



Compartment Review Presentation

Traverse City Forest Management Unit

Compartment 61230

Entry Year 2017

Acreage: 1,904

County Kalkaska

Management Area: Camp Grayling

Revision Date: 2015-04-23

Stand Examiner: Katie Armstrong

Legal Description:

T26N R5W Sections 25, 26, and 27

Identified Planning Goals:

This compartment is heavily used by Camp Grayling for training. Since the last inventory, additional area in Sections 26 and 27 was cleared for the south Forward Operating Base (FOB) and a Counter Improvised Explosive Device (CIED) training area was built in Section 26. There are also 2 small ranges in Section 25. Much of the other area is heavily used for in-woods training so some level of canopy cover is desired. As such, managing even-age covertypes by a typical clearcut with 2" spec is not always desirable. Much of the oak resource in this compartment is, however, reaching maturity and showing signs of decline and/or mortality. In addition, deer populations seem unusually high which will cause additional challenges to regenerating oak. Many cuts completed since the last inventory have started to help balance the oak age classes and might shift cover types from a pure oak stand to mixed aspen, maple and oak stands. Treatments in this year of entry should further attempt to balance age classes while accommodating military training needs.

Soil and topography:

Most of the compartment is Grayling sand with lesser amounts of Croswell sand and Au Gres sand in the northwestern corner. The seeps and springs in Section 27 are on Au Sable-Bowstring mucks. The terrain in this compartment is generally flat in the northwestern part and hillier farther south and east. Some of the hills are large enough to be named: Smith Hill, Esler Hill, Grube Hill, Lamb Hill and Baker Hill.

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

These three sections are all State-owned land with the exception of one 40-acre parcel: the NWNW of Section 27. This land is administered by the Michigan Department of Military and Veterans Affairs, which has a timber management agreement with the Forest Resources Division. This arrangement is referred to as Military Board Land. Other Military Board Land surrounds this compartment to the north, east and south. West of the compartment, there are numerous year-round and seasonal dwellings along Portage Creek and King Roads and the Manistee River corridor. Several large underground pipelines run through a single north-south corridor in Section 26.

Unique Natural Features:

Stand 33 near the junction of Portage Creek and King Roads in Section 27 contains a large area of springs and seeps that converge to form Spring Creek, a small tributary of the Manistee River. There are a couple of small kettle depressions in Section 26, one of which holds water and is known as Kings Pond. There are no records of threatened or endangered species within the compartment although there is potential for Massasauga rattlesnake.

Archeological, Historical, and Cultural Features:

There is a record of an archaeological site(s) in Section 26.

Special Management Designations or Considerations:

The entire compartment is Military Board Land. As a tributary of the Manistee River, Spring Creek is protected by Natural Rivers designation.

Watershed and Fisheries Considerations:

The headwaters of Spring Creek originate in the southwest corner of Section 27. Spring Creek is a small tributary of the Manistee River, with naturally reproducing populations of brown and brook trout.

Wildlife Habitat Considerations:

Featured wildlife species for this management area include: American woodcock, Eastern massasauga rattlesnake, pileated woodpecker, red-headed woodpecker, ruffed grouse, snowshoe hare, wild turkey and white-tailed deer. Some of the most significant wildlife management issues will be maintenance of young forest and large open grassland complexes, the retention of large, over-mature trees and snags and the maintenance and expansion of hard mast and mesic conifer components. [To be edited by WLD.]

Mineral Resource and Development Concerns and/or Restrictions

Surface sediments consist of ice-contact and glacial outwash sand and gravel and postglacial alluvium and dune sand. The glacial drift thickness varies between 200 and 600 feet. Beneath the glacial drift are the Mississippian Marshall Sandstone and Coldwater Shale. The Marshall was previously used as a building stone. The nearest gravel pit is located two miles to the south, but there should be potential on the uplands. This area is located three miles north of the Beaver Creek Field. Beaver Creek produces from the Devonian Richfield and Detroit River formations and the Ordovician PdC. There are no leases currently in the compartment, but leases are located to the south.

Vehicle Access:

There is a rather well-developed road network throughout the compartment although access to some areas is restricted by the military. Howe Road (open year-round) runs along the northern edge of the compartment. A "tank trail" for military training runs more-or-less parallel to Howe Road through Section 27, but the military does not train much with tracked vehicles anymore.

Survey Needs:

There are no survey needs at this time. Corners on the private property boundary were established since the last inventory.

Recreational Facilities and Opportunities:

There are no designated recreational facilities within this compartment. It is common to find deer hunting camps in the fall of the year. Snowmobilers use the pipeline corridor during the winter. The mushroom hunters and berry pickers use the compartment seasonally. Since the military uses the area for training during the summer, the recreational camping opportunities are limited. (T.M.N. 12/10/14)

Fire Protection:

There is significant wildfire potential in the jack pine stands in the western part of this compartment. A large portion of the compartment burned in May 2009 as part of the Range 9 fire. Wildfire potential will increase as this jack pine matures. The military has purchased a Fecon mulching machine to put in firebreaks adjacent to the ranges to help stop the spread of fire.

Additional Compartment Information:

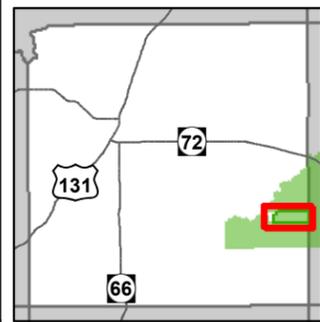
The following reports from the Inventory are attached:

- 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**

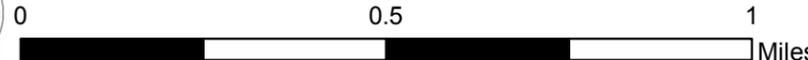
The following information is displayed, where pertinent, on the attached compartment maps:

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

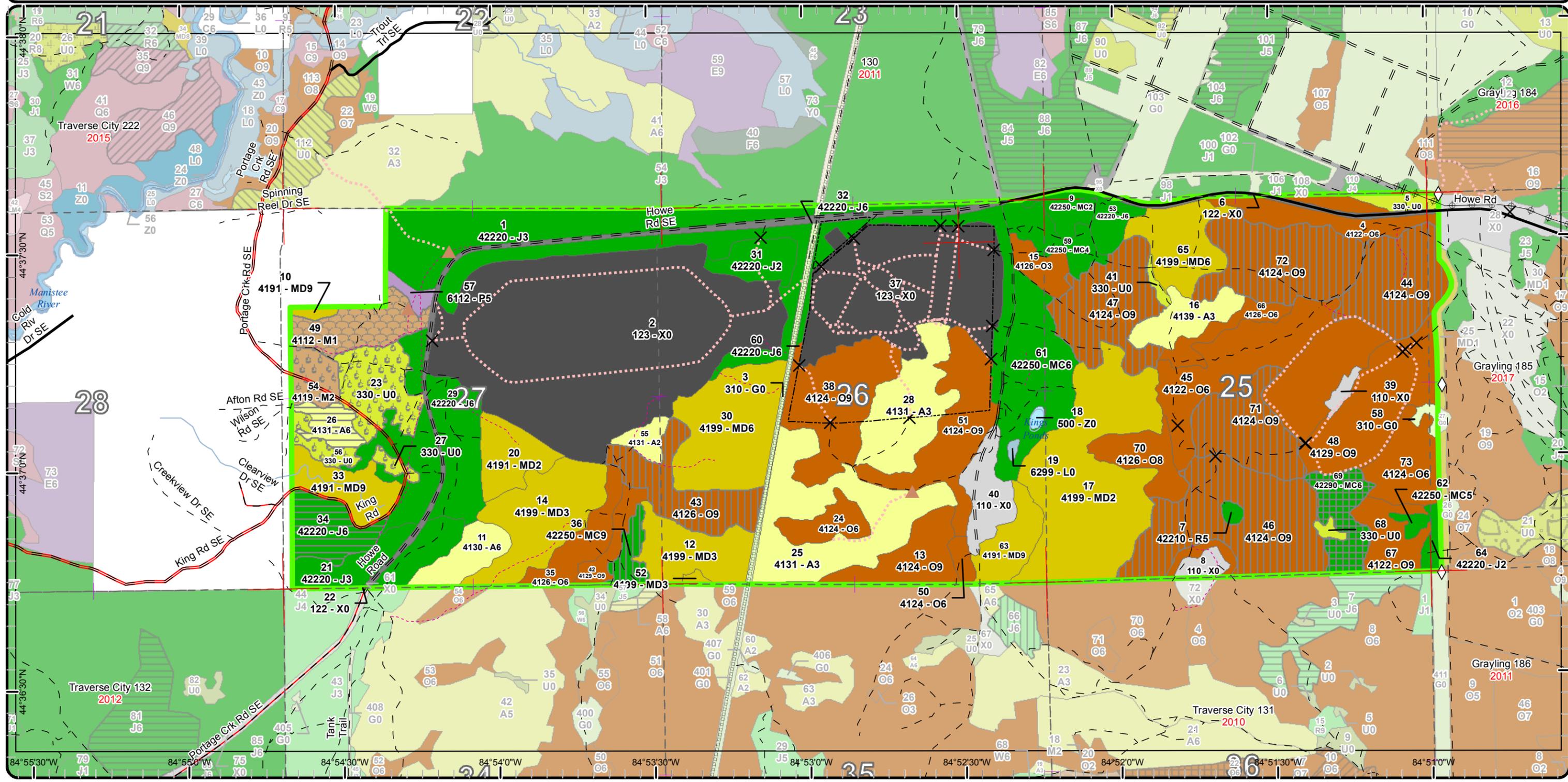
Cover Type & Treatments



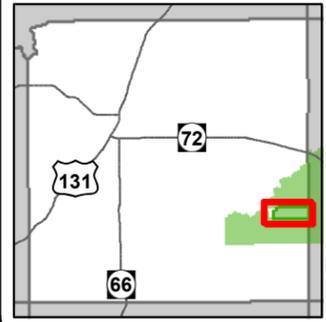
Compartment: 230
 T26N R05W 25-27
 Kalkaska
 Unit: Traverse City
 Mgmt Area: Camp Grayling
 YOE: 2017
 Acres: 1904 GIS Calculated
 Examiner: Katie Armstrong
 Map Revised: 6/18/2015
 Map Phase: Pre-Review



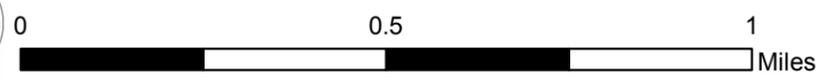
- ✦ Remonumented Section Corners
- ◇ Field Grade GPS Corners
- Miris Corners
- Paved Roads
- County Gravel Roads
- Gravel Roads
- Poor Dirt Roads
- County Poor Dirt Roads
- Trail (Non-Recreation)
- Closed Roads
- ✕ Gate
- ▲ Berms
- Rivers
- Lakes
- Pipeline
- Powerline
- Treatments
- ▨ Site Prep
- ▨ Clearcut (w/Reserves)
- ▨ Prescribed Burn
- ▨ Shelter Wood (w/Reserves)
- ▨ Seed Tree (w/Reserves)
- Forest Coverture
- 411 - Northern Hardwood
- 412 - Oak Types
- 413 - Aspen
- 419 - Mixed Upland Deciduous
- 422 - Natural Pines
- 611 - Lowland Deciduous Forest
- Non-Forest Coverture
- 110 - Low Intensity Urban
- 122 - Roads/Parking Lot
- 123 - Other High Intensity Urban
- 310 - Herbaceous Openland
- 330 - Low Density Trees
- 500 - Water
- 622 - Lowland Shrub



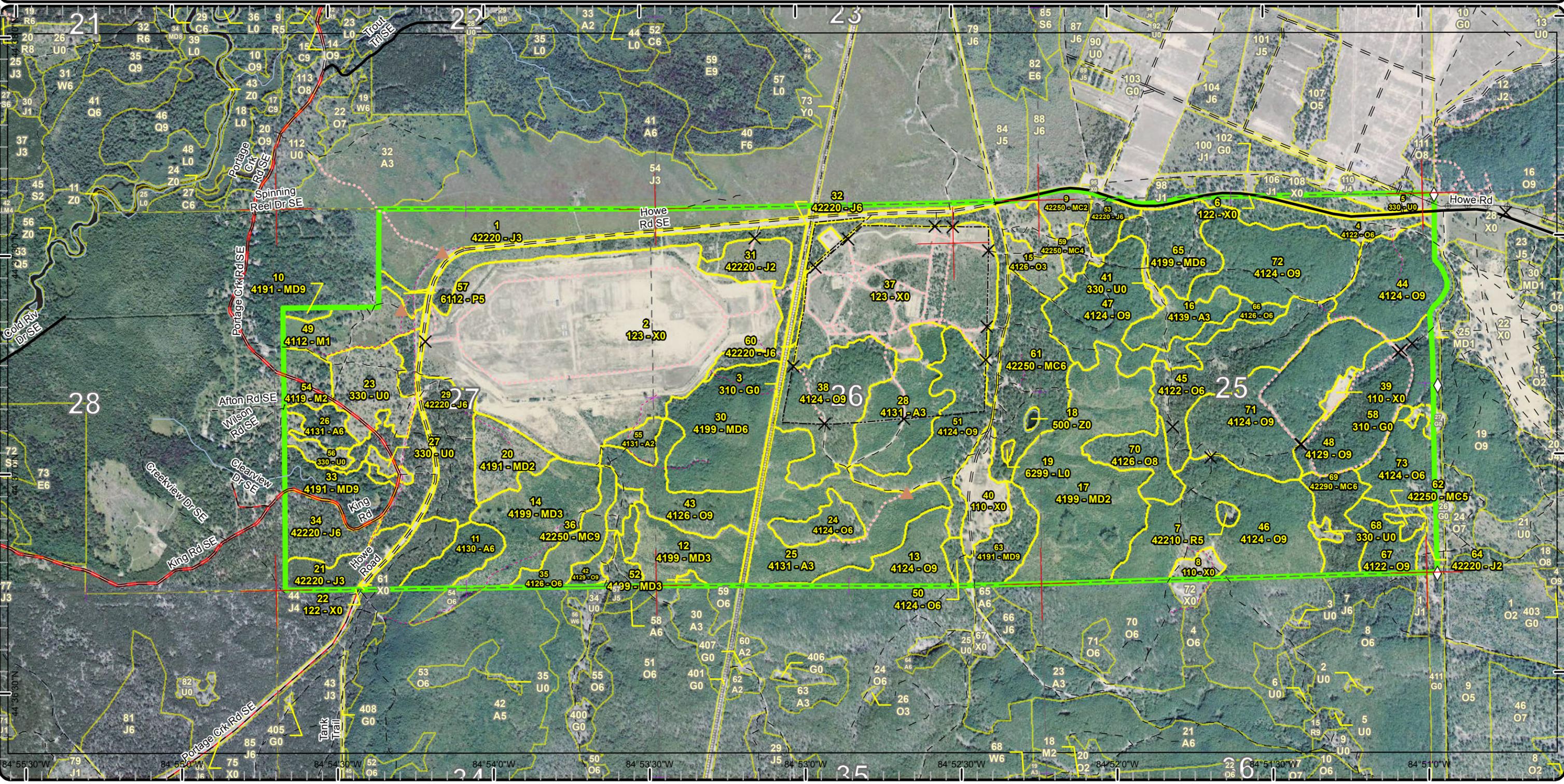
Stand Boundary Map



Compartment: 230
 T26N R05W 25-27
 Kalkaska
 Unit: Traverse City
 Mgmt Area: Camp Grayling
 YOE: 2017
 Acres: 1904 GIS Calculated
 Examiner: Katie Armstrong
 Map Revised: 6/16/2015
 Map Phase: Pre-Review



- ✚ Remonumented Section Corners
 - ◇ Field Grade GPS Corners
 - Miris Corners
 - Paved Roads
 - County Gravel Roads
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- Forest Covertype**
 411 - Northern Hardwood
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84°55'30"W 84°55'00"W 84°54'30"W 84°54'00"W 84°53'30"W 84°53'00"W 84°52'30"W 84°52'00"W 84°51'30"W 84°51'00"W
 44°36'30"N 44°36'00"N 44°35'30"N 44°35'00"N 44°34'30"N 44°34'00"N 44°33'30"N 44°33'00"N 44°32'30"N 44°32'00"N

Report 1 – Total Acres by Cover Type and Age Class

Traverse City Mgt. Unit

Compartment 230 Year of Entry 2017

Katie Armstrong : 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	119	0	15	0	0	0	9	0	0	0	0	0	0	0	0	0	0	143
Herbaceous Openland	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11
Jack Pine	0	64	19	0	0	129	23	20	0	0	0	0	0	0	0	0	0	0	255
Low-Density Trees	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	45
Lowland Aspen/Balsam Poplar	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	4
Lowland Shrub	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Mixed Upland Deciduous	0	163	20	0	50	0	0	0	2	43	20	0	0	0	0	0	0	0	298
Natural Mixed Pines	0	9	0	0	3	44	23	0	19	0	0	0	0	0	0	0	0	0	98
Northern Hardwood	0	0	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34
Oak	0	10	0	0	0	23	0	50	85	37	295	140	0	0	0	0	0	0	640
Red Pine	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
Urban	372	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	372
Water	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	430	365	73	15	53	196	50	81	106	80	315	140	0	0	0	0	0	0	1904



Report 2 – Treatment Summary

Traverse City Mgt. Unit
Year of Entry: 2017

Acres of Harvest

Compartment 230
Total Compartment Acres: 1,904

Commercial Harvest - 0
Harvests with Site Condition - 0
Next Step Harvest - 0
Habitat Cut - 70

Cover Type by Harvest Method

	Clearcut	Selection	Patch Clearcut	Seed Tree	Shelterwood	Thinning	Overstory Removal	Salvage	Other	Total Acres
Aspen	9	0	0	0	0	0	0	0	0	9
Jack Pine	20	0	0	0	0	0	0	0	0	20
Natural Mixed Pines	0	0	0	19	8	0	0	0	0	27
Oak	0	0	0	0	261	0	0	0	0	261
Total	29	0	0	19	269	0	0	0	0	317

Proposed and Next Step Treatments by Harvest Method

	Harvest	Site Prep	Planting	Seeding	Burning	Pesticide	Monitoring	Other	Non-Forest Mgt.	Total Acres
Current	317	23	0	0	47	0	0	0	0	387
Next Step	0	23	23	0	0	0	409	0	0	455
Total	317	45	23	0	47	0	409	0	0	842



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
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23	61230023-Burn	26.1	330 - Low-Density Trees	Nonstocked		Unspecified	Burn	Opening	320 - Upland Shrub		Proposal
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Habitat Cut: Yes

Site Condition:

Prescription Burn to set back encroachment of woody species and stimulate herbaceous ground cover.

Specs:

Next Step

Treatments:

Acceptable

Regen:

Other May be able to remove some woody vegetation with timber sale in Stand 26. Old next step comments:

Comment:

Proposed Start Date: 10/1 /2016

26	61230026-Cut	8.9	4131 - Aspen, Oak	Poletimber Well	62	Unspecified	Harvest	Clearcut	4139 - Aspen, Mixed Deciduous	Even-Aged	Proposal
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Habitat Cut: No

Site Condition:

Prescription Cut all aspen, jack pine and red maple >2" dbh. Mark scattered oaks, black cherry and white pine to leave. Residual BA will be low, 0-10 sf/acre.

Specs:

Next Step

Treatments:

Acceptable Aspen, jack pine, red maple, white oak, red oak, white pine, black cherry.

Regen:

Other No retention because this is non-certified military board land. Old next step comments:

Comment:

Proposed Start Date: 10/1 /2016

27	61230027-Burn	2.9	330 - Low-Density Trees	Nonstocked		Unspecified	Burn	Opening	320 - Upland Shrub		Proposal
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Habitat Cut: Yes

Site Condition:

Prescription Burn to set back encroachment of woody species and stimulate herbaceous ground cover.

Specs:

Next Step

Treatments:

Acceptable

Regen:

Other Old next step comments:

Comment:

Proposed Start Date: 10/1 /2016

34	61230034-Cut	19.7	42220 - Natural Jack Pine	Poletimber Well	62	Unspecified	Harvest	Clearcut	42220 - Natural Jack Pine	Even-Aged	Proposal
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Habitat Cut: No

Site Condition:

Prescription Cut all trees > 2" dbh except scattered oak and/or clumps of oak. Protect advanced oak regeneration if possible.

Specs:

Next Step

Treatments:

Acceptable Jack pine with lesser amounts of deciduous species including oak, aspen, cherry and white pine.

Regen:

Other No retention because this is non-certified military board land. Corners for private boundary are in place. Old next step comments:

Comment:

Proposed Start Date: 10/1 /2016



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
36	61230036-Cut	8.2	42250 - Pine, Oak	Sawtimber Well	54	111-140	Harvest	Shelterwood	42250 - Pine, Oak	Even-Aged	Proposal

Habitat Cut: No

Site Condition:

Prescription Shelterwood harvest to release white pine and oak in understory. Cut all trees >2" dbh except for red pine, white pine, red oak and white oak with
Specs: residual BA 10-40 sf/acre.

Next Step
Treatments:

Acceptable Combination of white pine, red pine, jack pine, oak and there will probably be some red maple.
Regen:

Other Include stands 57 and 58 in Comp 131 in the sale. Old next step comments:
Comment:

Proposed Start Date: 10/1 /2016

43	61230043-Cut	29.9	4126 - White, Black, N. Pin Oak	Sawtimber Well	94	111-140	Harvest	Shelterwood	4199 - Other Mixed Upland Deciduous	Two-Aged	Proposal
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Habitat Cut: No

Site Condition:

Prescription Cut all aspen and mark oak to shelterwood density (probably mark to cut). Residual BA will be variable, 30-50 sf/acre. Leave slightly higher
Specs: residual BA at edges of stand adjacent to FOB training area. Leave all red and white pine.

Next Step
Treatments:

Acceptable Expect balance to shift towards more aspen and less oak. Also, expect some red maple and white pine.
Regen:

Other Possibility of bullets in the trees based on previous sales in adjacent stands. Higher residual BA per military request. Old next step comments:
Comment:

Proposed Start Date: 10/1 /2016

44	61230044-Cut	38.1	4124 - Red with White Oak	Sawtimber Well	100	111-140	Harvest	Shelterwood	4199 - Other Mixed Upland Deciduous	Two-Aged	Proposal
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Habitat Cut: No

Site Condition:

Prescription Cut all aspen and jack pine. Mark oak and red maple to shelterwood density, 30-50 sf/acre. Most likely mark to leave. Leave higher residual
Specs: along roads, around obvious training areas, and on steep slopes.

Next Step
Treatments:

Acceptable Expect balance to shift towards more aspen and less oak. Also, expect some white pine, jack pine and red maple.
Regen:

Other Higher residual BA per military request. Old next step comments:
Comment:

Proposed Start Date: 10/1 /2016

46	61230046-Cut	70.6	4124 - Red with White Oak	Sawtimber Well	90	81-110	Harvest	Shelterwood	4199 - Other Mixed Upland Deciduous	Two-Aged	Proposal
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Habitat Cut: No

Site Condition:

Prescription Cut all aspen and mark oak to shelterwood density. Probably mark to cut leaving residual BA of approximately 40-60 sf/acre. Leave higher
Specs: residual BA around military training infrastructure and roads. Leave all red pine. Protect advanced regeneration in sale.

Next Step
Treatments:

Acceptable Expect composition to shift towards more aspen and less oak. Also, expect some white pine and red maple.
Regen:

Other Higher residual BA per military request. Treatment area excludes 100' untreated buffer around Range 21. Old next step comments:
Comment:

Proposed Start Date: 10/1 /2016



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
47	61230047-Cut	40.7	4124 - Red with White Oak	Sawtimber Well	95	81-110	Harvest	Shelterwood	4199 - Other Mixed Upland Deciduous	Two-Aged	Proposal

Habitat Cut: No

Site Condition:

Prescription Cut all aspen. Mark oak and red maple to shelterwood density. Residual BA will be variable, approximately 30-50 sf/acre. Probably mark to cut.

Specs: Leave all red pine. Protect advanced regeneration in sale.

Next Step
Treatments:

Acceptable Expect balance to shift towards more aspen and less oak. Also, expect some red maple.
Regen:

Other Higher residual BA per military request. Old next step comments:
Comment:

Proposed Start Date: 10/1 /2016

49	61230049-Prep	22.7	4112 - Maple, Beech, Cherry Association	Sapling Poor	16	Immature	SitePrep	Roller Chopping	4211 - Planted Red Pine	Even-Aged	Proposal
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Habitat Cut: Yes

Site Condition:

Prescription Range 9 fire set back red maple sprouts. Deer browse has limited natural regeneration of part of this stand. Roller chop, trench and plant red pine.

Next Step SitePrep, Trenching; Planting, Initial Plant; Monitoring, Artificial Regen(1yr); Monitoring, Artificial Regen(3yr)
Treatments:

Acceptable Red pine at acceptable stocking levels.
Regen:

Other Old next step comments:
Comment:

Proposed Start Date: 10/1 /2016

54	61230054-Burn	11.3	4119 - Mixed Northern Hardwoods	Sapling Medium	16	Immature	Burn	Opening	320 - Upland Shrub		Proposal
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Habitat Cut: Yes

Site Condition:

Prescription Consider burning to expand opening into this area. Burn to set back encroachment of woody species and stimulate herbaceous ground cover.

Next Step
Treatments:

Acceptable
Regen:

Other May be able to remove some woody vegetation with timber sale in Stand 26. Old next step comments:
Comment:

Proposed Start Date: 10/1 /2016

56	61230056-Burn	6.8	330 - Low-Density Trees	Nonstocked		Unspecified	Burn	Opening	320 - Upland Shrub		Proposal
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Habitat Cut: Yes

Site Condition:

Prescription Burn to set back encroachment of woody species and stimulate herbaceous ground cover.

Specs:

Next Step
Treatments:

Acceptable
Regen:

Other May be able to remove some woody vegetation with timber sale in Stand 26. Old next step comments:
Comment:

Proposed Start Date: 10/1 /2016



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	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
69	61230069-Cut	18.9	42290 - Natural Mixed Pine	Poletimber Well	70	111-140	Harvest	Seed Tree	4310 - Pine, Oak Mix	Even-Aged	Proposal

Habitat Cut: No

Site Condition:

Prescription Cut all jack pine. Mark red pine and oak to seedtree density, approximately 10-20 sf/acre.

Specs:

Next Step

Treatments:

Acceptable Jack pine, red pine, white pine and oak.

Regen:

Other Old next step comments:

Comment:

Proposed Start Date: 10/1 /2016

71	61230071-Cut	32.9	4124 - Red with White Oak	Sawtimber Well	95	111-140	Harvest	Shelterwood	4199 - Other Mixed Upland Deciduous	Two-Aged	Proposal
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Habitat Cut: No

Site Condition:

Prescription Remove all aspen and mark oak to shelterwood density, approximately 30-50 sf/acre. Probably mark to leave. Leave higher residual BA along roads.

Next Step

Treatments:

Acceptable Expect balance to shift towards more aspen and red maple and less oak. Also, expect some white pine.

Regen:

Other Higher residual BA per military request. Treatment only includes part of stand outside ring road around Range 20. Old next step comments:

Comment:

Proposed Start Date: 10/1 /2016

72	61230072-Cut	49.0	4124 - Red with White Oak	Sawtimber Well	100	81-110	Harvest	Shelterwood	4199 - Other Mixed Upland Deciduous	Two-Aged	Proposal
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Habitat Cut: No

Site Condition:

Prescription Cut all aspen. Mark oak and red maple to shelterwood density, approximately 30-50 sf/acre (probably mark to cut). Leave white pine.

Specs:

Next Step

Treatments:

Acceptable Expect balance to shift towards more aspen and less oak. Also, expect some red maple and white pine.

Regen:

Other Higher residual BA per military request. Old next step comments:

Comment:

Proposed Start Date: 10/1 /2016

Total Treatment Acreage Proposed: 386.7

Report 5 – Site Conditions

Traverse City Mgt. Unit
Katie Armstrong : Examiner

Compartment: 230
Year of Entry: 2017

Dominant Site Conditions

	3F	3J	5C	5E
Aspen				2
Herbaceous Openland				
Jack Pine	73			
Low-Density Trees				
Lowland Aspen/Balsam Poplar		3		
Lowland Shrub		1		
Mixed Upland Deciduous	0	20	50	6
Natural Mixed Pines		5		
Northern Hardwood				
Oak	65		21	
Red Pine				
Urban	3			
Water		1		
Total Forested Acres	141	30	72	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)	20	1A: Federal/State/Local Law	Unspecified	Unspecified	Unspecified
Comments: Natural Rivers buffer for unnamed tributary of Manistee River.							
2	Unavailable	5E: Long-Term Retention	6	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Reserve islands from Lamb Hill Oak, 61-68-07-01.							
3	Unavailable	5E: Long-Term Retention	2	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Retention from Esler Hill Aspen/Oak, 61-603-07-01.							

Report 5 – Site Conditions

Traverse City Mgt. Unit
Katie Armstrong : Examiner

Compartment: 230
Year of Entry: 2017

4	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	3	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Intermittent stream.							
5	Unavailable	3F: Military easement / lease	37	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Buffer strip for FOB.							
6	Unavailable	3F: Military easement / lease	14	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Part of FOB.							
7	Unavailable	3F: Military easement / lease	23	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Buffer for training area.							
9	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	12	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
10	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	4	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							

Report 5 – Site Conditions

Traverse City Mgt. Unit
Katie Armstrong : Examiner

Compartment: 230
Year of Entry: 2017

11	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	3	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
12	Unavailable	3F: Military easement / lease	68	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Buffer zone around range. Trees might have ammuniton in them.							
13	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	10	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
14	Unavailable	1B: Non-DNR agency concerns (e.g. USFS)	27	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
15	Unavailable	1B: Non-DNR agency concerns (e.g. USFS)	10	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
16	Unavailable	1B: Non-DNR agency concerns (e.g. USFS)	17	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							

Report 5 – Site Conditions

Traverse City Mgt. Unit
Katie Armstrong : Examiner

Compartment: 230
Year of Entry: 2017

17	Unavailable	1B: Non-DNR agency concerns (e.g. USFS)	17	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
18	Unavailable	1B: Non-DNR agency concerns (e.g. USFS)	24	5C: Delay treatment for age/size class diversity or exceptional site quality	Unspecified	Unspecified	Unspecified
Comments:							
19	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	50	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
20	Unavailable	1B: Non-DNR agency concerns (e.g. USFS)	17	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
21	Unavailable	1B: Non-DNR agency concerns (e.g. USFS)	45	5C: Delay treatment for age/size class diversity or exceptional site quality	Unspecified	Unspecified	Unspecified
Comments:							

Report 5 – Site Conditions

Traverse City Mgt. Unit
Katie Armstrong : Examiner

Compartment: 230
Year of Entry: 2017

22	Unavailable	1B: Non-DNR agency concerns (e.g. USFS)	40	5C: Delay treatment for age/size class diversity or exceptional site quality	Unspecified	Unspecified	Unspecified
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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
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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.
HCVA	Natural Rivers	There are two Natural Rivers datasets which are derived from spatial buffers set from an established and approved distance from the river centerlines. The Natural Rivers Zoning District is a 400 foot buffer for most Natural Rivers. The Vegetative Buffer ranges from 25 to 100 feet. To view specific Zoning Districts and Vegetative Buffers for each Natural River see the table located on the I:\Documentation\GDSE data folder.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
1	42220 - Natural Jack Pine	Sapling Well	64.3	3	Immature	Burned in Range 9 fire, May 2010. Salvage timber sale, Range 9 Fire Salvage, 61-633-10-01, cut winter 2011. Dense jack pine regeneration, less than 3 feet tall. Some veins of aspen from wet stand to the north.
4	4122 - Oak, Pine	Poletimber Well	22.5	73	1-50	Cut October 2010 as part of Baker Hill Jack, 61-645-07-01, Lutke, removed jack pine, aspen and red maple. Poor quality stand. Opening at east end maintained by Camp Grayling.
7	42210 - Natural Red Pine	Poletimber Medium	1.9	60	51-80	Small patch of red pine in a small bowl-shaped depression with an opening in the middle. Trees are open-grown.
9	42250 - Pine, Oak	Sapling Medium	8.9	5	Immature	Cut October 2010 as part of Range 9 and Howe Road Fire Salvage, 61-678-10-02, Lutke, clearcut with 2" spec except oak and cherry. Good jack pine regeneration and oaks are starting to get above the browse line. A few pole-sized oaks left in the overstory.
10	4191 - Mixed Upland Deciduous with Conifer	Sawtimber Well	2.1	70	81-110	Small stand with challenging topography, sandwiched between two small ridges. Burned in Range 9 fire, May 2010. Relatively high mortality and CWD.
11	4130 - Aspen	Poletimber Well	15.1	27	81-110	Most of stand is on slope of steep ridge with northwest aspect. Hill might be an operational challenge. Well-stocked, good quality aspen (4-8" dbh).
12	4199 - Other Mixed Upland Deciduous	Sapling Well	27.2	7	Immature	Cut October 2008 as part of Smith Hill Oak, 61-602-07-01, Mid-Michigan Logging, clearcut with 2" spec. There were problems with bullets in the trees that were not picked up by metal detectors. Sale notes state that this 2007 sale was set up before retention guidelines went into effect. Heavy browse.
13	4124 - Red with White Oak	Sawtimber Well	23.7	105	81-110	Rolling hills with mostly southern or eastern aspect. More white pine in understory than other oak stands in this compartment. Red maple in understory is starting to reach pole size. Heavy browse. Some oak mortality. Oak quality improves with higher elevations.
14	4199 - Other Mixed Upland Deciduous	Sapling Well	42.3	7	Immature	Cut October 2008 as part of Smith Hill Oak, 61-602-07-01, Mid-Michigan Logging, clearcut with 2" spec. 54 scattered oaks and a few white and red pine were left. There were problems with bullets in the trees that were not picked up by metal detectors. Sale notes state that this 2007 sale was set up before retention guidelines went into effect. Disappointing amount of aspen in regeneration mix. Heavy browse on the oaks. Rather steep
15	4126 - White, Black, N. Pin Oak	Sapling Well	9.5	5	Immature	Cut October 2010 as part of Baker Hill Jack, 61-645-07-01, Lutke, clearcut except for a handful of oak and red pine trees left for wildlife. Good oak regeneration. Some is getting above browse line but not the red maple.
16	4139 - Aspen, Mixed Deciduous	Sapling Well	16.4	7	Immature	Cut December 2008 as part of Lamb Hill Oak, 61-618-07-01, Muma, clearcut with 2" spec. Oaks are mostly suppressed by red maple and aspen. Heavy browse.



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
17	4199 - Other Mixed Upland Deciduous	Sapling Medium	94.2	7	Immature	Cut December 2008 as part of Lamb Hill Oak, 61-618-07-01, Muma, clearcut with 2" spec. Left 4 reserve areas of mature timber (1-2 acres each). Regeneration less thick than some other stands of this age. Rolling hills.
20	4191 - Mixed Upland Deciduous with Conifer	Sapling Medium	18.8	15	Immature	Cut winter 1998-1999 as part of Smith Hill, 61-126-98-01. Rolling hills. Left a clump of trees on a steep hill. Heavy browse but many oaks are above browse now. Oak seems to be relatively poor quality.
21	42220 - Natural Jack Pine	Sapling Well	28.2	43	Unspecified	Regenerated after a fire. Very dense jack pine just reaching pole size. A few scattered oaks in the overstory mostly along the eastern edge where stand transitions into oak type. Very few scattered oak saplings under jack pine.
24	4124 - Red with White Oak	Poletimber Well	11.8	105	81-110	Rolling hills. Mostly poles on the verge of a log stand. Hold until surrounding stands are older.
25	4131 - Aspen, Oak	Sapling Well	60.5	7	Immature	Part of Esler Hill Aspen/Oak, 61-603-07-01. Cannot file sale notes. Includes 2 retention islands. Red maple appears to be doing the best of the species within the regeneration mix.
26	4131 - Aspen, Oak	Poletimber Well	8.9	62	Unspecified	Variable stand. Not typed out separately in OI. Generally poor quality and variable stocking. Very heavy browse on red maple and oaks in understory.
28	4131 - Aspen, Oak	Sapling Well	36.6	7	Immature	Part of Esler Hill Aspen/Oak, 61-603-07-01. Cannot find sale notes. Aspen is doing well. Aspen and red maple are both taller than oaks. Rolling hills. Part of stand is fenced.
29	42220 - Natural Jack Pine	Poletimber Well	55.7	47	Unspecified	Patchy stand with scattered small openings. Moderate amount of jack pine mortality. Some advanced oak regeneration but heavy browse on shorter stems. Lots of roads and tank trail.
30	4199 - Other Mixed Upland Deciduous	Poletimber Well	50.4	39	141-170	Clearcut in 1976. Still mostly saplings but starting to become a pole stand. Some good quality oak poles. There are scattered residual oak log trees. More white pine in the understory along the northern edge/slope. Some oak mortality. Seems like high deer presence. Rolling hills.
31	42220 - Natural Jack Pine	Sapling Medium	13.6	10	Immature	Forested area within FOB. Cleared in summer 2005 with rest of FOB. Some oaks underneath but heavily browsed.
32	42220 - Natural Jack Pine	Poletimber Well	36.6	47	Unspecified	Buffer strip between FOB and Howe Road and/or pipeline. Parts are more like J6 and parts are more like J3. No evidence of red pine planted parallel to road (mentioned in previous inventory notes).



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
33	4191 - Mixed Upland Deciduous with Conifer	Sawtimber Well	20.0	95	81-110	Contains the headwaters of an unnamed stream that is a tributary to the Manistee River. Local name for the site is Cold Springs. The stream appears to seep out of steep hill and springs near the transition between Portage Creek Road to King Road. The creek floodplain is rather wide and surrounded by a steep 20' bank that leads to a forested upland area. Floodplain contains more of the balsam and white pine while most of the oak and jack pine is on top of the bank.
34	42220 - Natural Jack Pine	Poletimber Well	19.7	62	Unspecified	Significant jack pine mortality and some oak mortality. Stand is more diverse along edges especially northern boundary along King Road. Rolling hills.
35	4126 - White, Black, N. Pin Oak	Poletimber Well	17.0	74	111-140	Fair quality oak stand. Mostly poles but starting to reach log size. Evidence of fire. Some remnant older red pines. White pine and red pine in the understory on the slope with a southeast aspect. A few patches of dense oak regeneration but < 3' tall. Relatively flat terrain.
36	42250 - Pine, Oak	Sawtimber Well	8.2	54	111-140	Variable stand. Some jack pine and oak mortality. Evidence of fire.
38	4124 - Red with White Oak	Sawtimber Well	45.4	92	51-80	Most of stand is behind a chain link fence. Fair quality oak with scattered pine.
42	4129 - Mixed Oak	Sawtimber Well	9.6	88	111-140	Transitional stand between oak on hills and pine in valley. Consider waiting another 10 years for aspen to grow a little larger. Heavy browse on oaks < 3' tall.
43	4126 - White, Black, N. Pin Oak	Sawtimber Well	29.9	94	111-140	Fair quality oak stand but variable density. Trace of red pine and white pine in the canopy. Heavy browse on seedlings < 3' tall. Evidence of fire. Pocket of good size aspen in southeast corner near pipeline.
44	4124 - Red with White Oak	Sawtimber Well	38.1	100	111-140	Variable BA (average 125 sf) with some areas more open for training. Network of roads and trails. Rolling hills and stand continues into Crawford Co. Red maple in understory is starting to reach pole size. Oak quality improves with elevation. More pine in understory on lower part of slopes. Heavy browse.
45	4122 - Oak, Pine	Poletimber Well	44.9	70	111-140	Variable stand, distinctive because it has a very thick white pine understory. Some red maple in understory is reaching pole size. Trail road runs through the valley in the middle of the stand.
46	4124 - Red with White Oak	Sawtimber Well	74.7	90	81-110	Some training infrastructure scattered throughout the stand. Rolling hills. Scattered pockets of pine in valleys and pockets of denser aspen. Average BA is 109 sf/ac. Generally little understory.
47	4124 - Red with White Oak	Sawtimber Well	40.7	95	81-110	Fair to good quality oak with some mortality. Rolling hills. Scattered pockets of advanced regeneration. Generally more open in area outside of loop road.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
48	4129 - Mixed Oak	Sawtimber Well	46.5	60	111-140	Stand is adjacent to Range 20 which is used for detonating small explosives. As a result, trees on the edge of the range may contain metal fragments. Understory is dense white pine with a few red pine sap/poles. Rolling hills with a slight depression in the middle of the stand. Observed a large flock of turkeys.
49	4112 - Maple, Beech, Cherry Association	Sapling Poor	22.7	16	Immature	Burned in Range 9 fire, May 2010. M2 in 2005. Part was clearcut in 1999 and part was opening. Heavy deer browse. Contains several access roads to seasonal dwellings on private property to northwest.
50	4124 - Red with White Oak	Poletimber Well	3.9	60	81-110	Variable, poor quality stand. Thick oak in understory but poor quality. Some oak and jack pine mortality.
51	4124 - Red with White Oak	Sawtimber Well	39.9	95	111-140	Fair to good quality oak which increases with elevation. Some oak mortality. More jack pine mixed in on flat parts. Rolling hills. Part of stand is behind fence.
52	4199 - Other Mixed Upland Deciduous	Sapling Well	1.4	13	Immature	Clearcut winter of 2002 as part of Lindquist Hill, 61-003-00-01. Manage with Compartment 131. Rolling hills.
53	42220 - Natural Jack Pine	Poletimber Well	8.5	49	Unspecified	Some jack pine mortality. Very dense oak saplings in understory; many could be considered advanced regeneration.
54	4119 - Mixed Northern Hardwoods	Sapling Medium	11.3	16	Immature	Clearcut in 1999. Heavy deer browse.
55	4131 - Aspen, Oak	Sapling Medium	6.2	7	Immature	Cut October 2008 as part of Smith Hill Oak, 61-602-07-01, Mid-Michigan Logging, clearcut with 2" spec. Left a few overstory oak and pine. Heavy browse on the oak seedlings < 3' tall. There were problems with bullets in the trees that were not picked up by metal detectors. Sale notes state that this 2007 sale was set up before retention guidelines went into effect.
57	6112 - Lowland Aspen	Poletimber Medium	3.7	57	Unspecified	Burned in Range 9 fire, May 2010. Narrow stand bisected by an intermittent drainage and wettest at western end.
59	42250 - Pine, Oak	Poletimber Poor	15.1	55	1-50	Open stand with generally poor quality timber. Appears to have high use by military, including the launching of "mortars or other projectiles" (KGR 2005).
60	42220 - Natural Jack Pine	Poletimber Well	22.7	55	Unspecified	Variable stand that serves as buffer for training area. From 2005 KGR comments: Portions of the stand may have hazards in the form of military ordnances. Some were found in this area in 1998.
61	42250 - Pine, Oak	Poletimber Well	43.8	49	81-110	Variable stand, poor quality. More diverse at edges. Patchy BA; parts have open canopy with 10-20' oak saplings. Moderate jack pine mortality. Mostly flat terrain.
62	42250 - Pine, Oak	Poletimber Medium	2.5	30	51-80	Stocking is variable but is mostly 2 stick jack pine and scrubby oak. Nice J6 pocket in southeast corner.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
63	4191 - Mixed Upland Deciduous with Conifer	Sawtimber Well	16.9	88	111-140	Variable, diverse stand. Scrubby stand with significant mortality. Most flat with some small canopy gaps.
64	42220 - Natural Jack Pine	Sapling Medium	4.9	15	Immature	Opening that is filling in with very limby jack pine. Stocking is variable. Opening continues into adjacent compartments.
65	4199 - Other Mixed Upland Deciduous	Poletimber Well	26.6	81	81-110	Variable stand with fuzzy edges. Generally low quality. Small canopy gaps and multiple roads and trails as though this stand receives heavy training use. Jack pine mostly at edges and NW and SE corners.
66	4126 - White, Black, N. Pin Oak	Poletimber Well	10.4	80	81-110	Stand transitions between pine stand to south and aspen/oak to north. Distinctive because it has an understory of older and variably sized red pine and white pine (dbh ~4-8"). Gentle slope. Heavy browse.
67	4122 - Oak, Pine	Sawtimber Well	16.8	80	51-80	Variable stand. Medium-quality oak with pockets of jack and other pine spp. Average BA is 76 sf/acre. Relatively dense oak understory, 1-2' tall but heavily browsed. More oak regeneration in southern part of stand. Rolling hills.
69	42290 - Natural Mixed Pine	Poletimber Well	18.9	70	111-140	Variable stand. Some jack pine mortality and heavy browse.
70	4126 - White, Black, N. Pin Oak	Sawtimber Medium	17.1	105	51-80	Poor quality and greater mortality than other oak stands in this compartment. Heavy browse. Gentle slopes.
71	4124 - Red with White Oak	Sawtimber Well	64.7	95	111-140	Fair quality oak with some pockets of pure aspen. Some oak mortality and heavy browse. Rolling hills but generally flatter. Stand is adjacent to Range 20 which is used for detonating small explosives. As a result, trees on the edge of the range may contain metal fragments.
72	4124 - Red with White Oak	Sawtimber Well	49.0	100	81-110	Fair quality oak with heavier aspen in some parts. White pine in understory is heavier along the northern aspect slopes along the north edge of the stand. Red maple may have been removed from part of stand in the mid-1990s. Average BA is 88 sf/ac. Some oak mortality and heavy browse. Rolling hills with a local summit of 1,255' south of road.
73	4124 - Red with White Oak	Poletimber Well	23.0	40	81-110	Some stems just reaching pole size. Multi-stem red oak and red maple. Variable stand. White pine is heavier in some pockets.



Stand	Cover Type	Acres	Managed Site	General Comments:
2	123 - Other High Intensity Urban	222.8	No	FOB 29
3	310 - Herbaceous Openland	8.9	No	Corridor for multiple underground pipelines.
5	330 - Low-Density Trees	5.6	No	Entrance to Ranges 8 and 9. Includes some small outbuildings. Mowed and maintained open by Camp Grayling.
6	122 - Road/Parking Lot	6.0	No	Howe Road.
8	110 - Low Intensity Urban	5.2	No	Range 21. Camp Grayling has been doing some work with Fecon in this area to open up roads and clear edges of this opening. Continues in Compartment 131 to the south.
18	500 - Water	1.1	No	Small kettle lake with relatively steep banks.
19	6299 - Lowland Shrub (OI)	0.8	No	Small kettle depression with relatively steep sides.
22	122 - Road/Parking Lot	21.4	No	Howe Road.
23	330 - Low-Density Trees	26.1	Yes	Opening that is filling in with shrubby cherry and jack pine. Contains scattered clumps of merchantable jack pine and aspen that, combined with nearby stands, may help make an opening maintenance prescription a commercial treatment.
27	330 - Low-Density Trees	2.9	Yes	Opening that is filling in with shrubby cherry and jack pine.
37	123 - Other High Intensity Urban	96.6	No	CIED training area.
39	110 - Low Intensity Urban	3.0	No	Range 20.
40	110 - Low Intensity Urban	17.2	No	Used for military training.
41	330 - Low-Density Trees	1.8	No	Small opening/area of disturbance.
56	330 - Low-Density Trees	6.8	Yes	Opening that is filling in with shrubby cherry and jack pine. Contains scattered clumps of merchantable jack pine and aspen that, combined with nearby stands, may help make an opening maintenance prescription a commercial treatment.
58	310 - Herbaceous Openland	2.1	No	Small opening with lots of disturbance.
68	330 - Low-Density Trees	1.9	No	Small opening with scattered white pine, jack pine, and red pine saplings and poles.