



# Compartment Review Presentation

## Grayling Forest Management Unit

Compartment 184

Entry Year 2016

Acreage: 1,766

County Crawford

Management Area: Camp Grayling

**Revision Date:** 08/17/2014

**Stand Examiner:** Joan Charlebois

### Legal Description:

T26N R04W Sections 19, 20, 21

### Identified Planning Goals:

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

### Soil and topography:

The dominant soil series are Grayling and Graycalm-Grayling sands on rolling to steep terrain. The northwest outwash plains have Rubicon and Croswell sands, grading into the swamp's Tawas and Leafriver mucks.

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

Hanson Reserve Lands were given to the National Guard, DMA by Rasmus Hanson in 1913, with several deed restrictions as outlined under the management objective. These restrictions have tasked the DNR with managing the natural resources on these lands as long as management activities do not conflict with military needs. In addition, hunting is prohibited on these lands.

### Unique Natural Features:

There is the potential for rare plants and animals to be associated with the Lake Margrethe basin, Bear Swamp, and dry upland pine sites.

### Archeological, Historical, and Cultural Features:

There are known concerns within the compartment. All proposed management activities have taken these concerns into consideration.

### Special Management Designations or Considerations:

This compartment is designated as a Military Special Conservation Area (SCA) and contains part of the fenced Small Arms Ranges and Camp Grayling Cantonment Area. It is also part of the Hanson Military Reserve, with goals and restrictions as noted above.

### Watershed and Fisheries Considerations:

The compartment borders the west side of Lake Margarethe, which is popular for cool water sport fishing and recreational watercraft use.

### Wildlife Habitat Considerations:

Because it is part of the Hanson Refuge, hunting is prohibited. The Bear Swamp (most of it north of the compartment) is a winter deer-yarding area.

### Mineral Resource and Development Concerns and/or Restrictions

Surface sediments consist of ice-contact and glacial outwash sand and gravel and postglacial alluvium. The glacial drift thickness varies between 400 and 600 feet. Beneath the glacial drift are the Marshall Sandstone and Coldwater Shale. The Marshall was quarried for building stone in the past. A gravel pit is located 1.5 miles to the south and potential is good on the upland areas. None of the compartment is leased for oil and gas, as it is part of the Military area. The Compartment is located five miles north of Beaver Creek Field. The field has produced over 21 MBO from the Devonian Richfield and over 5 Bcf gas from the Ordovician Prairie du Chien.

### Vehicle Access:

The compartment's southeast corner is within the Camp Grayling Cantonment Fence. Much of the rest of the compartment is within the fenced Small Arms Range complex. Access within those areas is restricted and managed by Range Control.

**Survey Needs:**

None needed

**Recreational Facilities and Opportunities:**

Due to the deed restrictions and fenced ranges, there are no designated recreational facilities, and dispersed use is limited.

**Fire Protection:**

The Camp Grayling Fire Department monitors active ranges for fire starts and conducts initial attack with on-camp resources. The MDNR assists with fire suppression at the military's request and with coordination through Range Control.

**Additional Compartment Information:****The following reports from the Inventory are attached:**

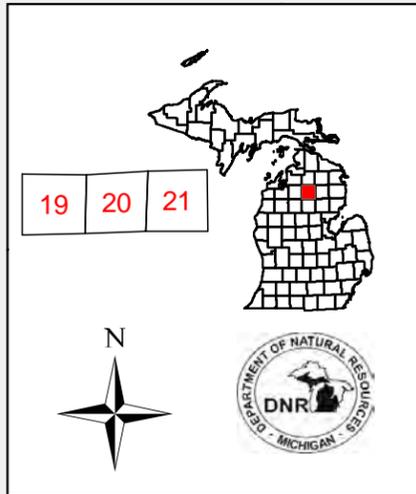
- Total Acres by Cover Type and Age Class**
- Cover Type by Harvest Method**
- Proposed Treatments – No Limiting Factors**
- Proposed Treatments – With Limiting Factors**
- Stand Details (Forested and Nonforested)**
- Dedicated and Proposed Special Conservation Areas**
- Site Condition Details**

**The following information is displayed, where pertinent, on the attached compartment maps:**

- Base feature information, stand boundaries, cover types, and numbers**
- Proposed treatments**
- Site condition boundaries**
- Details on the road access system**

# Cover Type & Treatment Map

Compartment: 184  
 T26N R04W Sec. 19, 20, 21  
 County: Crawford  
 Unit: Grayling  
 YOE: 2016  
 Acres: 1,766 GIS Calculated  
 Examiner: Joan Charlebois  
 Map Revised: 09/05/2014  
 Map Phase: Pre-Review



**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)
- ⊕ Powerline
- ✕ Gate
- Camp Grayling Fence
- ✕ Camp Grayling Gates
- ⊙ Camp Grayling Firing Point
- ★ Camp Grayling Safety Marker
- ⊗ Camp Grayling Land Navigation Marker
- ⊙ Camp Grayling Observation Point
- ★ Camp Grayling Monitoring Wells
- Stream
- Intermittent Stream
- Lakes and Rivers
- State Forest Land

### Treatments

- Clearcut (w/Reserves, Patch/Strip)
- Planting (tree species)
- Regeneration Survey

### Forest Stands

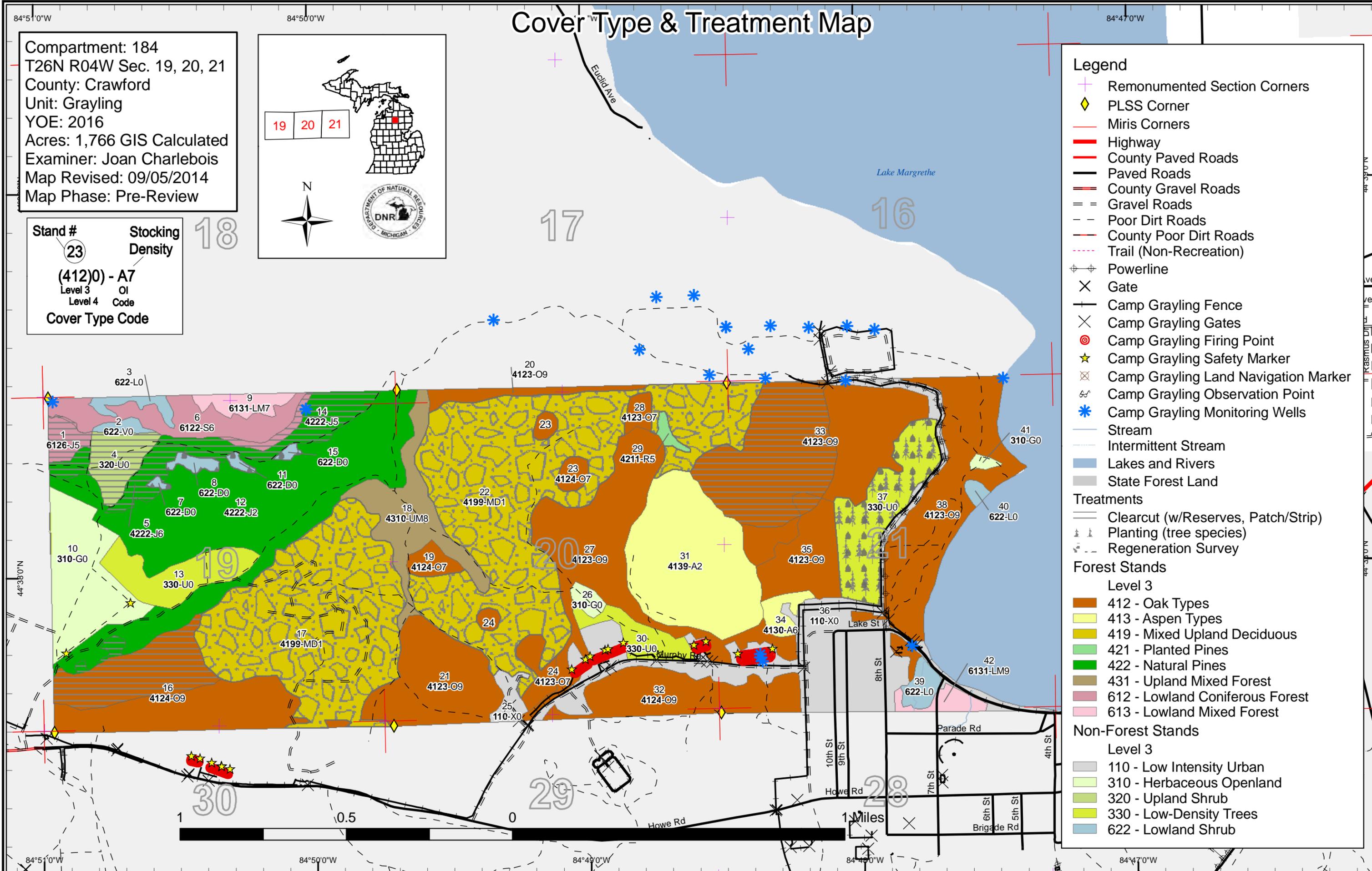
Level 3

- 412 - Oak Types
- 413 - Aspen Types
- 419 - Mixed Upland Deciduous
- 421 - Planted Pines
- 422 - Natural Pines
- 431 - Upland Mixed Forest
- 612 - Lowland Coniferous Forest
- 613 - Lowland Mixed Forest

### Non-Forest Stands

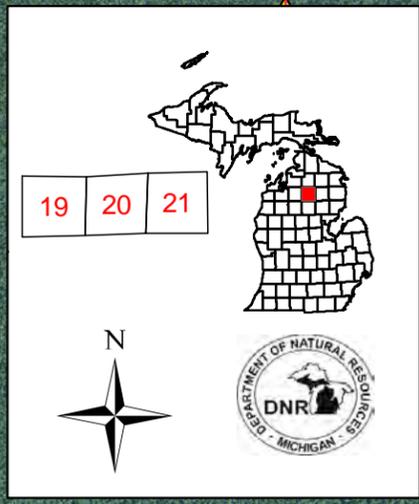
Level 3

- 110 - Low Intensity Urban
- 310 - Herbaceous Openland
- 320 - Upland Shrub
- 330 - Low-Density Trees
- 622 - Lowland Shrub



# Stand Boundary Map

Compartment: 184  
 T26N R04W Sec. 19, 20, 21  
 County: Crawford  
 Unit: Grayling  
 YOE: 2016  
 Acres: 1,766 GIS Calculated  
 Examiner: Joan Charlebois  
 Map Revised: 09/05/2014  
 Map Phase: Pre-Review



Stand #	Stocking Density
23	
(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)
- ✕ Gate
- Camp Grayling Fence
- ✕ Camp Grayling Gates
- ⊙ Camp Grayling Firing Point
- ★ Camp Grayling Safety Marker
- ⊗ Camp Grayling Land Navigation Marker
- ⊗ Camp Grayling Observation Point
- ★ Camp Grayling Monitoring Wells
- Stream
- Intermittent Stream
- ⊕ Powerline
- Stand Boundaries

### Forest Stands

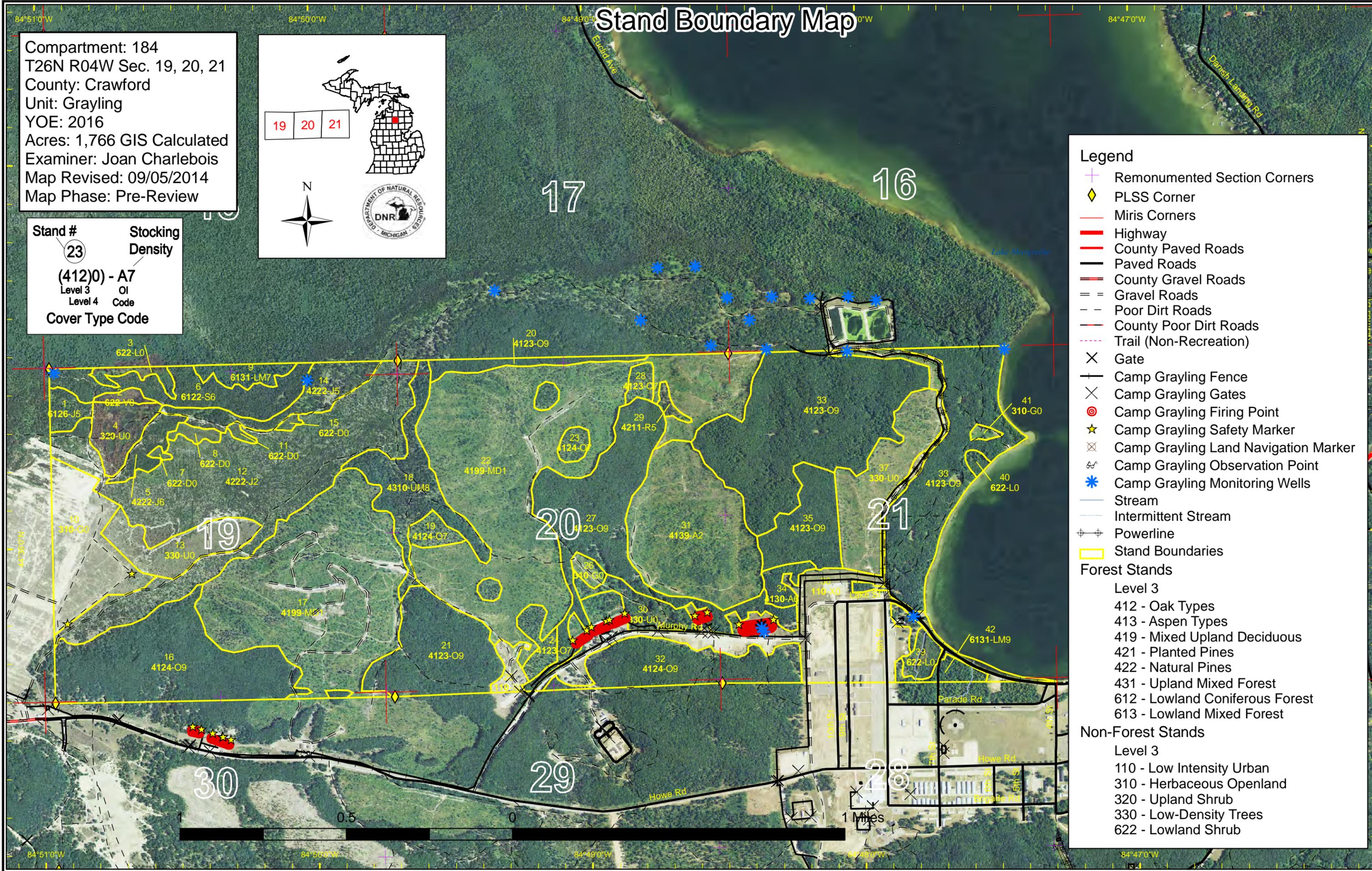
Level 3

- 412 - Oak Types
- 413 - Aspen Types
- 419 - Mixed Upland Deciduous
- 421 - Planted Pines
- 422 - Natural Pines
- 431 - Upland Mixed Forest
- 612 - Lowland Coniferous Forest
- 613 - Lowland Mixed Forest

### Non-Forest Stands

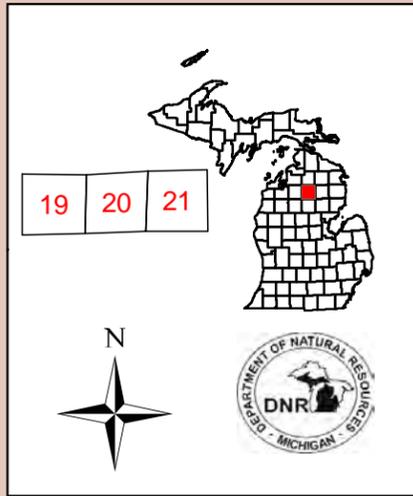
Level 3

- 110 - Low Intensity Urban
- 310 - Herbaceous Openland
- 320 - Upland Shrub
- 330 - Low-Density Trees
- 622 - Lowland Shrub



# Special Conservation Areas & Site Conditions Map

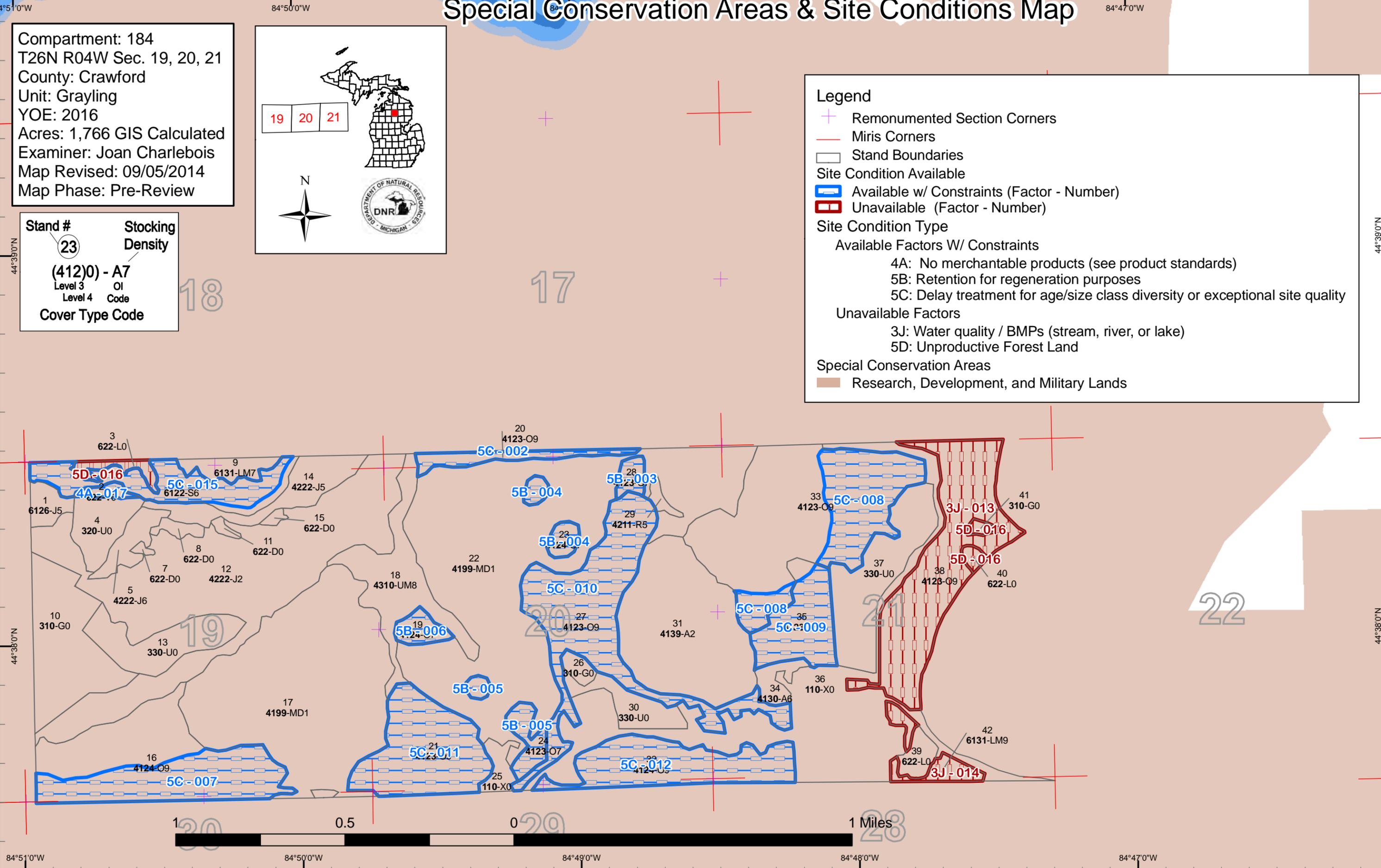
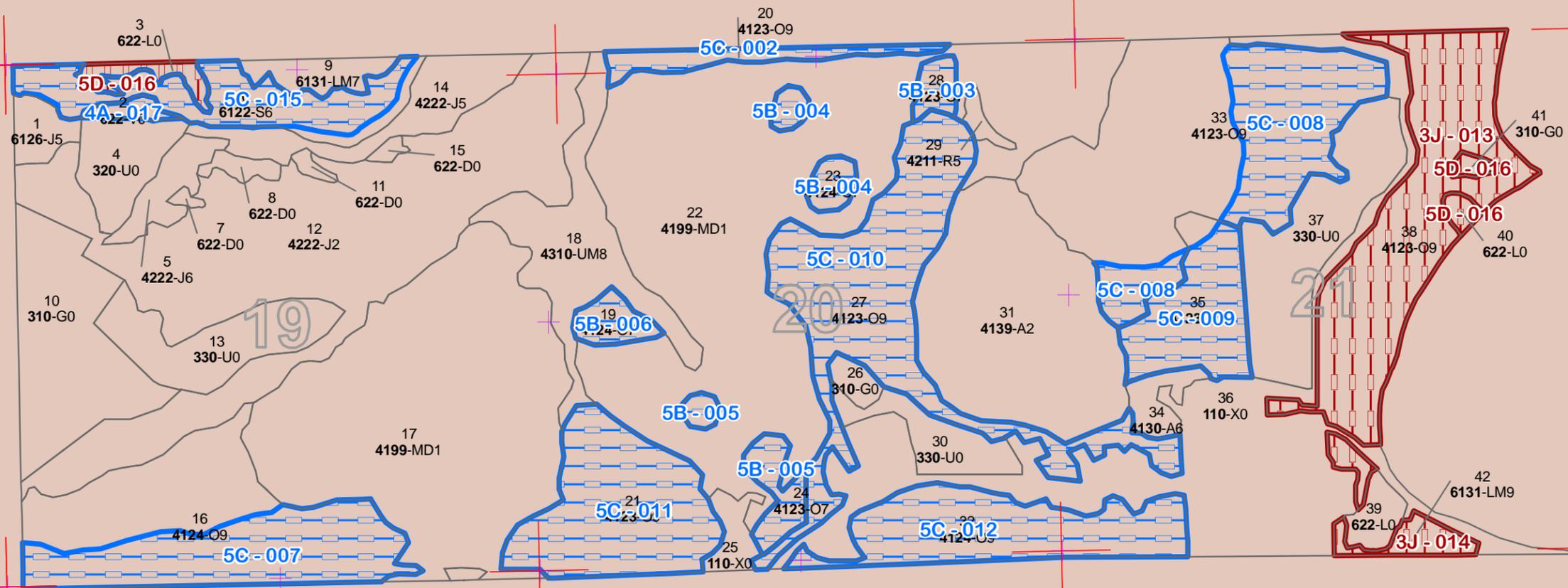
Compartment: 184  
 T26N R04W Sec. 19, 20, 21  
 County: Crawford  
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 Acres: 1,766 GIS Calculated  
 Examiner: Joan Charlebois  
 Map Revised: 09/05/2014  
 Map Phase: Pre-Review



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

## Legend

- + Remonumented Section Corners
- Miris Corners
- Stand Boundaries
- Site Condition Available
- Available w/ Constraints (Factor - Number)
- Unavailable (Factor - Number)
- Site Condition Type
- Available Factors W/ Constraints
  - 4A: No merchantable products (see product standards)
  - 5B: Retention for regeneration purposes
  - 5C: Delay treatment for age/size class diversity or exceptional site quality
- Unavailable Factors
  - 3J: Water quality / BMPs (stream, river, or lake)
  - 5D: Unproductive Forest Land
- Special Conservation Areas
  - Research, Development, and Military Lands





	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 +		Uneven Age
Aspen	93	0	0	8	0	0	0	0	0	0	0	0	0	0	101
Bog	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Herbaceous Openland	60	0	0	0	0	0	0	0	0	0	0	0	0	0	60
Jack Pine	0	180	0	0	0	19	0	0	26	0	0	0	0	0	224
Low-Density Trees	94	0	0	0	0	0	0	0	0	0	0	0	0	0	94
Lowland Mixed Forest	0	0	0	0	0	0	0	0	0	8	0	0	0	10	18
Lowland Shrub	16	0	0	0	0	0	0	0	0	0	0	0	0	0	16
Lowland Spruce/Fir	0	0	0	0	0	0	0	40	0	0	0	0	0	0	40
Mixed Upland Deciduous	412	0	0	0	0	0	0	0	0	0	0	0	0	0	412
Oak	0	0	0	0	0	0	0	0	0	421	33	138	0	0	592
Red Pine	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3
Treed Bog	8	0	0	0	0	0	0	0	0	0	0	0	0	0	8
Upland Mixed Forest	0	0	0	0	0	44	0	0	0	0	0	0	0	0	44
Upland Shrub	18	0	0	0	0	0	0	0	0	0	0	0	0	0	18
Urban	133	0	0	0	0	0	0	0	0	0	0	0	0	0	133
<b>Total</b>	<b>837</b>	<b>180</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>63</b>	<b>3</b>	<b>40</b>	<b>26</b>	<b>429</b>	<b>33</b>	<b>138</b>	<b>0</b>	<b>10</b>	<b>1766</b>



## Report 2 – Proposed Treatment Summaries

**Grayling Mgt. Unit**  
**Year of Entry 2016**

**Compartment 184**  
**Total Compartment Acres: 1,766**

### Acres by Treatment Type

Commercial Harvest - 201    Tree Planting - 48    Other - 0  
 Habitat Cut - 0    Opening Maintenance - 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>
<b>Lowland Coniferous Forest</b>	8	0	0	0	0	0	8
<b>Natural Pines</b>	46	0	0	0	0	0	46
<b>Oak Types</b>	128	0	0	0	0	0	128
<b>Upland Shrub</b>	18	0	0	0	0	0	18
<b>Total</b>	<b>201</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>201</b>



S t a n d	Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
1	72184001-cc	8.2	6126 - Lowland Jack Pine	Medium Density Pole	53	51-80	Harvest	Clearcut	3105 - Mixed Upland Herbaceous	Cmpt. Review Proposal

Prescription Final harvest 2" & up, chipping required, no retention due to fuels reduction intent.

Specs:

Other Is currently under contract 61-609-11-01, set up as an addition to Kalkaska's Range 9 Fire salvage sale, at the request of Range Control in order to reduce down-range fuel loading. The current harvest boundary picks up a couple acres of dense J3 in the adjacent stand 12. Take into consideration potential for Massasauga when spec-ing harvest. If the contract can be modified, spec boundary line trees to be tipped-over into the adjacent swamp.

Next Periodic opening maintenance as determined necessary by the Military.

Steps:

Proposed

Start Date: 10/01/2011

5	72184005-cc	11.2	42220 - Natural Jack Pine	High Density Pole	51	51-80	Harvest	Clearcut	3105 - Mixed Upland Herbaceous	Cmpt. Review Proposal
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Prescription Final harvest 2" & up, chipping required, opt out of WBHG, no retention due to fuels reduction intent.

Specs:

Other Is currently under contract 61-609-11-01, set up as an addition to Kalkaska's Range 9 Fire salvage sale, at the request of Range Control in order to reduce down-range fuel loading. Take into consideration potential for Massasauga when spec-ing harvest.

Next Periodic opening maintenance as determined necessary by the Military.

Steps:

Proposed

Start Date: 10/01/2011

12	72184012- cc_part	4.7	42220 - Natural Jack Pine	Medium Density Sapling	18		Harvest	Clearcut	3105 - Mixed Upland Herbaceous	Cmpt. Review Proposal
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Prescription Final harvest 2" & up, chipping required, no retention due to fuels reduction intent.

Specs:

Other A portion is currently under contract 61-609-11-01, set up as an addition to Kalkaska's Range 9 Fire salvage sale, at the request of Range Control in order to reduce down-range fuel loading. Take into consideration potential for Massasauga when spec-ing harvest.

Next Periodic opening maintenance as determined necessary by the Military.

Steps:

Proposed

Start Date: 10/01/2011

14	72184014-cc	30.2	42220 - Natural Jack Pine	Medium Density Pole	82	51-80	Harvest	Clearcut	3105 - Mixed Upland Herbaceous	Cmpt. Review Proposal
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Prescription Final harvest 2" & up. Extend the boundary roughly 1 to 2 chains into the adjacent black spruce swamp, picking up the densest transition ground cover. Require chipping, no retention due to fuels reduction intent.

Specs:

Other If possible, add to the adjacent Range 9 salvage sale (61-609-11-01). This would extend the already-prescribed fuels reduction area further east. Take into consideration potential for Massasauga when spec-ing harvest. Spec boundary line trees to be tipped-over into the adjacent swamp.

Next Periodic opening maintenance as determined necessary by the Military.

Steps:

Proposed

Start Date: 10/01/2014



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Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
16 72184016-cc	46.7	4124 - Red with White Oak	High Density Log	95	81-110	Harvest	Clearcut	4191 - Mixed Upland Deciduous with Conifer	Cmpt. Review Proposal

Prescription Final harvest 2" & up except red pine & white pine. Run the north boundary to pick up the couple acres of mature jack pine in the adjacent stand  
Specs: 12. For line visibility, consider taking that part of the boundary out to the E-W road, even though it will include patches of J3. Using terrain as a guide, run the south boundary approximately across the middle of the hilltops E-W. Require chipping, no additional retention at this time due to only part of the stand being treated in this entry. Restrict harvest to fall-winter to address oak wilt and coppice regen concerns.

Other Treat the north half of stand 16 this YOE, picking up the mature & overmature jack pine on the flats, and releasing the existing oak regen on the  
Comments: flats & hillside.

Next Natural regen check. Acceptable regen includes a mix of oak, red maple, aspen & pine. If natural regen fails, supplemental plant red pine in  
Steps: poorly-stocked areas.

Proposed  
Start Date: 10/01/2015

33 72184033-cc	81.1	4123 - Red Oak	High Density Log	97	81-110	Harvest	Clearcut	4199 - Other Mixed Upland Deciduous	Cmpt. Review Proposal
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Prescription Final harvest 2" & up except leave all red pine & white pine. Require chipping, no additional retention at this time due to only part of the stand  
Specs: being treated in this entry. Restrict harvest to fall-winter to address oak wilt and coppice regen concerns.

Other Treat the west half of stand 33 this YOE. The treatment boundary was adjusted to avoid dropping down onto the south aspect of Stewart Hill.  
Comments: For the east boundary, consider following a valley bottom north to the Small Arms Range fence.

Next Natural regen survey. Acceptable regen includes a mix of oak, red maple, aspen & pine. If natural regen fails, supplemental plant red pine in  
Steps: poorly-stocked areas.

Proposed  
Start Date: 10/01/2015

4 NF_72184004-salvage	18.4	3205 - Mixed Upland Shrub				Harvest	Clearcut	3105 - Mixed Upland Herbaceous	Cmpt. Review Proposal
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Prescription Final harvest 2" & up (majority is now fire-killed JP) chipping required, opt out of WBHG, no retention due to fuels reduction intent.  
Specs:

Other Is currently under contract 61-609-11-01, set up as an addition to Kalkaska's Range 9 Fire salvage sale, at the request of Range Control in order  
Comments: to reduce down-range fuel loading. Subsequently burned in the 2012 Range 8 fire, with close to 100% mortality. Take into consideration potential for Massasauga when spec-ing harvest.

Next Periodic opening maintenance as determined necessary by the Military.  
Steps:

Proposed  
Start Date: 09/06/2011

37 NF_72184037-Plant	48.2	3301 - Low Density Deciduous Trees				Tree Planting	Hand Plant	4191 - Mixed Upland Deciduous with Conifer	Cmpt. Review Proposal
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Prescription Site prep as needed. Supplemental plant pine in poorly-stocked areas. White pine and/or red pine may be used. Both are suited to the site and  
Specs: the naturally-established white pine saplings experienced little browse.

Other Previous YOE oak M.O. Fails to that M.O. or any combination of species at this time. There is a pocket of white pine & red pine regen at the  
Comments: north end and small patches of aspen regen in the southwest.

Next Regen survey. Acceptable regen includes variable stocking in red maple, aspen, oak and natural and planted pine.  
Steps:

Proposed  
Start Date: 10/01/2014



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Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
17 72184017-Survey	168.6	4199 - Other Mixed Upland Deciduous	Low Density Sapling	4	1-50	Regeneration Survey	Intermediate Survey (natural regen)	4199 - Other Mixed Upland Deciduous	Cmpt. Review Proposal

Prescription Natural regen survey. Acceptable regen is a mix of red maple, oak, aspen & pine, with a longer timeframe to achieve moderate stocking.

Specs:

Other Comments: Was four stands the previous YOE, with M.O.'s of mixed natural regen (oak, aspen, pine) and portions prescribed for supplemental planting RP & WP. The current stand makes the forested benchmark through the residual's contribution, but the regen alone doesn't pass at this time because <4' tall oak can't be counted. Given the light deer browse, there is good potential for that oak to recruit. Unless use of the ISBC training course requires a faster green-up, do not supplementally plant.

Next Steps:

Proposed Start Date: 10/01/2015

22 72184022-Survey	243.2	4199 - Other Mixed Upland Deciduous	Low Density Sapling	4		Regeneration Survey	Intermediate Survey (natural regen)	4199 - Other Mixed Upland Deciduous	Cmpt. Review Proposal
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Prescription Natural regen survey. Acceptable regen is a moderately stocked mix of red maple, oak, aspen & pine.

Specs:

Other Comments: Previous YOE oak M.O. with portions prescribed for supplemental planting of RP & WP. Regen doesn't pass at this time, but there is good recruitment potential for the currently <4-foot tall oak. Drop the planting Rx & change the M.O. to mixed natural regen (oak, RM, BTA, WP & RP). Thompson Hill may be sparser for some time, but its sheer steepness limits cultural activities.

Next Steps:

Proposed Start Date: 10/01/2015

**Total Treatment Acreage Proposed: 660.4**



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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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#Type! #Type!

Prescription  
Specs:

Other  
Comment:

Next  
Steps:

Proposed  
Start Date: #Type!

Limiting Factor

**Total Treatment  
Acreage Proposed: 0.0**



### Report 6 – 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.

SCA Name	SCA Category	Detail Type	Recommendation	Acres
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Comments
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**Report 7 – EXISTING SPECIAL CONSERVATION AREA DETAILS**

\* This is a list of SCA's for this compartment along with a 1/4 mile buffer surrounding the compartment. Refer to the Special Conservation Area Map for locations of the below listed Conservation Areas.

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

Conservation Area	Type	Description
SCA	Archaeological Site	An aquatic or terrestrial area of the State that contains physical remains of human occupation. These are sites of cultural and historical significance that may occur upon terrestrial areas and Great Lakes bottomlands. They include thousands of Native American settlements and burial sites, as well as French and British outposts, nineteenth century logging camps, mines and homesteads. Beneath the waters of the Great Lakes, there are shipwrecks and other remains documenting the maritime trade. Such sites may be identified by Natural heritage data from the State Historic Preservation Office. Proposed treatments in this compartment will be implemented in such a manner as to maintain the integrity of these sites. Due to the sensitive nature of this information, no further detail about location is available.
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.



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
1	6126 - Lowland Jack Pine	Medium Density Pole	7.9	53	51-80	Two-aged JP stand. The majority small-pole/large sapling component ( in its early 50's) is interspersed with patches of overmature pole-log JP (second age, 114 years). Black spruce mixes in on the lower ground. The stand has a dry ridge across the north end, but three-quarters of the stand is on Kinross muck. Deep snow hid most of the groundcover, but sheep laurel and traces of leatherleaf were visible above the snowpack. That and the mapped soil type led me to call the stand lowland overall, but its lower ground likely has only a seasonal high water table, and operability is probably good outside of spring break-up or periods of unusually heavy rain. The stand was set up within the Range 9 Fire Salvage East (61-609-11-01) harvest, spec'd to be cut 2" & up except oak. While not within the Range 9 fire, this stand is to be cleared for fuelbreak purposes.
5	42220 - Natural Jack Pine	High Density Pole	11.2	51	51-80	Two-aged JP stand. The majority small-pole/ large sapling component (in its early 50's) is interspersed with patches of overmature pole-log JP (second age, 80 years) and poorly-stocked areas. A little black spruce mixes in on the lower ground. The stand occupies soil complexes ranging from excessively well-drained sand to poorly-drained organic. Sheep laurel was visible above the snowpack. Areas in the stand's middle may have a seasonal high water table, but as best as could be determined with the deep snow, the stand appears to be upland overall. The stand was set up within the Range 9 Fire Salvage East (61-609-11-01) harvest, spec'd to be cut 2" & up except oak. While not within the Range 9 fire, this stand is to be cleared for fuelbreak purposes.
6	6122 - Black Spruce	High Density Pole	39.6	79	51-80	Tall spindly black spruce small pole-large sapling cover, barely averaging 6" DBH, with JP mixing in along the transition ground margin, and occasional WP, tamarack, RM & RP. Best growth is on the drier transition ground. Spruce cover is dense, but not reflected in the BA swings due to the proportion of large sapling material in the canopy. RM is relatively common in the understory. Spot fires from the 2012 Range 8 fire crept through, leaving scattered dead trees. Three acres of the type were killed in the main fire perimeter and were separated out as a non-forest wetland stand. First age averaged from cored spruce 77 & 80 years old. Second age from cored spruce 103 years old.
9	6131 - Hemlock, White Pine, Maple, Birch	Low Density Log	10.0	Uneven Age	1-50	Patches of E/Q cover separated by swaths of tag alder. Marginal, mixed stand with large cull RM, super-canopy WP, NWC, and black spruce, balsam fir and paper birch poles. Understory is predominantly tag alder but there is locally high cover in RM saplings, and scattered black spruce also. The stand likely has multiple age bands but I only took time to age the most common species. A lot of hare & deer use.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
12	42220 - Natural Jack Pine	Medium Density	179.6	18		Was cut 2" & up spring of 1996 (72-002-96-01), except for the far NW 10 acres and two red-line excluded patches of sparse JP in the stand's SW & NE. Stand occupies the outwash plain between the Bear Swamp and the oak hills. Regen from the cut is JP (1-4" DBH), with oak stump sprouts (2-4" DBH), single-stem oak (1-2" DBH), & traces of WP, RP & RM. Most of the oak occurs on the stand's SE edge bordering the hills. The oak is vigorous and up there with the JP. The JP distribution is patchy; high-stem density cover alternates with small openings. Mature JP occurs in low-density patches in the stand's SW & NE. Cover is sparser across the top of the range fan. A patch of 10-year older J3 was included north of there. Narrow swaths were cleared ~N-S across the stand's middle, for access and fuelbreaks. Low ground fingers into the stand along the swamp edge -- these were roughly split out as treed bogs but deep snow made it difficult to delimit their full extent. A lot of deer use.
14	42220 - Natural Jack Pine	Medium Density Pole	25.6	82	51-80	Dense patches of overmature JP (first age) alternate with patches of small pole JP (second age) that partially filled in numerous canopy gaps. Poor-quality oak occurs on the highest ground, and black spruce mixes in on the stand's long transition ground border with the Bear Swamp. Part of that transition ground is on Kinross muck, with a seasonal high water table. Understory cover in RM saplings is locally high toward the swamp edge, with occasional black spruce regen there also. Two acres in the west end are within the Range 9 Fire Salvage East (61-609-11-01) harvest, spec'd to be cut 2" & up except oak. That portion did not burn, but will be cleared for fuelbreak purposes. Slash is building as the overmature JP breaks up. A lot of deer use.
16	4124 - Red with White Oak	High Density Log	96.7	95	81-110	Fair to decent-quality, somewhat hybridized NRO, with WO, RM, sub-acre BTA clones, and RP of all sizes. The NRO has more in the pole class than is typical in the compartment, but diameters do increase in the stand's west 1/3rd on Bald Knob. The WO is heavy to narrow-crowned poles. The most-suppressed oak poles are dropping out. Little of the RM is seen from above. Super-canopy RP are scattered across the stand. Pockets of sapling-pole-saw RP occur in the valleys and on the perimeter flats. JP occurs there also, with densest concentrations along the stand's NW edge on the outwash plains. Site & oak quality decreases there & stems are more open-grown. Almost all of the stand's recorded oak understory is found on that edge also. First age averaged from cored oak 84 & 105 years old. 105 was used again on its own as the second age, to reflect the top end of the age range. A sub-acre patch on the southeast edge was cut in Feb 2009 (72-635-07-01, comp 185).



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
17	4199 - Other Mixed Upland Deciduous	Low Density Sapling	168.6	4	1-50	<p>Was cut Oct 2009 to Jan 2010 (72-623-06-01), merch &amp; up except RP, WP &amp; green-marked trees. Contract was modified to facilitate ISBC range construction: additional oak &amp; RM were marked to leave across the stand. Three islands in the SW (~6 ac. total) had 30 BA in oak marked-to-leave already. Three acres on the S edge were cut in Feb 2009 (72-635-07-01).</p> <p>Regen from the cut is the featured canopy, with residual occupying a super-canopy layer above it. The regen includes RM &amp; oak stump sprouts &amp; patches of BTA root suckers. There is more RM than oak, but the oak is vigorous &amp; recruiting, with minor browse. Well-distributed residual includes the marked oak saw &amp; RM poles, sub-merch oak &amp; RM, RP of all sizes &amp; WP. Complete release shocked &amp; killed a portion of the sub-merch oak &amp; RM. There was also mortality in the residual NRO saw (stand-wide Forest Health point). Terrain is hilly, with steep sideslopes in the NW. ISBC course roads &amp; targets systems are on the hilltop.</p>
18	4310 - Pine, Oak Mix	Medium Density Log	43.9	52	51-80	<p>Mixed pine-oak stand in valleys and on sideslopes. In the stand's core, on the flats, there is a mix of RP, NPO, WO &amp; WP in the canopy, with WP &amp; RP below. Climbing the sideslopes out of the valley, the site and oak quality increase and the amount of pine decreases. The JP is mostly on the stand's NW edge against the outwash plains. Standing dead NPO are common. The WP understory is locally high, but averages medium overall. Recruitment of WP &amp; RP from the understory is close to shifting the canopy closure into the 75-100% category, off-setting losses in the poorer-quality oak.</p>
19	4124 - Red with White Oak	Low Density Log	7.3	93	1-50	<p>Was cut Oct 2009 to Jan 2010 (72-623-06-01), merch &amp; up except RP, WP &amp; green-marked trees. This shelterwood-seed island was marked to a stated average 30 BA residual in WO, NRO, RP &amp; WP within the larger clearcut stand. West end on the flats has RP &amp; WP of all sizes. Regen from the cut includes oak &amp; RM stump sprouts. A few overstory oak died along the island margins.</p>
20	4123 - Red Oak	High Density Log	11.3	98	111-140	<p>Decent-quality, somewhat hybridized NRO, with WO, overmature BTA, and suppressed-intermediate RM poles. Little of the RM is seen from above, so its canopy percentage is much lower than its basal area representation. Suppressed poles in the WO &amp; NRO are dropping out. This strip remained along the compartment boundary when the rest of the original stand was set up for final harvest last YOE. Forest Health point: TLCB galleried dead oak along edge of recent clearcut.</p>
21	4123 - Red Oak	High Density Log	57.8	91	81-110	<p>Decent-quality, somewhat hybridized NRO, with WO, sub-acre overmature BTA patches, and largely-suppressed RM. The WO has a saw component but is heavier to narrow-crowned poles. The most suppressed of the oak poles are dropping out. A minority of the oak saw are open-grown xlog specimens. The stand is on gently-rolling terrain. Some poorer-quality mixed oak occur on the stand margins on the flats. Very open below except for witch hazel and occasional WP &amp; RP saplings. A sub-acre patch on the south edge was cut in Feb 2009 (72-635-07-01, comp 185). That same sale resulted in the SW multi-poly. First age averaged from cored oak 87 &amp; 95 years old.</p>



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
22	4199 - Other Mixed Upland Deciduous	Low Density Sapling	243.2	4		Was cut merch & up except RP & WP, Oct 2009 to mid-March 2010 except the far NE was cut Nov 2010 to Jan 2011 (72-623-06-01). Regen from the cut includes stump-sprout oak & RM, & scattered patches of BTA root suckers. The oak stump sprouts are vigorous, 5-10 feet tall. There is also an oak seedling layer 2-3 feet tall with potential to recruit. Because the <3-foot oak can't be counted in the canopy, some areas of the stand barely meet the forested benchmark. Other areas with a good mix of oak, RM & aspen regen exceed the 25-50% coverage category. The stand's far NE on Thompson Hill is one growing season behind. Cover on that steep knob is sparser, less well-developed & seeing more browse. Residual from the cut includes RP & WP of all sizes, and the sub-merch RM & oak stems. The large sapling-small pole deciduous residual was heavily suppressed pre-harvest, and the sudden full release shocked & killed a good portion of it.
23	4124 - Red with White Oak	Low Density Log	8.1	98	1-50	Was cut between Feb & mid-March 2010 (72-623-06-01), merch & up except RP, WP & green-marked trees. These shelterwood-seed islands were marked to a stated average 30 BA residual in NRO & WO within the larger clearcut stand. Some former suppressed RM poles are now part of the canopy. Regen from the cut includes oak & RM stump sprouts and BTA root suckers. A few overstory oak died along the island margins. Stand age is from the uncut portion of the parent stand immediately to the north.
24	4123 - Red Oak	Low Density Log	12.3	96	1-50	Was cut Oct 2009 to Jan 2010 (72-623-06-01), merch & up except RP, WP & green-marked trees. These shelterwood-seed islands were marked to a stated average 30 BA residual in NRO & WO within the larger clearcut stand. Understory has residual sapling RM, WP & RP, along with regen from the cut: oak & RM stump sprouts and BTA root suckers. A few overstory oak died along the island margins.
27	4123 - Red Oak	High Density Log	89.6	99	111-140	Decent-quality, somewhat hybridized NRO, with WO, sub-acres patches of overmature BTA, and suppressed-intermediate RM poles. Little of that RM is seen from above. The WO has a saw component but it is heavier to small-crowned poles. The most suppressed WO poles are dropping out. Open below with sparse witch hazel clumps, WP saplings, and localized RP seeding in from the supercanopy RP scattered across the stand. The stand has steep terrain at the north end but is gently-rolling to the south. Where the stand trails down onto the flats behind the ranges, the canopy closure drops to 50-75%, tree form is more open-grown, and xlog NPO are seen, as well as a trace of cull black cherry. Forest Health point: TLCB galleried dead oak along edge of recent clearcut.
28	4123 - Red Oak	Low Density Log	5.1	98	1-50	Was cut in March 2010 (72-623-06-01), merch & up except RP, WP & green-marked trees. This shelterwood-seed island was marked to a stated average 30 BA residual in NRO & WO within the larger clearcut stand. The understory has sub-merch RM residual along with regen from the cut: oak & RM stump sprouts and BTA root suckers. A few overstory oak & RM died along the island margins. Stand age is from the residual uncut portion of the parent stand immediately to the N.



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
29	42110 - Planted Red Pine	Medium Density Pole	2.9	67	81-110	Was thinned in March 2010 (72-623-06-01), cutting orange-marked RP (and merch deciduous) down to a stated average residual of 90 BA. Sketchy plantation down in a valley. Decent form where stocking held up, >/< open-grown on periphery. Some RM regen in understory from species removal, along with suppressed RP saplings. RP SI 59
31	4139 - Aspen, Mixed Deciduous	Medium Density	93.3	4		South 2/3rds cut between March & mid-April 2010, North 1/3rd cut between Nov 2010 & Jan 2011 (72-623-06-01), merch & up except RP & WP. Regen is predominantly BTA & RM, with lesser amounts of oak. The oak stump sprouts, while in the minority, are vigorous & recruiting, most 5-10 feet tall. Residual from the cut includes the sub-merch RM & WO, widely-scattered super-canopy RP, and WP saplings. A portion of the residual RM, shocked by the full release, are dying back or epicormic branching. Much of the residual sub-merch WO is top-dying or dead. The relative proportion in A-RM-O varies across the stand, as does the canopy closure, which ranges from 0-100% and averages towards the low end of 50-75%. The stand's north 1/3rd is one growing season behind. The BTA & RM regen there is not as well-developed, but filling in.
32	4124 - Red with White Oak	High Density Log	49.6	116	81-110	Decent-quality, somewhat hybridized NRO, with dominant to codominant WO saw & suppressed poles, sub-acre BTA clones, & intermediate to suppressed RM stump clumps. This stand has more & larger diameter WO than typical in the compt. Most of the RM pole material reaches into the main canopy layer, but very little of it is recordable (receiving direct sunlight from above). The most suppressed of the oak poles are dying out. A few super-canopy RP have been seeding in localized patches of RP. The overmature aspen patches are mostly on the stand's N aspect. Both the RP & WP saplings in the understory are at the low end of the low coverage category. There is a minority component of older xlog oak scattered across the stand. The ground is rolling to steeply rolling. The poorer quality >/< NPO occurs mainly where the stand trails down onto the flats. There are some green & yellow course markers in the stand's E side.
33	4123 - Red Oak	High Density Log	132.8	97	81-110	Most of the stand had aspen, RM & RP cut 2" & up in 1996-1997 (72-004-96-01), leaving a stated average residual of 85 BA in mixed oak (range 50-120 sq. ft.) Residual within the harvest area is decent-quality, somewhat hybridized NRO, with WO. The most suppressed of the WO poles have been dropping out. Regen from the cut is stump-sprout RM and BTA root-suckers, the distribution in both quite variable. The RM averages on the low end of medium cover. The BTA regen has locally high cover, mostly in the stand's east side, but averages to low overall. The stand's W & SW margins were not within the harvest area. The recorded canopy aspen & RM is concentrated there, with trace amounts left within the harvest boundary on the steepest hills. The terrain in rolling to steeply rolling. Site & tree quality tend to decrease on the lower slopes and in valleys. Almost no deer traffic, even at north end near swamp. Deep snow winter. First age averaged from cored oak 94 & 101 years old.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
34	4130 - Aspen	High Density Pole	7.6	37	111-140	Hardwoods were cut merch & up in 1977 (#15-76), for a proposed sand pit expansion. Regen from the cut is now dense BTA pole cover with lesser amounts of RM & oak stump-clump stems. The RM regen is furthest behind diameter-wise. The oak is vigorous, right up there with the aspen, and many of the stump-clumps have weeded down to two main stems. The cut left scattered residual oak that are now saw-sized. Aspen on the edge of small openings have shifted into the saw class. Former disturbed ground in those openings.
35	4123 - Red Oak	High Density Log	33.1	100	81-110	Decent-quality, somewhat hybridized NRO, with WO, patches of overmature BTA, & largely-suppressed RM stump clumps. Open below, with sparse witch hazel and RM large sapling clumps. The WO tend to be narrow-crowned poles, with the most-suppressed stems dying out. There is a scattered minority xlog component in the oak that likely predates the majority small saw cover. Terrain is a series of ridges.
38	4123 - Red Oak	High Density Log	88.7	118	111-140	Stand is on a shallow sideslope bordering Lake Margrethe. Majority cover is decent-quality NRO, some more hybridized than others, with WO, sub-acre overmature BTA clones, & RM stump-clump poles. The oak form is more open-grown bordering small grassy openings that dot the stand. There is a minority xlog oak component. Most of the stand's super-canopy WP & RP rim the lake and lowland brush edges. A trace of hemlock, cedar and paper birch occur there also. The understory ranges from very open to full WP sapling cover (averages medium overall). Trails wind through the stand. The south end of the stand encompasses a few structures, some of which are within the Cantonment Fence. First age averaged from cored oak 116 & 121 years old.
42	6131 - Hemlock, White Pine, Maple, Birch	High Density Log	7.6	94	81-110	Wet-mesic stand with lowland brush swales. Muck-bottom stream cuts through it out to Lake Margrethe. Canopy cover includes super-canopy WP with RM cull saw, xlog oak, hemlock, cedar, and small amounts of black spruce, balsam fir and paper birch. The understory has fir, spruce, WP & tag alder. Heavy deer use this winter.



Stand	Cover Type	Acres	Managed Site	Management Priority (Objective)	General Comments:
2	6225 - Bog	3.4	No	Low	Burned in the 2012 Range 8 fire. Black spruce swamp cover killed at the north end of the main fire perimeter.
3	6229 - Mixed lowland shrub	5.8	No	Low	Non-forested stand by way of lowland shrub cover and Range 8 spot fires. The fire burned dense black spruce swamp cover and a narrow dry ridge with supercanopy WP. The unburned lowland shrub cover within the stand ranges from tag alder to leatherleaf to ilex, with encroaching black spruce & tamarack. See locked OFS.
4	3205 - Mixed Upland Shrub	18.4	No	Low	Burned in the 2012 Range 8 fire. Standing dead J3-J6, except for JP that survived on the perimeter (mostly on the east edge). Stand contains dry ground N & S and a band of lower ground through the middle on an organic & sand soil complex. Deep snow made it difficult to determine if that was intermediate or flat-out lowland ground. Sheep laurel (FAC) common, with only a trace of leatherleaf (OBL) visible above the snowpack. Good communication with the water table there in any event. Stand was set up within the Range 9 Fire Salvage East (61-609-11-01) harvest, spec'd to be cut 2" & up except oak. The stand was not within the Range 9 fire, but was intended to be cleared for fuelbreak purposes.
7	6224 - Treed Bog	1.0	Natural Regen	Lowland Conifers	Was within a larger harvest area cut 2" & up in spring of 1996 (72-002-96-01). This stand is likely a small bog, but couldn't be certain with the deep snow pack. Sheep laurel visible above the snow, with JP seeding in. Lowland call based mostly on soils map & appearance on imagery.
8	6224 - Treed Bog	3.7	Natural Regen	Lowland Conifers	Was within a larger harvest area cut 2" & up in spring of 1996 (72-002-96-01). This stand is likely a small bog, but couldn't be certain with the deep snow pack. Sheep laurel & a trace of leatherleaf were visible above the snow, with JP & some black spruce seeding in. Lowland call based mostly on soils map & appearance on imagery.
10	3105 - Mixed Upland Herbaceous	53.8	No	Unspecified	Range 8 fan. Maintained open through periodic burning.
11	6224 - Treed Bog	1.6	Natural Regen	Lowland Conifers	Was within a larger harvest area cut 2" & up in spring of 1996 (72-002-96-01). This stand is likely a small bog, but couldn't be certain with the deep snow pack. Sheep laurel & a trace of leatherleaf were visible above the snow, with JP & some black spruce seeding in. Lowland call based mostly on soils map & appearance on imagery.
13	3303 - Mixed Low Density Trees	30.0	No	Low	Periodic burning is maintaining the area open- to low-density treed. Has scattered patches of JP saplings, oak & black cherry sprouts, JP seedlings and an occasional RP.
15	6224 - Treed Bog	1.5	Natural Regen	Lowland Conifers	Was within a larger harvest area cut 2" & up in spring of 1996 (72-002-96-01). This stand is likely a small bog, but couldn't be certain with the deep snow pack. Sheep laurel & a trace of leatherleaf were visible above the snow, with JP seeding in. Lowland call based mostly on soils map & appearance on imagery.



Stand	Cover Type	Acres	Managed Site	Management Priority (Objective)	General Comments:
25	11 - Low Intensity Urban	7.1	No	Unspecified	UAC range facilities and improvements.
26	3105 - Mixed Upland Herbaceous	4.3	No	Low	Cleared opening down-range used as a decking area for the timber harvest to the north.
30	3301 - Low Density Deciduous Tree	16.0	No	Unspecified	Disturbed area behind ranges, partially cleared in the past, and growing in with contorted black cherry pole-sapling material. Scattered above the cherry brush are xlog NPO and the occasional WO saw and NPO pole. Large NPO snags are common.
36	11 - Low Intensity Urban	125.9	No	Low	Roads, parking lots, buildings & range facilities. Part within the Cantonment fence, part within the Small Arms Range fence. Scattered mature oak along the road corridors.
37	3301 - Low Density Deciduous Tree	48.2	Natural Regen	Mixed Upland Deciduous	Was cut between Oct 2010 & Jan 2011 (72-623-06-01), merch & up except RP & WP. Stand is on a relatively steep hillside overlooking the Lake Margrethe basin. Recordable tree cover does not meet the forested benchmark. Residual from the cut includes: widely-scattered supercanopy RP & a supercanopy WP, WP & RP saplings (most in N1/3 of stand), and spindly sub-merch RM & oak. Some of the residual RM were large stump sprouts from a 1997 harvest. The suppressed RM & oak single-stem saplings were stressed by the complete release and a portion have died. RM & oak stump sprouts from the cut were heavily browsed. Small patches of BTA sprouted in the stand's SW.
39	6220 - Alder/willow	7.3	No	Low	Tag alder with open marsh at north end. Perimeter with scattered hemlock, WP, balsam fir & black spruce. A lot of windthrows on southeast edge.
40	6220 - Alder/willow	2.4	No	Low	Lowland shrub wetland that ties into the Lake Margrethe shoreline. Tag alder with scattered WP & NWC.
41	3105 - Mixed Upland Herbaceous	1.9	No	Unspecified	Small opening with encroaching sap-pole-saw WP. Possibly an old borrow pit.