



**TRAVERSE CITY FOREST MANAGEMENT UNIT
COMPARTMENT REVIEW PRESENTATION**

COMPARTMENT # 231 ENTRY YEAR: 2007

Compartment Acreage: 1931 County: Kalkaska

Stand Examiner: Ken Rouston

Legal Description: T25N R5W, Sections 1, 2 & 3

Management Goals: Management goals within this compartment must be meshed with the needs of the military. Summer troop training areas are most useful when dense forest canopy cover is in place, so the goal shall be to retain a high percentage of timber stands with this condition. Some forest canopy covers will be reduced by thinnings and other partial cuttings. It is equally important, to have adequate understory and ground covers for military maneuver areas. In the end, a variety of stand conditions will be in place. The timber stands in this compartment are in need of considerable amount of attention. There is a need to develop a more balanced rotational treatment schedule in order to maintain healthy, diverse vegetation that includes productive timber stands and essential habitat for the 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 maintaining a proper mixture of non-forested/semi-open or open areas. The high percentage of Oak timber type is being lowered by expanding aspen types through clearcutting areas where aspen has naturally developed. Some high quality oak stands need to be burned to reduce the competition from red maple and to allow for the development of oak seedlings in the understory. The addition of red pine or white pine via underplanting should be considered in some oak stands to perpetuate the ability to manage for oak on some sites.

Soil and Topography: Excessively drained, poor sandy soils dominate the compartment. The main soil type is Roselawn sand. The terrain ranges from slightly rolling to hilly and it will require extra thought and planning prior to and during the preparation of timber sales.

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

The entire land base in this compartment is state owned with the administrative authority being the Department of Military Affairs. These lands are commonly referred to as Military Board Lands. FMFMD manages the timber upon these lands with guidance and direction from the staff of the Michigan National Guard at Camp Grayling. Military troop training is the primary activity in this area. No fenced ranges or live ammunition exercises occur in this area. A mortar range is located just east of this compartment in Crawford County. Some military bivouac areas are located in the compartment and these areas are used annually. In 2001, the military had a trail developed for tracked vehicles and a portion of that route is located near the south, east and west edges of this compartment. The tracked vehicle trail is not fully completed or in full use. It is commonly referred to as the tank trail. A cement refueling pad is located in the very southwest corner of Section 1 (stand 68). Military Board lands are open to the public for recreational use. Public use of the area includes snowmobiling, hunting and mushroom/berry picking. The adjacent lands around the perimeter of this compartment are all state owned, so there is no interface with private lands.

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

The compartment topography is quite hilly. No endangered or threatened species of plants or animals are known to exist in the compartment.

Archeological, Historical, and Cultural Features (include only non-site specific and non-sensitive information):

This area contains several old railroad grades from the turn of the century logging era. It is the intent of the Military to maintain the integrity of these old grades as they exist today. No known historical or archeological sites are listed for this area.

Special Management Designations or Considerations: This compartment is entirely under the jurisdiction of the Department of Military Affairs.

Watershed and Fisheries Considerations: There are no water bodies within the bounds of this compartment.

Wildlife Habitat Considerations: The north half of the compartment consists of an ice contact ridge (LTA 3111). Topography is generally steep and irregular. Soil types are excessively drained loamy sand. Oak is a major component within this compartment. Aspen stands are also present. The south half of the compartment consists of a broad, flat outwash plain (LTA 5111). Topography is generally level with excessively drained sands. Oak stands and aspen stands again dominate this portion of the compartment. There are also shrubland and one jack pine stand.

Acorns are an important food source for many different wildlife species. Wildlife considerations for oak stands may include leaving a scattering of mast-producing trees, use of harvest methods to perpetuate oak within the community, species diversification within each stand, and leaving of den/nest trees (by sale specification). This will insure biodiversity of wildlife species within these stands. Examples of wildlife found here include fox & gray squirrel, scarlet tanager, spotted salamander, and garter snake. Aspen stands are an important habitat type for ruffed grouse and white-tailed deer. Ruffed grouse use different aged aspen throughout their life cycle. Younger stands provide cover while older stands provide catkins (food source) for the winter months. Clearcutting helps facilitate age class diversification of aspen by mimicking the necessary disturbances vital for regeneration. The creation of CWD trees for drumming logs and maintaining berry-producing shrubs is also desirable. This compartment is Military Board Land so the creation CWD will be subject to the Military's approval. Where applicable, the shrublands should be maintained by handfelling or by prescribed burning. Shrublands within this LTA type have a history of wildfire, and many species (for example, hill's thistle & little bluestem) respond positively to prescribed burning. The berry-producing shrubs provide an important food source. Examples of wildlife species found here include bluebird, badger, and green snake.

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 200 and 600 feet. Beneath the glacial drift are the Mississippian Michigan Formation and Marshall Sandstone. The Michigan is quarried for gypsum and the Marshall has been used as a building stone in other areas of the State. A gravel pit is located in Section 3 and there is potential on the uplands. This area is located just north of Garfield 8 and Beaver Creek Fields. Garfield 8 produces from the Devonian Richfield and the Ordovician PdC and Beaver Creek produces from the Devonian Richfield, the Detroit River Formation and the Ordovician PdC. There are leases in Section 3 that are Held By Production by the Garfield 8 Field.

Vehicle Access: Numerous trails and roads are found in the compartment. The road system is extensive and will remain as it is since the roads are needed for modern day military training. Roads developed during timber harvests will be closed once the harvest is complete unless the military determines that the road is one that they would like to keep open.

Survey Needs: No additional corners are necessary.

Recreational Facilities and Opportunities: There are no recreational facilities within the compartment. It is common to find deer hunting camps in this area during the fall deer hunting seasons. Snowmobilers use the pipeline corridor during winter. There are no water bodies within the compartment, so there is no fishing opportunity. The mushroom hunters and berry pickers use the compartment seasonally. Since the military uses the area for training during the summer, the recreational camping opportunities are limited and there are no real attractions such as lake or streams.

Fire Protection: This compartment is located in a relatively remote part of Kankaska County that is primarily oak forest. The main forest fire difficulty will be the lengthy response time for initial attack units and the lack of a nearby water supply. It is 27 miles from the Kankaska Office and 16 miles from the standby station at the Garfield Township Fire Hall. Roads are good for access to the southern part of the compartment. Fires occurring in the north half of the compartment will be much more difficult to access because the North/South roads are generally just two-track trails that often pass through some hilly terrain. Fire control crews will need to assess the topography and insert fire control lines accordingly. There are only small amounts of volatile pine fuels and those are located in the very northwest corner of the compartment so this reduces the chances of a catastrophic fire occurrence. Fires in open grass areas and fires burning up the hillsides may consume a fair amount of area before they can be controlled. Since slash is required to be removed from timber sales that are upon Military Board land, cut-over areas will not contain the usual fuel loads following harvests and may actually act as fuel breaks.

Additional Compartment Information: Timber harvests upon Military Board lands must be done in such a manner that slash is removed from the sale area, stumps must be cut as low as possible and equipment/forest products must be removed from the sale area during the summer. Logging operations are limited to the period of May 1 - October 1. A balance must be met between the desire to maintain good canopy cover and reduction of the stand basal area low enough to facilitate whole tree harvests to accomplish the low density of slash that the military requires.

****** 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

11/22/2005 2:02:11 PM

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

PERE MARQUETTE STATE FOREST

TRAVERSE CITY FOREST MGT UNIT

KALKASKA COUNTY

COMPARTMENT: 231

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		131	70	121	66			58	22										468
Grass	59																		59
Jack Pine				45	6	26	16	22											115
Oak		166	28	26				34	204	211	277	31	24						1001
Upland Brush	282																		282
White Pine								6											6
Total	341	297	98	192	72	26	16	120	226	211	277	31	24						1931

11/22/2005 2:02:16 PM

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

PERE MARQUETTE STATE FOREST

TRAVERSE CITY FOREST MGT UNIT

KALKASKA COUNTY

COMPARTMENT: 231

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	468																										468
G Grass					59																						59
J Jack Pine							115																				115
O Oak	31													935		2										33	1001
U Upland Brush																										282	282
W White Pine																										6	6
Total	499				59		115							935		2										39	1931

PERE MARQUETTE STATE FOREST

TRAVERSE CITY FOREST MGT UNIT

KALKASKA COUNTY

COMPARTMENT: **231**

Table 10 - COMPARTMENT VOLUME SUMMARY - ALL STANDS

COMPARTMENT SUMMARY			
TOTAL VOLUME		CUT VOLUME	
Hardwood	13341 Cds	Hardwood	7214 Cds
Hardwood	2412 Mbf	Hardwood	1277 Mbf
Softwood	1032 Cds	Softwood	213 Cds
Softwood	30 Mbf	Softwood	8 Mbf
Sum TotVol	19257 Cds	Sum CutVol	9997 Cds
Total Cmpt Acres		Acres Proposed For Cut.....	639
1931			

TRAVERSE CITY FOREST MGT UNIT

**Proposed Treatments
With NO Limiting Factors**

Compartment: 231 Entry Year: 2007

Stand	Cover Type	Acres	Age	Site Index	Mgt Obj	Condition	Method Cut	Harvest Priority	Cultural Need	FDF Status
3	U0	19			upland brush	nonstocked		0	opening maintenance	
<p>comnts Fmd : 2005 KGR comments: Stand was included in the large 2000 timber sale. Cherry has stump sprouted & some oak occupies the site. Ground cover is bracken fern & grass. This corridor contains a trail road that was used extensively as a decking area. This stand must have been a "range" activity area at one time (probably small arms) since the 2000 harvest was hampered by the fact that huge numbers of bullets were found in the trees. Terrain is slightly rolling. The tank trail is the north boundary of the stand.</p> <p>Wld : 2005 BJR: scattered shrubby black cherry and juneberry. Warm season grasses. Timber sale slash present. Burn if Military will allow. These U-types are likely spots for fire dependant plants and animals, included ETS species. May want to harvest some timber prior to burning.</p>										
8	O6	7	80	58	oak	immature	shelterwood-seed	1	natural regeneration	
<p>comnts Fmd : 2005 KGR comments: Oak stand with low quality. No noticeable mortality, closed canopy does not allow much of an understory to develop. Aspen is widely scattered. There are a few widely scattered pine in the understory. Terrain is rolling. Harvest stand and leave 30-40 square feet of large crowned oak (red oak & white oak), get rid of red maple.</p> <p>Wld : Stand 8: 2005 SGG: Sale should be marked to retain representatives of all oak species present in the stand, for habitat diversity.</p>										
9	O9	14	86	45	oak	mature	final harvest	1	natural regeneration	
<p>comnts Fmd : 5/13/98 (Grieve) This stand is dying, needs treatment. 2005 KGR OI comments: This oak stand has relatively wide spacing between trees with lots of regeneration coming in beneath the oak sawlogs in the open areas. Terrain is slightly rolling. The south half of the stand has the most advanced regeneration. Stand is at the low end of well-stocked classification. Clearcut to within two chains of the military tank trail. Maintain the canopy cover along the tank trail. Goal is to release the regeneration that is already in place. Acceptable regeneration would be any combination of oak and red maple. A very old fire plow line seems to divide this stand from the adjacent oak stand - east.</p> <p>Wld : Stand 9: 2005 SGG: Leave scattered oak (~7 trees) for mast production. WLD can mark.</p>										
11	J6	6	60	46	jack pine	mature	final harvest	1	natural regeneration	
<p>comnts Fmd : 2005 KGR comments: Stand looks healthy to me. Lots of oak seedlings and some advanced oak regeneration. Red Maple saplings coming in too. Old SI was wrong. Clearcut now! Acceptable regeneration will be any combination of Red Maple, Jack Pine and Oak.</p> <p>Wld : Stand 11: 2005 SGG: Concur with FMFM.</p>										
14	O6	68	75	57	oak	immature	shelterwood-seed	1	natural regeneration	
<p>comnts Fmd : 2005 KGR comments: Fair to good quality Red Oak with White Oak and Pin Oak mixed in. Lots of variables - some areas smaller dbh, quality varies from fair to good, pure red oak in some areas. Mark to leave 40 sq ft may work best. Give the stand marker flexibility to improvise density of residual BA. Shelterwood cut now. Terrain is slightly rolling.</p> <p>Wld : Stand 14: 2005 SGG: Sale should be marked to retain representatives of all oak species present in the stand, for habitat diversity.</p>										
15	O6	18	85	48	oak	mature	final harvest	1	natural regeneration	
<p>comnts Fmd : 2005 KGR comments: Oak quality is low. No height and small diameter. Probably just a poor site. Low numbers of Oak seedlings scattered and not promoting into sapling size. Overall, not much regeneration to be found. Ground cover is bracken fern and blueberry. Some Aspen pockets - widely scattered. BT Aspen site index was taken - 67 years old and 72 feet tall SI=53. Clearcut the stand now. Acceptable regeneration will include whatever mixture of oak, aspen and red maple that naturally evolves. Stand is somewhat elevated on a ridge. Terrain is gently rolling.</p> <p>Wld : Stand 15: 2005 SGG: Leave scattered oak (~9 trees) for mast production. WLD can mark.</p>										
17	O6	80	88	60	oak	mature	shelterwood-seed	1	natural regeneration	
<p>comnts Fmd : 2005 KGR OI comments: Oak stand that is healthy and of fair quality. Scattered aspen in the stand that is dominated by white oak and red oak. The stand canopy is quite tight in places. Some areas of the stand contain advanced oak regeneration. The sawlogs in this stand are generally small dbh. Mark to leave and reduce the stand to approximately 30 sq ft. The person doing the sale preparation should be given flexibility so that they can mark the oak stems that are found within aspen pockets, resulting in some small pockets with no residual basal area. Terrain is gently rolling.</p> <p>Wld : Stand 17: 2005 SGG: Sale should be marked to retain representatives of all oak species present in the stand, for habitat diversity.</p>										
24	U0	7			upland brush	nonstocked		0	opening maintenance	
<p>comnts Fmd : 2005 KGR comments: U-type with some O7 area directly adjacent to the trail road that runs N/S through the section. Scattered trees in the stand. Some military use is apparent.</p> <p>Wld : 2005 BJR: Low density trees. Filling in with cherry. 2005 SGG: Hand fell some cherry to maintain semi open habitat.</p>										
26	O6	9	94	64	oak	mature	shelterwood-seed	1	natural regeneration	
<p>comnts Fmd : 2005 KGR comments: Oak quality ranges from fair to good. Oak seedlings scattered and not promoting into sapling size. Ground cover is bracken fern and blueberry. Some Aspen widely scattered. Not a stand to clearcut without trying other options. Recommend that we attempt a partial cut where all aspen, red maple are removed. In addition, mark to leave 30 square feet of full crowned oak. Ideally, the site needs to be scarified and underplanted with red pine. Acceptable regeneration includes any combination of red oak, red maple and aspen.</p> <p>Wld : Stand 26: 2005 SGG: Sale should be marked to retain representatives of all oak species present in the stand, for habitat diversity.</p>										

TRAVERSE CITY FOREST MGT UNIT

**Proposed Treatments
With NO Limiting Factors**

Compartment: 231 Entry Year: 2007

Stand	Cover Type	Acres	Age	Site Index	Mgt Obj	Condition	Method Cut	Harvest Priority	Cultural Need	FDf Status
29	O5	25	88	50	oak	mature	final harvest	1	natural regeneration	
<p>comnts Fmd : 2005 kgr comments: Lots of oak seedlings however, few have promoted beyond seedling status. Some white pine seedlings scattered around. Aspen is mixed in along with some Red Maple. The oak quality is fair. Treatment will be to clearcut and plant some Red Pine in this stand. Acceptable regeneration will be combinations of oak, aspen and red maple.</p> <p>Wld : Stand 29: 2005 SGG: Leave scattered oak (12-15 trees) for mast production. WLD can mark.</p>										
30	O6	16	85	46	oak	mature	shelterwood-seed	1	natural regeneration	
<p>comnts Fmd : 2005 kgr comments: Oak stand between an elevated ridge on the west and a trail road on the east. Lots of oak seedlings however, few have promoted beyond seedling status. Some white pine seedlings scattered around. Aspen is mixed in along with some Red Maple. The oak quality is fair. Treatment will be to cut all red maple and aspen. In addition, reduce oak BA to 40 square feet except in dense pockets of oak seedlings where reduction of Basal Area should be taken down to 20 square feet.</p> <p>Wld : Stand 30: 2005 SGG: Sale should be marked to retain representatives of all oak species present in the stand, for habitat diversity.</p>										
31	O6	42	84	51	oak	immature	final harvest	1	planting	
<p>comnts Fmd : 2005 kgr comments: This is low quality Oak with a component of Big Tooth Aspen mixed in. Scattered Red Maple is also found in the stand. The Aspen is in very poor condition due to its age. Red Maple is gaining in the understory while Oak seedlings are failing to respond. White Pine and Red Pine are also found in the understory in the form of saplings. Terrain is rolling. Clearcut the stand now. Resulting stand will be a mixture of Oak, Aspen and Red Maple which is acceptable. Stand should be burned, cut and then trenched and planted with red or white pine.</p> <p>Wld : Stand 31: 2005 SGG: Leave scattered oak (~20 trees) for mast production. WLD can mark. Could mark as a leave island if suitable conditions.</p>										
32	A6	6	64	62	aspen (upland)	mature	final harvest	1	natural regeneration	
<p>comnts Fmd : 2005 KGR comments: Small stand of Aspen/Oak mix. The high BA of aspen, suggests that this stand will convert after clearcutting. Aspen vigor is slowing somewhat but the stand is still healthy. There is no noticeable mortality. The natural stand lines extend northward into compartment 131. Any combination of the aspen, oak, red maple and pine will be acceptable reforestation. Be sure to protect the minor component of pine that exists in the understory. Terrain here is rolling. Stand was GPS'd to determine exact position.</p> <p>Wld : Stand 32: 2005 SGG: Leave a small (~ ¼ ac) island of oak for mast production. WLD can mark. Include a spec to create coarse woody debris (~1-2/acre) if Military will allow.</p>										
34	O6	7	82	58	oak	mature	shelterwood-seed	2	natural regeneration	
<p>comnts Fmd : 2005 kgr comments: Small stand with a fair amount of oak seedlings in place - not many taller than 18". Stand is healthy and Oak quality is fair. Remove the Red Maple, Aspen and reduce total Oak Basal Area of the stand to about 50 square feet by removing larger and poor quality oak trees. There are some very good potential crop trees with descent crowns. A small pocket of Red Pine is located at the North end of the stand. This Red Pine pocket is unique and should be protected from the harvest as should all the pine that is within this stand.</p> <p>Wld : Stand 34: 2005 SGG: Concur with FMFM.</p>										
40	O9	12	89	46	oak	high risk	final harvest	1	natural regeneration	
<p>comnts Fmd : 2005 kgr comments: Mixed Oak/Aspen stand - dominated by oak. Stand is bordered on the north by the Military Tank Trail. The forest canopy within two chains of the Tank Trail must be maintained. The stand should be clearcut up to the two chain distance. This stand is being managed with stand 36 in Compartment 139 that is south of this compartment. This is a continuation of the same stand however Compartment 231 stands are all Military Board Lands. Burn this stand either before or after the harvest. The burn is to set back cherry and red maple sprouting in an attempt to retain this site as in oak management. In the event that this effort fails to materialize or that the burn does not accomplish the objective, the stand would become more mixed composition (oak, red maple & cherry), and this is an acceptable alternative.</p> <p>Wld : Stand 40: 2005 SGG: Leave scattered oak (~6 trees) for mast production. WLD can mark.</p>										
41	A9	10	65	51	aspen (upland)	high risk	final harvest	1	natural regeneration	
<p>comnts Fmd : 2005 kgr comments: Oak/Quaking Aspen, with Red Maple mixed in. The stand is bordered on the north by the Military Tank Trail. The forest canopy within two chains of the Tank Trail must be maintained. The stand should be clearcut up to the two chain distance. Leave all merchantable hardwood and oak within the two chain area adjacent to the tank trail. Harvest should occur during leaf-off to assure the sprouting vigor of the aspen is at a maximum. This stand is being managed with stand 35 in Compartment 139 that is south of this compartment. This is a continuation of the same stand however Compartment 231 stands are all Military Board Lands.</p> <p>Wld : Stand 41: 2005 SGG: Leave 1-2 oak at south end of stand for mast production.</p>										
43	U0	4			upland brush	nonstocked		0	opening maintenance	
<p>comnts Fmd : 2005 KGR comments: Ground cover includes grass and sweet fern. Pin Cherry shrubs with occasional cherry tree are found on this site. Terrain is slightly rolling. Stand is bounded on the north by the tank trail and is bisected by a trail road.</p> <p>Wld : 2005 BJR: growing in with cherry. 2005 SGG hand fell some encroaching woody vegetation to maintain semi open habitat.</p>										

TRAVERSE CITY FOREST MGT UNIT

**Proposed Treatments
With NO Limiting Factors**

Compartment: 231 Entry Year: 2007

Stand	Cover Type	Acres	Age	Site Index	Mgt Obj	Condition	Method Cut	Harvest Priority	Cultural Need	FDF Status
45	O6	22	80	57	oak	mature	shelterwood-seed	1	natural regeneration	
<p>comnts Fmd : 2005 kgr comments: Stand consists of low to fair quality Red Oak and White Oak. Canopy is pretty tightly closed and very little oak regeneration is present. Aspen is widely scattered, some Red Maple is mixed in and a traces and small pockets of white pine and red pine can be found in the understory. Prescribed burn would destroy the small pine understory. Harvest by marking to leave 40 square feet of large crowned oak.</p> <p>Wld : Stand 45: 2005 SGG: Sale should be marked to retain representatives of all oak species present in the stand, for habitat diversity.</p>										
47	O6	22	75	50	white pine	immature	shelterwood-seed	1	natural regeneration	
<p>comnts Fmd : 2005 kgr comments: Oak stand with lots of pine in the understory. The White Pine/Red Pine understory ranges in size from seedlings to 30' tall saplings. Oak is healthy. There are scattered aspen clones. The canopy is mostly closed up and the terrain is rolling. Goal will be to alternate the pine and oak management. Prescription for this rotation is to cut all red maple and aspen. In addition, mark to leave 20 square feet of good crown, healthy oak trees in areas that lack significant oak regeneration.</p> <p>Wld : Stand 47: 2005 SGG: Concur with FMFM.</p>										
48	O6	8	101	38	white pine	mature	final harvest	1	natural regeneration	
<p>comnts Fmd : 2005 kgr comments: Mixed stand with a low quality oak component. Canopy is somewhat more open and lots of pine and oak seedlings and saplings have developed beneath the mature trees. Some advanced oak regeneration has developed in many places. Recommendation - Clearcut to release the regeneration. Exception: Do Not Cut Pine. Regeneration of the stand will surely be of mixed composition. Medium to well stocked stand of red pine, white pine, oak, and red maple will be acceptable in any combination. Protect seedling/saplings during harvest. Goal is to maintain the option of alternating the pine/oak management. Terrain is rolling. Retained Site Index of record.</p> <p>Wld : Stand 48: 2005 SGG: Leave scattered oak (~4 trees) for mast production. WLD can mark.</p>										
56	A9	7	75	50	aspen (upland)	high risk	final harvest	1	natural regeneration	
<p>comnts Fmd : 2005 kgr comments: Aspen/Oak mixed stand. Aspen is old and many stems are deformed. The stand has canopy gaps where advanced oak regeneration can be found. Red maple and white pine are found in the understory too. Timber is in very poor condition due to its age. Stand needs to be clearcut and regenerated. Any combination of Aspen, Oak, Red Maple or Jack Pine natural regeneration will be acceptable as long as it is a good stocking.</p> <p>Wld : Stand 56: 2005 SGG: Leave a small (~ ¼ ac) island of oak for mast production. WLD can mark. Include a spec to create course woody debris (~1-2/acre) if Military will allow.</p>										
57	O6	21	88	46	oak	high risk	final harvest	1	natural regeneration	
<p>comnts Fmd : 2005 kgr comments: Oak/Jack Pine mixed stand with lots of canopy gaps. The Jack Pine is in poor condition and the Oak is low quality (N. Pin). There are good amounts of advance oak regeneration especially in the areas where canopy gaps occurred. Some jack pine regeneration is present. Some noticeable oak mortality due to oak decline. Terrain ranges from relatively flat to rolling. Recommendation is: Clearcut except for red pine. A significant amount of the red pine is alongside the tank trail. This residual red pine will provide some canopy cover alongside the tank trail. A mixed composition stand with Red Pine, Oak and Jack Pine is acceptable regeneration.</p> <p>Wld : Stand 57: 2005 SGG: Leave scattered oak (~10 trees) for mast production. WLD can mark.</p>										
58	A6	38	65	56	aspen (upland)	mature	final harvest	1	natural regeneration	
<p>comnts Fmd : 5/13/98 (Grieve) Junk logs, clearcut. 2005 KGR comments: Very mixed stand with dense pockets of Aspen in many places. Lots of understory shrubs, oak and red maple. Some of the oak regeneration is advanced. Aspen is old and in poor condition. Oak is of marginal quality. Ground cover consists of bracken fern, blueberry and grass. There is some Jack Pine component on the west side of the stand. Clearcut this stand to sprout back as a highly aspen dominated stand. Harvest should be done during leaf-off to insure maximum vigor for sprouting aspen regeneration. There will be some oak component in the new stand as well as some red maple. Any combination of the aspen, oak and red maple will be acceptable reforestation.</p> <p>Wld : Stand 58: 2005 SGG: Leave ~6 small (~ ¼ ac) islands of oak for mast production. Islands can be centered around the advanced oak regen and/or wildlife shrubs. WLD can mark. Include a spec to create course woody debris (~1-2/acre) if Military will allow.</p>										
64	O6	9	100	39	oak	mature	selection	2		
<p>comnts Fmd : 2005 kgr comments: This stand is heavily used by the military as a bivouac area. The stand is generally low quality oak dominates with some small dbh Red Maple and Aspen in pockets and as scattered trees. There is a few good quality Red Oak stems mixed in. Prescription is to remove the Red Maple and Aspen. In addition, remove the larger, poor quality oak trees. Leave good quality trees with healthy crowns. Leave the canopy cover high in the area where the military us it bivouac. Ground cover is grass with some bracken fern.</p> <p>Wld : Stand 64: 2005 SGG: Concur with FMFM.</p>										
65	A6	5	77	57	aspen (upland)	high risk	final harvest	1	natural regeneration	
<p>comnts Fmd : 2005 KGR comments: Aspen/Oak mixed stand. Clearcut and manage for Aspen. Aspen is old and is declining. Generally, the Oak is of fair quality. Both White Oak and Red Oak are found in the stand. Ground cover consists of bracken fern and grass. Terrain is gently rolling. There will be some oak component in the new stand as well as some red maple. Any combination of the aspen, oak and red maple will be acceptable reforestation.</p> <p>Wld : Stand 65: 2005 SGG: Leave a small (~ ¼ ac) island of oak for mast production. WLD can mark.</p>										

TRAVERSE CITY FOREST MGT UNIT

**Proposed Treatments
With NO Limiting Factors**

Compartment: 231 Entry Year: 2007

Stand	Cover Type	Acres	Age	Site Index	Mgt Obj	Condition	Method Cut	Harvest Priority	Cultural Need	FDF Status
68	O7	8	90	38	oak	two aged	delayed removal	3	natural regeneration	
<p>comnts Fmd : 2005 kgr comments: Stand is two aged, low quality oak. There are small pockets of dense oak regeneration and the general understory is advanced oak regeneration with some jack pine saplings mixed in. The stand is suffering serious ORV damage from 4x4 trucks. Planting red pine might work but it would be hampered by the fact that the sited has lots of sweet fern and the ORV's would surely run over the trees. Prescription for now is to remove merchantable trees and be careful not to damage the residual regeneration. Terrain is short sandy hills. The military has constructed a cement refueling pad at the very south end of the stand indicating that the military uses this stand for maneuvers.</p> <p>Wld : Stand 68: 2005 SGG: Concur with FMFM.</p>										
71	U0	2			upland brush	nonstocked		0	opening maintenance	
<p>comnts Fmd : 2005 KGR comments: U-type with lots of shrubs, grasses and some various species of regeneration invading around the edges of the stand.</p> <p>Wld : 2005 SGG: hand fell woody encroachment to maintain semi open habitat. Retain some mast bearing species.</p>										
73	O9	7	89	63	oak	immature	selection	1	natural regeneration	
<p>comnts Fmd : 2005 kgr comments: Oak stand containing some very good quality Red Oak. Canopy is closed up pretty tight and there is little oak regeneration. There is an occasional Aspen clone and some Red Maple is mixed into the stand. Selectively cut the Red Maple and Aspen. Thin the Oak to 70-80 square feet BA. Canopy cover within two chains of the Military Tank trail must be maintained. The natural stand is bisected by the tank trail and this stand represents that portion of stand that is south of the tank trail. Along the tank trail, just remove the Red Maple and Aspen, leave all the oak in that area. Oak selection should focus on lower quality and defective stems. East boundary of the stand is a pipeline. Terrain is slightly rolling to flat. A small amount of mortality was noticed, but not much.</p> <p>Wld : Stand 73: 2005 SGG: Concur with FMFM.</p>										
74	O6	17	91	68	oak	mature	selection	1	natural regeneration	
<p>comnts Fmd : 2005 kgr comments: Red Oak stand with a fair amount of Red Maple understory developing as saplings. Oak quality is very good. There is some Aspen and White Oak mixed in. The terrain in the stand is rolling hills with some short steep slopes. The goal here is to open up the canopy somewhat in hopes of getting some Oak regeneration started an retain this site as Oak since the quality it so good. Ideally, it would be good to burn this stand to set back the Red Maple, then harvest via thinning/shelterwood. Without the use of fire as a tool, I doubt that the Red Maple can be deterred. Since this is Military Board Land, it is unlikely that burning would be an option.</p> <p>Wld : Stand 74: 2005 SGG: Retain some white oak for mast production and diversity.</p>										
77	O9	18	67	70	aspen (upland)	immature	final harvest	1	natural regeneration	
<p>comnts Fmd : 2005 kgr comments: Stand is mixed Oak/Aspen. South edge of stand is at the top of a ridge. There is a fair amount of aspen right along the ridge top. Oak quality is fair-good and the stand is healthy yet. Ground cover is bracken fern. The Aspen is dominating in some areas but it is getting pretty old and is declining. Harvest should be done during leaf-off to maximize the vigor for aspen sprouting. Terrain is relatively flat below the ridge. Did not verify the North half of the stand. Some reconisance will be required when setting up the sale - suggestion: flag the lines in before painting.</p> <p>Wld : Stand 77: 2005 SGG: Leave ~3 small (~ ¼ ac) islands of oak for mast production. WLD can mark. Include a spec to create course woody debris (~1-2/acre) if Military will allow.</p>										
79	U0	9			upland brush	nonstocked		0	opening maintenance	
<p>comnts Fmd : 2005 KGR comments: U-type with lots of shrubs, grasses and some various species of regeneration invading around the edges of the stand.</p> <p>Wld : 2005 SGG: hand fell woody encroachment to maintain semi open habitat. Retain mast bearing species.</p>										
82	O6	13	74	63	aspen (upland)	mature	final harvest	1	natural regeneration	
<p>comnts Fmd : 2005 kgr comments: Oak stand with a fair amount of aspen component. Aspen is very old and declining. Oak quality is only fair at best. Ground cover is bracken fern. There are traces of White Pine in the form of saplings. A few advanced oak regeneration stems and some oak seedlings are in place. Clearcut and convert and expand Aspen - Oak will remain a component of this stand but Aspen will dominate. Treat the stand during leaf-off so that the vigor of the sprouting aspen in maximized. High priority cut.</p> <p>Wld : Stand 82: 2005 SGG: Leave ~2 small (~ ¼ ac) islands of oak for mast production. WLD can mark. Include a spec to create course woody debris (~1-2/acre) if Military will allow.</p>										
83	O9	3	84	47	white pine	mature	delayed removal	1	natural regeneration	
<p>comnts Fmd : 2005 kgr comments: Oak/White Pine. White Pine is pole size. Stand is healthy but not much sign of oak regeneration. Harvest oak with adjacent stand to the east. Use care felling trees so as to not damage the young white pine understory. Long term plan is to alternate management between Oak and White Pine. Terrain is slightly rolling.</p> <p>Wld : Stand 83: 2005 SGG: Retain any non-merchantable oak for mast production and diversity.</p>										

TRAVERSE CITY FOREST MGT UNIT

**Proposed Treatments
With NO Limiting Factors**

Compartment: 231 Entry Year: 2007

Stand	Cover Type	Acres	Age	Site Index	Mgt Obj	Condition	Method Cut	Harvest Priority	Cultural Need	FDF Status
84	A6	10	75	57	aspen (upland)	high risk	final harvest	1	natural regeneration	
<p>comnts Fmd : 2005 KGR comments: Aspen/Oak mixed stand. Clearcut and expand Aspen type into the adjacent stands where poor quality Oak is found. Do not expand into high quality Oak areas. Some nice Red Oak is found within this stand in a few places. Aspen is old and is declining. Generally, the Oak is of marginal quality. Ground cover consists of bracken fern and grass. Terrain is slightly rolling. There will be some oak component in the new stand as well as some red maple. Any combination of the aspen, oak and red maple will be acceptable reforestation.</p> <p>Wld : Stand 84: 2005 SGG: Leave a small (~ ¼ ac) island of oak for mast production. WLD can mark. Include a spec to create course woody debris (~1-2/acre) if Military will allow.</p>										
88	O9	13	90	61	oak	mature	thinning	1		
<p>comnts Fmd : 2005 kgr comments: Very high quality Red Oak in this stand. Some White Oak and Aspen are mixed in. Red Maple is generally in sapling stage. Stand appears to be healthy. Terrain is rolling hills with some short steep slopes. Selectively reduce the BA in this stand to 80 square feet. Cut all Aspen and Red Maple. Stand line determination could be slow work due to the slopes and the similarities to adjacent stands. Sale preparation will take a little extra time to insert the stand lines properly.</p> <p>Wld : Stand 88: 2005 SGG: Retain some white oak for mast production and diversity.</p>										
90	O8	5	115	48	oak	mature	final harvest	1	natural regeneration	
<p>comnts Fmd : 2005 kgr comments: This mixed stand is somewhat dominated by oak and is located along the east side of a trail road. Species present - large diameter, low quality N. Pin Oak, old Aspen and some Red Maple. The canopy is rather open and regeneration is coming into some of the holes. A small U-type pocket is located within the stand and there is some sweet fern ground cover here. As the stand regenerates, we can expect a mixed composition to develop and that will be acceptable. Terrain is slightly rolling. Used Site Index of record.</p> <p>Wld : Stand 90: 2005 SGG: Leave a small (~ ¼ ac) island of oak for mast production. WLD can mark. Coordinate island location with that of stand 65.</p>										
91	O9	2	85	45	red pine	two aged	selection	3		
<p>comnts Fmd : 2005 kgr comments: Small pocket of oak sawlogs with a Red Pine and White Pine understory. Some advanced oak regeneration present but not much. Oak and pine seedlings are on the ground. Ground cover is bracken fern. Oak quality is fair at best. Some signs of oak decline in the tops. Once the oak is removed, the pine is already to assume dominance on the site. Terrain is gently rolling. Cut Oak and protect all pine. Whole tree must be harvested and removed from the site but no tree length skidding is to be allowed because of potential damage to the residual pine.</p> <p>Wld : Stand 91: 2005 SGG: Concur with FMFM.</p>										
103	U0	156			upland brush	nonstocked		0	opening maintenance	
<p>comnts Fmd : 2005 KGR comments: Stand was included in the large 2000 timber sale. Cherry has stump sprouted & some oak occuppies the site. Ground cover is bracken fern & grass. This corridor contains a trail road that was used extensively as a decking area. Old "range" activity area - probably small arms since the 2000 harvest encountered huge numbers of bullets in the trees. Terrain is slightly rolling. The tank trail is the south boundary of the stand.</p> <p>Wld : 2005 BJR: scattered shrubby black cherry and juneberry. Warm season grasses. Timber sale slash present. Burn if Military will allow. These U-types are likely spots for fire dependant plants and animals, included ETS species. May want to harvest some timber prior to burning.</p>										
108	O6	5	80	58	oak	immature	shelterwood-prep	1	natural regeneration	
<p>comnts Fmd : 2005 KGR comments: Oak stand with reasonable quality. No noticeable mortality, some advanced oak regeneration in places, basically not much understory of any kind. Must maintain a tightly closed canopy within 2 chains of the military tank trail. Focus harvest on the low quality and larger oak trees. Reduce the BA to about 70 square feet. Terrain is relatively flat. This stand is south of the tank trail and the treatment should incorporate the continuation of the stand southward into compartment 139. Acceptable regeneration would be any combination of oak, red maple and aspen.</p> <p>Wld : Stand 108: 2005 SGG: Concur with FMFM.</p>										
126	O6	48	94	64	oak	mature	shelterwood-seed	1	natural regeneration	
<p>comnts Fmd : 2005 KGR comments: Oak quality ranges from fair to good. Oak seedlings scattered and not promoting into sapling size. Ground cover is bracken fern and blueberry. Some Aspen widely scattered. Not a stand to clearcut without trying other options. Recommend that we attempt a partial cut where all aspen, red maple are removed. In addition, mark to leave 30 square feet of full crowned oak. Ideally, the site needs to be scarified and underplanted with red pine. Acceptable regeneration includes any combination of red oak, red maple and aspen.</p> <p>Wld : Stand 126: 2005 SGG: Sale should be marked to retain representatives of all oak species present in the stand, for habitat diversity.</p>										
140	O9	5	89	46	oak	high risk	selection	1	natural regeneration	
<p>comnts Fmd : 2005 kgr comments: Mixed Oak/Aspen stand - dominated by oak. Stand is bordered on the south by the Military Tank Trail. The forest canopy within two chains of the Tank Trail must be maintained. Cut only Aspen within the two chain area and in that portion of the stand that is located north of the tank trail. Burn this stand either before or after the harvest. The burn is to set back cherry and red maple sprouting in an attempt to retain this site as in oak management. In the event that this effort fails to materialize or that the burn does not accomplish the objective, the stand would become more mixed composition (oak, red maple & cherry), and this is an acceptable alternative.</p> <p>Wld : Stand 140: 2005 SGG: Concur with FMFM.</p>										

TRAVERSE CITY FOREST MGT UNIT

**Proposed Treatments
With NO Limiting Factors**

Compartment: 231 **Entry Year: 2007**

Stand	Cover Type	Acres	Age	Site Index	Mgt Obj	Condition	Method Cut	Harvest Priority	Cultural Need	FDf Status
141	A9	4	65	51	aspen (upland)	high risk	final harvest	1	natural regeneration	
<p>comnts Fmd : 2005 kgr comments: Oak/Quaking Aspen, with Red Maple mixed in. The stand is bordered on the south by the Military Tank Trail. The forest canopy within two chains of the Tank Trail must be maintained. The stand should be clearcut up to the two chain distance. Leave all merchantable hardwood and oak within the two chain area adjacent to the tank trail. Harvest should occur during leaf-off to assure the sprouting vigor of the aspen is at a maximum. Military Board Lands.</p> <p>Wld : Stand 141: 2005 SGG: Leave 1-2 oak at north end of stand for mast production.</p>										
143	U0	1			upland brush	nonstocked		0	opening maintenance	
<p>comnts Fmd : 2005 KGR comments: Ground cover includes grass and sweet fern. Pin Cherry shrubs with occasional cherry tree are found on this site. Terrain is slightly rolling. Stand is bounded on the south by the tank trail and it is bisected by a trail road..</p> <p>Wld : 2005 BJR: growing in with cherry. 2005 SGG hand fell some encroaching woody vegetation to maintain semi open habitat.</p>										
173	O9	29	89	63	oak	immature	selection	1	natural regeneration	
<p>comnts Fmd : 2005 kgr comments: Oak stand containing some very good quality Red Oak. Canopy is closed up pretty tight and there is little oak regeneration. There is an occasional Aspen clone and some Red Maple is mixed into the stand. Selectively cut the Red Maple and Aspen. Thin the Oak to 70-80 square feet BA. Canopy cover within two chains of the Military Tank trail must be maintained. The natural stand is bisected by the tank trail and this stand represents that portion of stand that is north of the tank trail. Along the tank trail, just remove the Red Maple and Aspen, leave all the oak in that area. Oak selection should focus on lower quality and defective stems. East boundary of the stand is a pipeline. Terrain is slightly rolling to flat. A small amount of mortality was noticed, but not much.</p> <p>Wld : Stand 173: 2005 SGG: Concur with FMFM.</p>										
Total Acres.....		837								

**Proposed Treatments
With Limiting Factors**

Compartment: 231

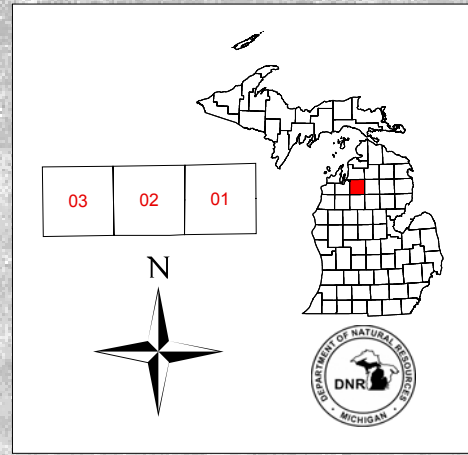
Entry Year: 2007

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

TREATMENT LIMITING FACTORS:

Total Acres..... 0

Compartment 231
 T25N, R5W, Sec. 1-3
 County: Kalkaska
 Unit: Traverse City
 YOE: 2007
 Acres: 1,931 GIS Calculated
 Stand Examiner: Ken Rousten
 Map Revised: 10/24/2005
 Map Phase: Pre-review



Field Map

Legend

- ◆ RLS Corners
- Miris Corners
- - County Dirt Roads
- - Poor Dirt Roads
- Abandoned Railroads
- Trails
- Pipeline
- Stand Boundary
- ▨ 100 - Final Harvest
- ▩ 147 - Final Harvest
- ▧ Natural Regeneration/Prescribed Burning
- ▦ 300 - Shelterwood-seed
- ▧ 400 - Thinning
- ▨ 600 - Delayed Removal
- ▩ 700 - Shelterwood-prep
- ▧ 800 - Selection
- ▨ 847 - Selection
- ▧ Natural Regeneration/Prescribed Burning
- Name County Dirt Roads

