly sawlog sized. There are lots of oak seedlings in place now but most are not promoting. Lots of red maple stump sprouted and areas where aspen was prominent are regenerating well. There is also some red pine and white pine regeneration scattered about. My recommendation is to do a shelterwood-seed cut to further reduce the upper canopy to 20 square feet in an attempt to stimulate the new oak seedlings. In addition, the stand should be burned following the harvest to set back the red maple.

6	**R9**	13	58	52	red pine	mature	removal	2		

comnts Fmd **:** (R7R5O7) Mixed stand of Red Pine and Red Oak. A small amount of White Oak is included within the stand mostly in the form of pulpwood. Not much Oak regeneration in place. There are some White Pine saplings in the stand, so prescribed burning is removed as a tool since we would lose this White Pine component. Remove the merchantable Oak now and allow the Red Pine to remain to nurse oak seedlings along. In ten years, remove the Red Pine if adequate oak seedling stocking develops. Ground cover consists of bracken fern and blueberry. The terrain is rolling.

7	**O6**	30	101	61	oak	mature	shelterwood-seed	1	natural regeneration	

comnts Fmd **:** Stand was cut in 2000-01. Pockets heavy to maple and aspen were clearcut. Some areas of oak thinned by marking. Sale name "Spike-Horn", 023-99-1, 100 acres. This portion of the remaining stand is mostly red oak poles and small sawlogs. There is a pine component (mostly red pine) scattered through the stand. The red maple sprouted at the stump and it is growing very well. The stand needs to be treated further by reducing the basal area to seed tree level (20 - 30 square feet). Once the harvest is completed, the stand should be burned to stimulate acorn production and to set back the red maple. In addition, the site should be scarified to expose mineral soil for the acorns to develop in. Under planting red pine should be considered to establish a higher pine presence in the stand. This would set the stand up so that pine and oak could be managed alternately.

8	**R9**	13	64	54	red pine	immature	removal	2		

comnts Fmd **:** Red Pine is outperforming the Jack Pine. Good amounts of Oak regeneration in place. Remove the Jack Pine now and allow the Red Pine to nurse the oak seedlings along. In ten years, remove the Red Pine. Deer populations are low, thus there is no browsing damage occurring to the oak seedlings. Ground cover is blueberry and the terrain is rolling.

9	**J6**	28	57	58	jack pine	mature	final harvest	1	planting	

comnts Fmd **:** Clearcut this stand and replant jack pine where necessary. There is some advanced oak regeneration already in place. The jack pine is showing signs of decline, so it should be harvested now. There is 15-20% mortality now and this stand is clearly a site that could be infested by bud worm. Oak regeneration will release and some natural jack pine regeneration will appear. There is some sweetfern present. The post-harvest stand will be mixed composition of oak and jack pine and may need to be supplemented by planting some areas. An old railroad grade bisects the stand. Current condition is J5R7J7O1. Timber quality is average. Terrain is slightly rolling.

12	**O8**	195	93	55	oak	mature	shelterwood-seed	1	natural regeneration	

comnts Fmd **:** 2006 kgr stand exam comments: Some nice Oak remains after the thinning. Some Red Pine and White Pine saplings are scattered. Oak stump sprouts are coming along nicely and oak seedlings have developed on the ground but have not promoted yet. Some browse damage but not a lot. Red Maple has sprouted too. Aspen regeneration has developed in scattered areas through the stand. Recommended prescription is to reduce the basal area to +/- 20 square feet as a shelterwood seed cut. All the Pine should be left uncut in hopes of developing a natural seed source to expand the pine component in the stand. Do not remove all of the White Oak component. After the cut is completed, the stand should be burned to set back the Red Maple and to stimulate acorn production. 2004 kgr TCR update comments: Stand thinned in winter/spring of 2002. Frank Blake produced for Sappi, 195 acres, sale #157-98-01, "Sunset Trail" sale. Some nice timber in this stand.

14	**J6**	78	51	55	oak	mature	final harvest	2		

comnts Fmd **:** Stand is mixed. Some areas have a higher concentration of Red Pine. There is a dense carpet of oak seedling/saplings in places where there is a hole in the canopy. Red Pine is all lmerchantable. Jack Pine varies in diameter but should be cut now. Ground cover is blueberry. By clearcutting, we should get a fair amount of oak promoting into sapling stage. Some natural regeneration of Jack Pine and Red Pine is expected and is quite common in this area of Kalkaska County. Any combination of oak, red pine and jack pine that comprises a medium stocked stand is acceptable.

19	**R6**	4	66	60	red pine	immature	thinning	1		

comnts Fmd **:** This stand is located along a gully. The timber is along the sideslopes with a trail road passing along the bottom of the gully. Harvests should extend to the top rim to facilitate logging equipment operations. There is a high degree of mortality in the Jack Pine. The Red Pine is doing well. Ground cover is blueberry and bracken fern. A fair number of oak seedlings are in place but they are not promoting. Reducing the overstory may solve this problem. There was no Red Maple observed in the stand. Harvest now! Remove all Jack Pine and Oak. In addition, thin the Red Pine down to 70 square feet in hopes of stimulating the oak seedlings so that they promote into the lower canopy. Concentrate on removing the larger diameter poles and all the sawlog size Red Pine stems. Oak seedlings will also benefit from the fact that deer numbers are down in this area. Browsing damage is no longer a problem in this area and we should try to capitalize on this condition now before deer numbers swell again.

Stand	Cover Type	Acres	Age	Site Index	Mgt Obj	Condition	Method Cut	Harvest Priority	Cultural Need	FDF Status
20	**O6**	101	90	54	oak	immature	final harvest	2		

comnts Fmd **:** Oak quality here is medium. Not much diameter and only a few stems have reached sawlog size. Terrain is rolling and the soils are very poor. There is scattered red pine and white pine seedlings/saplings. It is getting kind of late to thin this stand since it is 90 years old now. Clearcut and regenerate the stand as an Oak/Red Maple mixed stand. Medium stocking of oak and maple is acceptable.

Stand	Cover Type	Acres	Age	Site Index	Mgt Obj	Condition	Method Cut	Harvest Priority	Cultural Need	FDF Status
25	**O9**	32	108	47	white pine	mature	final harvest	1		

comnts Fmd **:** Oak stand of low quality with lots of white pine saplings in understory. A fair amount of oak seedlings are on the ground but they are not promoting. Some pockets of Big Tooth Aspen mixed in. DO NOT BURN this stand. Burning would eliminate much of the small white pine that has developed. Mark to leave +/- 20 sq ft of large crown oak and cut all aspen & red maple. Terrain is rolling. Rotate management objective between white pine and oak. Oak is healthy and there is not much mortality.

Stand	Cover Type	Acres	Age	Site Index	Mgt Obj	Condition	Method Cut	Harvest Priority	Cultural Need	FDF Status
26	**O6**	8	55	68	white pine	high risk	delayed removal	1		

comnts Fmd **:** Mixed stand of Oak and White Pine. Oak is mostly polesize with some sawlog size trees mixed in. A high percentage of White Oak is found here and there is 15-20% mortality. Lots of oak seedlings on the ground but few have promoted. White pine and red pine have developed beneath the oak and are now saplings and small poles. Recommended prescription is to remove all the oak now and leave the pine to nurse the oak seedlings along. By opening up the canopy, the oak seedlings should respond favorably. Then alternate the management objective between oak and pine as long as we can. Terrain here is rolling hills.

Stand	Cover Type	Acres	Age	Site Index	Mgt Obj	Condition	Method Cut	Harvest Priority	Cultural Need	FDF Status
30	**O6**	25	51	46	red pine	two aged	final harvest	1		

comnts Fmd **:** Mixed stand of Oak and Red Pine. Red pine of all sizes from saplings to sawlog size. GC = grass and blueberry. Some oak regeneration scattered around. 15% mortality in the oak. Many oak trees on this site are big and wolfy. Go in now and take out all the merchantable oak. Leave the Red Pine as residual to nurse along the oak seedlings. Once the oak seedlings promote, remove the Red Pine overstory. A scattering of Jack Pine is also found in the stand. Rotate the management objective between pine and oak. The site index for red pine is not a true indicator since the red pine were suppressed by the oak for a long period during their development.

Stand	Cover Type	Acres	Age	Site Index	Mgt Obj	Condition	Method Cut	Harvest Priority	Cultural Need	FDF Status
32	**O9**	151	77	56	oak	immature	shelterwood-seed	1	natural regeneration	

comnts Fmd **:** 2006 kgr stand exam comments: Good quality oak in most areas of the stand. Both Red Oak and White Oak are found here. Heavy Aspen regeneration in places. Lots of Red Maple stump sprouts. A fair number of oak seedlings are started. Recommended prescription: Reduce BA to 20 square feet and burn the stand after the harvest is completed. Burn will set back the red maple and stimulate additional acorn production. 2001 kgr treatment update comments: Stand was harvested as a marked thinning in September of 2000. The sale was #021-99-01, "Eight Point Sale." The oak in this stand has good quality. Acorns were plentiful during the harvest and lots of mineral soil was exposed during the skidding process. It will be interesting to see if abundant oak seedling establishment occurs.

Stand	Cover Type	Acres	Age	Site Index	Mgt Obj	Condition	Method Cut	Harvest Priority	Cultural Need	FDF Status
37	**O9**	170	90	64	oak	two aged	delayed removal	1		

comnts Fmd **:** Mixed stand. Simply remove the aspen and red maple now. Return later to get residual oak trees once seedlings develop on the forest floor. Some oak seedlings here now but none are promoting. Oak and Maple have been co-existing here for a long time and I expect that the new stand will develop with similar composition and results. Consider a burn following the oak harvest in ten years if the maple competition is too intense. Oak is descent quality. Terrain is flat.

Total Acres..... **908**

Proposed Treatments With Limiting Factors

Compartment: 138 **Entry Year: 2008**

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

TREATMENT LIMITING FACTORS:

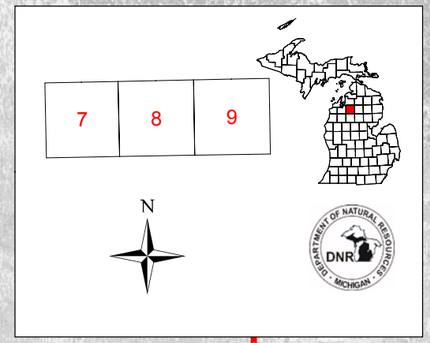
Total Acres..... 0

Field Map

Compartment 138
T25N, R05W, Sec. 7, 8, 9
County: Kalkaska
Unit: Traverse City
YOE: 2008
Acres: 1,908 GIS Calculated
Stand Examiner: Kenneth Rouston
Map Revised: 10/04/2006
Map Phase: Pre-review

Legend

- Miris Corners
- County Gravel Roads
- Poor Dirt Roads
- Abandoned Railroad
- Stand Boundary
- 100 - Final Harvest
- 114 - Final Harvest/Planting/Bulldozer
- 347 - Shelterwood-seed/Natural Regeneration/Prescribed Burning
- 367 - Shelterwood-seed/Cleaning-weeding/Prescribed Burning
- 400 - Thinning
- 500 - Removal
- 600 - Delayed Removal



Sunset Rd
Portage Creek Rd
Ten Point Rd
Eight Point Rd
Maple Rd

1 A4 | 2 O3 | 3 O9 367 | 4 A3 | 5 A3 | 6 R9 500 | 7 O6 347 | 8 R9 500 | 9 J6 114 | 10 A3 | 11 U0 | 12 O8 347 | 13 R5 | 14 J6 100 | 15 U0 | 16 R4 | 17 R8 | 18 O2 | 19 R6 400 | 20 O6 100 | 21 O6 | 22 O6 | 23 U0 | 24 O2 | 25 O9 100 | 26 O6 500 | 27 U0 | 28 O6 | 29 A3 | 30 O6 100 | 31 U0 | 32 O9 347 | 33 A3 | 34 A3 | 35 A3 | 36 M3 | 37 O9 600 | 38 M6 | 39 A3 | 40 U0 | 41 W9 | 42 A6 | 43 U0 | 401 G0 | 402 G0 | 403 G0 | 404 G0 | 405 G0 | 406 G0 | 407 G0 | 408 G0 | 409 G0

1 0.5 0 1 Miles