



Compartment Review Presentation

Gwinn Forest Management Unit

Compartment 32250

Entry Year 2017

Acreage: 1,196

County Marquette

Management Area: Chain Lakes Moraine

Revision Date: 2015-07-15

Stand Examiner: Jason Caron

Legal Description:

T46N-R27W. Sections 22,27, and 34.

Identified Planning Goals:

Promote oak regeneration via. shelterwood harvesting. Promote aspen and pine types by clearcut methods.

Soil and topography:

Ranging from relatively level creek bottoms, swamp conifer, tag alder, and bog marshlands. Upland stands consist of only higher ground which is rolling to slightly hilly. A good logging chance exists throughout the compartment.

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

State ownership within this compartment is mostly contiguous, but does have a block of private ownership within the north half. Timber harvesting along with recreational activities such as hunting, fishing, mushroom & berry picking, and trapping make up the land use component within the compartment.

Unique Natural Features:

The Voelker Lake, East Voelker Lake, Floppers Creek, and other tributaries make up the natural features within this compartment. All of these water bodies feed into the Middle Branch of the Escanaba River.

Archeological, Historical, and Cultural Features:

No features were found within this compartment during this inventory cycle.

Special Management Designations or Considerations:

No special management designations or considerations within this compartment.

Watershed and Fisheries Considerations:

Wildlife Habitat Considerations:

Compartment 250 is found within the Chain Lakes Moraine Management Area; on a Disintegration Moraine in Southwestern Marquette County. The dominant Natural Communities are dry mesic northern forests, poor conifer swamps, and mesic northern forests. This management area offers opportunities to increase diversity and perhaps long-term oak sustainability through under planting white and red pine. Another priority is to maintain or increase wildlife corridors especially along riparian corridors. Wildlife management issues in the management area are: mast (hard and soft); habitat fragmentation; mature forest conditions; mesic conifer; coarse woody debris; and retention or development of large living and dead standing trees (for cavities). This management area represents approximately ¼ of the oak resource on WUP state forest.

The following have been identified as featured species for Chain Lakes Management Area: black bear, gray jay, pileated woodpecker, Northern goshawk, red crossbill.

Mineral Resource and Development Concerns and/or Restrictions

Surface sediments consist of glacial outwash sand and gravel and postglacial alluvium and coarse-textured till. The glacial drift thickness varies between 10 and 100 feet. Archean granite/gneiss subcrop below the glacial drift. This rock could be used as dimension stone. Gravel pits are not located in the area, but there could be some potential. The Tilden and Empire iron mines are located five miles to the north; a large tailings pond associated with the mines is located just one mile to the north. Section 34 was previously leased for metallic mineral exploration. There is no economic oil and gas production in the UP.

Vehicle Access:

The Hemmings Lake Road to the west and the Hawkins Pond Road to the east are the main access roads into this compartment. Various internal two tracks are all bermed within this compartment and are for foot traffic only.

Survey Needs:

No survey needs for this year of entry.

Recreational Facilities and Opportunities:

No recreational facilities exist. Recreation opportunities consist of hunting, fishing, mushroom & berry picking, and trapping.

Fire Protection:

This compartment is included in the 581 Zone Dispatch area which provides for a pre-planned dispatch of fire equipment. Areas of jack & red pine cover types with the encroachment of recreational seasonal dwellings have warranted this pre-planning. Mutual aid agreements with local volunteer fire departments also provide critical fire suppression response, especially in the area of structural fire protection and evacuations.

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

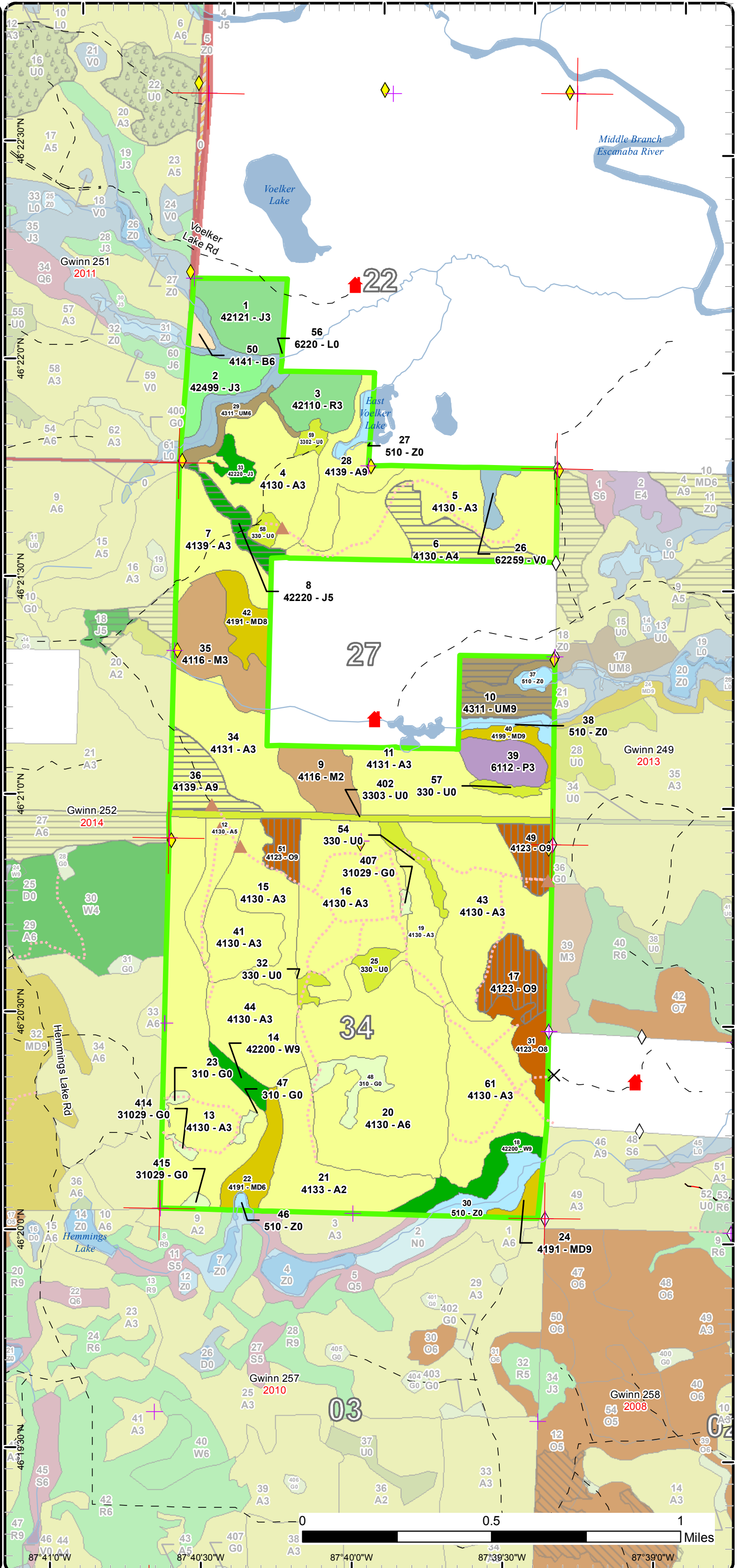
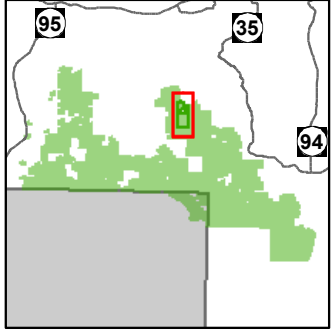
- Total Acres by Cover Type and Age Class**
- Cover Type by Harvest Method**
- Proposed Treatments – No Limiting Factors**
- Proposed Treatments – With Limiting Factors**
- Stand Details (Forested and Nonforested)**
- Dedicated and Proposed Special Conservation Areas**
- Site Condition Details**

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

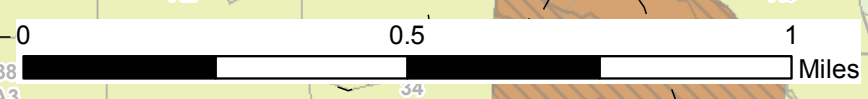
- Base feature information, stand boundaries, cover types, and numbers**
- Proposed treatments**
- Site condition boundaries**
- Details on the road access system**

Cover Type & Treatments

Compartment: 250
 T46N, R27W, Sections. 22, 27, 34
 County: Marquette
 Unit: Gwinn
 Mgmt Area: Chain Lakes Moraine
 YOE: 2017
 Acres: 1196 GIS Calculated
 Examiner: Jason Caron
 Map Revised: 7/1/2015
 Map Phase: Pre-Review



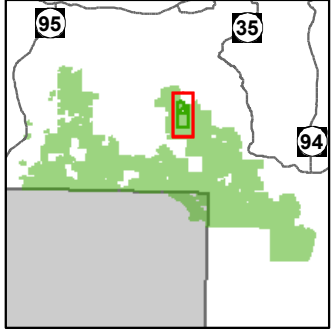
- ✚ Remonumented Section Corner
- ◆ Survey Grade GPS Corners
- ◇ Field Grade GPS Corners
- Miris Corners
- == Gravel Roads
- - Poor Dirt Roads
- - County Poor Dirt Roads
- ⋯ Closed Roads
- ✕ Gate
- ▲ Berms
- Rivers
- Lakes
- Treatments**
- ▭ Clearcut (w/Reserves)
- ▨ Shelter Wood (w/Reserves)
- Forest Cotype**
- 411 - Northern Hardwood
- 412 - Oak Types
- 413 - Aspen
- 414 - Other Upland Deciduous
- 419 - Mixed Upland Deciduous
- 421 - Planted Pines
- 422 - Natural Pines
- 424 - Pine (OI)
- 430 - Upland Mixed Fores
- 611 - Lowland Deciduous Forest
- Non-Forest Cotype**
- 310 - Herbaceous Openland
- 330 - Low Density Trees
- 500 - Water
- 622 - Lowland Shrub



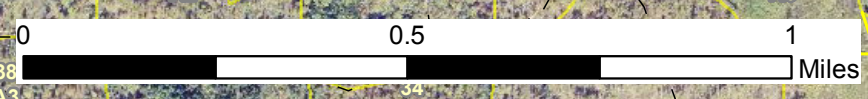
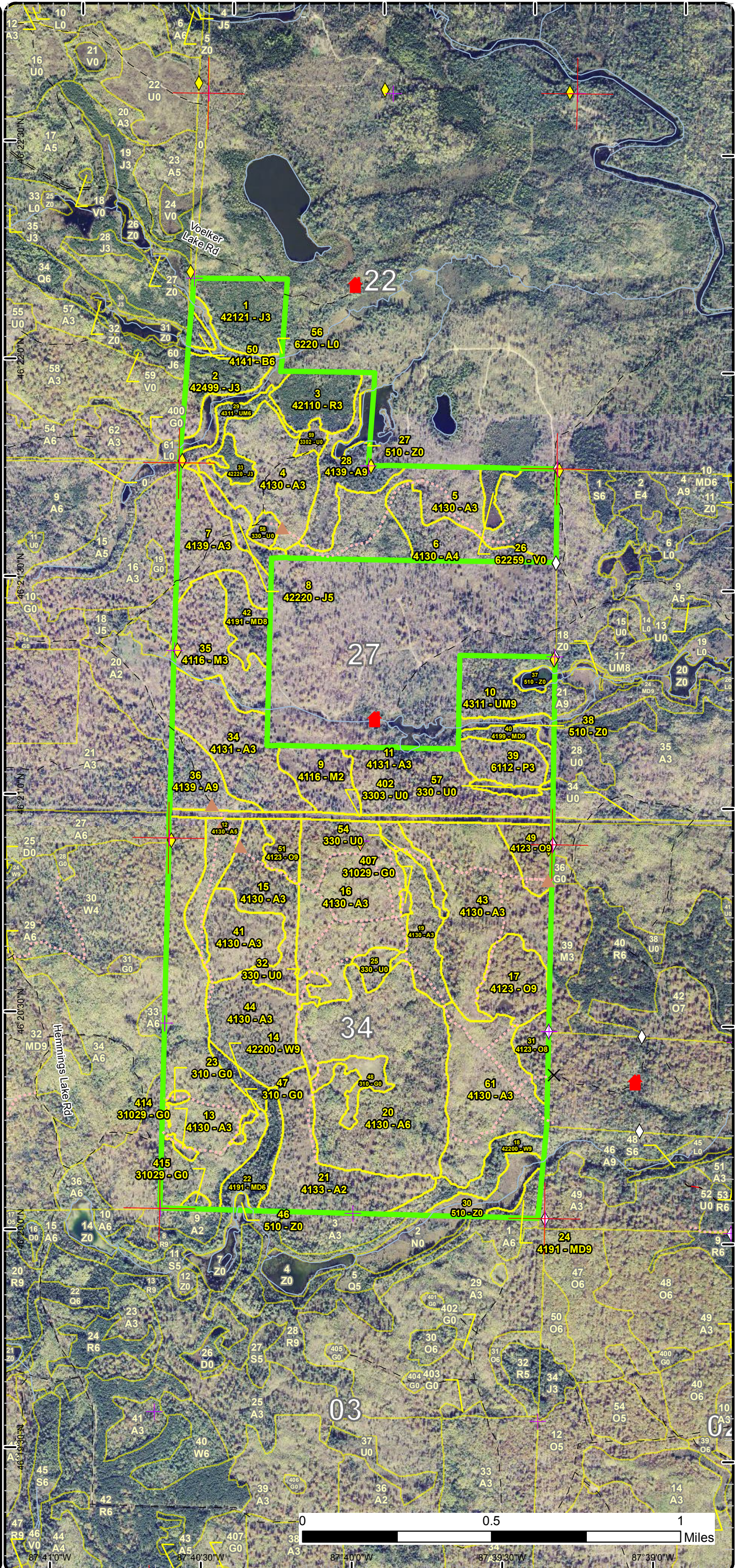
87°41'0"W 87°40'30"W 87°39'30"W 87°39'0"W

Stand Boundary Map

Compartment: 250
 T46N, R27W, Sections. 22, 27, 34
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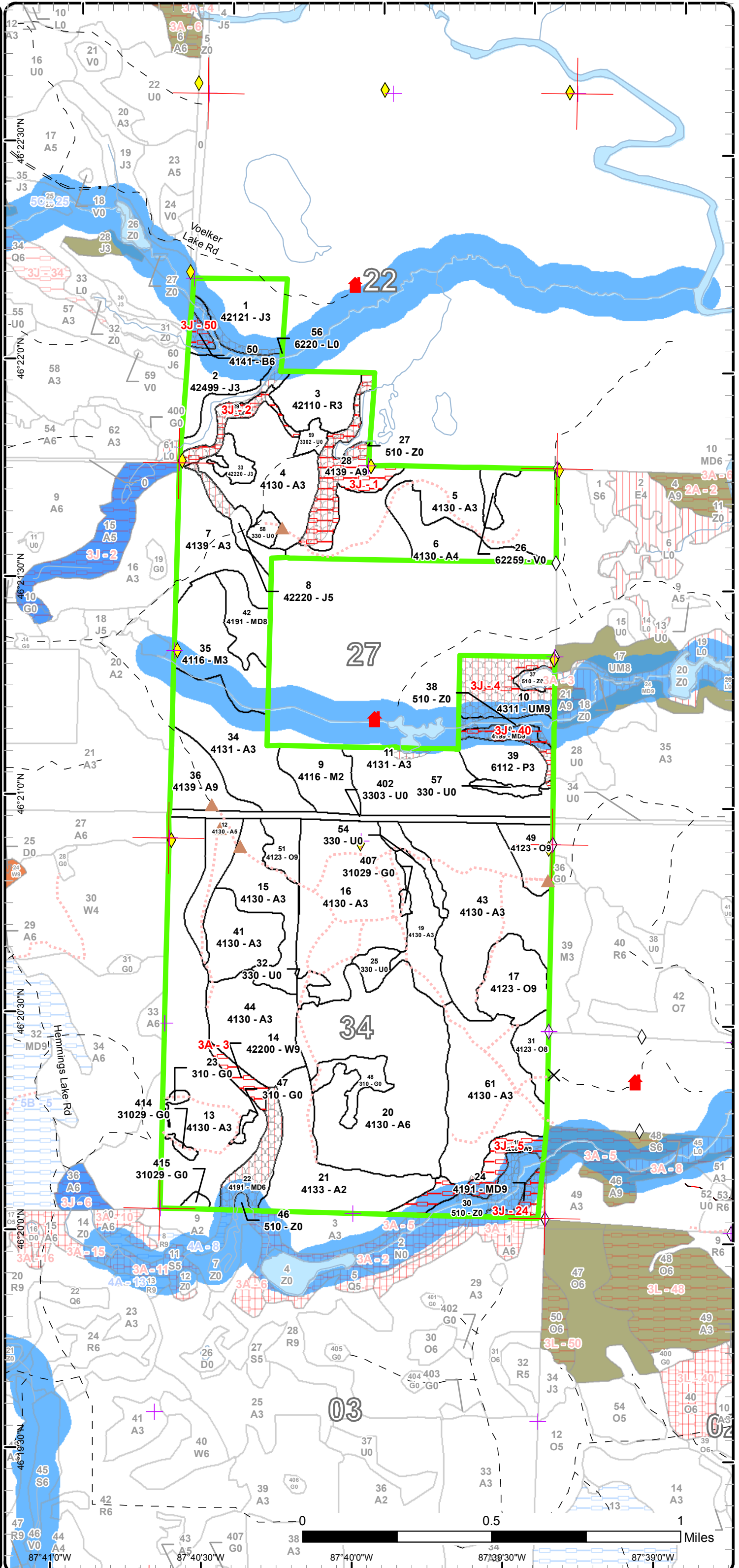
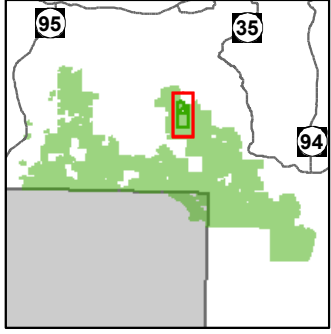
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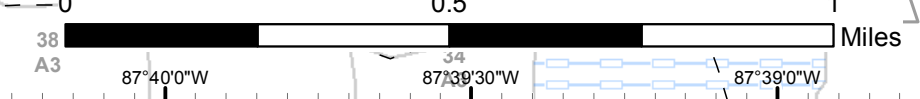
87°41'0"W 87°40'30"W 87°39'30"W 87°39'0"W

Special Conservation Areas & Site Conditions Map

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 T46N, R27W, Sections. 22, 27, 34
 County: Marquette
 Unit: Gwinn
 Mgmt Area: Chain Lakes Moraine
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- ⋯ Closed Roads
- ✕ Gate
- ▲ Berms
- Rivers
- Stand Boundaries
- Reviewable SCAs (dq)
- Recommendation
- SCA Removal
- Site Condition
- Unavailable
- Unavailable Factors
- 3A: Potential old growth / biodiversity
- 3J: Water quality / BMPs (stream, river, or lake)
- Special Conservation Areas
- Cold Water Streams
- Cold Water Lakes
- High Priority Trout Stream Buffer
- Riparian Area
- Other Habitat Area



Report 1 – Total Acres by Cover Type and Age Class



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	94	215	327	0	119	0	62	0	0	0	0	0	0	0	0	0	0	817
Bog	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
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	25	5	16	0	0	0	9	0	0	0	0	0	0	0	0	0	55
Low-Density Trees	37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37
Lowland Aspen/Balsam Poplar	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15
Lowland Shrub	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14
Mixed Upland Deciduous	0	0	0	0	0	14	6	0	14	0	5	0	0	0	0	0	0	0	39
Northern Hardwood	0	18	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	49
Oak	0	0	0	0	0	0	0	0	0	30	0	0	0	0	0	0	0	22	52
Paper Birch	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3
Red Pine	0	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19
Upland Mixed Forest	0	0	0	0	0	0	0	23	8	0	0	0	0	0	0	0	0	0	31
Water	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27
White Pine	0	0	0	0	0	0	0	0	0	0	20	0	0	0	0	0	0	0	20
Total	99	112	305	332	16	133	6	85	31	30	28	0	0	0	0	0	0	22	1199



Report 2 – Treatment Summary

Gwinn Mgt. Unit

Year of Entry: 2017

Acres of Harvest

Compartment 250

Total Compartment Acres: 1,196

Commercial Harvest - 103
 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
Aspen	38	0	0	0	0	0	0	0	0	38
Jack Pine	9	0	0	0	0	0	0	0	0	9
Oak	0	0	0	0	39	0	0	0	0	39
Upland Mixed Forest	17	0	0	0	0	0	0	0	0	17
Total	64	0	0	0	39	0	0	0	0	103

Proposed and Next Step Treatments by Method

	Harvest	Site Prep	Planting	Seeding	Burning	Pesticide	Monitoring	Other	Non-Forest Mgt.	Total Acres
Current	103	0	0	0	0	0	0	0	0	103
Next Step	0	46	21	0	0	21	103	0	0	190
Total	103	46	21	0	0	21	103	0	0	293



Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
6	32250006-Cut	20.7	4130 - Aspen	Poletimber Poor	60	1-50	Harvest	Clearcut	4211 - Planted Red Pine	Even-Aged	Proposal

Habitat Cut: No**Site Condition:**

Prescription Clearcut. Do not cut white pine within the stand.

Specs:

Next Step Pesticide, Skidder/Mechanical; SitePrep, Trenching; Planting, Initial Plant; Monitoring, Artificial Regen(1yr)

Treatments:

Acceptable Red Pine.

Regen:

Other Stand is very sparse with poor quality aspen throughout. Old next step comments:

Comment:

Proposed Start Date: 10/1 /2016

8	32250008-Cut	8.7	42220 - Natural Jack Pine	Poletimber Medium	77	81-110	Harvest	Clearcut with Retention	4222 - Natural Jack Pine	Even-Aged	Proposal
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Habitat Cut: No**Site Condition:**

Prescription Clearcut with reserves. Do not cut oak and leave a patch of jack pine for retention purposes. Also retain a patch of larger aspen for pileated

Specs: woodpecker and N. Goshawk.

Next Step SitePrep, Scarification; Monitoring, Natural Regen (Intermediate)

Treatments:

Acceptable pine, oak, maple, aspen.

Regen:

Other Stand contains only a couple patches of mature jack pine. Old next step comments:

Comment:

Proposed Start Date: 10/1 /2016

10	32250010-Cut	17.0	4311 - Pine, Aspen Mix	Sawtimber Well	65	81-110	Harvest	Clearcut with Retention	4319 - Mixed Upland Forest	Even-Aged	Proposal
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Habitat Cut: No**Site Condition:**

Prescription Clearcut w/ reserves. Retention has been accounted for in adjusting the treatment boundary. Also, mark out a few red pine and oak within the cut

Specs: for retention. Retain (green tree) XL white pine and red pine for legacy trees. Make sure retention includes big tooth aspen for pileated woodpecker and N. Goshawk.

Next Step SitePrep, Scarification; Monitoring, Natural Regen (Intermediate)

Treatments:

Acceptable Pine, oak, aspen, fir, spruce, maple and birch.

Regen:

Other Submit an FTP for this stand to anchor chain after the harvest. The residual pine should provide a good seed source. The scattered aspen

Comment: should flush back as well, creating a mixed stand. Old next step comments:

Proposed Start Date: 10/1 /2016

17	32250017-Cut	18.0	4123 - Red Oak	Sawtimber Well	80	81-110	Harvest	Shelterwood	4319 - Mixed Upland Forest	Two-Aged	Proposal
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Habitat Cut: No**Site Condition:**

Prescription Shelterwood harvest to release existing regeneration and promote oak stump sprouts. Leave 40-50 basal area of oak. Create large gaps

Specs: throughout the stand to promote regeneration. No cut on the few pine that exist.

Next Step

Treatments:

Acceptable Maple, oak, aspen, pine and birch

Regen:

Other 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	32250036-Cut	17.2	4139 - Aspen, Mixed Deciduous	Sawtimber Well	66	81-110	Harvest	Clearcut with Retention	4319 - Mixed Upland Forest	Even-Aged	Proposal

Habitat Cut: No**Site Condition:**

Prescription Clearcut with reserves. Retain an island or patch of mature timber for retention purposes. Cut smaller diameter red pine, green tree x-log red pine. No cut on white pine. No cut on oak.

Next Step
Treatments:

Acceptable pine, maple, oak, aspen, birch, fir and spruce.
Regen:

Other Old next step comments:
Comment:

Proposed Start Date: 10/1 /2016

49	32250049-Cut	12.3	4123 - Red Oak	Sawtimber Well	80	111- 140	Harvest	Shelterwood	4319 - Mixed Upland Forest	Two-Aged	Proposal
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Habitat Cut: No**Site Condition:**

Prescription Shelterwood harvest to release existing regeneration and promote oak stump sprouts. Leave 40-50 basal area of oak. Create large gaps throughout the stand to promote regeneration. No cut on the few pine that exist.

Next Step
Treatments:

Acceptable Maple, oak, pine, aspen and birch.
Regen:

Other Old next step comments:
Comment:

Proposed Start Date: 10/1 /2016

51	32250051-Cut	8.6	4123 - Red Oak	Sawtimber Well	80	81-110	Harvest	Shelterwood	4199 - Other Mixed Upland Deciduous	Two-Aged	Proposal
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Habitat Cut: No**Site Condition:**

Prescription Shelterwood harvest to release existing regeneration and promote oak stump sprouts. Leave 40-50 basal area of oak. Create large gaps throughout the stand to promote regeneration. No cut on the few pine that exist.

Next Step
Treatments:

Acceptable oak, maple, pine, aspen and birch.
Regen:

Other Old next step comments:
Comment:

Proposed Start Date: 10/1 /2016

**Total Treatment
Acreage Proposed: 102.5**

Dominant Site Conditions

	3A	3J
Aspen		23
Bog		
Herbaceous Openland		
Jack Pine		
Low-Density Trees		0
Lowland Aspen/Balsam Poplar		
Lowland Shrub		
Mixed Upland Deciduous		11
Northern Hardwood		
Oak		
Paper Birch		3
Red Pine		
Upland Mixed Forest		13
Water		1
White Pine	5	15
Total Forested Acres	5	66
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)	23	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Stand acts as a buffer along East Voelker Lake and also a small wetland that heads south of the lake.							
2	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	8	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Stand acts as a buffer along drainage.							

Report 5 – Site Conditions

Gwinn Mgt. Unit
Jason Caron : Examiner

Compartment: 250
Year of Entry: 2017

3	Unavailable	3A: Potential old growth / biodiversity	5	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Small stand of white and red pine of large diameter. A great stand of biodiversity amongst a sea of young aspen.							
4	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	5	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Buffer along lake and drainage that heads west of lake.							
5	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	15	3A: Potential old growth / biodiversity	Unspecified	Unspecified	Unspecified
Comments: A buffer along a nearby drainage and also a stand of large diameter red and white pine.							
24	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	5	2F: Too steep	Unspecified	Unspecified	Unspecified
Comments: Stand acts as a buffer for nearby stream and riparian area.							
40	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	8	3G: Other Influence zones - See comments	Unspecified	Unspecified	Unspecified
Comments: Buffer along drainage.							
50	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	3	3G: Other Influence zones - See comments	Unspecified	Unspecified	Unspecified
Comments: Stand cannot be accessed currently due to stream crossings and buffers.							



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
Eight	Other SCA		SCA Removal	13
Comments Potential biodiversity mgt area. See cmpt header for additional comments. This stand is also valuable for wildlife cover since conifer types are scarce in this area.				
Eleven	Other SCA		SCA Removal	4
Comments Potential biodiversity mgt area, see cmpt header for more comments. Flopper's Creek flows easterly through this marsh and it is periodically flooded by beaver activity.				
Five	Other SCA		SCA Removal	1
Comments Potential biodiversity mgt area. See cmpt header for additional comments.				
Four	Other SCA		SCA Removal	14
Comments Potential biodiversity mgt area. See cmpt header for additional comments. This stand was left in 1988 to act as a visual buffer when both stands 4 & 5 were cut, but also because it protects a drainage or seepage of water flowing northward into East Voelk				
Nine	Other SCA		SCA Removal	7
Comments Potential biodiversity mgt area. See cmpt header for additional comments.				
One	Other SCA		SCA Removal	11
Comments Potential biodiversity mgt area. See cmpt header for additional comments.				
Seven	Other SCA		SCA Removal	24
Comments Potential biodiversity mgt area. See cmpt header for additional comments. This stand is somewhat unique in this general area which is quite heavy to aspen types. It has very good diversity at present and contains a variety of age/size classes of pine, fr				
Six	Other SCA		SCA Removal	8
Comments Potential biodiversity mgt area. See cmpt header for additional comments. Somewhat of a flood plain. Beaver evidence present.				
Ten	Other SCA		SCA Removal	6
Comments Potential biodiversity mgt area. See cmpt header for additional comments. Part of stand is located on a steep slope also.				
Three	Other SCA		SCA Removal	4
Comments Potential biodiversity mgt area which consists of a steep slope along creekbottom. See cmpt header for additional comments.				



Report 6 – PROPOSED SPECIAL CONSERVATION AREA* (SCA) DETAILS

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SCA Name	SCA Category	Detail Type	Recommendation	Acres
Two	Other SCA		SCA Removal	3
Comments				
Potential biodiversity mgt area. Located between two converging creeks. See cmpt header for additional 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	Cold Water Lake	A coldwater lake has temperature and dissolved oxygen conditions that allow naturally-reproduced or stocked trout populations and those of other coldwater fish species to persist from year to year. Suitable conditions for coldwater fishes may occur in Michigan lakes if they are relatively deep, have substantial groundwater inflows, or are located in colder (northern) areas of the state. Such lakes are established by Director's action and designated as trout resources by Fisheries Order 200.
SCA	Cold Water Stream	A coldwater stream has temperature and dissolved oxygen conditions that allow naturally-reproduced or stocked trout populations and those of other coldwater fish species (e.g., slimy sculpin) to persist from year to year. Coldwater streams in Michigan typically provide these conditions due to substantial contributions of groundwater to their stream flows. Such streams are established by Director's action and designated as trout resources by Fisheries Order 210.
SCA	Riparian Area	A transitional area between aquatic and terrestrial ecosystems in which the terrestrial ecosystem influences the aquatic ecosystem and vice-versa. Because of the unique conditions adjacent to lakes, streams and open water wetlands, riparian areas harbor a high diversity of plants and wildlife. Riparian communities are ecologically and socially significant in their effects on water quality and quantity, as well as aesthetics, habitat, bank stability, timber production, and their contribution to overall biodiversity.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
1	42121 - Planted Jack Pine, Mixed Deciduous	Sapling Well	25.5	15	Immature	Stand was harvested in 1999. TS# 25-98-01. All oak, cherry, red & white pine was left. Seeded to jack pine in 2000. FTP #C31-403 for herbiciding, disk trenching, and seeding of jack pine. Stand currently consists of well stocked jack pine. Jack pine is poorer form. Stand has a mix of big tooth aspen, red maple and white pine.
2	42499 - Jack Pine (OI)	Sapling Well	15.9	36	Unspecified	OI Notes: Was commercially cut in 1978-79 by Holli Forest Products, Inc., permit #13-77A, "Voelker Lake Block". No oak was cut. Some aspen & white pine make up a component of this stand. This stand will likely have to be cut with adjacent stand to the west (stand 7 of cmpt 251) for access purposes.
3	42110 - Planted Red Pine	Sapling Well	19.1	14	Immature	Stand was cut in 1999. TS# 30-98-01. FTP #C-31-406 for herbicide, disk trench, and contract hand plant red pine seedlings. Pine seedlings were planted in the spring of 2001. Stand has become established and looks good. Jack pine volunteers are scattered throughout the stand but are good quality. Red maple stump sprouts are here and there within the stand.
4	4130 - Aspen	Sapling Well	38.2	27	Immature	Stand was cut in 1988. TS# 22-87. A decent stand of aspen. Big tooth is better quality than the quaking. Certain pockets within the stand are showing aspen decline but nothing too severe. Continue to monitor the stand each YOE to see if the decline gets worse.
5	4130 - Aspen	Sapling Well	63.4	27	Immature	Stand was cut in 1988. TS# 22-87. Stand of medium quality. Some areas the aspen looks good while other areas it looks poor due to pocket decline. Overall the stand is doing pretty good but should be monitored each YOE. Small openings exist within the stand as do pockets of jack pine that are the same age. The western half of the stand much contain better soils as the trees appear healthier and are bigger diameter. Manage as one stand due to age.
6	4130 - Aspen	Poletimber Poor	20.7	60	1-50	A stand of off site aspen. Very poor quality. Stand should be cut and converted to either jack pine or red pine. Aspen is small diameter and in very poor condition. A couple of cords per acre at best.
7	4139 - Aspen, Mixed Deciduous	Sapling Well	28.0	16	Immature	Stand was cut in 1999. TS# 19-98-01. Tree length skidding was used to scarify the site. Stand currently consists of red maple, jack pine, aspen and large oak scattered throughout the stand. Stand is in good condition.
8	42220 - Natural Jack Pine	Poletimber Medium	8.7	77	81-110	A small strip of jack pine mixed with a few red oak and aspen. Stand is a chain to two chains wide and consists of mostly over mature jack pine.
9	4116 - Mixed N. Hardwood - Aspen	Sapling Medium	17.9	5	Immature	Sale was harvested in 2010: TS#114-07-01. All oak was left. Currently the red maple stump sprouts are what dominate the stand in terms of regeneration. The aspen regen. is poorer quality due to the sandy soils. Scattered mature oak and red pine are throughout the stand. The stand should continue to fill in as it gets older.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
10	4311 - Pine, Aspen Mix	Sawtimber Well	22.5	65	81-110	Old stand of mixed deciduous and conifer. Stand is in need of treatment.
11	4131 - Aspen, Oak	Sapling Well	43.0	17	Immature	Stand was cut in 1998. TS# 16-98. Previous notes say the stand was well scarified during the timber sale harvest and the hopes were oak would regenerate back. Aspen is the dominant species but some oak within the understory do exist. Manage as an aspen stand.
12	4130 - Aspen	Poletimber Medium	14.2	42	Unspecified	Small stand that consists of poorer quality aspen. Stand may have been left for retention during a previous adjacent cut. Hold for 10 years and then consider cutting.
13	4130 - Aspen	Sapling Well	85.9	25	Immature	Sale was cut in '90. T-sale #025-87-1. All oak were left. Stand consists of nice aspen with scattered log sized oak throughout.
14	42200 - Natural White Pine	Sawtimber Well	5.1	98	111-140	Nice stand of white pine with a few red pine mixed in. Stand is on a small ridge and makes for a unique area given the young aspen all around it. Do not manage.
15	4130 - Aspen	Sapling Well	27.4	3	1-50	Stand was harvested in 2012: TS#114-07-01. Regeneration has flushed back and looks good. Scattered mature oak, red and white pine left throughout the stand.
16	4130 - Aspen	Sapling Well	67.8	26	Immature	OPIC - FMD: Was commercially cut in 1988-89 by Minerick Logging, Inc, permit #24-87, "Plevna Block". Approx 4 oak per acre were left (marked with green paint). Access was from the northwest side of the sale.
17	4123 - Red Oak	Sawtimber Well	21.0	80	81-110	Stand was harvested in 2008: TS#115-07-01. All oak was left. Stand consists of poor quality mature oak with marginal regeneration underneath. Aspen and red maple are shaded out and of poor quality.
18	42200 - Natural White Pine	Sawtimber Well	14.5	98	81-110	Nice stand of mature white pine and red pine with scattered deciduous. Stand acts as a buffer along the stream edge. White pine and red pine are very good quality and large diameter.
19	4130 - Aspen	Sapling Well	18.9	27	Immature	Stand was cut in 1989. TS #24-87. Stand contains poor quality aspen due to poor soil quality. Stand is currently too young to manage. A couple of the small openings that exist within the stand are filling in with red pine.
20	4130 - Aspen	Poletimber Well	104.8	40	Unspecified	This stand was treated noncommercially in 1975 by Wildlife Division with KG treecutter - roller chopper, FTP #W3-517. Some areas of the stand show signs of decline while other areas look good. Due to small diameter and 40 year old trees, hold the stand for 10 years. Check in the next YOЕ for possible harvest.
21	4133 - Aspen, Mixed Pine	Sapling Medium	43.9	3	Immature	Stand was harvested in 2012: TS#114-07-01. All oak and red/white pine left. A nice flush of aspen regeneration exists along with red pine and white pine regen. Scattered mature oak throughout the stand. A nice crop of young white pine exists.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
22	4191 - Mixed Upland Deciduous with Conifer	Poletimber Well	13.9	77	Unspecified	Stand consists of a steep ridge that slopes to the West and leads into a tag alder slough that consists of black spruce and cedar. The ridge contains upland species such as aspen and pine. Do not manage, keep as a riparian area. This stand is essentially the headwaters of a small stream.
24	4191 - Mixed Upland Deciduous with Conifer	Sawtimber Well	5.0	98	81-110	Stand of deciduous and conifer that was left as a buffer along the stream edge. Aspen and birch are in poor condition. Pine, oak and maple are holding up well. Do not manage, keep as a riparian buffer.
28	4139 - Aspen, Mixed Deciduous	Sawtimber Well	23.4	66	Unspecified	OI comments state: This stand was left in 1988 to act as a visual buffer when both stands 4 & 5 were cut, but also because it protects a drainage or seepage of water flowing northward into East Voelker Lake. The central core of this stand is lowland brush. The north part of this stand consists of some large diameter red pine and white pine. Paper birch is falling apart with most of the stems dead or dying. Aspen is poor quality. Do not manage, maintain as a wildlife corridor.
29	4311 - Pine, Aspen Mix	Poletimber Well	7.7	77	Unspecified	Buffer strip along a flowage. Stand consists of a steep ridge down to the wetland edge. Jack pine and paper birch are in very poor condition. Paper birch contains dead and dying tops and is falling out of the stand. I notice a few oak seedlings but they are browsed quite heavily. Do not manage.
31	4123 - Red Oak	Sawtimber Medium	9.6	83	51-80	Stark contrast in looking at this stand in which previous management has cut some oak versus the other stands within this compartment in which no oak was cut. This stand has a decent amount of oak regeneration, mostly in the form of stump sprouts. A more open canopy has also led to better regeneration of other species such as pine and red maple.
33	42220 - Natural Jack Pine	Sapling Well	5.1	27	Immature	Stand was cut in 1988. Permit #22-87. Hard to discern if this stand was planted or natural? Jack pine is good form and healthy.
34	4131 - Aspen, Oak	Sapling Well	41.5	17	Immature	Stand was cut in 1998. TS #14-98. Stand of young aspen with scattered mature oak throughout. Some of the oak is showing signs of decline. I considered cutting more oak within the stand but given the density of aspen regeneration underneath I felt it would not be a good idea.
35	4116 - Mixed N. Hardwood - Aspen	Sapling Well	31.0	16	Immature	Former cut. Scattered oak left throughout the stand. Different aged regeneration throughout the stand as well. Regen looks healthy.
36	4139 - Aspen, Mixed Deciduous	Sawtimber Well	17.2	66	81-110	Stand of aspen, red maple and some pine. Stand is in poor condition. Many different ages exist.
39	6112 - Lowland Aspen	Sapling Well	15.1	17	Immature	Stand was cut in 1998. TS#16-98. Stand consists of poorer quality aspen with a mix of red maple and pine throughout. Large oak and white pine left scattered throughout the stand. Aspen is off site and is showing signs of decline already. Monitor in future YOE to see how the stand holds up.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
40	4199 - Other Mixed Upland Deciduous	Sawtimber Well	6.4	50	Unspecified	A mixed stand of conifer and deciduous of various ages. Stand was left as a no-cut buffer along the stream edge.
41	4130 - Aspen	Sapling Well	23.0	3	Immature	Harvested in 2012. TS#114-07-01. All oak and red and white pine were left. Aspen regeneration looks to be flushing back nicely. Hard to tell if the aspen regeneration is big tooth or quaking.
42	4191 - Mixed Upland Deciduous with Conifer	Sawtimber Medium	13.8	40	1-50	This stand is mostly semi-open and offers many of the same benefits to wildlife that grass openings provide. Stand offers good biodiversity at present. Most of the aspen clones are smaller diameter (6-7 inch) and relatively young (perhaps 40 yrs). Collectively, oak has 30 sq.ft/acre here. Hold stand for another 10 years to provide more diversity.
43	4130 - Aspen	Sapling Well	66.9	18	Immature	Stand was harvested in 1997, permit #106-97-01. All oak, red & white pine was left. Note: Basal area of oak from cruise made in Jan 1997 was 22 sq.ft/Acre. Stand consists of good quality aspen. Stems per acre is high, stand is quite dense.
44	4130 - Aspen	Sapling Well	35.3	16	Immature	Harvested in 1999. TS# 7-97-01. A nice stand of aspen regeneration exists. Scattered mature red oak was left throughout the stand. White pine within the understory and a few scattered throughout the stand.
49	4123 - Red Oak	Sawtimber Well	12.3	80	111-140	Stand was harvested in 2008: TS#115-07-01. All oak was left within the sale. What currently remains is poor quality oak with marginal regeneration underneath. Aspen and red maple are shaded out and of poor quality. A few 2" (dbh) oak exist within the stand.
50	4141 - Birch (OI)	Poletimber Well	2.6	91	Unspecified	OI Notes: Potential biodiversity mgt area. Located between two converging creeks. See cmpt header for additional comments.
51	4123 - Red Oak	Sawtimber Well	8.6	80	81-110	Stand was harvested in 2012: TS#114-07-01. All oak was left. Stand consists of poor quality mature oak with marginal regeneration underneath. Aspen and red maple are shaded out and of poor quality.
61	4130 - Aspen	Sapling Well	52.7	23	Immature	Stand was harvested in 1992. TS# 29-89. OI comments note that a steep north-south ridge exists on the west side of the stand. I did not see this ridge during my inventory.



Stand	Cover Type	Acres	Managed Site	General Comments:
23	310 - Herbaceous Openland	1.4	No	
25	330 - Low-Density Trees	5.2	No	
26	62259 - Bog (OI)	4.9	No	
27	510- Water (OI)	4.2	No	OPIC - FMD: West half of East Voelker Lake. Clear water - supported brook trout in the past.
30	510- Water (OI)	12.9	No	
32	330 - Low-Density Trees	2.8	No	
37	510- Water (OI)	3.2	No	OPIC - FMD: Locally known as "Kirkasjarvi" in the Finnish language which translates as "Clear Lake". Pond is spring fed and very clear water. Brook trout were present at one time.
38	510- Water (OI)	5.6	No	OI Notes: Alder creek bottom which is periodically flooded by beaver. Currently it is mostly flooded and thus typed "Z".
46	510- Water (OI)	1.1	No	OI Notes: Small beaver pond on Flopper's Creek.
47	310 - Herbaceous Openland	1.2	No	
48	310 - Herbaceous Openland	9.4	No	Grass opening that is filling in with aspen. In the next YOE this stand will most likely be considered a forested stand.
54	330 - Low-Density Trees	6.5	No	A grass opening that is filling in with jack pine.
56	6220 - Alder/willow	14.0	No	
57	330 - Low-Density Trees	3.4	No	Former landing that was previously managed by wildlife but is now filling in with red pine.
58	330 - Low-Density Trees	3.5	No	Stand is non-forested but is filling in around the edges with red maple and jack pine. Ground vegetation is sweet fern.
59	3302 - Low Density Conifer Trees	3.4	No	Stand is filling in with a mix of red pine and jack pine.



Stand	Cover Type	Acres	Managed Site	General Comments:
402	3303 - Mixed Low Density Trees	11.8	No	ELF (Naval submarine communications system) cleared right of way, approx 100 feet wide. This was established circa 1985 and abandoned in 2005. ELF line is filling in with trees.
407	31029 - Grass (OI)	1.1	No	OI Notes: Created by Wildlife Div. in 1991 after commercial sale #24-87. FTP W31-222, rock rake, disk, seed, & "Promone" herbicide.
414	31029 - Grass (OI)	1.3	No	OI Notes: Created in 1992 by Wildlife Division. FTP #W31-235, trail systems & landings will be rock raked, then disked and seeded in August 1992.
415	31029 - Grass (OI)	1.7	No	OI Notes: Created in 1992 by Wildlife Division. FTP #W31-235, trail systems & landings will be rock raked, then disked and seeded in August 1992.