



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

COMPARTMENT # 129 ENTRY YEAR: 2013

Compartment Acreage: 2,884 County: Kalkaska

Stand Examiner: Katie Armstrong

Legal Description: T26N R5W Sections 1, 10, 11, 12, 13, 14, and 15; Bear Lake Township

Management Goals: Since so much of this compartment is within Camp Grayling, the primary management objective will be maintaining healthy, productive forest stands while facilitating military training. With large, contiguous areas dominated by jack pine, management will be directed toward reducing risk of catastrophic wildfire. Within this constraint, management will attempt to increase diversity in species composition and age classes. Indeed, harvest of some jack pine stands was delayed from the last inventory cycle to increase age and size class diversity. Military Board Lands will be managed to achieve military objectives such as buffering small arms ranges for noise control. Stands within the Natural River corridor along the Manistee River and Portage Creek will be managed according to the Upper Manistee River Natural River Plan. Other management activities may be implemented to improve wildlife habitat for the variety of species found in this area.

Soil and Topography: Soils in this compartment are mostly excessively to moderately drained sands, including Grayling Sand, Rubicon Sand, and Croswell Sand. Southeast of Portage Creek is mostly the very poorly drained Tawas-Lupton mucks. Soils along the Manistee River and Portage Creek tend to be poorly drained including Ausable-Bowstring mucks and the Au Gres-Kinross-Croswell complex. The terrain ranges from low and wet to gently rolling upland hills. Along the Manistee River, the land often transitions sharply from upland stands down a steep bluff to a lowland floodplain along the river.

Ownership Patterns, Development, and Land Use in and Around the Compartment: Most of the land in this compartment is Military Board Land, which is used extensively for military training maneuvers. Several fenced small arms ranges (Ranges 12, 16, 18 and 19) are located within Sections 12 and 13. Most of Sections 10, 11, and 15 are state forest land. Numerous permanent and seasonal residences are located along the Manistee River corridor, many of which are accessed through state land. The last remaining Consumer Power lease expired in 2011 so that property has been added to the state forest.

Unique, Natural Features (include only non-site specific and non-sensitive information): An ecologically significant natural community spans the eastern edge of this compartment into Crawford County. Priority will be given to protection of this natural community and the multiple federally or state Threatened and state Special Concern plant species that it contains. This area is especially sensitive to changes in hydrology so any nearby management activities will be appropriately buffered. The Eastern massasauga rattlesnake has also been found nearby and several areas were clearcut in 2006 to promote rattlesnake habitat within this compartment.

Archeological, Historical, and Cultural Features (include only non-site specific and non-sensitive information): Some archeological sites of unknown significance exist within this compartment and may

require restricting timber sale activity to winter months. River courses are prime areas for archeological sites and the adherence to Natural Rivers management along the Manistee River and its tributaries will help protect the river corridor from disturbances that could damage or destroy undiscovered sites.

Special Management Designations or Considerations: Most of this compartment is Military Board Land and much of that is used intensively for military training operations. The location of some stands down range from active small arms ranges presents some safety concerns for commercial timber harvests. The Manistee River and Portage Creek were designated Natural Rivers in 2003 and are managed to preserve a native vegetation buffer along the river.

Watershed and Fisheries Considerations: The Manistee River, Portage Creek, and several unnamed tributaries flow through Compartment 129. All are Designated Trout Streams. The Manistee River has naturally reproducing populations of brook, brown, and rainbow trout. Portage Creek and its tributaries have naturally reproducing populations of brook and brown trout. The Natural Rivers native vegetation buffer is 75' for all streams in the compartment. No cutting should take place inside that buffer. A sand trap is located in Portage Creek just downstream from the timber bridge located on the ARF & AFF Range Road, although it has not been emptied in the last several years.

Wildlife Habitat Considerations:

Mineral Resource and Development Concerns and/or Restrictions: Surface sediments consist of glacial outwash sand and gravel and postglacial alluvium and dune sand along the river. The glacial drift thickness varies between 200 and 600 feet. Beneath the glacial drift is the Mississippian Coldwater Shale. The Coldwater does not have an economic use. The nearest gravel pit is located one mile to the northwest. Gravel potential in the compartment is considered limited. This area is located four miles north of Garfield 8 Field. The field produces from the Devonian Richfield and the Ordovician PdC. The PdC has produced over 46 Bcf gas. This compartment has oil and gas leases, currently, and there may be additional potential in the compartment.

Vehicle Access: Vehicle access to this compartment is primarily off of Portage Creek Road, Arrowhead Road, or Daniels Road (also known as ARF & AFF Range Road). Numerous other two tracks exist throughout the Military Board Lands. Road access to the swamp in the southeast corner of the compartment is very limited.

Survey Needs: Survey is needed to delineate private boundaries in Sections 1 (SE ¼), 11 (NE ¼), 12 (NW ¼), and 15 (multiple lines).

Recreational Facilities and Opportunities: The Manistee River and Portage Creek are popular with recreational users for fishing, canoeing, kayaking, river boating, and tubing. Two designated access sites are located on the Manistee River along Portage Creek Road near the center of Section 11.

Fire Protection: The area between the Manistee River and Portage Creek is dominated by large, continuous stands of jack pine and red pine. This swath of pine is about one mile wide running in a southwest-to-northeast line and extending into Crawford County. The potential for catastrophic wildfire is high. In 2010, the Range 9 Fire (an escaped prescribed burn) burned over 1,000 acres in similar jack pine types in the compartment just south of this one. The threat of structure loss, however, is mitigated by the fact that most of the structures are located along the river corridor. This area would likely be along the flank of the fire rather than in its direct path. In addition, the fire behavior would be moderated by the higher humidity levels along the river, created by the wetter soils and different timber types in that area.

Additional Compartment Information: The tank trail, as designated by the military, is used by tracked vehicles to travel between North Camp Grayling and South Camp Grayling.

****** 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

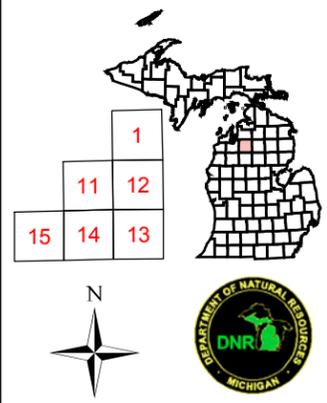
Proposed treatments

Proposed road access system

Suggested potential old growth

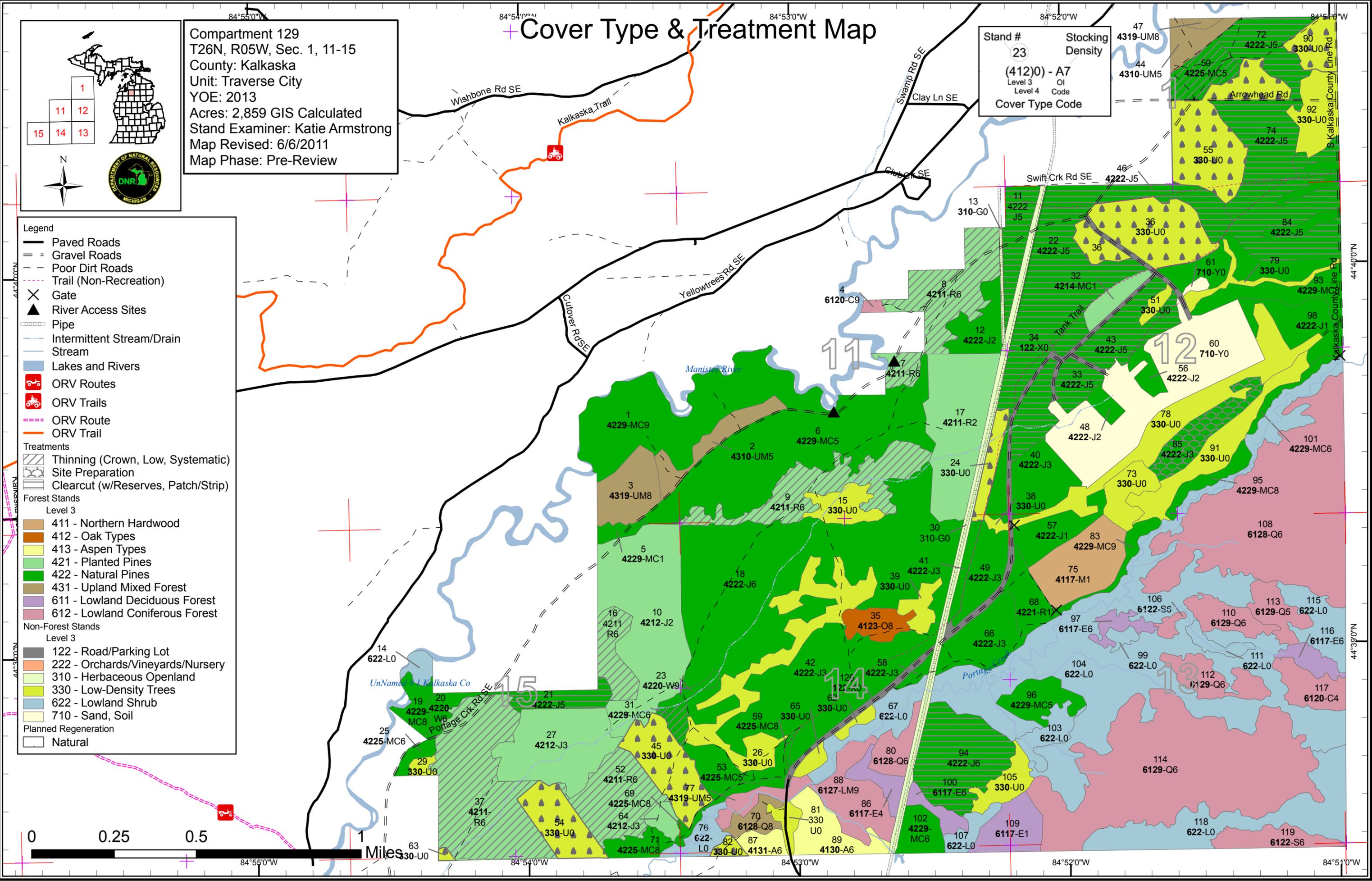
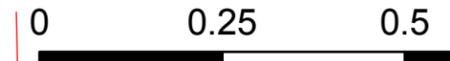
Cover Type & Treatment Map

Compartment 129
 T26N, R05W, Sec. 1, 11-15
 County: Kalkaska
 Unit: Traverse City
 YOE: 2013
 Acres: 2,859 GIS Calculated
 Stand Examiner: Katie Armstrong
 Map Revised: 6/6/2011
 Map Phase: Pre-Review



Stand #
 23
 (412)0 - A7
 Level 3 OI
 Level 4 Code
 Cover Type Code

- Legend**
- Paved Roads
 - Gravel Roads
 - Poor Dirt Roads
 - Trail (Non-Recreation)
 - Gate
 - River Access Sites
 - Pipe
 - Intermittent Stream/Drain
 - Stream
 - Lakes and Rivers
 - ORV Routes
 - ORV Trails
 - ORV Route
 - ORV Trail
- Treatments**
- Thinning (Crown, Low, Systematic)
 - Site Preparation
 - Clearcut (w/Reserves, Patch/Strip)
- Forest Stands**
- Level 3
- 411 - Northern Hardwood
 - 412 - Oak Types
 - 413 - Aspen Types
 - 421 - Planted Pines
 - 422 - Natural Pines
 - 431 - Upland Mixed Forest
 - 611 - Lowland Deciduous Forest
 - 612 - Lowland Coniferous Forest
- Non-Forest Stands**
- Level 3
- 122 - Road/Parking Lot
 - 222 - Orchards/Vineyards/Nursery
 - 310 - Herbaceous Openland
 - 330 - Low-Density Trees
 - 622 - Lowland Shrub
 - 710 - Sand, Soil
- Planned Regeneration**
- Natural



Stand Boundary Map

1
11 12
15 14 13

Compartment 129
T26N, R05W, Sec. 1, 11-15
County: Kalkaska
Unit: Traverse City
YOE: 2013
Acres: 2,859 GIS Calculated
Stand Examiner: Katie Armstrong
Map Revised: 5/26/2011
Map Phase: Pre-Review

Stand #
23
(412)0 - A7
Level 3 OI
Level 4 Code
Cover Type Code

- Legend**
- Miris Corners
 - Paved Roads
 - Gravel Roads
 - Poor Dirt Roads
 - Trail (Non-Recreation)
 - River Access Sites
 - Gate
 - Intermittent Stream/Drain
 - Stream
 - ORV Routes
 - ORV Trails
 - ORV Route
 - ORV Trail
 - Stand Boundaries
- Forest Stands**
- Level 3
- 411 - Northern Hardwood
 - 412 - Oak Types
 - 413 - Aspen Types
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 - 422 - Natural Pines
 - 431 - Upland Mixed Forest
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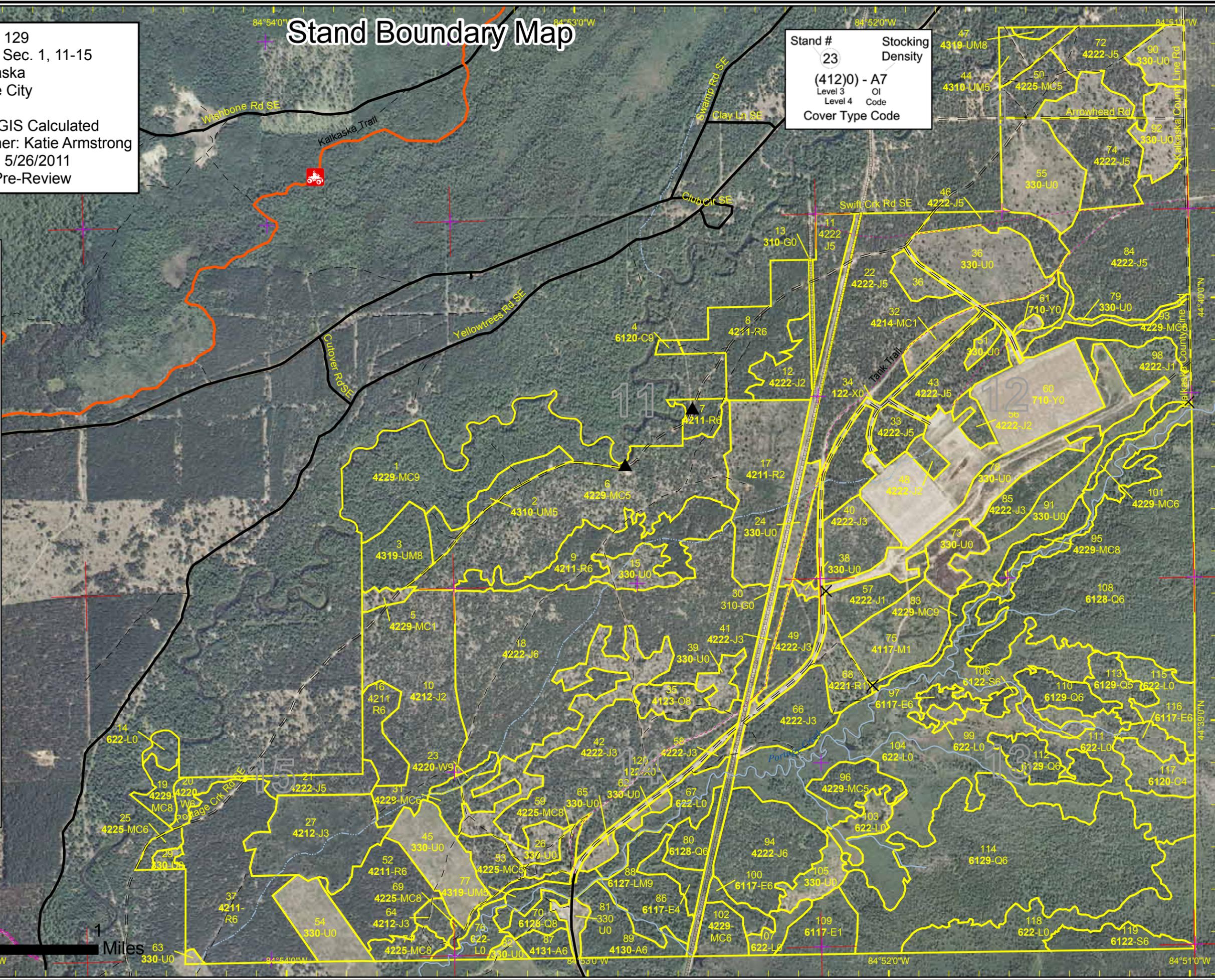
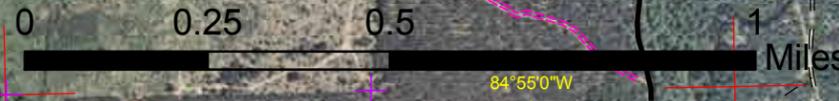


Table 1 – Total Acres by Cover Type and Age Class



	Age Class														Total	
	Non-Forested	1-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100-109	110-119	120 +		Unre/en Age
Aspen	0	0	0	0	21	0	0	0	0	0	0	0	0	0	0	21
Cedar	0	0	0	0	0	0	0	0	14	2	0	0	0	0	0	16
Herbaceous Openland	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31
Jack Pine	0	0	136	0	396	194	29	35	68	24	0	0	0	0	0	882
Low-Density Trees	357	0	0	0	0	0	0	0	0	0	0	0	0	0	0	357
Lowland Conifers	0	0	0	0	0	0	0	0	335	25	9	0	0	0	0	369
Lowland Deciduous	0	0	0	14	14	0	0	0	13	0	0	0	0	0	0	41
Lowland Shrub	330	0	0	0	0	0	0	0	0	0	0	0	0	0	0	330
Lowland Spruce/Fir	0	0	0	0	0	0	0	9	3	0	0	0	0	0	0	12
Natural Mixed Pines	0	0	0	0	4	123	15	18	43	21	0	0	0	80	0	303
Northern Hardwood	0	0	31	0	0	0	0	0	0	0	0	0	0	0	0	31
Oak	0	0	0	0	0	0	0	0	11	0	0	0	0	0	0	11
Planted Mixed Pines	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	8
Red Pine	0	0	52	0	55	153	0	0	0	13	0	0	0	0	0	273
Sand, Soil	86	0	0	0	0	0	0	0	0	0	0	0	0	0	0	86
Upland Mixed Forest	0	0	0	0	0	0	15	0	28	0	2	0	10	0	0	55
Urban	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25
White Pine	0	0	0	0	0	6	0	0	3	0	0	0	0	0	0	9
Total	828	8	218	14	490	476	58	63	518	84	11	0	10	80	0	2859



Table 2 – Proposed Treatment Summaries

Traverse City Mgt. Unit
Year of Entry 2013

Compartment 129
Total Compartment Acres: 2859

Acres by Treatment Type

Commercial Harvest - 537	Site Prep - 19	Tree Planting - 0	Prescribed Burn - 0	Other - 0
Habitat Cut - 0	Opening Maintenance - 0	Tree Seeding - 0	Pesticide - 0	

Cover Type by Harvest Method

	<i>Clearcut</i>	<i>Selection</i>	<i>Seed Tree</i>	<i>Shelterwood</i>	<i>Thinning</i>	<i>Other - Specify</i>	<i>Total Acres</i>
Jack Pine	312	0	0	0	0	0	312
Natural Mixed Pines	0	0	0	0	19	0	19
Red Pine	0	0	0	0	205	0	205
Total	312	0	0	0	225	0	537



S t a n d	Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
7	61129007- RowThin	5.6	42110 - Planted Red Pine	High Density Pole	47	Harvest	Systematic Thinning	42110 - Planted Red Pine	Cmpt. Review Proposal
<p><u>Prescription</u> Third row thin red pine. Sizeable gaps in rows may make following rows difficult. Goal is to remove about 1/3 of volume. Also remove all jack pine. Leave oak and other species, where present, unless they cause operability issues.</p> <p><u>Specs:</u></p> <p><u>Other</u> Stand is within Natural River vegetative buffer along Manistee River so part west of Portage Creek Road has been excluded from treatment area.</p> <p><u>Comments:</u></p> <p><u>Next</u> <u>Steps:</u></p>									
8	61129008- RowThin	36.3	42110 - Planted Red Pine	High Density Pole	47	Harvest	Systematic Thinning	42110 - Planted Red Pine	Cmpt. Review Proposal
<p><u>Prescription</u> Third row thin red pine. Rows are close together and not very straight so may present operability issues. Goal is to remove about 1/3 of volume. Also remove all jack pine. Leave oak, white pine, and other species, where present, unless they cause operability issues.</p> <p><u>Specs:</u></p> <p><u>Other</u> Private boundaries along north and west edges will need to be determined prior to harvest.</p> <p><u>Comments:</u></p> <p><u>Next</u> <u>Steps:</u></p>									
9	61129009- RowThin	40.3	42110 - Planted Red Pine	High Density Pole	36	Harvest	Systematic Thinning	42110 - Planted Red Pine	Cmpt. Review Proposal
<p><u>Prescription</u> Third row thin red pine. Sizeable gaps in rows may make following rows difficult. Goal is to remove about 1/3 of volume. Leave other species for diversity, where present, unless they cause operability issues.</p> <p><u>Specs:</u></p> <p><u>Other</u> Intermittent stream may run through east half of stand. Buffer appropriately, if necessary.</p> <p><u>Comments:</u></p> <p><u>Next</u> <u>Steps:</u></p>									
11	61129011-CC	16.1	42220 - Natural Jack Pine	Medium Density Pole	47	Harvest	Clearcut	42110 - Planted Red Pine	Cmpt. Review Proposal
<p><u>Prescription</u> Clearcut and replant to red pine. Also leave white pine and some oak along edges, if it would not interfere with planting.</p> <p><u>Specs:</u></p> <p><u>Other</u> Military is interested in reducing amount of jack pine in this compartment to reduce wildfire risk.</p> <p><u>Comments:</u></p> <p><u>Next</u> Replant with red pine.</p> <p><u>Steps:</u></p>									
16	61129016- RowThin	14.8	42110 - Planted Red Pine	High Density Pole	36	Harvest	Systematic Thinning	42110 - Planted Red Pine	Cmpt. Review Proposal
<p><u>Prescription</u> Third row thin red pine. Sizeable gaps in rows may make following rows difficult. Goal is to remove about 1/3 of volume. Also remove all jack pine. Leave oak and other species, where present, unless they cause operability issues.</p> <p><u>Specs:</u></p> <p><u>Other</u> Stand may be massasauga rattlesnake habitat. Include relevant specs.</p> <p><u>Comments:</u> Private boundary along western edge will need to be determined prior to harvest.</p> <p><u>Next</u> <u>Steps:</u></p>									
21	61129021- CCReserves	11.6	42220 - Natural Jack Pine	Medium Density Pole	69	Harvest	Clearcut with Reserves	42220 - Natural Jack Pine	Cmpt. Review Proposal
<p><u>Prescription</u> Final harvest stand, leaving all oak and white pine. Leave retention areas as 1-2 islands within stand. Include specs to encourage jack pine regeneration, e.g. scattering tops, exposing mineral soil etc.</p> <p><u>Specs:</u></p> <p><u>Other</u> Private boundary along north edge will need to be determined prior to harvest.</p> <p><u>Comments:</u> Stand was prescribed in last inventory but never cut.</p> <p><u>Next</u> Check for regeneration after harvest per work instructions. Acceptable regeneration includes jack pine, oak, and white pine. If natural regeneration is unacceptable, replant stand with jack pine, around residual trees.</p> <p><u>Steps:</u></p>									



Stand	Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
22	61129022-CC	75.2	42220 - Natural Jack Pine	Medium Density Pole	46	Harvest	Clearcut	42110 - Planted Red Pine	Cmpt. Review Proposal
<p><u>Prescription:</u> Clearcut and replant to red pine. Leave some oak around edges, if it would not interfere with planting. <u>Specs:</u> <u>Other:</u> Military is interested in reducing amount of jack pine in this compartment to reduce wildfire risk. <u>Comments:</u> Part of stand south of bottleneck has been excluded from treatment in order to provide noise buffer for ranges. <u>Next Steps:</u> Replant with red pine.</p>									
31	61129031- Thin	4.7	42290 - Natural Mixed Pine	High Density Pole	44	Harvest	Low Thinning	42290 - Natural Mixed Pine	Cmpt. Review Proposal
<p><u>Prescription:</u> Thin red and white pine to release suppressed trees. Even though red pine was part of a plantation, stand is patchy enough that it will probably need to be marked. Thin to BA of about 120 sf. Leave non-pine species for diversity, where present. <u>Specs:</u> <u>Other:</u> Stand is likely within massasauga rattlesnake habitat. Include relevant specs. <u>Comments:</u> Intermittent stream may run along north edge of stand. Buffer appropriately, if necessary. <u>Next Steps:</u></p>									
37	61129037- RowThin	76.0	42110 - Planted Red Pine	High Density Pole	45	Harvest	Systematic Thinning	42110 - Planted Red Pine	Cmpt. Review Proposal
<p><u>Prescription:</u> Third row thin red pine. Rows will be relatively easy to follow but do include sizeable gaps in places. Goal is to remove about 1/3 of volume. <u>Specs:</u> Leave oak, white pine, and other species, where present, unless they cause operability issues. <u>Other:</u> Stand is adjacent to two massasauga rattlesnake research cuts and may be rattlesnake habitat. Include relevant specs. <u>Comments:</u> Private boundary along southern half of western edge will need to be determined prior to harvest. Intermittent stream may run through stand. Buffer appropriately, if necessary. <u>Next Steps:</u></p>									
46	61129046-CC	16.4	42220 - Natural Jack Pine	Medium Density Pole	48	Harvest	Clearcut	42110 - Planted Red Pine	Cmpt. Review Proposal
<p><u>Prescription:</u> Clearcut and replant with red pine. Leave some oak along edges, if it will not interfere with planting. <u>Specs:</u> <u>Other:</u> Military is interested in reducing amount of jack pine in this compartment to reduce wildfire risk. <u>Comments:</u> <u>Next Steps:</u> Replant with red pine.</p>									
50	61129050-Cut	14.6	42250 - Pine, Oak	Medium Density Pole	55	Harvest	Crown Thinning	42250 - Pine, Oak	Cmpt. Review Proposal
<p><u>Prescription:</u> Remove all jack pine in order to release white pine and oak. <u>Specs:</u> <u>Other:</u> Private boundary along western edge will need to be determined prior to harvest. <u>Comments:</u> <u>Next Steps:</u></p>									
52	61129052- RowThin	32.5	42110 - Planted Red Pine	High Density Pole	45	Harvest	Systematic Thinning	42110 - Planted Red Pine	Cmpt. Review Proposal
<p><u>Prescription:</u> Third row thin red pine. Sizeable gaps in rows may make following rows difficult. Goal is to remove about 1/3 of volume. Also remove all jack pine. Leave oak, cherry and other species, where present, unless they cause operability issues. <u>Specs:</u> <u>Other:</u> Stand is adjacent to massasauga rattlesnake research cut and may be rattlesnake habitat. Include relevant specs. <u>Comments:</u> <u>Next Steps:</u></p>									



Stand	Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
72	61129072-CC	23.5	42220 - Natural Jack Pine	Medium Density Pole	64	Harvest	Clearcut	42110 - Planted Red Pine	Cmpt. Review Proposal
<p><u>Prescription</u> Clearcut and replant with red pine. Leave some oak and white pine along edges, if it will not interfere with planting. <u>Specs:</u> <u>Other</u> Private boundary along north edge will need to be determined prior to harvest. <u>Comments:</u> Military is interested in reducing amount of jack pine in this compartment to reduce wildfire risk. <u>Next Steps:</u> Replant with red pine.</p>									
74	61129074-CC	28.8	42220 - Natural Jack Pine	Medium Density Pole	52	Harvest	Clearcut	42110 - Planted Red Pine	Cmpt. Review Proposal
<p><u>Prescription</u> Clearcut and replant with red pine. Leave some oak along edges, if it will not interfere with planting. <u>Specs:</u> <u>Other</u> Military is interested in reducing amount of jack pine in this compartment to reduce wildfire risk. <u>Comments:</u> <u>Next Steps:</u> Replant with red pine.</p>									
84	61129084-CCReserves	48.1	42220 - Natural Jack Pine	Medium Density Pole	49	Harvest	Clearcut with Reserves	42220 - Natural Jack Pine	Cmpt. Review Proposal
<p><u>Prescription</u> Clearcut with reserves following retention guidelines. Do not cut oak. <u>Specs:</u> <u>Other</u> Reserves (3 islands and southwestern part of stand) have been eliminated from stand to protect sensitive natural communities. Retention of southern part of stand will also help with noise buffer near ranges. <u>Comments:</u> <u>Next Steps:</u> Check for regeneration after harvest per work instructions. Acceptable regeneration includes jack pine, oak, red pine, and white pine.</p>									
94	61129094-CCReserves	43.6	42220 - Natural Jack Pine	High Density Pole	70	Harvest	Clearcut with Reserves	42220 - Natural Jack Pine	Cmpt. Review Proposal
<p><u>Prescription</u> Clearcut with reserves following retention guidelines. Mark some oak and white pine to leave. Delineate wetter spots as retention areas. <u>Specs:</u> <u>Other</u> Access will be through locked gate on road to range 12 and then up pipeline. <u>Comments:</u> <u>Next Steps:</u> Check for regeneration after harvest per work instructions. Acceptable regeneration includes jack pine, white pine, white spruce, and oak.</p>									
85	61129085-Prep	18.8	42220 - Natural Jack Pine	High Density Sapling	18	Site Prep	Chopping	42110 - Planted Red Pine	Cmpt. Review Proposal
<p><u>Prescription</u> Remove jack pine by most efficient means in order to prepare site for planting red pine. Area may be increased depending on military interests. <u>Specs:</u> <u>Other</u> Military is interested in reducing amount of jack pine in this compartment to reduce wildfire risk. <u>Comments:</u> <u>Next Steps:</u> Replant with red pine.</p>									

**Total Treatment
Acreage Proposed: 506.8**



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Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
28 61129028-Cut	14.9	42220 - Natural Jack Pine	High Density Pole	74	Harvest	Clearcut	42110 - Planted Red Pine	Cmpt. Review Proposal

Prescription Clearcut and replant with red pine. Leave some oak along edges, if it will not interfere with planting.
Specs:

Other Comment: Military is interested in reducing amount of jack pine in this compartment to reduce wildfire risk.

Next Steps: Replant with red pine.

Limiting Factor and No Treatment Reason 3G: Military easement / lease
Military Board Land. Military is interested in retaining mature timber on this stand in order to provide noise buffer for ranges. Also 3B (SC natural community and species).

33 61129033-Cut	9.8	42220 - Natural Jack Pine	Medium Density Pole	76	Harvest	Clearcut	42110 - Planted Red Pine	Cmpt. Review Proposal
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Prescription Clearcut and replant with red pine. Leave some oak along edges, if it will not interfere with planting.
Specs:

Other Comment: Military is interested in reducing amount of jack pine in this compartment to reduce wildfire risk.

Next Steps: Replant with red pine.

Limiting Factor and No Treatment Reason 3G: Military easement / lease
Military Board Land. Military is interested in retaining mature timber on this stand in order to provide noise buffer for ranges. Also 3B (SC natural community and species).

43 61129043-Cut	23.9	42220 - Natural Jack Pine	Medium Density Pole	85	Harvest	Clearcut	42110 - Planted Red Pine	Cmpt. Review Proposal
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Prescription Clearcut and replant with red pine. Leave some oak along edges, if it will not interfere with planting.
Specs:

Other Comment: Military is interested in reducing amount of jack pine in this compartment to reduce wildfire risk.
Buffer wet area within Stand 51.

Next Steps: Replant with red pine.

Limiting Factor and No Treatment Reason 3G: Military easement / lease
Military Board Land. Military is interested in retaining mature timber on this stand in order to provide noise buffer for ranges. Also 3B (SC natural community and species).

Total Treatment Acreage Proposed: 48.5



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
1	42290 - Natural Mixed Pine	High Density Log	79.6	127	141-170	Stand is along Manistee River; part is within Natural River vegetative buffer. Mature, natural red pine and white pine with no obvious rows. Contains areas of dense cedar and/or oak/hardwoods near river, but they are less than 3 acres. Most of stand is down steep bluff. Good white pine regeneration (1" DBH) in understory. Cedar in understory, especially at south end. Was once part of the Livingstone estate. Some logging occurred prior to state ownership. OI: 1883. River bottomland area. Much of stand is within Natural Rivers Corridor. Once owned by Livingstone estate. Considered for OG status? Look for C6 stands along oxbows in river (OI 80, 81, 82).
2	4310 - Pine, Oak Mix	Medium Density Pole	14.8	55		White pine is taking over oaks. Some of canopy is white pine saplings. Oaks do not appear all that healthy.
3	4319 - Mixed Upland Forest	Medium Density Log	21.0	76		Variable stand. Mostly down steep bluff in old river bottomland, but seems dry. Good wildlife habitat. Some dense cedar pockets. Good white pine regeneration.
4	6120 - Lowland Cedar	High Density Log	1.6	88		Stand is along Manistee River; part is within Natural River vegetative buffer. Most of stand is bottomland but part along the road is upland. Upland is red oak, red pine, red maple and white pine saplings. Bottomland is cedar with several very large white pine. Powerline to private cabin along east edge of stand.
5	42290 - Natural Mixed Pine	Low Density Sapling	3.8	35		Stand was classified as an opening in 2001 but is filled in enough now to be considered forested.
6	42290 - Natural Mixed Pine	Medium Density Pole	100.6	45		Patchy cover type. Some areas are all jack pine, white pine, or red pine while others are good mix of pine and oak. Lots of oak patches and openings that have filled in. Good amount of white pine in understory but fate is questionable. Regenerated from cutting in mid- to late-1960s. Low merchantability.
7	42110 - Planted Red Pine	High Density Pole	6.9	47	171-200	Stand is along Manistee River; part is within Natural River vegetative buffer. Contains boat launch known as Z landing and designated parking area. Patchy regen success, includes areas of jack pine and oak. Has not been third-row thinned.
8	42110 - Planted Red Pine	High Density Pole	36.8	47	171-200	Planted in rows with high density. Has not been third row thinned. South end contains poorer regen and higher proportion of jack pine. Contains some red oak and jack pine, mostly along road.
9	42110 - Planted Red Pine	High Density Pole	40.3	36	171-200	Planted red pine but rows are uneven and starting to break up. Also contains significant jack pine volume and openings.
10	42120 - Planted Jack Pine	Medium Density	75.8	35		Regenerated naturally from 1975 clearcut. Patchy regeneration. Includes some sizeable openings.
11	42220 - Natural Jack Pine	Medium Density Pole	16.1	47		Old railroad grade runs through north part of stand. Jack pine is showing mortality. Little to no understory. Variable ages.

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Traverse City Mgt. Unit

5 – Forested Stands

Compartment: 129
Year of Entry: 2013

	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
12	42220 - Natural Jack Pine	Medium Density	15.2	33		Naturally regenerated from cut in early 1970s. Regen is patchy, contains small gaps in canopy.
16	42110 - Planted Red Pine	High Density Pole	14.8	36	171-200	Red pine planted in rows but patchy. Some red pine extends into south part of Stand 10 but it's scattered enough that it's not worth including.
17	42110 - Planted Red Pine	Medium Density	52.0	17		Sale 015-93-01 (1 of 3 units). Portage Creek Jack Pine. Clearcut 1993. 3-0 red pine planted June 1994. Also contains significant amount of natural jack pine, at least at edges.
18	42220 - Natural Jack Pine	High Density Pole	178.0	35		Regenerated naturally from 1975 cut. Some scattered shrubby openings. Patchy jack pine regen in places.
19	42290 - Natural Mixed Pine	Medium Density Log	6.4	87		Stand is along Manistee River; part is within Natural River vegetative buffer. Stand is in river bottomland down steep bluff but appears dry.
20	42200 - Natural White Pine	High Density Pole	6.0	44	51-80	Stand is upland, divided from older white pine along Manistee River by bluff. Dense white pine regen in patches.
21	42220 - Natural Jack Pine	Medium Density Pole	11.6	69		Jack pine is starting to die. Not a lot of regen in understory.
22	42220 - Natural Jack Pine	Medium Density Pole	81.9	46		Jack pine is showing some mortality. Good oak regen in some places. Military tank trail runs through southern part of stand. Old railroad grade runs through north part of stand. Variable ages (46 to 76).
23	42200 - Natural White Pine	High Density Log	3.5	75		Multi-age white pine stand. Some very large white pine in canopy with good stocking of other age/size classes in understory. Could not locate stream because of snow but there is a swale through the middle of the stand.
25	42250 - Pine, Oak	High Density Pole	4.0	47	81-110	BA Swings are white pine only. Oak is 30/20/0. Good white pine regen ranging from 10-30'. Similar to 22 (stand on north side of road) but without red pine.
27	42120 - Planted Jack Pine	High Density Sapling	44.9	16		Sale 015-93-01 (1 of 3 units). Portage Creek Jack Pine. Clearcut 1993. 2-0 jack pine planted June 1994. Mostly dense jack pine saplings with a few black cherry stump sprouts and overstory red oak. Intermittent stream runs through stand.
28	42220 - Natural Jack Pine	High Density Pole	14.9	74		Intermittent stream at south end of stand. Less oak than other mixed stands. Some jack pine mortality.
31	42290 - Natural Mixed Pine	High Density Pole	4.7	44	171-200	Variable stand. North end is mostly jack pine, central section is mostly white pine and south section is mostly red pine. Red pine appears to be part of plantation but rows are breaking up. Not much regen in understory.

Stand	Traverse City Mgt. Unit		5 – Forested Stands			Compartment: 129	General Comments:
	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Year of Entry: 2013	
32	42141 - Planted Mixed Pine, Mixed Deciduous	Low Density Sapling	8.0	5		Sale 034-04-01 (1 of 5 units). Range 18 Jack Pine. Cut winter 2006. Red pine planted May 2006.	
33	42220 - Natural Jack Pine	Medium Density Pole	9.8	76		OI suggested cutting now. Jack pine is starting to die.	
35	4123 - Red Oak	Medium Density Log	10.7	77		Slightly hilly terrain. No advanced oak regeneration.	
37	42110 - Planted Red Pine	High Density Pole	77.0	45	171-200	Ready for row thinning. Rows will be relatively easy to follow. Include significant breaks in some places.	
40	42220 - Natural Jack Pine	High Density Sapling	20.7	19		Inside fenced area of Range 18.	
41	42220 - Natural Jack Pine	High Density Sapling	5.3	35		Regenerated naturally from 1975 cut.	
42	42220 - Natural Jack Pine	High Density Sapling	80.2	35		Regenerated naturally from 1975 cut. Patchy canopy cover. Some areas have more oak.	
43	42220 - Natural Jack Pine	Medium Density Pole	23.9	85		Older jack pine with significant mortality. Open canopy in many areas. Military management goal to develop sound and visual barrier for small arms ranges. Considered cutting jack pine and replanting with red pine 10 years ago.	
44	4310 - Pine, Oak Mix	Medium Density Pole	10.0	110		Stand is along Manistee River; part is within Natural River vegetative buffer. Significant amount of dead white pine. Oak is poor quality.	
46	42220 - Natural Jack Pine	Medium Density Pole	16.4	48		Variable ages. Jack pine is starting to show mortality. Old railroad grade runs through stand.	
47	4319 - Mixed Upland Forest	Medium Density Log	1.9	91		Stand is near Manistee River; part is within Natural River vegetative buffer. Stand is down a steep bluff, along the riverbottom. Seems mostly dry. Within Natural Rivers corridor. Contains some very large white pines.	
48	42220 - Natural Jack Pine	Medium Density	4.4	12		Between Range 18 and 16.	
49	42220 - Natural Jack Pine	High Density Sapling	16.2	35		Dense sapling jack pine with scattered larger red oak and red pine.	
50	42250 - Pine, Oak	Medium Density Pole	14.6	55		Good oak regeneration in understory. Jack pine is starting to die.	
52	42110 - Planted Red Pine	High Density Pole	32.5	45	171-200	Red pine planted 1966. Residual oak in pockets. Significant amount of planting failure in some places. Significant jack pine or canopy gaps in areas. There will be some 10" red pine logs and some large jack pine.	



Stand	Traverse City Mgt. Unit		5 – Forested Stands			Compartment: 129	General Comments:
	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Year of Entry: 2013	
53	42250 - Pine, Oak	Medium Density Pole	11.1	63			Variable stand. Variable topography - slightly hilly. Some very large white pine. Not much regen in understory.
56	42220 - Natural Jack Pine	Medium Density	5.7	12			Between ranges 16 and 19. Burned recently?
57	42220 - Natural Jack Pine	Low Density Sapling	16.0	18			Inside fenced range area. Canopy is patchy.
58	42220 - Natural Jack Pine	High Density Sapling	2.5	33			Mainly pole-sized jack pine with residual oak.
59	42250 - Pine, Oak	Medium Density Log	5.7	84			Variable stand. More red pine than nearby pine/oak stands.
64	42120 - Planted Jack Pine	High Density Sapling	5.0	16			Dense jack pine saplings with overstory red oak. Sale 015-93-01 (1 of 3 units). Portage Creek Jack Pine. Clearcut 1993. 2-0 jack pine planted June 1994. Mostly dense jack pine saplings with a few black cherry stump sprouts and overstory red oak.
66	42220 - Natural Jack Pine	High Density Sapling	23.2	35			Stand is near Portage Creek; small part is within Natural River vegetative buffer. Mostly sapling sized jack pine with most of red pine at west end.
68	42210 - Natural Red Pine	Low Density Sapling	12.7	80			Sale 034-04-01 (1 of 5 units). Range 18 Jack Pine. Cut winter 2006. Large slash piles at north end.
69	42250 - Pine, Oak	Medium Density Log	5.5	77			Near Portage Creek. Elevation slightly above tag alder along Portage Creek.
70	6128 - Lowland Coniferous, Mixed Deciduous	Medium Density Log	8.9	91			Portage Creek runs through stand; part is within Natural River vegetative buffer. Diverse stand. Good wildlife habitat.
71	42250 - Pine, Oak	Medium Density Log	7.3	68			Red oak is in mostly in clumps and poor quality. Some jack pine and red oak mortality.
72	42220 - Natural Jack Pine	Medium Density Pole	23.5	64			Largest jack pine in this compartment so far. Includes some open areas/areas of younger jack pine. Some jack pine mortality.
74	42220 - Natural Jack Pine	Medium Density Pole	28.8	52			OI suggested treating in 10-20 years knowing some mortality might occur during this time. Some clumps of mostly 10" jack pine. Poor quality oak. Scattered small grassy/shrubby openings.
75	4117 - Mixed N. Hardwood - Pine	Low Density Sapling	30.9	18			Very open. Jack pine follows pattern as though it's in a stream drainage, but seems dry.
77	4319 - Mixed Upland Forest	Medium Density Pole	7.5	72			Stand is along Portage Creek; part is within Natural River vegetative buffer. Part, especially along the road, is an opening that is filling in. Tag alder along creek.



Stand	Traverse City Mgt. Unit		5 – Forested Stands			Compartment: 129	General Comments:
	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Year of Entry: 2013	
80	6128 - Lowland Coniferous, Mixed Deciduous	High Density Pole	10.2	70			Variable stand. Pockets of dense red maple saplings. Some jack pine mortality.
83	42290 - Natural Mixed Pine	High Density Log	6.5	75			Variable stand. Mostly upland but with some lowland cedar along creek. Good buffer for Portage Creek.
84	42220 - Natural Jack Pine	Medium Density Pole	79.5	49			Variable ages. Some jack pine mortality.
85	42220 - Natural Jack Pine	High Density Sapling	18.8	18			Dense jack pine saplings but with scattered canopy gaps/openings.
86	6117 - Lowland Deciduous, Mixed Coniferous	Low Density Pole	7.6	39			Variable stand. Definitely wet. 100% tag alder in places and alder is thick under a lot of tree canopy.
87	4131 - Aspen, Oak	High Density Pole	5.1	39			Variable stand. Aspen is poor quality.
88	6127 - Lowland Pine	High Density Log	25.2	87			Stand is along Portage Creek; part is within Natural River vegetative buffer. Mostly wet but dry in places. Hummocky ground. Variable cover type. Types in pockets. White pine is mostly poles and XL logs but without many logs.
89	4130 - Aspen	High Density Pole	16.1	39			Stand is along Portage Creek and tributary; part is within Natural River vegetative buffer.
93	42290 - Natural Mixed Pine	Medium Density Log	18.3	74			Variable stand. Merchantable red pine. Not a lot of white pine regen. Pine mortality.
94	42220 - Natural Jack Pine	High Density Pole	43.6	70			Mostly upland but with low spots. Variable sizes of jack pine. Some canopy gaps. White pine is almost pole-sized. Some quaking aspen at edge. Scattered pockets of other conifers and swamp hardwoods.
95	42290 - Natural Mixed Pine	Medium Density Log	7.8	75			Stand is near Portage Creek; part is within Natural River vegetative buffer. Good buffer for Portage Creek. Some places are mature jack pine and others are more mixed.
96	42290 - Natural Mixed Pine	Medium Density Pole	14.0	45			Stand is near Portage Creek and between two tributaries; small part is within Natural River vegetative buffer. Variable stand. Mostly upland but with some wet spots. Used to have aspen component. Jack pine mortality has led to a lot of CWD.
97	6117 - Lowland Deciduous, Mixed Coniferous	High Density Pole	6.2	71			Stand appears similar to 96 or 99 but appears more deciduous than coniferous. Age is estimated from aerial photo showing cutting before 1938.
98	42220 - Natural Jack Pine	Low Density Sapling	20.1	18			Variable stand. Natural regen.





Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
100	6117 - Lowland Deciduous, Mixed Coniferous	High Density Pole	6.0	39		Variable stand.
101	42290 - Natural Mixed Pine	High Density Pole	4.8	75		Variable stand. Similar to 81 but with more white pine in canopy and understory. Good buffer for Portage Creek.
102	42290 - Natural Mixed Pine	High Density Pole	9.0	89	1-50	Variable stand. White pine is mostly poles in some places, with few logs. Large white pine is mostly south of road. May contain vernal pond/area of standing water. Beaver activity south of road. Gets increasingly wet toward south.
106	6122 - Black Spruce	High Density Pole	2.6	71		Variable stand. Similar to 98 and 94e. Age is estimated from aerial photo showing cutting before 1938.
108	6128 - Lowland Coniferous, Mixed Deciduous	High Density Pole	137.3	71		Stand is along Portage Creek and contains a tributary; part is within Natural River vegetative buffer. Stand appears similar to Stand 99. Age is estimated from aerial photo showing cutting before 1938.
109	6117 - Lowland Deciduous, Mixed Coniferous	Low Density Sapling	14.4	22		Odd stand. Almost non-forested.
110	6129 - Mixed Coniferous Lowland Forest	High Density Pole	12.2	71		Stand appears similar to 98. Age is estimated from aerial photo showing cutting before 1938.
112	6129 - Mixed Coniferous Lowland Forest	High Density Pole	15.8	71		Mostly wet but with some small upland islands. Other areas are typical black spruce bog. Good wildlife habitat. Age is estimated from aerial photo showing cutting before 1938.
113	6129 - Mixed Coniferous Lowland Forest	Medium Density Pole	12.3	71		Canopy species are probably similar to 96 or 99 but with less canopy closure. Open areas are probably wetter with dense tag alder. Age is estimated from aerial photo showing cutting before 1938.
114	6129 - Mixed Coniferous Lowland Forest	High Density Pole	146.8	71		Stand contains tributaries of Portage Creek; part is within Natural River vegetative buffer. Some tributaries are not mapped correctly or at all. Variable stand. Parts are dense cedar, parts are dense tamarack, parts are black spruce/leatherleaf bog while others are mixed. Some parts were mostly upland. Age is estimated from aerial photo showing cutting before 1938.
116	6117 - Lowland Deciduous, Mixed Coniferous	High Density Pole	7.1	71		Portage Creek tributary runs through stand; part is within Natural River vegetative buffer. Stand appears to be a mixture of swamp hardwoods with scattered cedar, tamarack, and black spruce. Did not observe subcanopy. Age is estimated from aerial photo showing cutting before 1938.
117	6120 - Lowland Cedar	Low Density Pole	14.0	71		Stand is contains end of tributary to Portage Creek; part is within Natural River vegetative buffer. Stand also contains some standing dead timber in flooded areas along creek. Age is estimated from aerial photo showing cutting before 1938.

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Traverse City Mgt. Unit

5 – Forested Stands

Compartment: 129
Year of Entry: 2013



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
119	6122 - Black Spruce	High Density Pole	9.3	66		Stand continues in compartment 130 to the south.



Stand	Cover Type	Acres	Managed Site	Management Priority (Objective)	General Comments:
13	3102 - Grass	2.3	No	Unspecified	Natural gas pipeline.
14	6229 - Mixed lowland shrub	4.6	No	Unspecified	Stand is along Manistee River; part is within Natural River vegetative buffer. Stand is between main stem of Manistee River and tributary/slough. Vegetation is mostly tag alder with pockets of cedar, tamarack, and paper birch.
15	3303 - Mixed Low Density Trees	12.0	No	Low (NonForested)	Clearcut 1975. Mostly shrubby jack pine and stump sprout cherry.
24	3303 - Mixed Low Density Trees	8.5	Natural Regen	Jack Pine	Sale 034-04-01 (2 of 5 units). Range 18 Jack Pine. Cut winter 2006. Intermittent stream runs through stand. Military tank trail runs along eastern edge of stand. Large slash pile just north of stream. Mostly jack pine seedlings with scattered large red oak, red pine and jack pine.
26	3303 - Mixed Low Density Trees	44.9	No	Low (NonForested)	Part of a very large clearcut in 1975. Some sapling jack pine and lots of stump sprout cherry.
29	3303 - Mixed Low Density Trees	2.5	No	Low (NonForested)	Opening with lots of black cherry stump sprouts and scattered shrubby jack pine. Also includes some red pine and white pine saplings.
30	310 - Herbaceous Openland	28.2	No	Low (NonForested)	Trans Canada natural gas pipeline.
34	122 - Road/Parking Lot	18.6	No	Low (NonForested)	Daniels Road. Also known as ARF and AFF Range Road.
36	3303 - Mixed Low Density Trees	42.8	Natural Regen	Jack Pine	Sale 034-04-01 (2 of 5 units). Range 18 Jack Pine. Cut Winter 2006. Scattered natural jack pine regen (seedlings). Scattered sapling/pole sized jack pine and poor quality red oak (pole/sapling) in overstory.
38	3303 - Mixed Low Density Trees	1.5	No	Low (NonForested)	Scattered jack pine saplings and clumps of black cherry.
39	3303 - Mixed Low Density Trees	7.0	No	Unspecified	Part of a very large clearcut in 1975. Some sapling jack pine and lots of stump sprout cherry.
45	3303 - Mixed Low Density Trees	27.2	Natural Regen	Jack Pine	Sale 023-06-02. Rattlesnake research project (continues into Comp 130). Clearcut Winter 2006. Mostly jack pine seedlings and black cherry stump sprouts.
51	3303 - Mixed Low Density Trees	2.9	No	Low (NonForested)	
54	3303 - Mixed Low Density Trees	20.0	Natural Regen	Jack Pine	Sale 023-06-02. Rattlesnake research project (continues into Comp 130). Clearcut Winter 2006. Mostly jack pine seedlings and black cherry stump sprouts.



Stand	Cover Type	Acres	Managed Site	Management Priority (Objective)	General Comments:
55	3303 - Mixed Low Density Trees	46.6	Natural Regen	Jack Pine	Sale 45-03-01 (3 of 4 units). Arrowhead Jack Pine. Clearcut winter 2006. Scattered natural jack pine regen (seedlings). Scattered sapling/pole sized jack pine and poor quality red oak (pole/sap/log) in overstory.
60	710 - Sand, Soil	84.4	No	Unspecified	Ranges 16, 18, and 19 are located within the fenced area.
61	710 - Sand, Soil	1.5	No	Low (NonForested)	Borrow area.
62	3302 - Low Density Conifer Trees	2.6	No	Low (NonForested)	Mostly jack pine, red pine, black cherry, and red oak. Mostly sapling sized.
63	3303 - Mixed Low Density Trees	0.8	Natural Regen	Jack Pine	Sale 023-06-02. Rattlesnake research project (continues into Comp 130). Clearcut Winter 2006. Mostly jack pine seedlings and black cherry stump sprouts.
65	3301 - Low Density Deciduous Tree	3.4	No	Low (NonForested)	Mostly black cherry, jack pine, red pine, red oak, and white pine. Some log-sized oak near road.
67	622 - Lowland Shrub	17.6	No	Low (NonForested)	Portage Creek runs through stand; part is within Natural River vegetative buffer. Mostly dense tag alder with scattered overstory trees.
73	3303 - Mixed Low Density Trees	12.9	No	Unspecified	Training area? Burned recently? Some scattered jack pine and black cherry.
76	622 - Lowland Shrub	8.4	No	Unspecified	Portage Creek runs through stand; part is within Natural River vegetative buffer. Mostly tag alder with a few overstory trees. Short bluff (4-5') separates this from upland stands.
78	3302 - Low Density Conifer Trees	40.5	No	Low (NonForested)	Inside fenced range area. Contains berm at back of ranges and multiple roads. Scattered jack pine saplings and shrubby black cherry sprouts.
79	3303 - Mixed Low Density Trees	6.9	No	Unspecified	
81	3303 - Mixed Low Density Trees	4.9	No	Low (NonForested)	Stand is along Portage Creek; part is within Natural River vegetative buffer. Mostly jack pine and clumps of black cherry.
82	3303 - Mixed Low Density Trees	1.9	Natural Regen	Aspen	Continues into Comp 130. Scattered jack pine, aspen, red oak, and black cherry seedlings. Rattlesnake Cut - #23-06-02
90	3303 - Mixed Low Density Trees	12.2	Natural Regen	Jack Pine	Sale 45-03-01 (1 of 4 units). Arrowhead Jack Pine. Clearcut Winter 2006. Scattered natural jack pine regen (seedlings). Scattered sapling/pole sized jack pine and poor quality red oak (P/S/L) in overstory.



Stand	Cover Type	Acres	Managed Site	Management Priority (Objective)	General Comments:
91	3303 - Mixed Low Density Trees	26.0	No	Unspecified	Mostly black cherry stump sprouts with scattered jack pine, and red oak saplings.
92	3303 - Mixed Low Density Trees	18.2	No	Unspecified	Almost 25% forested but fewer jack pine seedlings in understory than recently regenerated stand to north. Canopy is scattered sapling/pole-sized jack pine (avg. 4" dbh), pole/log-sized red oak (avg. 8" dbh), and black cherry stump sprouts.
99	622 - Lowland Shrub	2.7	No	Unspecified	Stand appears to have been flooded by beaver activity. Photo shows significant standing dead timber. Likely contains a lot of tag alder and scattered cedar and tamarack.
103	6229 - Mixed lowland shrub	10.0	No	Unspecified	Tributary of Portage Creek runs through stand; part is within Natural River vegetative buffer. Mostly open marsh with cattails and some tag alder. Some open water and several streams. Signs of beaver activity.
104	622 - Lowland Shrub	212.5	No	Unspecified	Portage Creek and multiple tributaries run through stand; part is within Natural River vegetative buffer. Mostly tag alder with scattered overstory trees (especially cedar and tamarack). Some areas of standing water. Some areas are marshy with cattails.
105	3303 - Mixed Low Density Trees	10.7	No	Unspecified	Contains Range 12 and parking area. Within fenced range area. Some open grassy area with scattered jack pine saplings and black cherry stump sprouts. Higher elevation than surrounding stands.
107	622 - Lowland Shrub	5.7	No	Unspecified	Lots of tag alder with scattered trees.
111	622 - Lowland Shrub	5.0	No	Unspecified	Portage Creek tributary runs through stand; part is within Natural River vegetative buffer. Stand has been flooded by beavers. Contains a lot standing dead cedar and tamarack. Understory is mostly tag alder.
115	622 - Lowland Shrub	17.7	No	Unspecified	Similar to stand 102 and 89. Mostly dense tag alder with scattered overstory cedar, tamarack, and black spruce. Appears to contain some standing dead trees as well.
118	622 - Lowland Shrub	45.8	No	Low (NonForested)	Mostly dense tag alder with some scattered trees such as cedar, tamarack, and black spruce.
120	122 - Road/Parking Lot	6.4	No	Low (NonForested)	Daniels Road, also known as ARF and AFF Range Road.



7 – PROPOSED SPECIAL CONSERVATION AREA* (SCA) DETAILS

* This is a partial list of SCAs for this compartment. Not included are those areas identified under other Department initiatives (Natural Rivers, Deer Wintering Areas, etc.). Those will be identified in separate, future map and report products.

Stand	SCA Type	SCA Name	Acres	Comments
1	Unique Site - SCA	61129001	79.6	Coded as Stand Condition 8 in OI. Uneven-aged mixed pine stand with pockets of mixed conifer swamp along the Manistee River. Stand is down a steep bluff from upland along Portage Creek Road so most of stand is within Natural River Vegetative Buffer (HCVA). Manage as old growth with no proposed treatments.
3	Unique Site - SCA	61129003	21.0	Coded as Stand Condition 8 in OI. Diverse mixed stand containing some large white pine and pockets of mixed conifer swamp along the Manistee River. Most of stand is down a steep bluff from upland along Portage Creek Road so most of stand is within Natural River Vegetative Buffer (HCVA). Manage as old growth with no proposed treatments.
4	Unique Site - SCA	61129004	1.1	Coded as Stand Condition 8 in OI. Mostly mixed conifer/deciduous swamp along the Manistee River. Stand is down a steep bluff so all of stand is within Natural River Vegetative Buffer (HCVA). Manage as old growth with no proposed treatments.
4	Unique Site - SCA	61129004_Remove	0.4	This is upland portion of stand coded as Stand Condition 8 in OI. Propose removing from SCA database based on new stand delineation. This stand is upland, on top of bluff running along Manistee River and does not have old growth characteristics or diversity of adjacent stand.
19	Unique Site - SCA	61129019	8.1	Coded as Stand Condition 8 in OI. Diverse mixed stand containing some large white pine and pockets of mixed conifer swamp along the Manistee River. Most of stand is down a steep bluff from upland along Portage Creek Road so most of stand is within Natural River Vegetative Buffer (HCVA). Manage as old growth with no proposed treatments.
20	Unique Site - SCA	61129020_Remove	3.9	This is upland portion of stand coded as Stand Condition 8 in OI. Propose removing from SCA database based on new stand delineation. This stand is upland, on top of bluff running along Manistee River and does not have old growth characteristics or diversity of adjacent stand.



8 – DEDICATED CONSERVATION AREA DETAILS

* This is a list of Dedicated Biodiversity Areas for this compartment along with a 1/4 mile buffer surrounding the compartment. Refer to Dedicated Conservation Area Map for areas that the below listed Conservation Areas are located.

ERA = Ecological Reference Area
HCVA = High Conservation Value Area
SCA = Special Conservation Area

Conservation Area	Type	Description
SCA	Cold Water Stream	A coldwater stream has temperature and dissolved oxygen conditions that allow naturally-reproduced or stocked trout populations and those of other coldwater fish species (e.g., slimy sculpin) to persist from year to year. Coldwater streams in Michigan typically provide these conditions due to substantial contributions of groundwater to their stream flows. Such streams are established by Director's action and designated as trout resources by Fisheries Order 210.
HCVA	Natural Rivers	There are two Natural Rivers datasets which are derived from spatial buffers set from an established and approved distance from the river centerlines. The Natural Rivers Zoning District is a 400 foot buffer for most Natural Rivers. The Vegetative Buffer ranges from 25 to 100 feet. To view specific Zoning Districts and Vegetative Buffers for each Natural River see the table located on the I:\Documentation\GDSE data folder.
SCA	Research and Military Areas	These areas provide facilities and lands specifically dedicated for research, or other purposes. They include the 5,847 acre Forest Fire Experiment Station, the 12,000 acre Houghton Lake Wildlife Research Area, the Beaver Islands Archipelago Wildlife Research Area (that includes most of Garden Island, all of High and Hog Islands, all state owned land on Beaver, South Fox and North Fox Islands), the Cusino Wildlife Research Area, the 3,000 acre Hunt Creek Fisheries Research Station, the 125 acre Wyman Nursery, and over 144,000 acres of Military Lands.