



GRAYLING FOREST MANAGEMENT UNIT COMPARTMENT REVIEW PRESENTATION

COMPARTMENT # 213 ENTRY YEAR: 2012

GIS Compartment Acreage: 927 County: Crawford

Revision Date: 4/20/2010

Stand Examiner: Patrick Cotant

Legal Description: Sections 4 - 6, T28N-R03W, Crawford County

Management Goals: To maintain species diversity while also addressing sustainability, forest health, productivity, wildlife habitat requirements, aesthetics, best management practices and recreational opportunities throughout the compartment.

Soils and Topography: The terrain is flat to gently rolling. The main soil type present within this compartment is Rubicon Sand. This soil type is classified as being excessively well drained and is common on outwash plains and stream terraces. There is little risk of both surface erosion and windthrow in this soil series. Blue Lake Loamy Sand and Dawson –Loxley Peat are the other two soil types that are well represented within this compartment. Blue Lake Loamy Sand is classified as being well drained and is typical of moraine land forms. Within this soil type, erosion and windthrow possibilities are slight. Dawson-Loxley Peat is classified as being very poorly drained and is common on closed depressions on lake plains. The chance for erosion is negligible and wind throw possibility is high depending on exposure to winds.

Ownership Patterns, Development, and Land Use in and Around the Compartment: State ownership is interrupted in this area by the Crawford-Otsego landfill. On March 8, 2010, a restrictive covenant of 68.12 acres in section 4 of this compartment was done due to groundwater contamination issues from the adjacent Water's Landfill. There is a fair amount of private ownership in the western portion of the compartment near Bluegill and Horseshoe Lakes.

Maple Forest Township is in process of trying to lease the Access Site on Blue Gill Lake to serve as a Township Park.

Unique, Natural Features (include only non-site specific and non-sensitive information): The water bodies in the western portion of the compartment have groundwater flow influence to the headwater areas of the Mainstream of the AuSable river which lies just across Old-27.

Watershed and Fisheries Considerations: Bluegill and Horseshoe Lakes lie in the western portion of the compartment. Each lake has a designated access site on it which are currently managed by Parks and Recreation Division. These lakes are noted for having good fishing opportunities.

Wildlife Habitat Considerations: A great deal of wildlife utilize all areas of this compartment. The major species that were observed during field data collection were; whitetail deer, wild turkey and ruffed grouse. Forest management in the compartment has contributed to excellent habitat for each of these species.

Mineral Resource and Development Concerns and/or Restrictions: Surface sediments consist of glacial and ice-contact outwash sand and gravel and postglacial alluvium. The glacial drift thickness varies between 600 and 1000 feet. Beneath the glacial drift is the Coldwater Shale. There is not an economic use for the Coldwater Shale. The nearest gravel pit is thought to be in the SW of Section 5, and gravel potential is thought to be good on the upland areas. All except Section 6 has been leased and developed for Antrim Shale gas. The Niagaran Reef Trend is also located in this area, but has no production on State lands in the compartment.

Vehicle Access: Access to the compartment is limited with Sherman Rd and Old 27 being the main corridors. Forest roads and 2-tracks access the remainder of the state land in the area. Gates restrict access to some state lands located near the landfill, requiring access be obtained by crossing state land from the south.

Survey Needs: No survey needs at this time.

Recreational Facilities and Opportunities: The two lakes and the associated access sites present in this compartment provide a great deal of recreational possibilities in this area. There is also a fair amount of hunting that occurs in this area.

Fire Protection: Fire activity is of concern in this area. The State of Michigan is responsible for wildland fire suppression in this area.

Additional Compartment Information:

LOTS Compartment Acreage: 927 acres

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

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

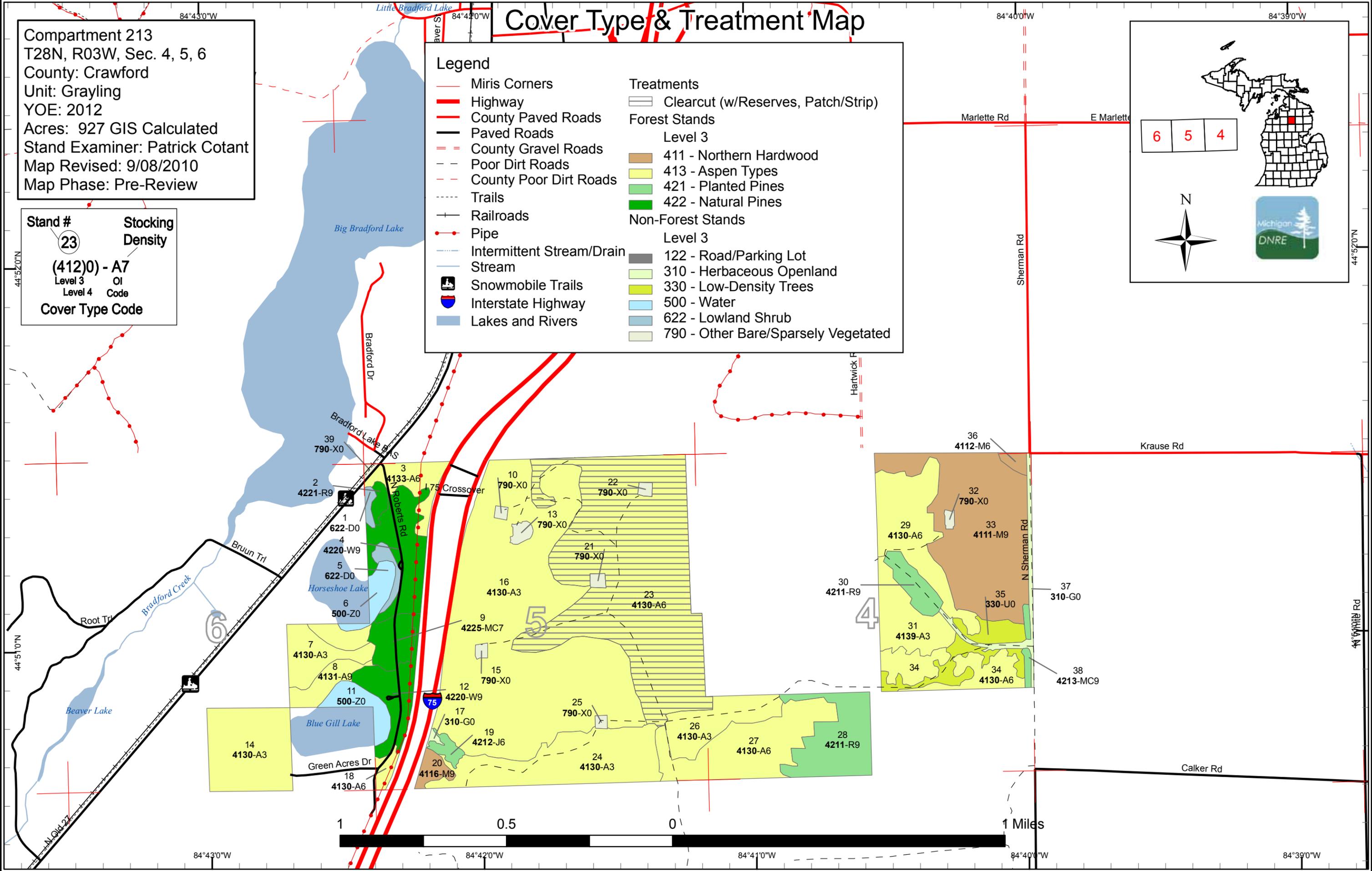
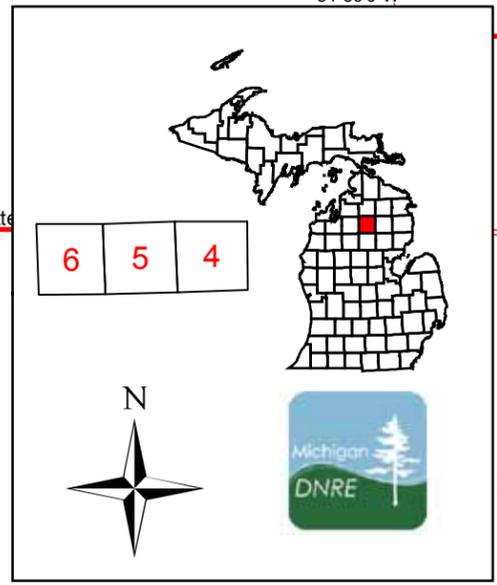
Cover Type & Treatment Map

Compartment 213
 T28N, R03W, Sec. 4, 5, 6
 County: Crawford
 Unit: Grayling
 YOE: 2012
 Acres: 927 GIS Calculated
 Stand Examiner: Patrick Cotant
 Map Revised: 9/08/2010
 Map Phase: Pre-Review

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

Legend

- | | |
|-----------------------------|--------------------------------------|
| — Miris Corners | Treatments |
| — Highway | — Clearcut (w/Reserves, Patch/Strip) |
| — County Paved Roads | Forest Stands |
| — Paved Roads | Level 3 |
| — County Gravel Roads | 411 - Northern Hardwood |
| — Poor Dirt Roads | 413 - Aspen Types |
| — County Poor Dirt Roads | 421 - Planted Pines |
| — Trails | 422 - Natural Pines |
| — Railroads | Non-Forest Stands |
| — Pipe | Level 3 |
| — Intermittent Stream/Drain | 122 - Road/Parking Lot |
| — Stream | 310 - Herbaceous Openland |
| — Snowmobile Trails | 330 - Low-Density Trees |
| — Interstate Highway | 500 - Water |
| — Lakes and Rivers | 622 - Lowland Shrub |
| | 790 - Other Bare/Sparsely Vegetated |



Stand Boundary Map

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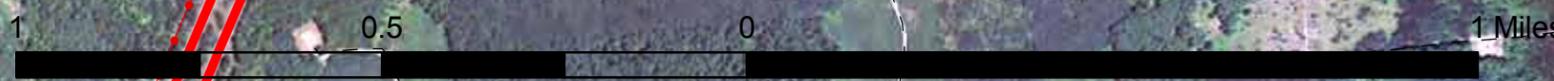
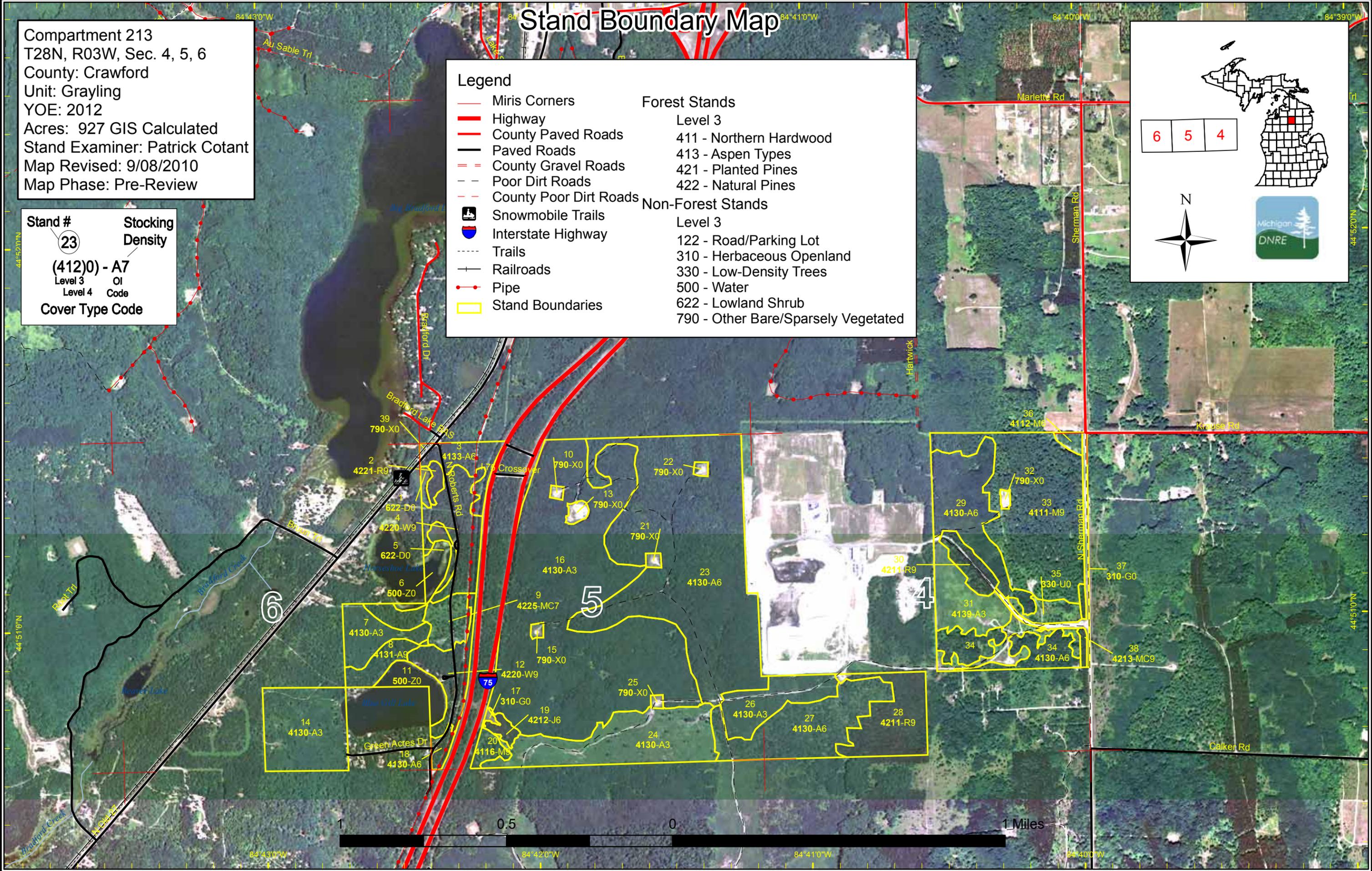
Stand #
 23
Stocking Density
 (412)0 - A7
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Legend

— Miris Corners	Forest Stands
— Highway	Level 3
— County Paved Roads	411 - Northern Hardwood
— Paved Roads	413 - Aspen Types
— County Gravel Roads	421 - Planted Pines
— Poor Dirt Roads	422 - Natural Pines
— County Poor Dirt Roads	Non-Forest Stands
— Snowmobile Trails	Level 3
— Interstate Highway	122 - Road/Parking Lot
— Trails	310 - Herbaceous Openland
— Railroads	330 - Low-Density Trees
— Pipe	500 - Water
— Stand Boundaries	622 - Lowland Shrub
	790 - Other Bare/Sparsely Vegetated

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Dedicated & Proposed Special Conservation Area Map

Legend

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

Forest Stands

Level 3

- 411 - Northern Hardwood
- 413 - Aspen Types
- 421 - Planted Pines
- 422 - Natural Pines

Non-Forest Stands

Level 3

- 122 - Road/Parking Lot
- 310 - Herbaceous Openland
- 330 - Low-Density Trees
- 500 - Water
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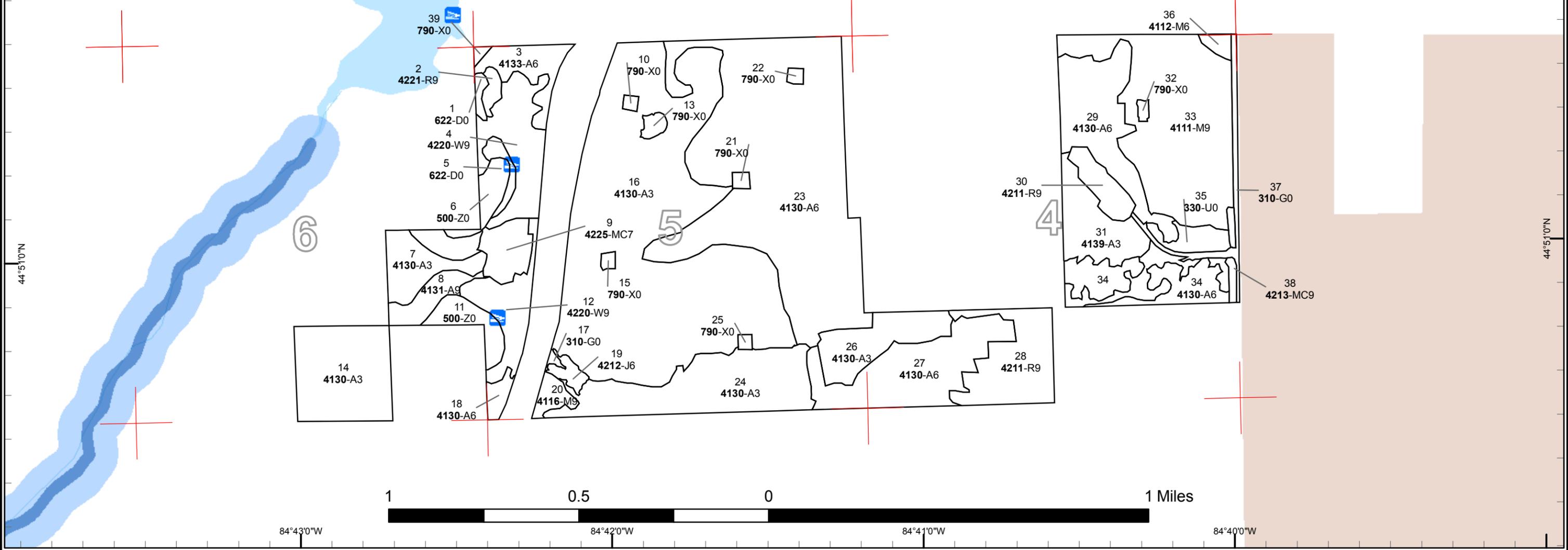


Table 1 – Total Acres by Cover Type and Age Class

Data updated before 2:00 PM



	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	129	270	170	71	0	14	0	15	0	0	0	0	0	669
Bare/Sparsely Vegetated	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
Herbaceous Openland	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
Jack Pine	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	3
Low-Density Trees	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18
Natural Mixed Pines	0	0	0	0	0	0	0	0	0	12	0	0	0	0	0	12
Northern Hardwood	0	0	0	0	0	0	0	0	93	0	0	0	0	0	0	93
Planted Mixed Pines	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	3
Red Pine	0	0	0	0	0	40	0	0	3	0	0	0	0	0	0	43
Treed Bog	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Water	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17
White Pine	0	0	0	0	0	0	0	18	0	27	0	0	0	0	0	45
Total	59	0	129	270	170	115	3	32	96	54	0	0	0	0	0	927



Table 2 – Proposed Treatment Summaries

Data updated before 2:00 PM

Grayling Mgt. Unit
Year of Entry 2012

Compartment 213
Total Compartment Acres: 927.0

Acres by Treatment Type

Commercial Harvest - 170	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
Aspen	170	0	0	0	0	0	170
Total	170	0	0	0	0	0	170



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Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
23 72213023-Cut	170.2	4130 - Aspen	High Density Pole	36	Harvest	Clearcut with Reserves	Aspen, Mixed Deciduous	Cmpt. Review Proposal

Prescription: Treat stand by final harvesting all aspen. Identify 2-3 islands in northern portion of compartment to serve as retention. If possible, delineate islands where they will maintain some species diversity of hardwoods while also keeping in tact mast producing species.

Other Comments:

Next Steps: monitor for aspen regeneration.

Total Treatment Acreage Proposed: 170.2



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Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
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Prescription
Specs:

Other
Comment:

Next
Steps:

Limiting Factor and No
Treatment Reason

Total Treatment
Acreage Proposed: 0

Data updated before 2:00 PM

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

Year of Entry: 2012



Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
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Prescription
Specs:

Other
Comments:

Next
Steps:

**Total Treatment
Acreage Proposed: 0**

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Grayling Mgt. Unit

5 – Forested Stands
Data updated before 2:00 PMCompartment: 213
Year of Entry: 2012

	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
2	42210 - Natural Red Pine	High Density Log	2.8	77	141-170	New stand added. natural rp stand abutting bog. some wp/oak and asp mixed in. rp is growing well and quite variable in terms of size.
3	4133 - Aspen, Mixed Pine	High Density Pole	13.8	65	81-110	Aspen stand with white and red pine fazing in from stand to the south. aspen growing fairly well as is white and red pine. stand is in close proximity to 27 and 75 with high visual impact.
4	42200 - Natural White Pine	High Density Log	26.5	88	111-140	nice natural wp stand with aspen, oak and some rm present. red pine also present in pockets. close proximity to lake and road as well as I-75 corridor. pipeline runs n/s through stand. much heavier to asp/rm in northern reaches of stand.
7	4130 - Aspen	High Density Sapling	15.7	15		New stand added. stand is western portion of orig stand 5. pure aspen stand growing well. occasional oak and birch-very few.
8	4131 - Aspen, Oak	High Density Log	15.4	80	111-140	New stand added. central portion of original stand 5. stands used as buffers for lakes when aspen stand was harvested. some decline in aspen, oak is doing fairly well. wp present in fair numbers, moreso along lake edges.
9	42250 - Pine, Oak	Low Density Log	11.7	80	1-50	New stand added. natural wp/oak stand that had aspen/rm removed last yoe. aspen regen looks good so far. wp and oak are serving well as visual trees and seed producers. this stand is the eastern portion of orig stand 5.
12	42200 - Natural White Pine	High Density Log	18.2	69	141-170	nice natural wp stand, similar to stand 2 to the north. stand has fewer aspen and also pockets of hemlock in the south. provides another nice buffer for lake to the west.
14	4130 - Aspen	High Density Sapling	40.0	10		young aspen stand regenerating well. wp present in aspen size class as well as occasional individuals in overstory class. this goes for oak as well. larger oak are mostly around perimeter.
16	4130 - Aspen	High Density Sapling	209.4	20		aspen stand with wp, oak, rp and rm present. occasional other misc. species present as well. aspen growing well, some variability in size/density and pockets of different age classes as well. for the most part stand is uniform and similar overall. less white pine than stand 21 to the east. some topography in western portions of stand, sloping towards I-75.
18	4130 - Aspen	High Density Pole	3.7	40		small aspen stand, lacking wp majority as in stands 2/8. hemlock present in low numbers. some beech present in understory.
19	42120 - Planted Jack Pine	High Density Pole	3.4	40		small jp stand/plantation, treat next yoe. some aspen creeping in near edges.
20	4116 - Mixed N. Hardwood - Aspen	High Density Log	4.9	70	111-140	hdwd/aspen stand on steep slope, left as residuaal from last harvest. small amount of oak/sm present. fair quality, aspen good.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
23	4130 - Aspen	High Density Pole	170.2	36	111-140	mixed aspen/hdwd stand with aspen dominant. some pockets heavier to hdwd. occasional large oak present as well. final next yoe? a few hemlock in understory along eastern edge of stand. Stand is similar in make-up and composition to stand 10 but has a greater component of white pine throughout. some variation in terms of size and density throughout. possibly more than one age class.
24	4130 - Aspen	High Density Sapling	51.4	10		aspen stand regenerating, occasional wp scattered throughout. occasional oak left as residual from harvest, log size class.
26	4130 - Aspen	High Density Sapling	22.5	20		aspen stand regenerating well. some wp, sm and bc present. thick w/ occasional areas of lower density.
27	4130 - Aspen	High Density Pole	44.1	44	51-80	aspen stand with occasional white pine throughout. not a great site, less quality than some surrounding stands. pole sized with some sapling sized trees in pockets.
28	42110 - Planted Red Pine	High Density Log	30.7	41	171-200	Stand was planted in 1969 and was harvested last YOE. Approximate average DBH of stand is 9-10"
29	4130 - Aspen	High Density Pole	37.5	20	1-50	aspen stand with hardwood mixed in. aspen growing fairly well.
30	42110 - Planted Red Pine	High Density Log	9.4	41	141-170	red pine plantation growing well. has benn third row thinned. thick hdwd understory.
31	4139 - Aspen, Mixed Deciduous	High Density Sapling	22.3	10		aspen stand in process of regen with rm and sm present in descent numbers. some snags stll standing providing wildlife habitat. fair amount of dwd. some browse in pockets.
33	4111 - S.Maple, Hard Mast Association	High Density Log	85.7	75	81-110	mixed northern hdwd stand with sm and beech being dominant. thinned in 02, stand has responded fairly well. lots of beech regen throughout understory. quality is very good, some multiple stem sm and some pockets of limby trees but overall a high quality hdwd stand.
34	4130 - Aspen	High Density Pole	23.2	48	51-80	aspen stand with red maple in low numbers. cherry also present in low numbers where openings in stand exist. aspen is fair quality with minimal decline.
36	4112 - Maple, Beech, Cherry Association	High Density Pole	2.6	75	81-110	mixed hdwd stand with hemlock present along northern edge. overall poor quality, especially compared to standd to the south.
38	42130 - Planted Scotch Pine	High Density Log	2.7	54	141-170	Planted scotch pine stand with red and white pine present as well in significant numbers. looks as though stand was planted to scotch pine and there was red and white pine mixed in to planting stock.



Stand	Cover Type	Acres	Gen Cmts:
1	6224 - Treed Bog	1.8	treed bog with scattered wp. leatherleaf is abundant with alder thick at edges.
5	6224 - Treed Bog	3.6	
6	50 - Water	7.3	eastern/northern shore of horseshoe lake.
10	790 - Other Bare/Sparsely Vegetate	0.9	Gas well site- Maple Forest A2-5.
11	50 - Water	9.8	northeast portion of blue gill lake.
13	790 - Other Bare/Sparsely Vegetate	2.2	opening with some vegetation creeping in around edges.
15	790 - Other Bare/Sparsely Vegetate	1.0	well site dominated by grasses as groundcover. Maple Forest-C2-5 HD1
17	3102 - Grass	0.7	small grassy opening in low spot near I-75. surrounded by jp on 2 sides.
21	790 - Other Bare/Sparsely Vegetate	1.2	Gas well site, Maple Forest B3-5.
22	790 - Other Bare/Sparsely Vegetate	1.1	gas well with grass and knapweed being the dominant ground cover. some ferns and seedlings around perimeter of pad. Gas well site, Maple Forest A4-5.
25	790 - Other Bare/Sparsely Vegetate	0.9	well site with gasses and knapweed as dominant groundcover. Gas well site, Maple Forest O3-5.
32	790 - Other Bare/Sparsely Vegetate	1.0	gas well site for 3 well pads, Maple Forest B3-4, A4-4, and A3-4 B116.
35	3301 - Low Density Deciduous Tree	18.2	opening with cherry and some aspen present. includes gas well in southern portion of stand.
37	3102 - Grass	8.3	paved road access to Waste Management landfill and road right of way along this access. also includes portions of right of way along Sherman Rd. two entrance signs for waste management are located at intersection with Sherman rd.
39	790 - Other Bare/Sparsely Vegetate	0.8	Road and Railroad ROW running through corner of stand to the east. Added after compartment was transferred to preinventory layer.



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.

Data updated before 2:00 PM

Stand	SCA Type	SCA Name	Acres	Comments
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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.

Data updated before 2:00 PM

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

Conservation Area	Type	Description
SCA	Cold Water Lake	A coldwater lake has temperature and dissolved oxygen conditions that allow naturally-reproduced or stocked trout populations and those of other coldwater fish species to persist from year to year. Suitable conditions for coldwater fishes may occur in Michigan lakes if they are relatively deep, have substantial groundwater inflows, or are located in colder (northern) areas of the state. Such lakes are established by Director's action and designated as trout resources by Fisheries Order 200.
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	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.