



GRAYLING FOREST MANAGEMENT UNIT COMPARTMENT REVIEW PRESENTATION

COMPARTMENT # 180 ENTRY YEAR: 2014

GIS Compartment Acreage: 1,432 County: Crawford

Revision Date: 08/27/2012

Stand Examiner: Patrick Mohney

Legal Description: T27N R04W Sections 31,32,33
Frederic Township

Management Goals: This compartment is comprised of Hanson Reserve Lands which contain the following deed restrictions: 1) The lands are to be used as a permanent encampment and maneuvering ground for the military, 2) it is to serve as a game preserve for the breeding and protection of game, and 3) it is to serve as a forest reserve. The management goal is to maintain forest health, productivity, sustainability, species diversification, and structural diversity throughout the compartment while meeting the deed restrictions.

Soils and Topography: Hills on the east side sloping down to flat land in the middle and continuing west to the Manistee River. There is well-drained Grayling sand in the west side and Graycalm in the east with pockets of poorly drained Croswell and AuCres in the middle.

Ownership Patterns, Development, and Land Use in and Around the Compartment: The compartment consists of Military Board land except for the 26.4 acres in the SW1/4NW1/4 in section 31. This parcel of land is tax-reverted state land and contains the Manistee River State Forest Campground. Public ownership is fairly consolidated, bordering on private parcels of varies sizes, on the east and west ends of the compartment. Camp Shawano, a juvenile correction facility, is located in Section 32, south of Howes Lake.

Unique, Natural Features: The compartment contains unique Northern Wet Prairie with Houghton's goldenrod (state threatened, *solidago houghtonii*), Clintons bulrush (state threatened, *scirpus clintonii*), Long leaved aster (special concern, *aster longifolius*). Secretive locust has been found in Section 32. There is the potential for massasauga, hill's thistle, dusted skipper, and calypso bulbosa. The compartment to the north (comp 179) is managed for Kirtlands Warbler (endangered, *dendroica, kirtlandii*). The Manistee River is a designated Natural River.

Archeological, Historical, and Cultural Features: None.

Special Management Designations or Considerations: Work within the guidelines for the National Guard training needs. Watch visual management along M-72, Arrowhead Rd, Manistee River Rd, and Camp Shawano. Protect and preserve the threatened and special concern species.

Watershed and Fisheries Considerations: The Manistee River is a designated trout stream and Natural River which flows through private land and touches one side of the Manistee River Campground in section 31. Howes Lake is a small lake on the north side of Camp Shawano used mainly by the National Guard for training during the summer time.

Wildlife Habitat Considerations: To maintain the existing Jack Pine , Aspen and Oak types for the deer, rabbits, and grouse. The east side of the compartment gets a lot of hunting pressure.

Mineral Resource and Development Concerns and/or Restrictions: All Military Board land in the compartment is classified as non-development per DMA agreement L-1479. The small parcel of State land in section 31 is also classified as non-development because of the Manistee River and campground. The present non-development classification should not be changed. Surface sediments consist of ice-contact and glacial outwash sand and gravel and postglacial alluvium. Glacial drift thickness varies between 400 and 600 feet. There is approximately 140 feet of relief in the compartment. Beneath the glacial drift are the Coldwater Shale and the Marshall Sandstone. The Marshall has been used as a building stone in the past. The nearest gravel pit is just outside the compartment to the southeast. Gravel potential is good on the upland area. This is part of the State Military Reservation. There are no oil and gas leases in this compartment. The nearest production is Beaver Creek Field, located seven miles to the south.

Vehicle Access: M-72, Arrowhead Rd, Manistee River Rd, Howes Lake Rd, Pollak Bridge Rd and two track trails provide more than adequate access. All new trails created for timber sales will be closed upon completion of the sale.

Survey Needs: The potential for future survey needs exist.

Recreational Facilities and Opportunities: This compartment receives heavy recreational use. Manistee River Bridge State Forest Campground is located in Section 31. The Manistee River, which runs through Section 31, is host to fishing and canoeing. Section 32 contains Howes Lake which is used for fishing and swimming to a limited extent. There is a large amount of camping around the lake which has resulted in some erosion problems. Section 33 contains a portion of an ORV route, the Blue Bear Snowmobile trail (Trail number 7), and part of the horse trail. East of Howes Lake Rd receives moderate to heavy hunting pressure. There is a river access site along M-72.

Fire Protection: The older jack pine along Arrowhead Rd and M-72 Has been cut and replanted. Those cuttings and the current road system is adequate to provide fire breaks for the fire prone jack pine types. The Manistee River and Howes Lake will provide the closest, accessible water source. There is a dry hydrant at the M-72 river access site.

Additional Compartment Information: None.

- **The following reports are available:**
 - ◆ **Total Acres by Cover Type and Age Class**
 - ◆ **Proposed Treatment Summaries**
 - ◆ **Dedicated Conservation Area Details**
 - ◆ **Listing of Forested Stands**
 - ◆ **Listing of Non-Forested Stands**
 - ◆ **Proposed Treatments with No Limiting Factor**
 - ◆ **Proposed Treatments with Limiting Factors**

- **The following information is displayed, where pertinent, on the attached compartment maps:**
 - ◆ **Base feature information, stand numbers, cover types, recreation trails and facilities**
 - ◆ **Proposed treatments**
 - ◆ **Dedicated & Proposed Special Conservation Areas**

Compartment: 180
 T26N R04W Sec. 03, 04
 T27N R04W Sec. 28, 29, 31-34
 County: Crawford
 Unit: Grayling
 YOE: 2014
 Acres: 1,432 GIS Calculated
 Examiner: Patrick Mohney
 Map Revised: 09/07/2012
 Map Phase: Pre-Review



Cover Type & Treatment Map

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

Legend

- Remonumented Section Corners
- PLSS Corner
- Miris Corners
- Highway
- County Paved Roads
- Paved Roads
- County Gravel Roads
- Gravel Roads
- Poor Dirt Roads
- County Poor Dirt Roads
- Trail (Non-Recreation)
- Closed Roads
- Stream
- Intermittent Stream
- Pipe
- Power
- ORV Trails
- ORV Routes
- Snowmobile Trails
- ORV Trail
- ORV Route
- Snowmobile Trail
- Campgrounds
- Boat Access Sites
- Lakes and Rivers
- State Forest Land

Treatments

- Clearcut (w/Reserves, Patch/Strip)

Forest Stands

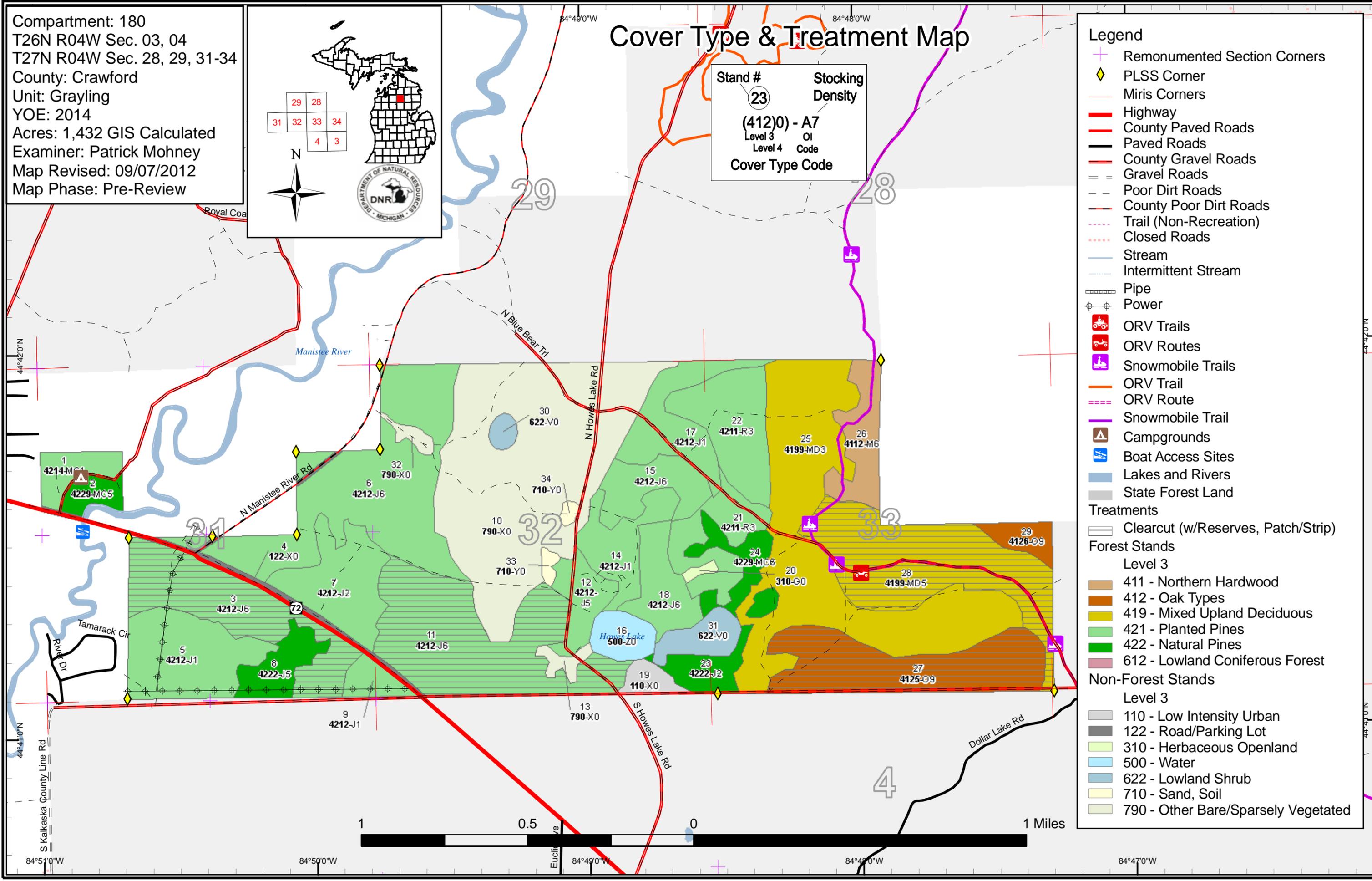
Level 3

- 411 - Northern Hardwood
- 412 - Oak Types
- 419 - Mixed Upland Deciduous
- 421 - Planted Pines
- 422 - Natural Pines
- 612 - Lowland Coniferous Forest

Non-Forest Stands

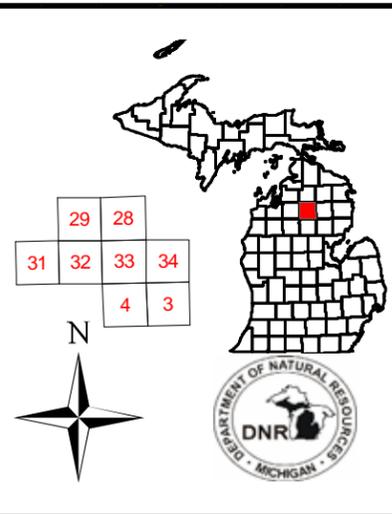
Level 3

- 110 - Low Intensity Urban
- 122 - Road/Parking Lot
- 310 - Herbaceous Openland
- 500 - Water
- 622 - Lowland Shrub
- 710 - Sand, Soil
- 790 - Other Bare/Sparsely Vegetated



84°51'0"W 84°50'0"W 84°49'0"W 84°48'0"W 84°47'0"W
 44°42'0"N 44°41'0"N 44°40'0"N

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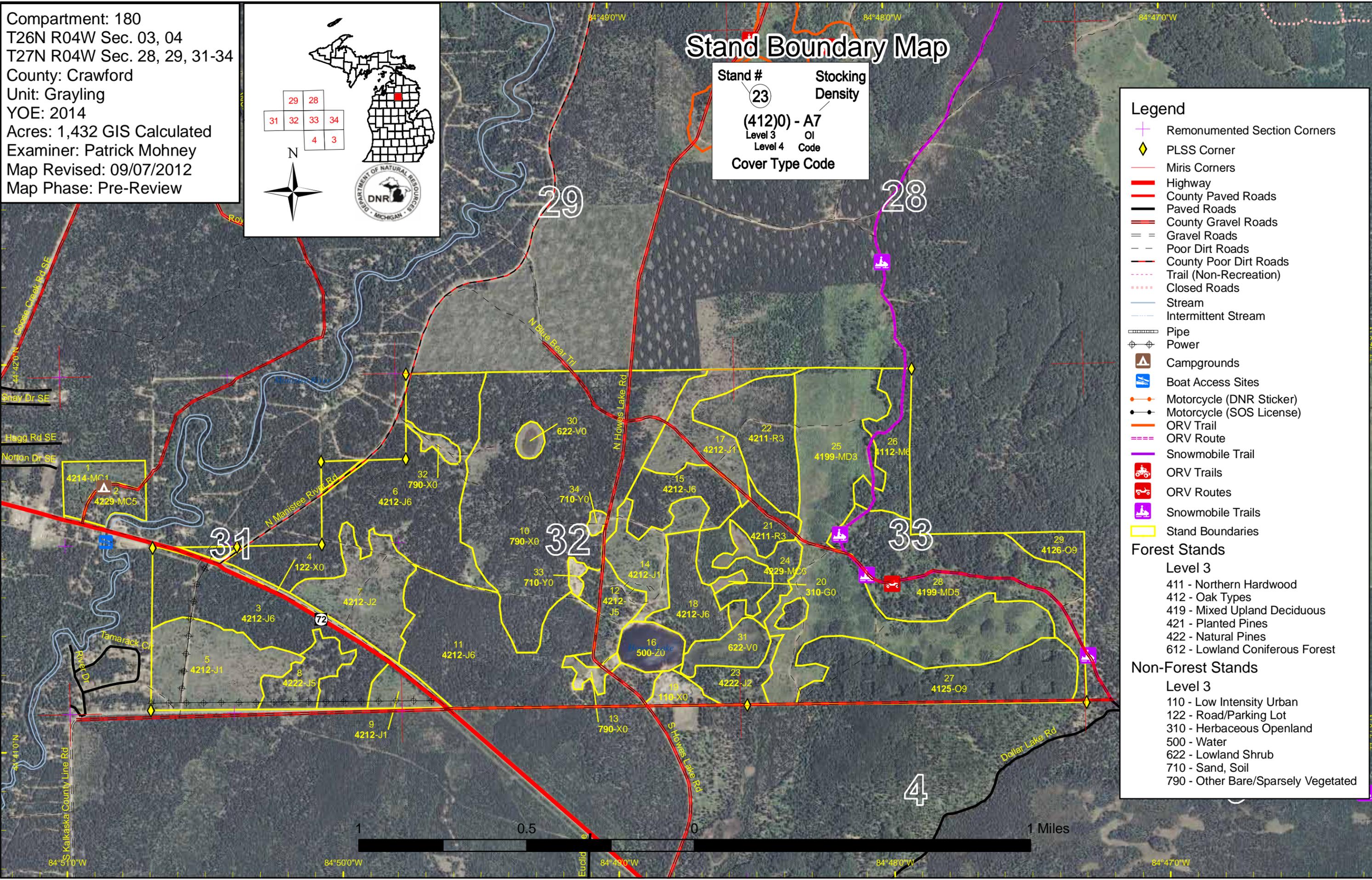


Stand Boundary Map

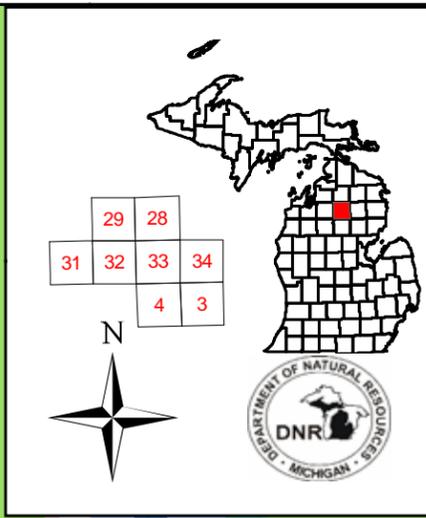
Stand #
 23
Stocking Density
 (412)0 - A7
 Level 3 OI
 Level 4 Code
Cover Type Code

Legend

- Remonumented Section Corners
 - PLSS Corner
 - Miris Corners
 - Highway
 - County Paved Roads
 - Paved Roads
 - County Gravel Roads
 - Gravel Roads
 - Poor Dirt Roads
 - County Poor Dirt Roads
 - Trail (Non-Recreation)
 - Closed Roads
 - Stream
 - Intermittent Stream
 - Pipe
 - Power
 - Campgrounds
 - Boat Access Sites
 - Motorcycle (DNR Sticker)
 - Motorcycle (SOS License)
 - ORV Trail
 - ORV Route
 - Snowmobile Trail
 - ORV Trails
 - ORV Routes
 - Snowmobile Trails
 - Stand Boundaries
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Dedicated & Proposed Special Conservation Area Map

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

Legend

- Miris Corners
- Stand Boundaries
- Dedicated Special Conservation Areas
- Cold Water Streams
- Ecological Reference Areas
- Natural Rivers Vegetative Buffer
- Natural Rivers Zoning District
- Kirtland Warbler Habitat
- Campgrounds
- Boat Access Sites
- Research, Development, and Military Lands

Forest Stands

Level 3

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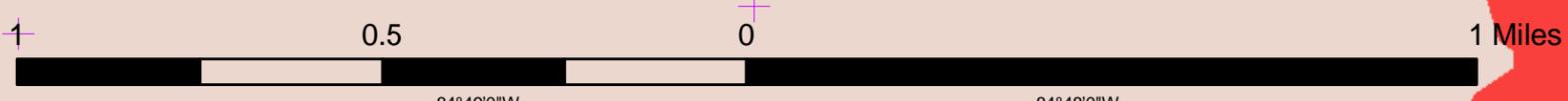
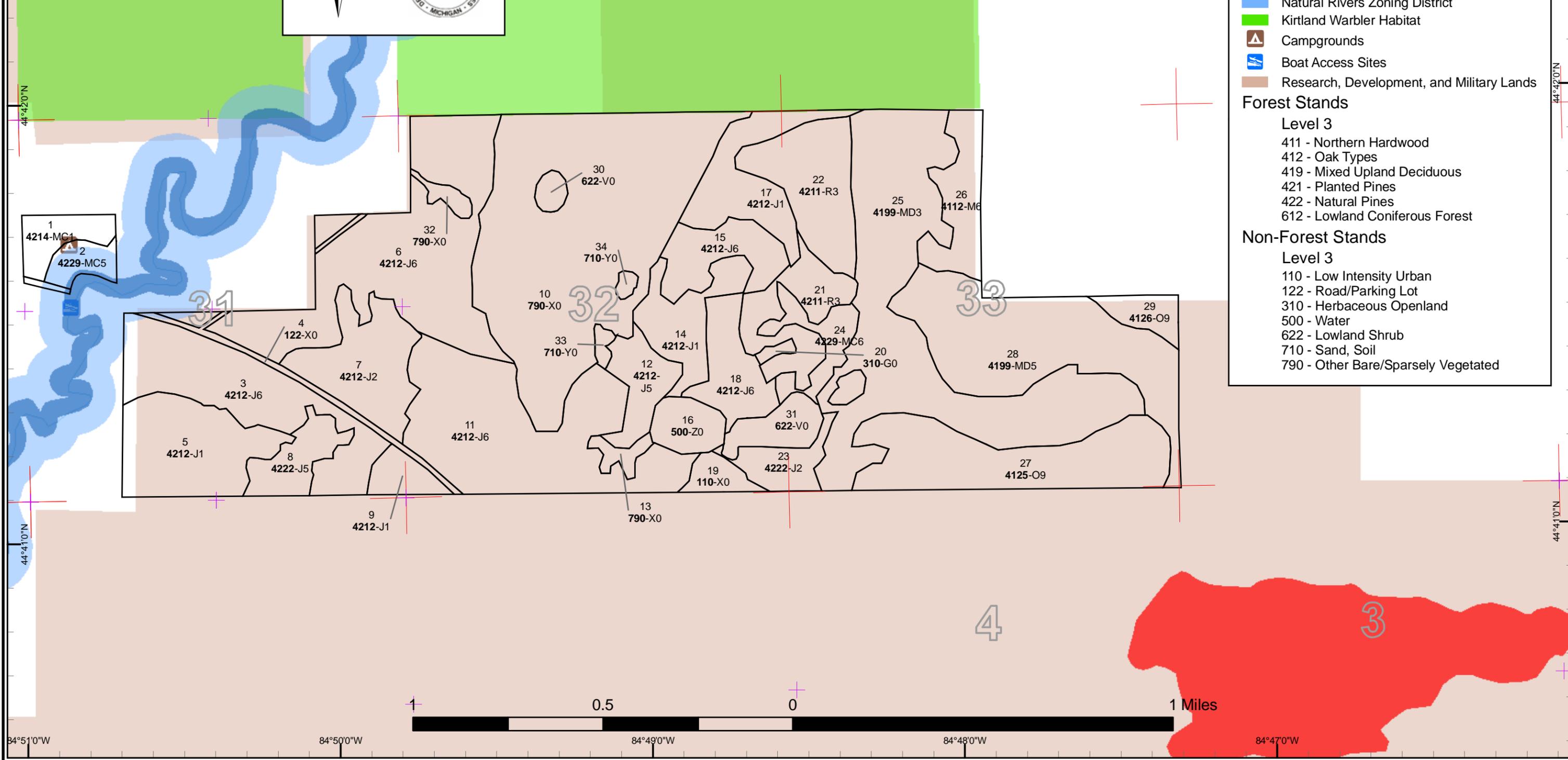


Table 1 – Total Acres by Cover Type and Age Class



	Age Class													Total	
	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 +		Uneten Age
Bare/Sparsely Vegetated	226	0	0	0	0	0	0	0	0	0	0	0	0	0	226
Bog	21	0	0	0	0	0	0	0	0	0	0	0	0	0	21
Herbaceous Openland	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Jack Pine	80	0	57	276	49	0	116	0	0	0	0	0	0	47	624
Mixed Upland Deciduous	170	0	0	0	105	0	0	0	0	0	0	0	0	0	275
Natural Mixed Pines	0	0	0	0	11	0	21	0	0	0	0	0	0	0	32
Northern Hardwood	0	0	0	0	0	29	0	0	0	0	0	0	0	0	29
Oak	0	0	0	0	0	0	91	0	0	0	0	0	0	0	91
Planted Mixed Pines	16	0	0	0	0	0	0	0	0	0	0	0	0	0	16
Red Pine	0	0	81	0	0	0	0	0	0	0	0	0	0	0	81
Sand, Soil	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Urban	21	0	0	0	0	0	0	0	0	0	0	0	0	0	21
Water	15	0	0	0	0	0	0	0	0	0	0	0	0	0	15
Total	556	0	138	276	165	29	228	0	0	0	0	0	0	47	1439



Table 2 – Proposed Treatment Summaries

Grayling Mgt. Unit
Year of Entry 2014

Compartment 180
Total Compartment Acres: 1449

Acres by Treatment Type

Commercial Harvest - 373	Site Prep - 0	Tree Planting - 0	Prescribed Burn - 0	Other - 0
Habitat Cut - 0	Opening Maintenance - 0	Tree Seeding - 0	Pesticide - 0	

Cover Type by Harvest Method

	Clearcut	Selection	Seed Tree	Shelterwood	Thinning	Other - Specify	Total Acres
Jack Pine	189	0	0	0	0	0	189
Mixed Upland Deciduous	105	0	0	0	0	0	105
Oak	79	0	0	0	0	0	79
Total	373	0	0	0	0	0	373



Stand	Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
3	72180003-Cut	73.6	42120 - Planted Jack Pine	High Density Pole	36	51-80	Harvest	Clearcut with Reserves	42120 - Planted Jack Pine	Cmpt. Review Proposal
<p><u>Prescription</u> Final harvest this stand, follow standard retention guidelines. Leave the red pine along M-72. Leave retention islands in locations that would make life easy for the trenching and planting crews.</p> <p><u>Specs:</u></p> <p><u>Other</u> <u>Comments:</u></p> <p><u>Next</u> Trench and plant to Jack Pine. <u>Steps:</u></p> <p><u>Proposed</u> <u>Start Date:</u> 10/01/2013</p>										

11	72180011-Cut	115.9	42120 - Planted Jack Pine	High Density Pole	60	81-110	Harvest	Clearcut with Reserves	42120 - Planted Jack Pine	Cmpt. Review Proposal
<p><u>Prescription</u> Final harvest stand following standard retention guidelines. Leave Red Pine along M-72. Place retention islands so that trenching operations will be smooth.</p> <p><u>Specs:</u></p> <p><u>Other</u> Apply retention for visual along howes lake road and camp shawano. Place islands around Houghton's Goldenrod which is located in the SE part of the stand. Plants are clearly labelled and identified. Try and place retention around areas of high recreational use. <u>Comments:</u></p> <p><u>Next</u> Trench and Plant to Jack Pine. <u>Steps:</u></p> <p><u>Proposed</u> <u>Start Date:</u> 10/01/2013</p>										

27	72180027-Cut	79.1	4125 - Black, N. Pin Oak	High Density Log	64	51-80	Harvest	Clearcut with Reserves	4126 - White, Black, N. Pin Oak	Cmpt. Review Proposal
<p><u>Prescription</u> Final Harvest, follow standard retention guidelines. Leave all white pine. Aspen, oak, red maple would be acceptable regeneration.</p> <p><u>Specs:</u></p> <p><u>Other</u> Design retention within the stand to provide areas of mast production. Islands or individual large canopy trees would be adequate. <u>Comments:</u></p> <p><u>Next</u> <u>Steps:</u></p> <p><u>Proposed</u> <u>Start Date:</u> 10/01/2013</p>										

28	72180028-Cut	105.0	4199 - Other Mixed Upland Deciduous	Medium Density Pole	45	1-50	Harvest	Clearcut	42110 - Planted Red Pine	Cmpt. Review Proposal
<p><u>Prescription</u> Final harvest stand. Follow standard retention guidelines. Place retention along trails in large enough islands that they will not blow down.</p> <p><u>Specs:</u></p> <p><u>Other</u> Natural Regeneration. Any combination of oak, aspen, maple will be acceptable. <u>Comments:</u></p> <p><u>Next</u> <u>Steps:</u></p> <p><u>Proposed</u> <u>Start Date:</u> 10/01/2013</p>										

**Total Treatment
Acreage Proposed: 373.5**

Table 4 -- Treatments Prescribed with a Limiting Factor



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Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
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#Error

Prescription Specs:

Other Comment:

Next Steps:

Proposed Start Date: #Error

Limiting Factor and No Treatment Reason

Total Treatment Acreage Proposed: 0

**Out of YOE -- Treatments
Prescribed with No Limiting Factor**

Year of Entry: 2014



Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
72269_OYOE_cc	2.0					Harvest	Clearcut	4131 - Aspen, Oak	Cmpt. Review Proposal
<u>Prescription Specs:</u> Final harvest except leave any beech, ash, and conifers. No additional retention specified due to small stand size and the proximity of retention in comp 268 stand 28. Set up concurrent with compt 268 (2014 YOE) stand 28.									
<u>Other Comments:</u>									
<u>Next Steps:</u> Natural regen survey. Natural regen goal is a mixture of aspen, oak and hardwoods.									
<u>Proposed Start Date:</u> 10/01/2013									
72272_OYOE_ccr	5.6					Harvest	Clearcut	42120 - Planted Jack Pine	Cmpt. Review Proposal
<u>Prescription Specs:</u> Final harvest except leave the RP & WP. No additional retention due to small stand size. Run the north & west boundary to include the operable transition ground (where the densest black spruce cover is) down to the swamp. Cut all JP & Scotch pine stems regardless of merchantability. Harvest concurrent with the adjacent comp 268 stand 6 (aquired through the same land transaction). When harvesting this stand's planted SP, site a secondary landing immediately adjacent to the plantation so that Scotch pine doesn't get dragged through the general stand area, distributing its weed seed. Add hare habitat improvement spec to fell the red-painted boundary line trees bordering the swamp.									
<u>Other Comments:</u> Protect the survey monument and any witness trees associated with the north quarter corner of section 22. Borders the Lovells KW Unit, Management Block 56.									
<u>Next Steps:</u> Trench and plant JP to KW specs. May need site prep treatments (that could include burning, herbicide, etc.) to control scotch pine regen before planting. Artificial regen surveys. Acceptable regen is JP at stockings suitable for KW habitat, with minor components of naturally-established mixed deciduous and native conifer species.									
<u>Proposed Start Date:</u> 10/01/2013									
72289_OYOE_cc	6.7					Harvest	Clearcut	42120 - Planted Jack Pine	Cmpt. Review Proposal
<u>Prescription Specs:</u> Final harvest, leaving any RP, WP and white oak. No additional retention due to small stand size. Treat concurrent with the adjacent comp 290 stand 26.									
<u>Other Comments:</u> Protect the survey monument and witness trees associated with the quarter corner common to sections 26 & 27.									
<u>Next Steps:</u> Trench and plant JP to KW specs. Artificial regen surveys. Acceptable regen is JP at stockings suitable for KW habitat, along with naturally-established oak and pine.									
<u>Proposed Start Date:</u> 10/01/2013									

**Total Treatment
Acreage Proposed: 14.3**



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
1	42141 - Planted Mixed Pine, Mixed Deciduous	Low Density Sapling	15.9	6		Next to Manistee River Rd. Campground. Harvested under "campground Jack". All trees under 6" were left and jack pine and red pine were planted throughout. Planted stock seems to be growing well, has good survival. Do nothing.
2	42290 - Natural Mixed Pine	Medium Density Pole	11.0	45	1-50	Manistee river campground. some of jack pine is dying, oak seems to be doing alright. Could remove dead or dying jack pine through hazard tree program.
3	42120 - Planted Jack Pine	High Density Pole	73.5	36	51-80	Merchantable jack pine stand. Potential green up issue with adjacent stand. Cut and replant to jack pine.
5	42121 - Planted Jack Pine, Mixed Deciduous	Low Density Sapling	56.7	20		Young jack pine plantation with some larger scattered jack pine throughout.
6	42121 - Planted Jack Pine, Mixed Deciduous	High Density Pole	127.2	32	81-110	Merchantable Jack Pine stand, has some log sized stuff throughout. No treatment at this time. Hold 10 years.
7	42121 - Planted Jack Pine, Mixed Deciduous	Medium Density	46.6	Uneven Age		All jack pine 5" and up was cut in 2007 (arrowhead Jack). It has been trenched and planted. Jack Pine is coming in well and has good survivability throughout. Large red pine along M-72. Was left out of jack pine harvest. Not enough to warrant its own stand.
8	42220 - Natural Jack Pine	Medium Density Pole	20.4	30	1-50	Scattered patches of various sized jack pine. Some cherry brush. Lots of open areas within stand do nothing. Good deer cover with lots of edge effect.
9	42121 - Planted Jack Pine, Mixed Deciduous	Low Density Sapling	11.4	4		Young jack pine plantation. Planted May 2010. Growing well, 3-5 ft tall some larger jack pine scattered throughout stand.
11	42120 - Planted Jack Pine	High Density Pole	115.9	60	81-110	merchantable jack pine stand. Most is pole sized with some occasional logs throughout. There is some smaller stuff to the north but all could be cut. Trench and replant with JP. Be aware of Houghton's Goldenrod in the area. Multiple sites are labelled and identified in the immediate area.
12	42120 - Planted Jack Pine	Medium Density Pole	21.0	48	51-80	Outskirts of Howes Lake Fire. Jack Pine plantation, getting to be merchantable throughout. No treatment at this time. Hold ten years.
14	42121 - Planted Jack Pine, Mixed Deciduous	Low Density Sapling	30.2	5		Young jack pine plantation. Cut and planted 2007, 2008. Good survivability, right on the edge of the Howes Lake Fire.
15	42120 - Planted Jack Pine	High Density Pole	28.4	34		Jack Pine plantation. Has varying density throughout. Could not locate planting record or cutting record for this stand. Previous inventory says stand year of origin was 1965. Best ring count I could come up with when cored was 34 years.
17	42120 - Planted Jack Pine	Low Density Sapling	38.3	5		Freshly planted JP stand. Some larger scattered Jack Pine throughout. Good survivability.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
18	42120 - Planted Jack Pine	High Density Pole	27.9	46	1-50	Jack pine stand with red pine further to the east. Do nothing at this time. Approaching merchantability.
21	42110 - Planted Red Pine	High Density Sapling	33.8	24		Young red pine plantation. Planted in 1988. Seems to be growing well, approaching merchantability.
22	42110 - Planted Red Pine	High Density Sapling	47.1	24		Red pine plantation. Survivability is good, quality varies throughout stand.
23	42221 - Natural Jack Pine, Mixed Deciduous	Medium Density	16.5	35		Jack Pine stand with open areas, some larger oak throughout. Do nothing at this time.
24	42290 - Natural Mixed Pine	High Density Pole	21.4	63	51-80	Multi part stand. There is an island that is in a bit of a depression, has a nice mix of pine throughout. The main part of the stand is not as densely populated, but still has a nice conifer mix throughout. No treatment at this time.
25	4199 - Other Mixed Upland Deciduous	High Density Sapling	170.1	5		Massive clear cut. It is coming back to a nice mixed stand of hardwoods and pine. Some thick patches of aspen throughout.
26	4112 - Maple, Beech, Cherry Association	High Density Pole	29.3	51	51-80	Dense Red maple stand. Some larger diameter oak throughout, seems to be poor quality. Occasional jack pine throughout stand. No treatment at this stand. ORV Trail passes through this stand. Cored larger stems, not the regen.
27	4125 - Black, N. Pin Oak	High Density Log	79.1	64	51-80	This stand has a lot of large oak. Final harvest, leave white pine. Should get decent oak regeneration.
28	4199 - Other Mixed Upland Deciduous	Medium Density Pole	105.0	45	1-50	This stand has a major gypsy moth issue. There are hardly any leaves left on the trees throughout the stand. Blue bear trail runs through stand, some pockets of aspen throughout. I would like to convert to red pine. ParVVb soils. Herbicide?
29	4126 - White, Black, N. Pin Oak	High Density Log	11.7	69	51-80	Mixed oak stand. Mostly pin oak with some white oak throughout. Could not located the corner on NE side of this stand. There is a gate there but no obvious corner. Stand can hold another ten years no problem.
35	42121 - Planted Jack Pine, Mixed Deciduous	High Density Pole	10.4	32	81-110	Merchantable Jack Pine stand, has some log sized stuff throughout. No treatment at this time. Hold 10 years.
36	42121 - Planted Jack Pine, Mixed Deciduous	High Density Pole	10.4	32	81-110	Merchantable Jack Pine stand, has some log sized stuff throughout. No treatment at this time. Hold 10 years.



Stand	Cover Type	Acres	Managed Site	Management Priority (Objective)	General Comments:
4	122 - Road/Parking Lot	12.0	N/A	Unspecified	
10	790 - Other Bare/Sparsely Vegetate	209.4	Yes	Medium (NonForested)	This is the site of the Howes Lake Fire from 2011. The burnt timber was left per wildlife's request. No salvage was done. There is little to none regeneration of jack pine throughout the stand. A portion of the stand was a warbler plantation. Some cherry brush is about all that is coming back at this time.
13	790 - Other Bare/Sparsely Vegetate	5.7	No	Low (NonForested)	Sand heli-pad utilized by the military.
16	50 - Water	15.5	N/A	Unspecified	
19	11 - Low Intensity Urban	9.0	No	Low (NonForested)	Camp Shawano. Monitoring well on location. Unsure what it is used for monitoring.
20	310 - Herbaceous Openland	2.0	N/A	Unspecified	
30	6225 - Bog	4.6	No	Lowland Mixed Forest	Leatherleaf bog with some conifers along the edges. Was involved in the Howes Lake Fire, June 2011
31	6225 - Bog	16.6	No	Lowland Mixed Forest	Leatherleaf bog. Has some tamarack in the middle. I only called it a bog because of the species present, but it was not wet at all, could be because its been so dry this year.
32	790 - Other Bare/Sparsely Vegetate	10.4	Yes	Low (NonForested)	Grassy opening. Has some scattered pine. No prescription.
33	710 - Sand, Soil	2.7	No	Low (NonForested)	Helipad utilized by the military.
34	710 - Sand, Soil	2.0	No	Low (NonForested)	Helipad utilized by the military.



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



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.
SCA	Concentrated Recreation Area	Facilities that are designed and maintained for routine or heavy recreational use, including State Parks, State Forest campgrounds, motorized and non-motorized trails, trailheads, staging areas and public access sites.
HCVA	Designated Critical Habitat	Critical habitat areas are established via a consultative and cooperative process between the DNR and the U.S. Fish and Wildlife service for the recovery of threatened and endangered species, as governed by Part 365, Endangered Species Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, and the Federal Endangered Species Act of 1973. This is an active program, with proposed species plans in various stages of review. As of now only two exist, Kirtland Warbler Habitat and Piping Plover Habitat.
ERA	Ecological Reference Areas	Ecological Reference Areas (ERAs) are high quality examples of natural communities that have been identified as Element Occurrences (EOs) by the Michigan Natural Features Inventory (MNFI) within the context of their natural community classification system. Element Occurrences with viability ranks of A (Excellent) or B (Good) and a Global (G) or State (S) element (rarity) ranking of endangered (1), threatened (2), or rare (3) serve as an initial base of ERAs. They may be located upon any ownership in the State. The system is comprised of individual or associations of natural community types that are managed for restoration and maintenance of natural ecological processes and values. The public may submit recommendations for lands as ERAs using the DNR Conservation Area Recommendation Form.
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.