



Compartment Review Presentation

Grayling Forest Management Unit

Compartment 72185

Entry Year 2017

Acreage: 1,922

County Crawford

Management Area: Camp Grayling

Revision Date: 2015-03-27

Stand Examiner: Joan Charlebois

Legal Description:

T26N R04W Sections 28, 29, 30

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 terrain transitions from nearly level ground in the valleys, climbs 15-30% slopes up to the ridge tops, and then has gently rolling hills beyond. The best soils are Graycalm-Klacking complex and Graycalm-Grayling sands that occur primarily in Section 28. Grayling sands of varying slope predominate across the rest of the compartment.

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

Most of the Michigan Army National Guard's Camp Grayling Cantonment Area lies within this compartment, as well as part of the fenced Small Arms Ranges and related installations. The compartment consists entirely of Military Board ownership, part of which was acquired through the Hanson Grant and part from separate deeded transfers. Hanson Reserve Lands were given to the National Guard, DMA by Rasmus Hanson in 1913, with several deed restrictions as outlined under the management goals. 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 the Hanson Grant lands.

Unique Natural Features:

There is the potential for rare plants and animals to be associated with the Lake Margrethe basin 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 southwest side of Lake Margrethe. Two small streams drain into that cool water lake.

Wildlife Habitat Considerations:

Opportunities for specific wildlife habitat management activities are limited due to military use, however, a variety of game and non-game species would benefit by maintaining the current mix of oak, aspen, pine, upland brush and grass types.

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 Coldwater Shale and Marshall Sandstone formations. The Marshall was previously used as a building stone. A gravel pit is located in Section 34 and potential is good in the upland areas. The compartment is not leased for oil and gas development, given that it is Military Board land.

Vehicle Access:

Howe Road, a paved road that runs the length of the compartment, is gated where it intersects Camp Grayling's Cantonment fence. Inside the Cantonment fence, there is a well-developed network of improved and paved streets.

Beyond the fence, sandy two-tracks associated with military training maneuvers crisscross the compartment.

Survey Needs:

None needed at this time.

Recreational Facilities and Opportunities:

The compartment has no developed recreational facilities except for those associated with the camp itself. Hunting is specifically prohibited on Hanson Grant lands per Hanson Reserve Lands deed restrictions. Military training needs take precedence over all other considerations, and any recreation – even if dispersed – cannot be allowed to conflict with military activities.

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:

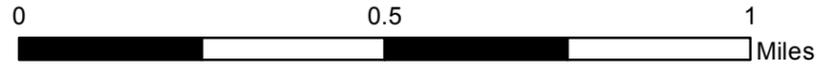
- Total Acres by Cover Type and Age Class**
- Cover Type by Harvest Method**
- Proposed Treatments – No Limiting Factors**
- Proposed Treatments – With Limiting Factors**
- Stand Details (Forested and Nonforested)**
- Dedicated and Proposed Special Conservation Areas**
- Site Condition Details**

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

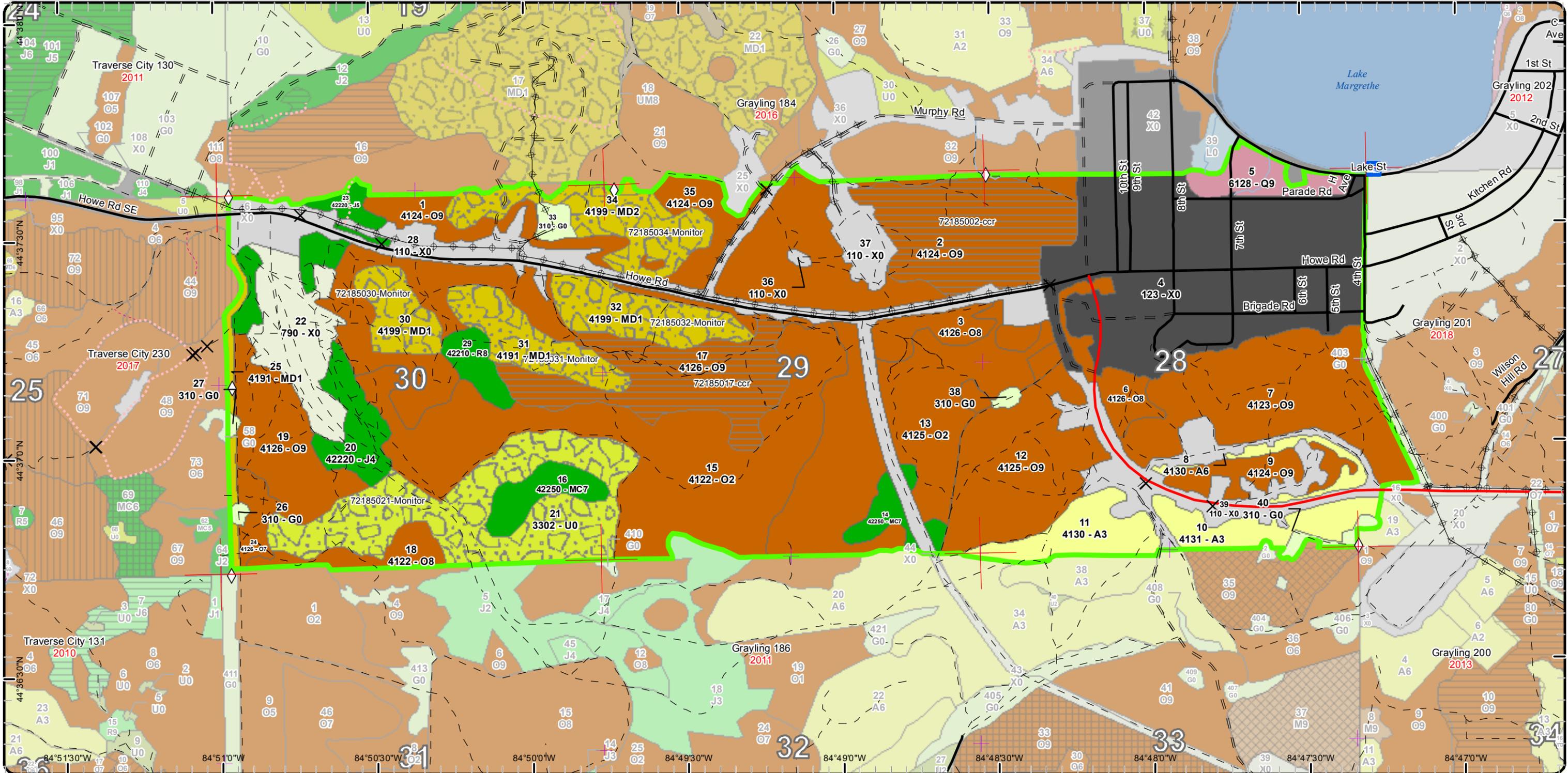
- Base feature information, stand boundaries, cover types, and numbers**
- Proposed treatments**
- Site condition boundaries**
- Details on the road access system**

Cover Type & Treatments

Compartment: 185
 T26N R04W 28-30
 County: Crawford
 Unit: Grayling
 Mgmt Area: Camp Grayling
 YOE: 2017
 Acres: 1922 GIS Calculated
 Examiner: Joan Charlebois
 Map Revised: 10/12/2015
 Map Phase: Review

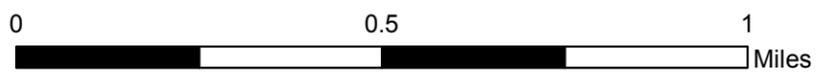


- ✚ Remonumented Section Corners
- ◇ Field Grade GPS Corners
- Miris Corners
- County Paved Roads
- Paved Roads
- Gravel Roads
- Poor Dirt Roads
- Trail (Non-Recreation)
- Closed Roads
- ✕ Gate
- ⚓ Boating Access Site
- Rivers
- Lakes
- Powerline
- ▭ Clearcut (w/Reserves)
- ▭ Regeneration Survey
- Forest Covertype
 - 412 - Oak Types
 - 413 - Aspen
 - 419 - Mixed Upland Deciduous
 - 422 - Natural Pines
 - 612 - Lowland Coniferous Forest
- Non-Forest Covertype
 - 110 - Low Intensity Urban
 - 123 - Other High Intensity Urban
 - 310 - Herbaceous Openland
 - 330 - Low Density Trees
- 790 - Other Bare/Sparsely Vegetated

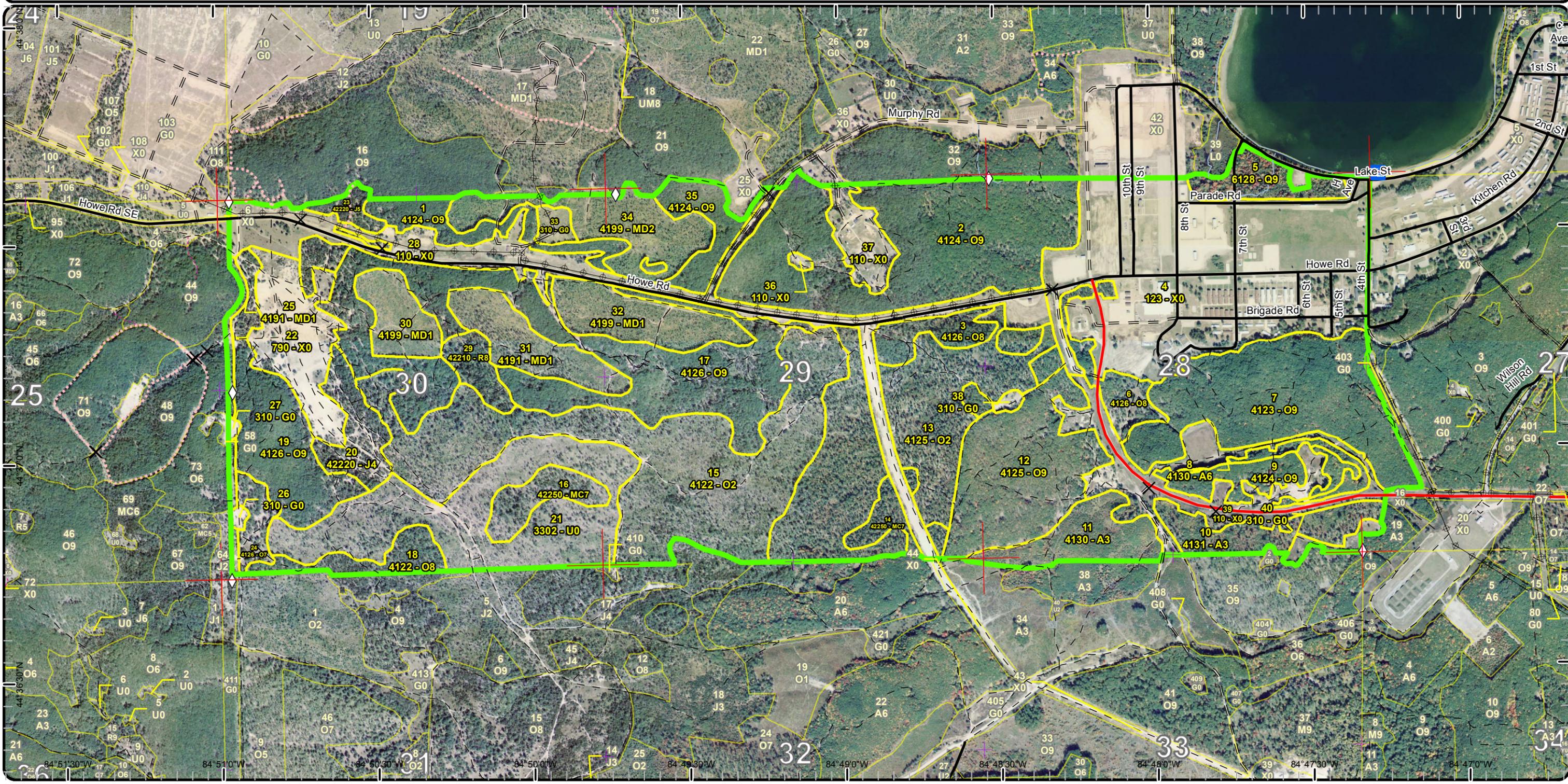


Stand Boundary Map

Compartment: 185
 T26N R04W 28-30
 County: Crawford
 Unit: Grayling
 Mgmt Area: Camp Grayling
 YOE: 2017
 Acres: 1919 GIS Calculated
 Examiner: Joan Charlebois
 Map Revised: 8/19/2015
 Map Phase: Review

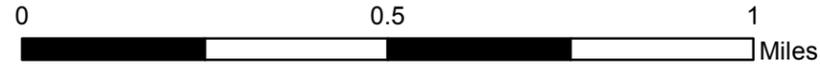
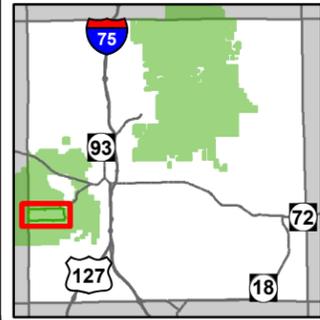


- | | | |
|---|------------------------------|--------------------------------------|
| + | Remunemented Section Corners | Forest Covertypes |
| ◇ | Field Grade GPS Corners | 412 - Oak Types |
| — | Miris Corners | 413 - Aspen |
| — | County Paved Roads | 419 - Mixed Upland Deciduous |
| — | Paved Roads | 422 - Natural Pines |
| — | Gravel Roads | 612 - Lowland Coniferous Forest |
| — | Poor Dirt Roads | Non-Forest Covertypes |
| — | Trail (Non-Recreation) | 110 - Low Intensity Urban |
| — | Closed Roads | 123 - Other High Intensity Urban |
| X | Gate | 310 - Herbaceous Openland |
| ⊡ | Boating Access Site | 330 - Low Density Trees |
| — | Rivers | 790 - Other Bare/Sparingly Vegetated |
| — | Powerline | |
| □ | Stand Boundaries | |

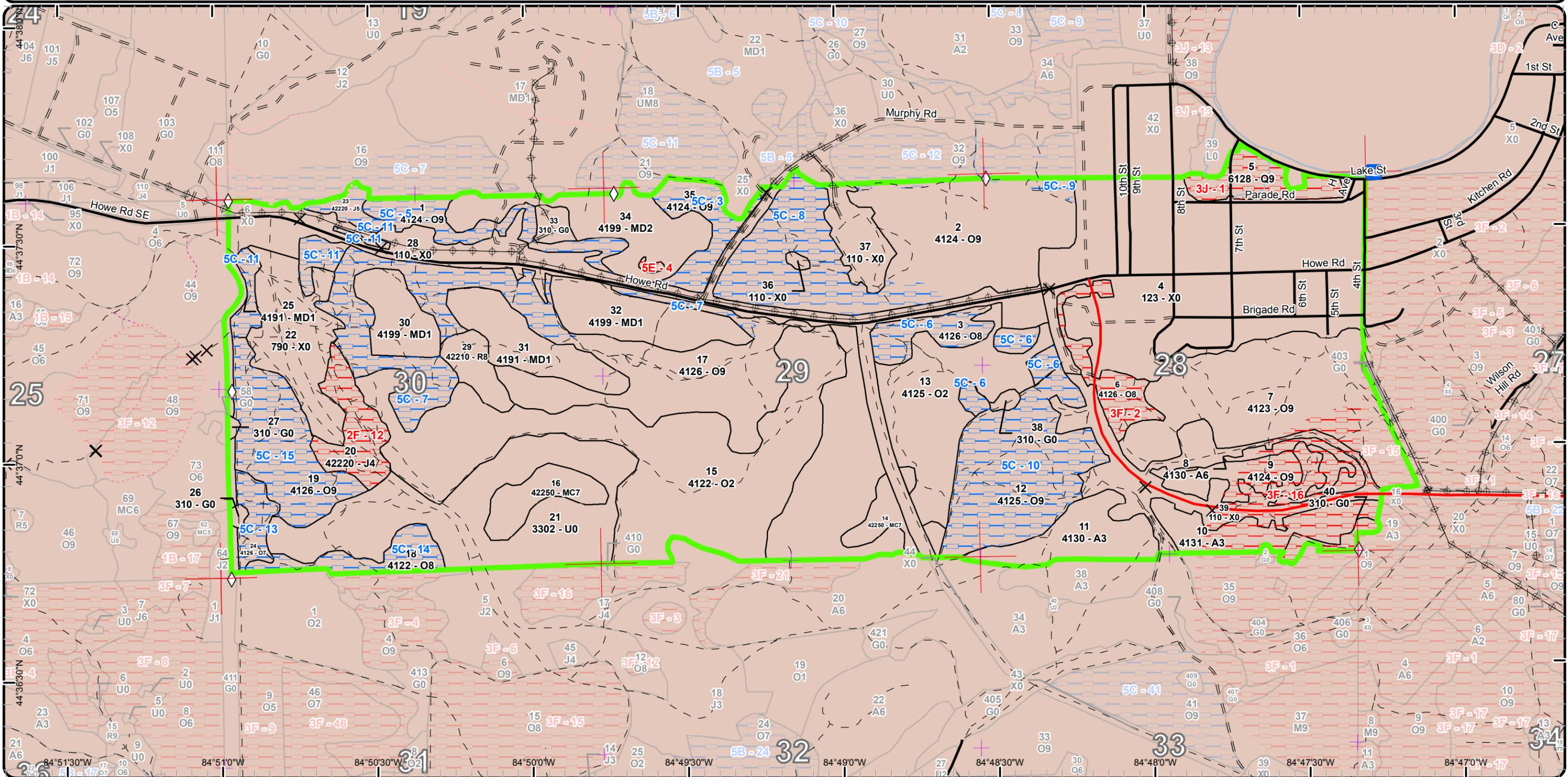


Special Conservation Areas & Site Conditions Map

Compartment: 185
 T26N R04W 28-30
 County: Crawford
 Unit: Grayling
 Mgmt Area: Camp Grayling
 YOE: 2017
 Acres: 1919 GIS Calculated
 Examiner: Joan Charlebois
 Map Revised: 8/19/2015
 Map Phase: Review



- ✦ Remonumented Section Corners
 - ◇ Field Grade GPS Corners
 - Miris Corners
 - County Paved Roads
 - Paved Roads
 - Gravel Roads
 - Poor Dirt Roads
 - Trail (Non-Recreation)
 - Closed Roads
 - ✕ Gate
 - 🚤 Boating Access Site
 - Rivers
 - ⊕ Powerline
 - Stand Boundaries
- Site Condition**
- Available w/ Constraints
 - Unavailable
- Available Factors W/ Constraints**
- 5C: Delay treatment for age/size class diversity or exceptional site quality
- Unavailable Factors**
- 2F: Too steep
 - 3F: Military easement / lease
 - 3J: Water quality / BMPs (stream, river, or lake)
 - 5E: Long-Term Retention
- Research, Development, and Military Lands



Report 1 – Total Acres by Cover Type and Age Class

Grayling Mgt. Unit

Compartment 185 Year of Entry 2017

Joan Charlebois : Examiner



Age Class

	Non-Forest	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100-109	110-119	120-129	130-139	140-149	150+	Uneven-Aged	Total
Aspen	0	62	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	72
Bare/Sparsely Vegetated	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	48
Herbaceous Openland	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16
Jack Pine	0	0	0	0	0	0	0	47	0	0	0	0	0	0	0	0	0	0	47
Low-Density Trees	110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	110
Lowland Conifers	0	0	0	0	0	0	0	0	0	0	0	0	0	21	0	0	0	0	21
Mixed Upland Deciduous	0	142	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	151
Natural Mixed Pines	0	0	0	0	0	0	0	19	13	0	0	0	0	0	0	0	0	0	32
Oak	0	317	0	0	0	0	0	0	0	81	399	205	0	0	0	0	0	0	1002
Red Pine	0	0	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	13
Urban	410	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	410
Total	584	521	9	0	10	0	0	79	13	81	399	205	0	21	0	0	0	0	1922



Report 2 – Treatment Summary

Grayling Mgt. Unit

Year of Entry: 2017

Acres of Harvest

Compartment 185

Total Compartment Acres: 1,922

Commercial Harvest - 161
 Harvests with Site Condition - 0
 Next Step Harvest - 0
 Habitat Cut - 0

Cover Type by Harvest Method

	Clearcut	Selection	Patch Clearcut	Seed Tree	Shelterwood	Thinning	Overstory Removal	Salvage	Other	Total Acres
Oak	161	0	0	0	0	0	0	0	0	161
Total	161	0	0	0	0	0	0	0	0	161

Proposed and Next Step Treatments by Method

	Harvest	Site Prep	Planting	Seeding	Burning	Pesticide	Monitoring	Other	Non-Forest Mgt.	Total Acres
Current	161	0	0	0	0	253	0	0	0	414
Next Step	0	0	0	0	0	161	0	0	0	161
Total	161	0	0	0	0	414	0	0	0	574



S t a n d	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
2	72185002-ccr	84.2	4124 - Red with White Oak	Sawtimber Well	98	81-110	Harvest	Clearcut with Retention	4199 - Other Mixed Upland Deciduous	Even-Aged	Proposal

Habitat Cut: No

Site Condition:

Prescription cut all stems >2" DBH except leave all RP & WP, and a portion of the xlog oak
Specs:

Next Step
Treatments:

Acceptable a moderately-stocked mix of oak, RM, aspen & pine, with poorly-stocked inclusions expected where cover was sparse pre-harvest
Regen:

Other Old next step comments:
Comment:

Proposed Start Date: 10/1 /2016

17	72185017-ccr	76.8	4126 - White, Black, N. Pin Oak	Sawtimber Well	95	51-80	Harvest	Clearcut with Retention	4199 - Other Mixed Upland Deciduous	Even-Aged	Proposal
----	--------------	------	---------------------------------	----------------	----	-------	---------	-------------------------	-------------------------------------	-----------	----------

Habitat Cut: No

Site Condition:

Prescription Cut stems >2" DBH except leave all RP & WP and a portion of the xlog oak.
Specs:

Next Step
Treatments:

Acceptable A moderately-stocked mix of oak, RM, aspen & pine, with poorly-stocked inclusions expected where cover was sparse pre-harvest
Regen:

Other Old next step comments:
Comment:

Proposed Start Date: 10/1 /2016

21	72185021-Monitor	110.3	3302 - Low Density Conifer Trees	Nonstocked	0	Unspecified	Monitoring	Natural Regen (Intermediate)	4122 - Oak, Pine	Even-Aged	Proposal
----	------------------	-------	----------------------------------	------------	---	-------------	------------	------------------------------	------------------	-----------	----------

Habitat Cut: No

Site Condition:

Prescription check regen
Specs:

Next Step
Treatments:

Acceptable a moderately stocked mix of oak, JP, RP & WP, with poorly stocked inclusions expected where the stand was sparse pre-harvest
Regen:

Other Old next step comments:
Comment:

Proposed Start Date: 10/1 /2018

30	72185030-Monitor	22.7	4199 - Other Mixed Upland Deciduous	Sapling Poor	3	Immature	Monitoring	Natural Regen (Intermediate)	4199 - Other Mixed Upland Deciduous	Even-Aged	Proposal
----	------------------	------	-------------------------------------	--------------	---	----------	------------	------------------------------	-------------------------------------	-----------	----------

Habitat Cut: No

Site Condition:

Prescription check regen
Specs:

Next Step
Treatments:

Acceptable a moderately-stocked mix of oak, RM & aspen, with poorly-stocked inclusions expected where cover was sparse pre-harvest
Regen:

Other Old next step comments:
Comment:

Proposed Start Date: 10/1 /2018



S t a n d	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
31	72185031- Monitor	33.7	4191 - Mixed Upland Deciduous with Conifer	Sapling Poor	3	Immatur re	Monitoring	Natural Regen (Intermediate)	4199 - Other Mixed Upland Deciduous	Even-Aged	Proposal

Habitat Cut: No

Site Condition:

Prescription check regen
Specs:

Next Step
Treatments:

Acceptable a moderately-stocked mix of oak, RM, aspen & pine with poorly-stocked inclusions expected where cover was sparse pre-harvest
Regen:

Other Old next step comments:
Comment:

Proposed Start Date: 10/1 /2018

32	72185032- Monitor	36.7	4199 - Other Mixed Upland Deciduous	Sapling Poor	5	Immatur re	Monitoring	Natural Regen (Intermediate)	4199 - Other Mixed Upland Deciduous	Even-Aged	Proposal
----	----------------------	------	----------------------------------------	-----------------	---	---------------	------------	---------------------------------	-------------------------------------------	-----------	----------

Habitat Cut: No

Site Condition:

Prescription intermediate regen survey
Specs:

Next Step
Treatments:

Acceptable a moderately-stocked mix of oak, RM & aspen, with poorly-stocked inclusions expected where cover was sparse pre-harvest
Regen:

Other Old next step comments:
Comment:

Proposed Start Date: 10/1 /2018

34	72185034- Monitor	49.2	4199 - Other Mixed Upland Deciduous	Sapling Medium	6	Immatur re	Monitoring	Natural Regen (Re-Inventory)	4199 - Other Mixed Upland Deciduous	Even-Aged	Proposal
----	----------------------	------	----------------------------------------	-------------------	---	---------------	------------	---------------------------------	-------------------------------------------	-----------	----------

Habitat Cut: No

Site Condition:

Prescription check regen during 2017 YOE inventory
Specs:

Next Step
Treatments:

Acceptable Oak-pine goal, with aspen & RM noted as expected.
Regen:

Other Old next step comments:
Comment:

Proposed Start Date: 10/1 /2016

**Total Treatment
Acreage Proposed: 413.5**

Report 5 – Site Conditions

Grayling Mgt. Unit
Joan Charlebois : Examiner

Compartment: 185
Year of Entry: 2017

Availability for Management

Total Acres	Acres Available	Acres Avail		Dominant Site Conditions	Dominant Site Conditions				
		With Condition	Not Available		5C	2F	3F	3J	5E
72	43	0	30	Aspen			30		
48	48	0	0	Bare/Sparsely Vegetated					
16	10	0	6	Herbaceous Openland			6		
47	0	23	24	Jack Pine	23	24			
110	110	0	0	Low-Density Trees					
21	0	0	21	Lowland Conifers				21	
151	150	1	0	Mixed Upland Deciduous	1				
32	32	0	0	Natural Mixed Pines					
1001	573	372	56	Oak	372		55		1
13	13	0	0	Red Pine					
410	386	0	24	Urban			24		
1,922	1,365	396	160	Total Forested Acres	396	24	114	21	1
	71%	21%	8%	Relative Percent					

**Due to limitations in the current Site Conditions Analysis tool, all nonforested acres are considered available. Future development will enable analysis of nonforested types.*

Site No.	Dominant Site Cond Availability	Dominant Site Condition	Acres	Other Site Condition	Other Site Condition	Other Site Condition	Other Site Condition
1	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	21	3F: Military easement / lease	Unspecified	Unspecified	Unspecified
<p>Comments: Lowland stand within the Cantonment fence, bordering Lake Margrethe. Two streams flow through the stand and empty into the lake. Typically sees heavy deer use. Any treatment without deer exclusion would hasten the stand's conversion to spruce, fir, RM & tag alder.</p>							
2	Unavailable	3F: Military easement / lease	19	Unspecified	Unspecified	Unspecified	Unspecified
<p>Comments: Within Camp Grayling's fenced Cantonment Area. Rx only if indicated by the Military for salvage or facility expansion needs.</p>							

Report 5 – Site Conditions

Grayling Mgt. Unit

Joan Charlebois : Examiner

Compartment: 185

Year of Entry: 2017

3	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	19	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Leave this YOE to maintain mast source and reduce browse pressure on the adjacent regenerating stands. Within Small Arms Range fence.							
4	Unavailable	5E: Long-Term Retention	1	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Retention island left in clearcut.							
5	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	24	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Leave this YOE to maintain mast source and reduce browse pressure on the adjacent regenerating stands. Within Small Arms Range fence.							
6	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	28	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Split out from a larger seed-treed stand, these islands were thinned and left for visual- & age-class diversity.							
7	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	68	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Leave this YOE to maintain mast source and reduce browse pressure on the adjacent regenerating stands and on the portion of this stand proposed for harvest this YOE to break up the oak age class.							
8	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	62	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Leave this YOE to maintain mast source and reduce browse pressure on the adjacent regenerating stands and on the portion of this stand proposed for harvest this YOE to break up the oak age class.							

Report 5 – Site Conditions

Grayling Mgt. Unit

Joan Charlebois : Examiner

Compartment: 185

Year of Entry: 2017

9	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	6	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Consider treating with the rest of the type to the north in comp 184.							
10	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	81	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Leave this YOE to maintain mast source and reduce browse pressure on the adjacent regenerating stands.							
11	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	21	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Small polys with mature & immature components. Consider treating concurrent with the adjacent larger oak stands when they are prescribed.							
12	Unavailable	2F: Too steep	24	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Was part of a larger JP stand prescribed last YOE, but this portion was excluded from the harvest boundary due to a combination of immature cover (on the flats) and steep slopes. Deadfalls from the overmature JP are progressively closing off hill climb two-tracks.							
13	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	12	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Sparse stand with large, open-grown, heavy-limbed oak. With the amount of ground traffic, wouldn't expect to secure regen if treated.							
14	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	18	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Leave this YOE to maintain mast source and reduce browse pressure on the adjacent regenerating stand.							

Report 5 – Site Conditions

Grayling Mgt. Unit

Joan Charlebois : Examiner

Compartment: 185

Year of Entry: 2017

15	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	52	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Leave this YOE to maintain mast source and reduce browse pressure on the adjacent regenerating stand.							
16	Unavailable	3F: Military easement / lease	81	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							

Mgt. Unit

Compartment: #Type!

Year of Entry:



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
Comments				



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	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.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
1	4124 - Red with White Oak	Sawtimber Well	24.4	102	81-110	Stand is mostly on a sideslope overlooking the Howe Road corridor and Small Arms Range improvements. The oak is not as good quality at the contiguous type to the north in comp 184. The somewhat hybridized NRO is small saw to large pole in size. The WO trends even smaller diameter and its suppressed poles are dropping out. Cover on the stand's south margins on the flats is sparser and pick up some JP, RP & open-grown xlog oak (including some NPO). A lot of deer use, digging for acorns. The portion of the stand split out and harvested in 2009 (new stand 34) is regenerating to a mix of RM, oak & aspen.
2	4124 - Red with White Oak	Sawtimber Well	152.5	98	81-110	Oak stand on rolling terrain. The better quality NRO is on the hilltops, along with small clones of overmature BTA. Moving downslope, the proportion in WO & NPO increases, as does open-grown xlog form. Most of the JP is in the valleys. A lot of the valley NPO has died out already. Typical 12-13" DBH NRO cored were 96-100 years old, ave 98. Did not age the minority xlog oak component. Stand contains LandNav course markers and wraps around two training compounds.
3	4126 - White, Black, N. Pin Oak	Sawtimber Medium	27.8	97	51-80	Most of the stand was harvested in early 2009 (72-649-07-01, Howe Road Seed Tree). 23 acres of it were islands within the larger seed-treed stand that were thinned (50-70 sq. ft. cruised residual) and left for visual- & age-class diversity. The rest of the stand picks up a boundary-excluded strip along Howe Road and areas with higher residual in the adjacent seed-tree unit where all RP, WP and green-marked oak were left. Residual canopy includes small to medium oak saw with occasional open-grown xlog material, pockets of sap-pole-saw RP & WP, and some JP along Howe Road. Epicormic branching common in the residual oak. Understory has low-medium regen, with some dense aspen pockets. Where the oak stump sprouted, it's not recruiting as fast as in the seed-treed area.
5	6128 - Lowland Coniferous, Mixed Deciduous	Sawtimber Well	20.6	127	81-110	Variable lowland stand along Lake Margrethe, within the cantonment fence. The hemlock is concentrated in the W1/2, with more NWC in the E1/2. There is also a supercanopy WP component, poor-quality RM, and lesser amounts of black spruce, balsam fir, balsam poplar, paper birch and oak. Understory cover ranges from non-stocked to locally-full stocking in tag alder, balsam fir, or WP. Little deer use compared to last winter (comp 184 portion of the type was merged with this comp's majority portion). Two small streams flow through the stand and out to the Lake. A suspension foot bridge crosses through to a lakeside parking lot.
6	4126 - White, Black, N. Pin Oak	Sawtimber Medium	19.1	100	51-80	Oak stand on the flats within the cantonment fence. Canopy closure is variable, with the patchy tree cover swinging off either end of 50-75%. This loose aggregation of tree patches is dissected by road/trail corridors, wraps around cantonment facilities, and serves as more of a landscape element than as an intact forested stand. Generally poor-quality NPO with WO, BRO, a clone of overmature BTA, and the occasional JP. Open-grown form common. Continuing deterioration and mortality in the mature NPO. Subcanopy has trace representation in oak, JP, witch hazel and black cherry.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
7	4123 - Red Oak	Sawtimber Well	109.3	103	111-140	Good quality NRO with WO, suppressed RM, and significant BTA clones. The aspen is overmature, with increasing rot and break-up. Suppressed WO & NRO poles have been dropping out. The stand is within the cantonment fence. It occupies a hilltop overlooking the Camp and Lake Margrethe, with rolling terrain sloping down toward the lake basin on a series of ridges. The stand's margins on the flats bordering Camp facilities have more open-grown xlog form with some poorer quality NPO mixing in. Most of the RP & WP are concentrated along that edge also. Pine understory cover is concentrated in the N & E, but averages below recordable levels overall. Typical 13" DBH NRO cored were 100-105 years old, ave 103. Did not age the minority xlog oak component. Aside from the dominant & xlog oak, the typical co-dominant oak have relatively small crowns and would not release well. Some of that cohort are already epicormic branching. NRO SI 70 on the best ground (upper slopes). Previous SI of 63 included the poorer-quality sites on the lower slopes/ravines.
8	4130 - Aspen	Poletimber Well	10.2	36	51-80	The stand regenerated in a former cleared swath visible on the 1978 leaf-on photos, filling in over the course of a few years (BTA ave 36). Majority BTA with a vigorous stump-origin oak component and minor amounts of RM & cherry. The regenerated oak have good form where there was enough competition to train & prune it up. Scattered above are mature oak & RM left during the original clearing. The stand is pole-sized and in the 75-100% canopy closure range, but it has sparser portions on the most disturbed ground; the aspen there is >/< open-grown and has shifted into the saw class already. Within the cantonment fence, overlooking the South Access Road.
9	4124 - Red with White Oak	Sawtimber Well	20.3	99	111-140	Stand is within the cantonment fence, on a south aspect overlooking the South Access Road. The N1/2 on the hilltop has good quality NRO, decent WO, and small clones of overmature BTA. The S1/2 on the hillside has more open-grown, poor-form oak, and atypical canopy-dominant RM (large cull). Most of the oak and RM understory is there also, encroaching on the abandoned openings that this stand encompasses. The east boundary between this stand and the immature aspen stand 8 is diffuse.
10	4131 - Aspen, Oak	Sapling Well	29.6	7	Immature	Most of the stand was harvested Nov-Dec 2008 (72-650-07-01, South of Fence), cutting merch stems except RP, WP and green-marked oak. Canopy-dominant RO & WO were marked to leave (cruised residual 0-40 sq. ft., ave 10). The prescribed stand had contained RO & WO saw, clones of overmature BTA, and clumps of large RM saw & poles. Regen from the cut is the featured canopy, and includes dense patches of aspen separated by sparser cover in RM & oak stump sprouts (stand averages to the low end of 75-100%). Oak stump sprouts have recruited. Little deer activity within the stand. A few of the residual mature oak died, but most weathered the exposure with only epicormic branching. Additional residual includes pole-sapling RM (3%, 6" DBH ave, that couldn't be recorded in the canopy due to MiFI rules), and scattered WP. The stand picks up some pole-sap-log NPO on its uncut margins that have been filling in old roadside openings. The previous inventory second age excluded the xlog component so it may underestimate the current residual's age (marking favored the xlog stems).



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
11	4130 - Aspen	Sapling Well	32.4	7	Immature	Most of the stand was harvested in Nov-Dec 2008 (72-650-07-01, South of Fence), cutting 2"+ DBH stems except RP & WP. Regen is vigorous BTA, with RM & oak stump sprouts. Areas with majority RM & oak cover are sparser (50-75% closure), such as in the west end & valleys. Most of the stump-origin oak has recruited, 5-8' tall. The oak seedling layer (<3' tall) has seen some browse, but deer traffic in the stand was relatively light. Scattered residual from the cut includes sap-pole-log RP & WP and large sap RM. The stand boundary was expanded to pick up valley U-types along the north edge that the regen is encroaching on.
12	4125 - Black, N. Pin Oak	Sawtimber Well	80.7	88	81-110	Mixed oak stand on rolling terrain, with somewhat hybridized BRO, WO, small clumps of BTA, and suppressed RM. The BRO is growing best on the hilltops, but site & oak quality decreases on the lower slopes. Cover is fairly uniform small saw oak with occasional open-grown xlog oak. Suppressed oak poles have been dropping out. Fairly open below, with oak regen limited to the margins of openings. A lot of deer use. Naturally-established RP are scattered across the stand and a few rows were planted bordering one of stand 39's roadside openings. The east edge picks up some limby NPO by the road corridor, including patches of large sapling oak. Previous inventory cored range 80-96 years old. Only cored one tree this re-inventory (88 yrs).
13	4125 - Black, N. Pin Oak	Sapling Medium	132.1	6	1-50	Most of the stand was harvested in early 2009 (72-649-07-01, Howe Road Seed Tree), cutting merch stems except RP, WP and green-marked oak (stated cruised residual of 20 sq. ft.). 15 acres in the SW were picked up from an adjacent harvest (72-660-07-01, Long Walk Jack) that was also cut Feb 2009 and had residual similar to this stand's. Regen is the featured canopy, with the mature residual a low-density "super-canopy" layer above it. The regen includes oak stump sprouts 5-8' tall, patches of BTA, RM stump sprouts, and a significant component of single-stem oak, part of which has recruited above 3' tall and the rest with good potential to. Little deer use; browse light. The stand is on rolling terrain. Frost pockets remain sparse, but on average, the stand has regenerated adequately, with a vigorous oak-dominated mix. The residual includes mature BRO & WO and varying size classes of RP & WP. Thinned islands within the stand and mappable areas where the residual was heavier where separated out as stands featuring the residual as the main canopy layer (stands 3 & 14). Even with that delimitation, there are small patches across the stand where the residual comprises >30% of the canopy. Road corridor splitting the stand was cleared after the 2007 YOE inventory planning process was done. Previous SI 55 (ranging from low 60's on the upper terrain to low 40's on the flats).
14	42250 - Pine, Oak	Sawtimber Poor	13.3	74	1-50	Was part of a larger stand harvested in early 2009 (72-649-07-01, Howe Road Seed Tree), cutting merch stems except RP, WP and green-marked oak (stated cruised residual of 20 sq. ft.). This area had heavier residual due to a concentration of RP-WP, so it was made a separate stand that features the residual as the main canopy layer. Canopy is at the high end of 25-50% closure. Wide range of age & size classes in this nice mixed pine-oak stand. The canopy oak is all mature, but there is good oak regen from the cut as well as released pine regen. The stand's WP cover is highest in the NE and the RP increases to the S & W.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
15	4122 - Oak, Pine	Sapling Medium	184.9	6	Immature	Most of the stand was harvested in Feb 2009 (72-660-07-01, Long Walk Jack), cutting JP & NPO >6" DBH, merch RM & aspen, and leaving the RP, WP & WO (stated cruised residual of 10 sq. ft.). A boundary-excluded strip along Howe Road is picked up by this stand. Stand occupies a valley with pitted terrain and some steeper sideslopes. Regen from the cut is the featured canopy, with residual scattered above in a "super-canopy" layer. There are patches where the residual dominates: the largest one was separated out as stand 29 & the smaller ones remain inclusions within this regen-featured stand. Regen from the cut includes vigorous oak stump-sprouts and single-stem material, and JP seedlings/saplings <5' tall. The JP sapling portion couldn't be recorded on its own in the canopy proper due to a MiFI rule. There is also a residual large sap-small pole oak component that had to be merged into the 6-year old canopy data line due to the same rule (NPO 10% 3" DBH S-P). The main residual is spindly small pole-large sapling JP, along with scattered WO and patches of sap-pole-saw WP & RP. There is a robust oak seedling layer just under 3' tall that is on the verge of recruiting.
16	42250 - Pine, Oak	Sawtimber Poor	19.0	66	1-50	Stand was cut in Dec 2013 (72-660-07-01, Long Walk Jack), leaving all RP, WP & WO. The residual cover has varying size-classes of RP & WP with mature WO and occasional JP & NPO poles. The cover varies from sparse on the margins to almost full stocking in interior patches. Oak regen is not yet >3' tall.
17	4126 - White, Black, N. Pin Oak	Sawtimber Well	145.7	95	51-80	Variable oak type on rolling terrain with steeper slopes on the NW edge. The best quality BRO and most intact canopy is on the upper slopes. Oak quality decreases and the proportion in WO & NPO increases on the lower slopes and valleys (the JP is concentrated there too). Canopy closure thins out in the valleys where the NPO has been dying out. RP is widely scattered across the stand as well as in pockets in the W & SW. This stand wraps around three young stands (30, 31 & 32) that were spilt out from the larger oak type last YOE and treated in order to break up the age class. There was a lot of deer activity in this mature oak stand, bedding down and digging for acorns, with little traffic into the adjacent regenerating stands. Last year's good acorn crop seemed to reduce browse pressure on regen this winter.
18	4122 - Oak, Pine	Sawtimber Medium	18.3	102	51-80	Narrow stand along the compt boundary, ending on a hilltop overlooking Engineer Valley. The far west end has open-grown but healthy BRO. Moving east, oak quality drops, switching to more NPO (poor form & health), with increasing JP cover and lesser amounts of RP & WP. There is some overmature pole-log JP, but most of it is younger. The NPO has been breaking up, with standing dead common and accumulating DWD. Oak saplings are filling in where the canopy NPO dropped out. Used previous inventory age on the NPO.
19	4126 - White, Black, N. Pin Oak	Sawtimber Well	51.7	91	81-110	Oak stand on a ridge, with steep sideslopes down to Engineer Valley in the northeast. The hilltop and upper slopes have fairly uniform cover in small saw BRO & WO, with little understory development. The north end and lower slopes have more WO (and more open-grown form), pole-log WP in the canopy and a significant WP subcanopy. Only cored one WO but listed it as the second age to give a sense of the potential age range present within the oak component. The JP & NPO are mostly on the east edge flats, including dense patches of large sapling oak. The stand's southwest has seen a lot of vehicle traffic. Heavy deer activity this winter, digging for acorns.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
20	42220 - Natural Jack Pine	Poletimber Poor	24.4	62	1-50	Two+aged JP stand on the south end of Engineer Valley, occupying the flats and steep hillsides. Was part of a larger JP stand prescribed last YOE, but this portion was excluded from the harvest boundary due to a combination of immature cover (on the flats) and steep slopes. The stand is the result of progressive colonization, with patchy distribution in immature to overmature JP components. The valley bottom is dissected with two-tracks and there's a lot of disturbed ground. The canopy there has a higher proportion in immature pole-sapling JP (cored 29 yrs, MiFI rule prevented recording in canopy, so listed it in the subcanopy). Climbing the hillsides out of the valley, the proportion in mature to overmature JP increases (cored 54-70 yrs, ave 62). RP, NPO & WP mix in at low densities except for a pocket of dense WP cover in the SW. Hill climb trail roads have been closing off with deadfalls.
23	42220 - Natural Jack Pine	Poletimber Medium	22.8	67	1-50	Fragmented JP stand on the sidehills and perimeter flats around Engineer Valley, dissected by two-tracks. The north poly is within the Small Arms Range fence. The stand's mature JP seeded in a second age class in the canopy as well as the subcanopy. Due to a MiFI rule, that two-aged condition could not be represented in the canopy, so the younger pole JP was recorded in the understory. Most of the RP & WO is within the range fence poly. NPO of all size classes are present, including solid medium stocking in advanced oak saplings. Hill-climb two-tracks coming out of Engineer Valley have been progressively closed off by deadfalls.
24	4126 - White, Black, N. Pin Oak	Sawtimber Poor	12.0	106	1-50	Park-like oak stand dotted with grassy opening inclusions and dissected by two-tracks. Open-grown xlog form is common in the oak. Minor amounts of RP-WP-JP-RM are scattered throughout. Only cored a couple trees, but listed the ages separate to give a sense of the potential age range present within the oak component. The NPO cored was younger than it looked, having put on rapid diameter growth in wide-open conditions.
25	4191 - Mixed Upland Deciduous with Conifer	Sapling Poor	8.6	14	Immature	Stand is a long swath cleared during the 2001 growing season for tank trail construction (72-018-01-02). Stumps were spec'd tall for ease of grubbing. Tank trail has not been constructed yet. Cover changes every few hundred feet, but the harvest was left as a single stand because it's low-acres to start with. Oak is the common thread across the stand, with both well-developed stump sprouts and single-stem saplings. The densest cover, with most of the RM, WP & RP, is in the north half. The canopy gets sparser moving south and picks up more JP.
29	42210 - Natural Red Pine	Sawtimber Medium	13.3	60	51-80	Was part of a larger stand harvested in Feb 2009 (72-660-07-01, Long Walk Jack), cutting JP & NPO >6" DBH, merch RM & aspen, and leaving the RP, WP & WO (stated cruised residual of 10 sq. ft.). This area had heavier residual due to a concentration of RP, so it was made a separate stand that features the residual as the main canopy layer. There is a range of age & size classes in this pine-oak stand and variable canopy closure. The majority small saw-large pole RP is around 60 years old. There is an older xlog supercanopy RP cohort that had to be merged into the younger class due to a MiFI rule (RP 5% 20" DBH XL-L). The canopy oak is all mature, but more open areas on the margins have good oak regen. Second age estimate based on current WO age in adjacent stand 17.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
30	4199 - Other Mixed Upland Deciduous	Sapling Poor	22.7	3	Immature	Stand was harvested Dec 2011 (72-639-07-01, Howe Road Oak), cutting merch stems except RP & WP. Low density residual includes scattered RP & WP. The regen includes RM, oak & some BTA. The oak stump sprouts have recruited. There is a vigorous single-stem oak layer just under 3' tall with good potential to recruit also. Little deer use, light browse. If the remaining oak recruits as expected, the stand will move solidly into the 50-75% category.
31	4191 - Mixed Upland Deciduous with Conifer	Sapling Poor	33.7	3	Immature	Stand was harvested Dec 2011 (72-639-07-01, Howe Road Oak), cutting merch stems except RP & WP. The regen is the featured canopy, with a fair amount of residual pole-sapling RP scattered above, and a few super canopy RP. Regen includes mostly oak, RM, and a little BTA. The oak stump sprouts have recruited but the single-stem oak sapling layer is not as well developed as in stands 30 & 32. Closing work delay put equipment back in during late spring, which may have set back the regen in places. Little deer use, light browse. If the <3' oak recruits, it will shift the canopy closure into 50-75% range.
32	4199 - Other Mixed Upland Deciduous	Sapling Poor	36.7	5	Immature	Stand was harvested Nov 2009 (72-639-07-01, Howe Road Oak), cutting merch stems except RP & WP. Regen includes RM, oak and aspen. Low density residual includes scattered RP, WP and large sap-small pole RM (couldn't be listed in canopy due to MiFI rule). The oak regen is made up of stump-sprout and dense single-stem sapling cover. The stump sprouts have recruited. A portion of the single-stem oak has recruited and the rest has good potential to. Little deer use, light browse. Small burned area in west end; sparser there. Cover overall close to 50-75%. As the <3' oak continues to recruit, will move solidly into that category, with proportional increase in oak and decrease in RM.
34	4199 - Other Mixed Upland Deciduous	Sapling Medium	49.4	6	Immature	Was cut Feb 2009 (72-635-07-01, Range 5 Oak), merch stems except RP & WP. Sprout regen from the cut includes RM, oak and aspen, with scattered residual RP, WP and large sap RM. Stump-sprout oak have recruited. A separate class of single-stem oak has partially recruited, with <3' tall material likely to grow into recordable range. Little deer use this winter; browse was light. Adjacent mature oak stands had heavy deer use: last year's good acorn crop appears to have kept browse pressure off this regen. Cover ranges from low to full stocking, averages out to moderate. As the single-stem oak layer continues to recruit, this stand is expected to move into the 75-100% cover class, with the RM proportion decreasing. Stand lies within the fenced Small Arms Range. Last YOE, this harvest was split out of the larger encompassing oak type in order to break up that age class.
35	4124 - Red with White Oak	Sawtimber Well	22.4	100	81-110	Within the fenced Small Arms Range. Better quality oak than stand 1 to the west; less hybridized & larger diameter. Small clumps of overmature BTA and a few supercanopy RP are mixed in. Relatively open below except for patches of RM stump sprouts. The typical 12-13" DBH NRO cored were 96-105 years old, ave 100. Did not age the minority xlog oak component. A lot of deer use this winter.



Stand	Cover Type	Acres	Managed Site	General Comments:
4	123 - Other High Intensity Urban	220.9	No	Southwest part of Camp Grayling, within cantonment fence. Roads, parking lots, buildings, mowed areas, scattered landscape trees and isolated patches of oak & pine.
21	3302 - Low Density Conifer Trees	110.3		The stand was harvested in Dec 2013 (72-660-07-01, Long Walk Jack), cutting JP & NPO >6" DBH, merch RM & aspen, and leaving the RP, WP & WO (stated cruised residual of 10 sq. ft.). The regen is not developed yet, being only one growing season in. There is good potential for it to look like stand 15's in five years. Stand 15 was part of the same 2007 YOE prescription but its units were cut earlier and are six growing seasons in. There are scattered patches of residual with >25% canopy closure, but on average the stand doesn't make the forested benchmark. The residual includes small pole-large sap JP & NPO, mature WO, and pole-log WP & RP. The valley two-track corridor has some dense patches of large sap JP & NPO. Harvest margins with significant WO residual were picked up by the adjacent forested stands.
22	790 - Other Bare/Sparsely Vegetate	47.8	No	Engineer Valley. Full snow cover. Appears on the imagery to have a lot of disturbed ground, criss-crossed with two-tracks. The north end is signed closed as a restoration area. More bluestem visible above the snow there and increasing JP cover. Rest of the opening has brushy JP & oak encroaching along the margins.
26	310 - Herbaceous Openland	1.5	No	Small opening. Full snow cover. Appears on imagery to have had a lot of past disturbance but is re-vegetating. Proposed Tank Trail route crosses through.
27	310 - Herbaceous Openland	1.0	No	Small opening. Full snow cover. Appears on imagery to have had a lot of past disturbance but is re-vegetating. Proposed Tank Trail route crosses through.
28	110 - Low Intensity Urban	102.2	No	Road corridors and range facilities. Northwest part within the Small Arms Range fence. JP and oak of all sizes occur in small patches and individually. The far west end south of Howe Road is part of a restoration area signed closed to off-road vehicle traffic.
33	310 - Herbaceous Openland	5.6	No	Was part of stand 34's harvest area, cut Feb 2009 (72-635-07-01, Range 5 Oak). Subsequently maintained open around a range observation tower. Some scattered sap-pole-saw RP along its west edge.
36	110 - Low Intensity Urban	1.3	No	Small opening with training structure.
37	110 - Low Intensity Urban	19.2	No	Opening with fenced training facility. Scattered sap-pole-saw oak and JP on the perimeter.
38	310 - Herbaceous Openland	2.0	No	Old opening along the two-track valley. Was used as a landing when stand 13 was cut.
39	110 - Low Intensity Urban	65.9	No	South Access Road corridor with associated gravel and two-track roads and areas of disturbed ground. Includes several roadside openings (old building sites) that have been filling in with tree cover (sap-pole-saw oak). Mostly within the cantonment fence, with an additional fenced area on the hilltop.
40	310 - Herbaceous Openland	6.0	No	String of old openings (former building sites) that have been filling in with oak, pine, aspen & cherry.