



GRAYLING FOREST MANAGEMENT UNIT COMPARTMENT REVIEW PRESENTATION

COMPARTMENT # 188 ENTRY YEAR: 2012

GIS Compartment Acreage: 1189 County: Crawford

Revision Date: 9/2/2010

Stand Examiner: Lucas Merrick

Legal Description: Beaver Creek Township, T25N R04W, Sections 8 and 9

Management Goals: To maintain forest health, productivity, sustainability, and diversity throughout the compartment while providing for multiple use, visual management, and military training needs as allowed by the twenty year management agreement.

Soils and Topography: Soils are primarily Grayling, Graycalm, and Kalkaska sands. Topography is hilly with steep slopes, ridges, and valleys.

Ownership Patterns, Development, and Land Use in and Around the Compartment: State ownership is contiguous with one 80 acre private parcel located in the north half of section 9. This state land is under the 20 year management agreement with the Michigan National Guard. The agreement allows for camping and maneuvers, but does not allow use of heavy equipment or high intensity live ammunition firing. Tracked vehicles are prohibited on these lands except to cross on designated trails. Wheeled vehicles are restricted to existing trails and are not to be driven cross country. MDNRE management activities take precedence on these lands, though management activities are tailored in order to be compatible with National Guard training needs. Multiple military firing and observation points associated with the Range 13 Complex are located in section 8. The Beaver Creek Gas and Oil Field is active in this area.

Unique, Natural Features: The state threatened rough fescue (*Festuca scabrella*) may occur in the area. Prairie or pale agoseris (*Agoseris glauca*), Hill's thistle (*Cirsium hillii*), and Alleghany plum (*Prunus alleghaniensis* var. *davisii*) are species of special concern with potential to appear in the compartment. These plant species are most often found in grassy openings and open areas of jack pine. Currently there are no known Ecological Reference Areas in this compartment.

Archeological, Historical, and Cultural Features: Operations could have potential to impact features within section 9 according to the database.

Special Management Designations or Considerations: The entire Compartment is considered a Special Conservation Area (SCA), it is designated under "Research and Development" for military lands. Range 13 (mortar range) is found in the western portion of section 8.

Watershed and Fisheries Considerations: None at this time.

Wildlife Habitat Considerations: Make conscious efforts to expand the oak and aspen components. Promote species and structural diversity during harvest operations.

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 400 and 600 feet. Beneath the glacial drift is the Michigan formation, mined for gypsum in other locations in the State. The nearest gravel pit is one and one half miles to the north, and gravel potential is thought to be good on the upland areas. Beaver Creek field is located in the compartment. This field has produced over 16,000,000 BO and 17 Bcf gas, from the Devonian Detroit River Sour Zone and Richfield Formations. The entire compartment is currently under lease for oil and gas development. A former gravel pit (Annis Pit) is in need of restoration.

Vehicle Access: The compartment is easily accessible by forest roads, pipeline access routes, and Annis Pit Rd. Sandy soils and hilly terrain may make access for 2-wheel drive vehicles difficult.

Survey Needs: The western corners of the private 80 acres located in section 9 were not located during inventory.

Recreational Facilities and Opportunities: Hunting and dispersed recreational use occurs throughout the compartment.

Fire Protection: Areas with oil and gas activity are designated “no plow zones” do to the presence of H₂S gas. The hilly terrain will make it difficult for water units to access certain areas. Range 13 is prone to frequent fire events. The majority of timber found in this compartment is deciduous.

LOTS Compartment Acreage: 1,200 acres

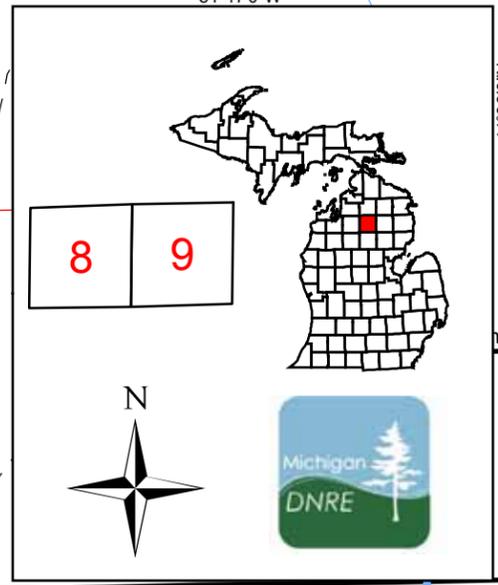
- **The following reports are available:**
 - ◆ **Cover Type by Age Class**
 - ◆ **Proposed Treatment Summaries**
 - ◆ **Dedicated Conservation Area Details**
 - ◆ **Listing of Forested Stands**
 - ◆ **Listing of Non-Forested Stands**
 - ◆ **Proposed Treatments – No Limiting Factors**
 - ◆ **Proposed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

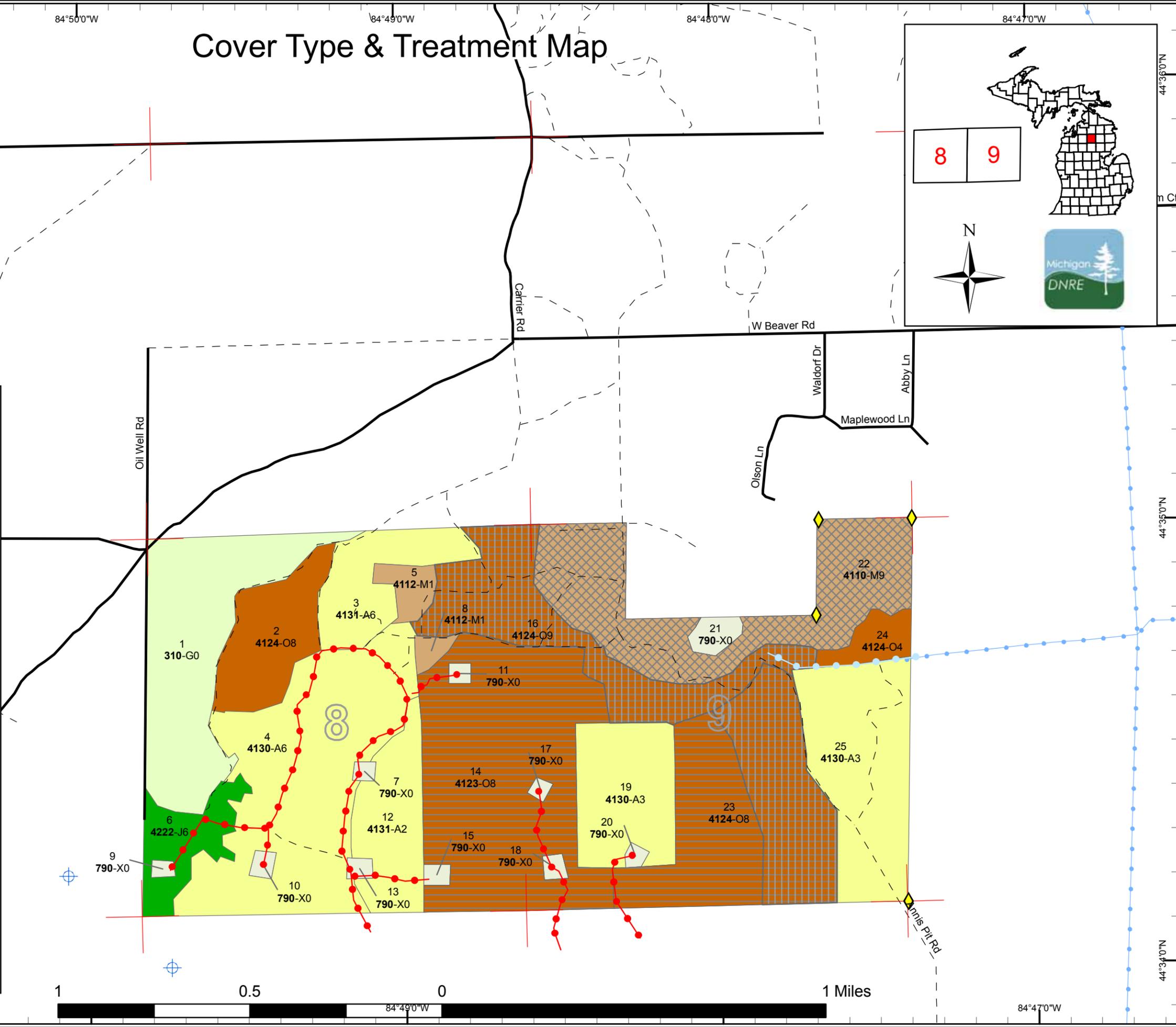
Cover Type & Treatment Map

Compartment 188
 T25N, R04W, Sec. 08, 09
 County: Crawford
 Unit: Grayling
 YOE: 2012
 Acres: 1,189 GIS Calculated
 Stand Examiner: Lucas Merrick
 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**
- RIs Corners
 - Miris Corners
 - Paved Roads
 - Poor Dirt Roads
 - Pipelines
 - Powerlines
 - Range Fence
 - Water Injection Wells
 - Intermittent Stream/Drain
 - Stream
- Treatments**
- Clearcut (w/Reserves, Patch/Strip)
 - Seed Tree (w/Reserves)
 - Selection (Group, Single Tree)
- Forest Stands**
- Level 3
- 411 - Northern Hardwood
 - 412 - Oak Types
 - 413 - Aspen Types
 - 422 - Natural Pines
- Non-Forest Stands**
- Level 3
- 310 - Herbaceous Openland
 - 790 - Other Bare/Sparsely Vegetated
- RIs Corners



Stand Boundary Map

Compartment 188
 T25N, R04W, Sec. 08, 09
 County: Crawford
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Stand #
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Stocking Density
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Legend

- RIs Corners
- Miris Corners
- Paved Roads
- Poor Dirt Roads
- Water Injection Wells
- Pipelines
- Powerlines
- Range Fence
- Stand Boundaries

Forest Stands

Level 3

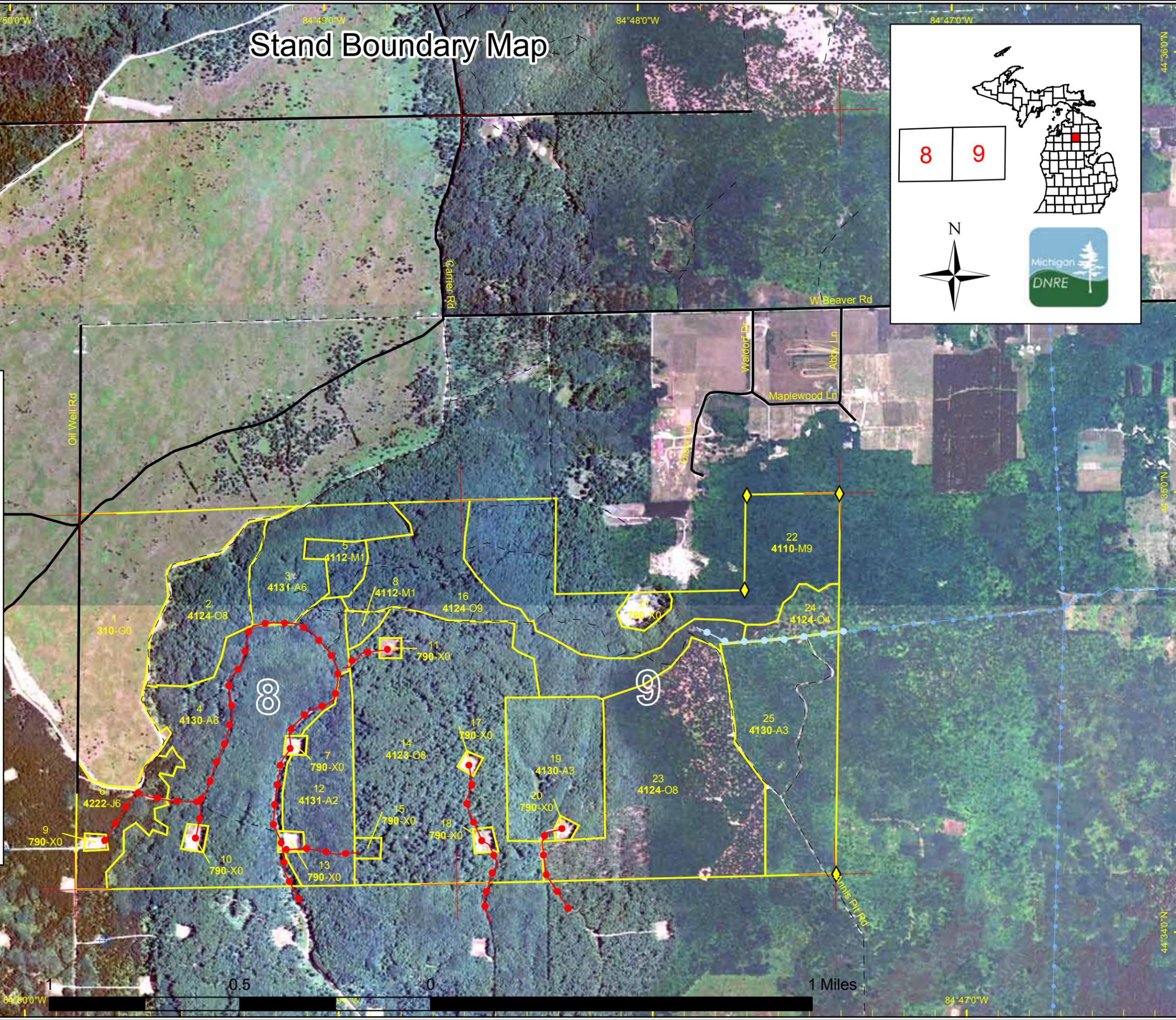
- 411 - Northern Hardwood
- 412 - Oak Types
- 413 - Aspen Types
- 422 - Natural Pines

Non-Forest Stands

Level 3

- 310 - Herbaceous Openland
- 790 - Other Bare/Sparsely Vegetated

RIs Corners



Dedicated & Proposed Special Conservation Area Map

Compartment 188
 T25N, R04W, Sec. 08, 09
 County: Crawford
 Unit: Grayling
 YOE: 2012
 Acres: 1,189 GIS Calculated
 Stand Examiner: Lucas Merrick
 Map Revised: 8/03/2010
 Map Phase: Pre-Review

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

Legend

- Miris Corners
- Stand Boundaries
- Research, Development, and Military Lands
- Kirtland Warbler Habitat

Forest Stands

Level 3

- 411 - Northern Hardwood
- 412 - Oak Types
- 413 - Aspen Types
- 422 - Natural Pines

Non-Forest Stands

Level 3

- 310 - Herbaceous Openland
- 790 - Other Bare/Sparsely Vegetated

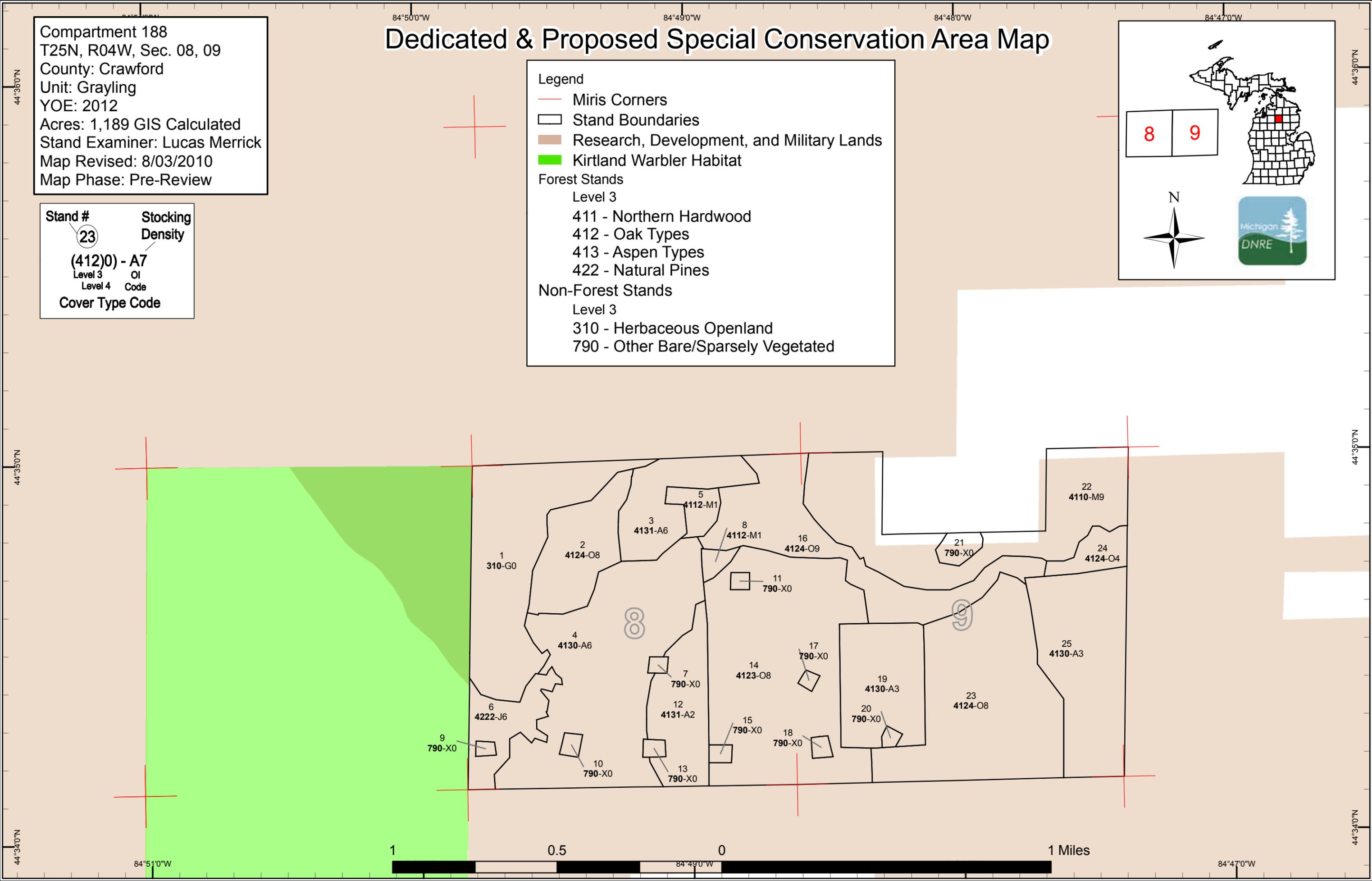


Table 1 – Total Acres by Cover Type and Age Class

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 +		Uneven Age
Aspen	0	48	153	44	0	0	165	0	0	0	0	0	0	0	0	410
Bare/Sparsely Vegetated	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25
Herbaceous Openland	109	0	0	0	0	0	0	0	0	0	0	0	0	0	0	109
Jack Pine	0	0	0	0	0	31	0	0	0	0	0	0	0	0	0	31
Northern Hardwood	0	15	0	0	0	0	120	0	0	0	0	0	0	0	0	136
Oak	0	0	0	0	0	0	0	0	88	376	14	0	0	0	0	479
Total	134	63	153	44	0	31	285	0	88	376	14	0	0	0	0	1189



Table 2 – Proposed Treatment Summaries

Data updated before 2:00 PM

Grayling Mgt. Unit
Year of Entry 2012

Compartment 188
Total Compartment Acres: 1189

Acres by Treatment Type

Commercial Harvest - 535	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
Northern Hardwood	0	120	0	0	0	0	120
Oak	254	0	161	0	0	0	415
Total	254	120	161	0	0	0	535

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Data updated before 2:00 PM

Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
14 72188014-Cut	182.3	4123 - Red Oak	Medium Density Log	83	Harvest	Clearcut with Reserves	Oak, Aspen	Cmpt. Review Proposal

Prescription Final Harvest 2" and up, Leave 7- 10% of the stand in scattered islands. Mark a handful of individual oak trees to leave throughout for some vertical structure. There are a few scattered pockets of A3/M3 that does not have overstory oak. Protect these pockets with islands where possible.

Other Management objective is a mixed stand of natural regeneration with an oak component. Acceptable stand component species are aspen, maple, oak, birch, and mixed conifer.

Next
Steps:

16 72188016-Cut	87.9	4124 - Red with White Oak	High Density Log	79	Harvest	Seed Tree with Reserves	Oak, Aspen	Cmpt. Review Proposal
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Prescription Leave 10 - 20 BA. Favor oak but some misc hdhws can be found within the stand and can also be marked for leave trees. Final harvest Specs: pockets of aspen. Would suggest buffering some of the trail roads with leave/retention islands.

Other Topo throughout. Trail roads in this area used by horse riders and walkers.

Comments:

Next
Steps:

22 72188022-Cut	120.4	4110 - Sugar Maple Association	High Density Log	55	Harvest	Group Selection	S.Maple, Hard Mast Association	Cmpt. Review Proposal
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Prescription Variable BA Ranging from 60 to almost 200. Mark for a BA around 70, the residual can be left higher in areas with better quality. Make multiple regeneration gaps throughout. Areas with poor quality lower BA would make excellent larger "regen gaps" rather than leaving poor quality walk through. Leave large 80 -100' regen gaps around some of the larger diameter sugar maple 12" plus. Include portion of stand found in the northern compartment (comp 187 Stand 35)?

Other Topography is fairly steep in many areas.

Comments:

Next Make attempt to find property corners with snow off conditions.

Steps:

23 72188023_1-Cut	72.1	4126 - White, Black, N. Pin Oak	Medium Density Log	82	Harvest	Clearcut	Oak, Aspen	Cmpt. Review Proposal
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Prescription Final harvest all species 2" and up. Protect pockets of aspen regen. Make attempts to hinder red maple regen with equipment during harvest operations. Do not leave retention islands. Protect the conifer component. Do not cut pine trees or damage pine regeneration. May want to mark a handful of oak throughout sale during prep to leave for various reasons (den, mast, uniqueness etc.)

Other Some topography in stand. Annis Pit Rd is a sandy hilly road in poor condition throughout majority of year. Oak, aspen is the management objective. A stand consisting of natural regeneration with an oak aspen component containing mixed hdhws and mixed conifer is acceptable

Next
Steps:

23 72188023-Cut	72.7	4126 - White, Black, N. Pin Oak	Medium Density Log	82	Harvest	Seed Tree	Oak, Aspen	Cmpt. Review Proposal
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Prescription Mark to Leave 10 - 20 BA of oak. Protect pockets of aspen regen during harvest operations.

Specs:

Other Rolling topo. Regen objective is the same as other 1/2 of stand.

Comments:

Next
Steps:

**Total Treatment
Acreage Proposed: 535.3**



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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**



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
2	4124 - Red with White Oak	Medium Density Log	49.2	88	51-80	Good looking oak in areas. Some 4 log trees. North end of stand starts to transition into a U-type, poorer quality in the southern portion also. The aspen regeneration is found in pockets between canopy gaps. Heavy browse.
3	4131 - Aspen, Oak	High Density Pole	43.5	28		Good looking mixed stand in most areas. The oak is doing well on top of the ridge. Military observation point present in stand.
4	4130 - Aspen	High Density Pole	165.0	52	81-110	A long ridge of aspen. Size and quality is variable depending on aspect and proximity to motor range. Pockets of un-merch. Entire stand was treated around 1957. Disturbance by military is the most likely reason for variety of quality. Pockets of advanced regeneration were left in 1957 and are now pockets of sawlog oak and aspen. A military observation point found in stand.
5	4112 - Maple, Beech, Cherry Association	Low Density Sapling	10.7	4		Clumps of red maple and oak with scattered aspen. Stand is a hill. Browse evident.
6	42220 - Natural Jack Pine	High Density Pole	30.7	48	1-50	Jack pine is around 30' tall. Fire origin regen from range fires? Scattered northern pin oak and pockets of aspen. A few sawlog size trees present in the stand.
8	4112 - Maple, Beech, Cherry Association	Low Density Sapling	4.5	4		New stand added. Harvested last year of entry, no residual. Clumps of red maple and oak.
12	4131 - Aspen, Oak	Medium Density	48.2	4		Pockets of good looking aspen regen. Fair amount of red maple. Some very good looking oak stump sprouts. Areas of browse and spotty regen.
14	4123 - Red Oak	Medium Density Log	182.3	83	51-80	Aspen and red maple removed 20 years ago. Understory is about 20' tall. Very hilly terrain. Very little oak in the understory but there are pockets where the oak regeneration is well above the browse line. Minor conifer component also found in stand. Some poor quality timber located along ridges in southern portion of stand. A few islands of A3/M3 can be found throughout.
16	4124 - Red with White Oak	High Density Log	87.9	79	81-110	2 age classes present in the canopy. Much of NW portions of the stand aspen and red maple removed in early 90's. A pocket of aspen found in stand from cutting around 1960. Average quality oak in most parts. Better looking timber where the northern hardwood transition line is. A few nhwd species along N&E edges. Stand has some topo. Illegal fuel wood cutting present.
19	4130 - Aspen	High Density Sapling	59.5	16		Average looking aspen. A few areas dominated by red maple clumps. Oak looks good
22	4110 - Sugar Maple Association	High Density Log	120.4	55	81-110	Nice looking oak along western and southern stand lines. Hilly, portions too steep for equipment. Lower quality timber in the north along the county rd. Much of the western portion of stand was harvested around 1957. Annis Pit Road is difficult to drive throughout the year without 4-wheel drive.

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Grayling Mgt. Unit

5 – Forested Stands

Compartment: 188

Year of Entry: 2012



Data updated before 2:00 PM

	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
23	4124 - Red with White Oak	Medium Density Log	144.7	82	51-80	Hilly. Some mature BT aspen still found in stand. Red pine also present. This stand will look like the adjacent oak stand to the west in 15yrs.
24	4124 - Red with White Oak	Low Density Pole	14.5	92	1-50	Bigger diameter along the power line, trees get smaller in the north. Limited browse. Many oak seed/saps seem to be doing well. A couple of seed sources for the white pine, seedlings starting to establish.
25	4130 - Aspen	High Density Sapling	93.7	19		Healthy looking stand, most of the aspen is doing well. The red oak seems to be doing great. White pine and red pine present, majority is found in the sub-canopy. Miscellaneous hwdws also found throughout.



Stand	Cover Type	Acres	Gen Cmts:
1	3105 - Mixed Upland Herbaceous	108.9	This fenced in range burns almost annually.
7	790 - Other Bare/Sparsely Vegetate	1.8	State Beaver Creek C3-8.
9	790 - Other Bare/Sparsely Vegetate	1.6	H.H. Joseph #9? A few jack pine starting to seed in. Cherry brush around the edges.
10	790 - Other Bare/Sparsely Vegetate	2.5	Two wells on site, State Beaver Creek D-6 and State Beaver Creek D2-8. BAM growing in SE corner.
11	790 - Other Bare/Sparsely Vegetate	1.9	State Beaver Creek B4-8.
13	790 - Other Bare/Sparsely Vegetate	2.3	State Beaver Creek D9. Knappweed present.
15	790 - Other Bare/Sparsely Vegetate	2.4	State Beaver Creek D4-8.
17	790 - Other Bare/Sparsely Vegetate	1.5	State Beaver Creek C1-9.
18	790 - Other Bare/Sparsely Vegetate	2.3	Abandoned well pad. Knappweed and sweet fern present.
20	790 - Other Bare/Sparsely Vegetate	1.8	State Beaver Creek D2-9.
21	790 - Other Bare/Sparsely Vegetate	6.8	An old gravel pit. Knappweed present.



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
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.
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.