



# Compartment Review Presentation

## Gwinn Forest Management Unit

Compartment 32260

Entry Year 2017

Acreage: 808

County Marquette

Management Area: Chain Lakes Moraine

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**Revision Date:** 2015-07-31

**Stand Examiner:** Rick Hill

**Legal Description:**

T45N, R27W, Sec. 13, and 14.

**Identified Planning Goals:**

Vegetative management in the Chain Lake management area will provide a variety of timber products; maintain or enhance wildlife habitat; protect areas with unique characteristics; and provide for forest based recreational uses.

**Soil and topography:**

Topography ranges from relatively level creek bottoms, swamp conifer, tag alder, and bog/ marshlands, to upland which is only rolling to moderately hilly (a few steep slopes in west end ).

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

State ownership here is generally blocked in quite well to the north and east, but does border some relatively small private forest holdings on the southwest side of the compartment, mostly non-industrial private owners with recreational objectives. Also this compartment is bordered on the west by the Michigan Northwoods Club with holdings of approx 10,000 acres. In addition to being a hunting club, they actively manage their forest resource with professional advisement and management. Development is very limited with a few seasonal cottages or hunting camps widely distributed.

**Unique Natural Features:**

Hay Lake and it's outlet creek and other tributaries creeks and beaver ponds all emptying into the Middle Branch of the Escanaba River, make up the unique natural features on State land here.

**Archeological, Historical, and Cultural Features:**

None known.

**Special Management Designations or Considerations:**

None Known.

**Watershed and Fisheries Considerations:**

**Wildlife Habitat Considerations:**

Compartment 260 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; course 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 coarse-textured glacial till. The glacial drift thickness varies between 50 and 100 feet. The Precambrian Archean Granite/Gneiss subcrops below the glacial drift. This rock could be used as dimension stone. Gravel pits are not located in the area, but potential should to be good. Abandoned iron mines are located ten miles to the north. There were previous metallic leases in this area. There is no economic oil and gas production in the UP.

**Vehicle Access:**

The Hemmings Lake Road to the north and the Chain of Lakes Road (Co.Rd PX-gravel, leading east to M-35) to the southeast, are the two main access routes to reach this compartment. Various internal two track, narrow roads (some of

which are bermed), complete the access network for this compartment. Temporary roads are established for timber removal, but these are bermed, and often seeded for wildlife, or obliterated following timber sale completion.

**Survey Needs:**

Could potentially need corners placed on the west side of the compartment.

**Recreational Facilities and Opportunities:**

The Bass Lake Trail, ORV trail passes through the southeast portion of this compartment. In addition to this, low key recreational opportunities for activities such as hunting, trapping, hiking, mushroom & berry picking, etc. exist in this compartment.

**Fire Protection:**

This area is dominated by aspen, with fair access. Large fire potential is low as a result there is some camps in the area that would provide added complexity to fire suppression.

**Additional Compartment Information:**

**The following reports from the Inventory are attached:**

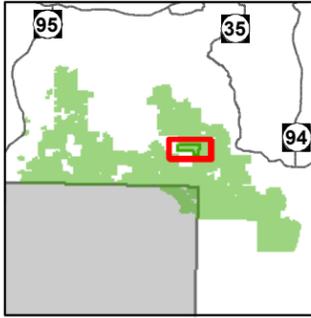
- Total Acres by Cover Type and Age Class**
- Cover Type by Harvest Method**
- Proposed Treatments – No Limiting Factors**
- Proposed Treatments – With Limiting Factors**
- Stand Details (Forested and Nonforested)**
- Dedicated and Proposed Special Conservation Areas**
- Site Condition Details**

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

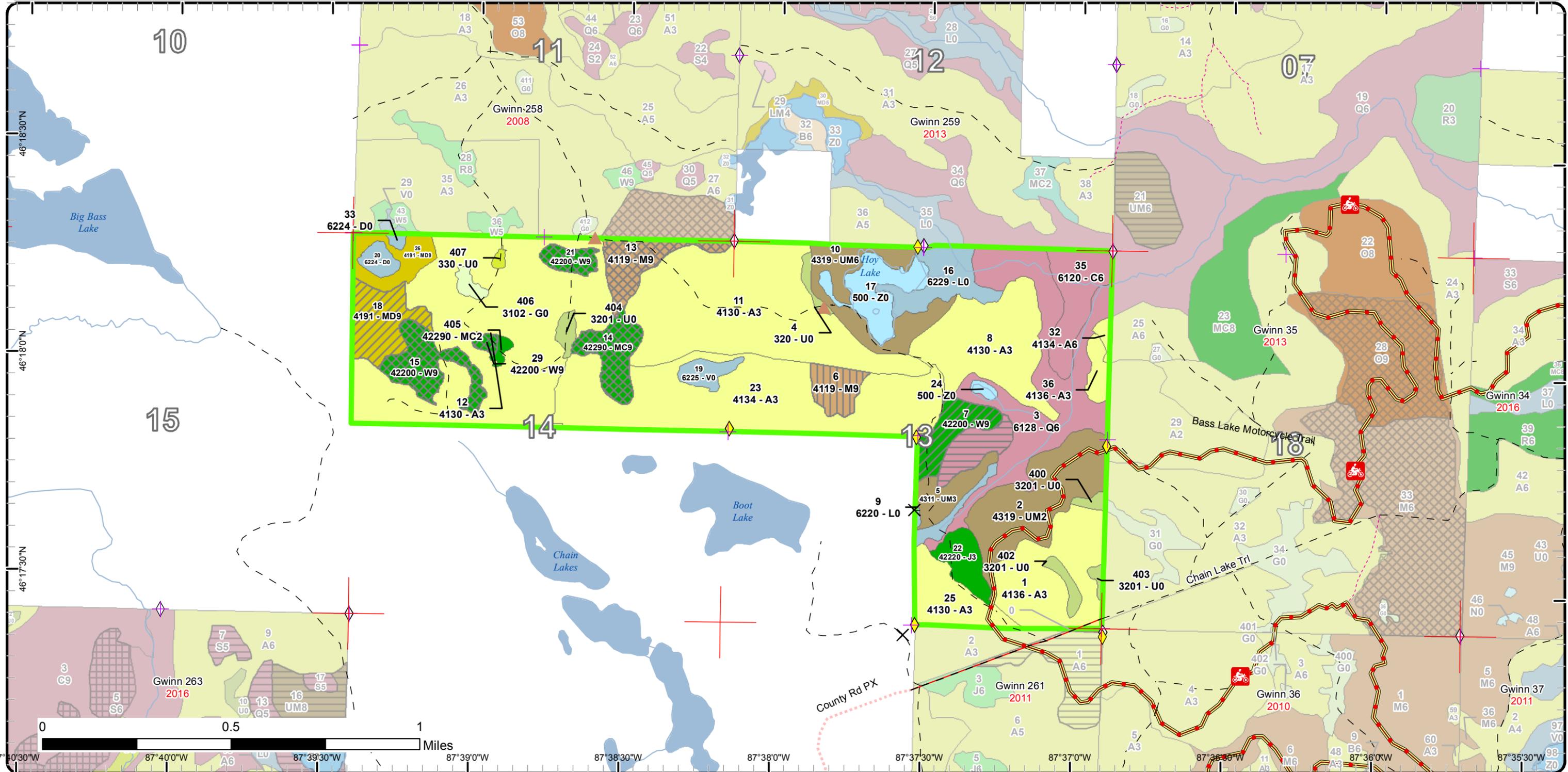
- Base feature information, stand boundaries, cover types, and numbers**
- Proposed treatments**
- Site condition boundaries**
- Details on the road access system**

# Cover Type & Treatments

Compartment: 260  
 T45N,R27W, Sec. 13, 14  
 County: Marquette  
 Unit: Gwinn  
 Mgmt Area: Chain Lakes Moraine  
 YOE: 2017  
 Acres: 808 GIS Calculated  
 Examiner: Rick Hill  
 Map Revised: 7/1/2015  
 Map Phase: Pre-Review

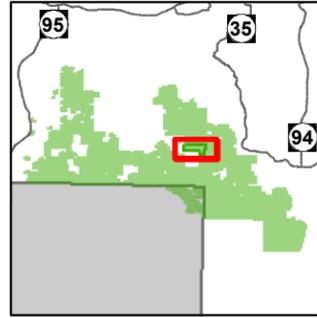


- ✚ Remonumented Section Corners
- ◆ Survey Grade GPS Corners
- ◇ Field Grade GPS Corners
- Miris Corners
- - Poor Dirt Roads
- - County Poor Dirt Roads
- - Trail (Non-Recreation)
- ⋯ Closed Roads
- ORV License & Trail Permit
- ✕ Gate
- ▲ Berms
- 🏍 Motorcycle Trails (DNR License)
- Rivers
- Lakes
- Treatments
- ▨ Selection (Group, Single Tree)
- ▨ Clearcut (w/Reserves)
- ▨ Thinning (Crown, Low, Systematic)
- ▨ Shelter Wood (w/Reserves)
- Forest Covertype
- 411 - Northern Hardwood
- 413 - Aspen
- 419 - Mixed Upland Deciduous
- 422 - Natural Pines
- 430 - Upland Mixed Forests
- 612 - Lowland Coniferous Forest
- Non-Forest Covertype
- 310 - Herbaceous Openland
- 320 - Upland Shrub
- 330 - Low Density Trees
- 500 - Water
- 622 - Lowland Shrub

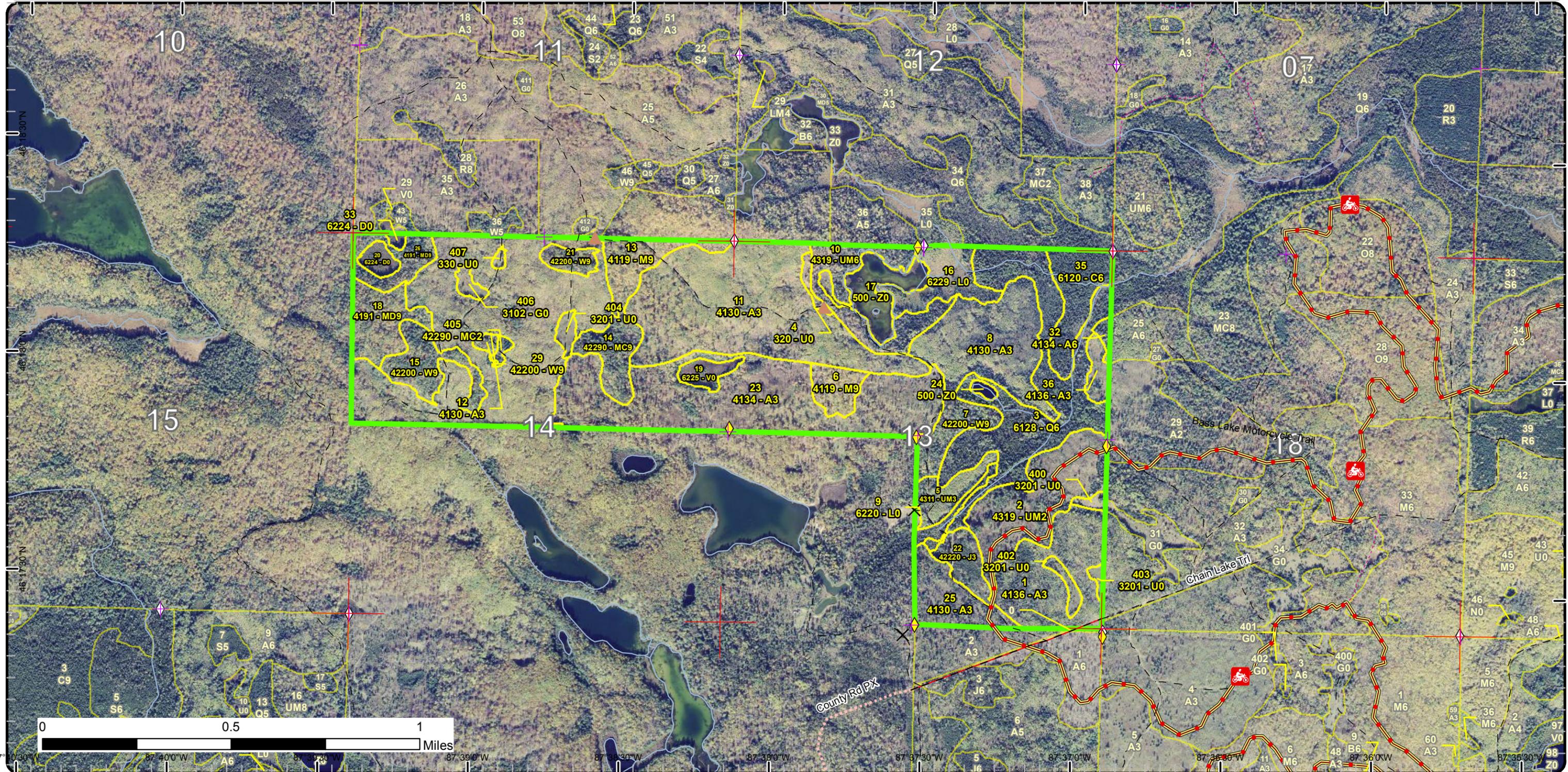


# Stand Boundary Map

Compartment: 260  
 T45N,R27W, Sec. 13, 14  
 County: Marquette  
 Unit: Gwinn  
 Mgmt Area: Chain Lakes Moraine  
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- ✚ Remonumented Section Corners
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- ▭ Stand Boundaries
- Forest Covertype
  - 411 - Northern Hardwood
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  - 422 - Natural Pines
  - 430 - Upland Mixed Fores
  - 612 - Lowland Coniferous Forest
- Non-Forest Covertype
  - 310 - Herbaceous Openland
  - 320 - Upland Shrub
  - 330 - Low Density Trees
  - 500 - Water
  - 622 - Lowland Shrub





# Report 1 – Total Acres by Cover Type and Age Class

Gwinn Mgt. Unit  
Rick Hill : Examiner

Compartment 260 Year of Entry 2017



## 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	101	120	219	0	0	0	0	0	0	0	0	0	0	0	0	0	8	448
Bog	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
Cedar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21	21
Herbaceous Openland	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Jack Pine	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10
Low-Density Trees	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Lowland Conifers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	72	72
Lowland Shrub	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22
Mixed Upland Deciduous	0	0	0	0	0	0	0	0	19	0	0	0	0	0	0	0	0	12	31
Natural Mixed Pines	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	17
Northern Hardwood	0	0	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0	15	25
Treed Bog	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Upland Mixed Forest	0	43	0	11	0	0	25	0	0	0	0	0	0	0	0	0	0	0	79
Upland Shrub	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
Water	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20
White Pine	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39	39
<b>Total</b>	<b>69</b>	<b>144</b>	<b>132</b>	<b>230</b>	<b>0</b>	<b>0</b>	<b>25</b>	<b>0</b>	<b>0</b>	<b>29</b>	<b>0</b>	<b>182</b>	<b>811</b>						



## Report 2 – Treatment Summary

Gwinn Mgt. Unit

Year of Entry: 2017

Acres of Harvest

Compartment 260

Total Compartment Acres: 808

Commercial Harvest - 107  
 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
Lowland Conifers	11	0	0	0	0	0	0	0	0	11
Mixed Upland Deciduous	0	0	0	0	0	19	0	0	0	19
Natural Mixed Pines	0	15	0	0	0	0	0	0	0	15
Northern Hardwood	0	15	0	0	10	0	0	0	0	24
White Pine	0	25	0	0	0	14	0	0	0	39
<b>Total</b>	<b>11</b>	<b>54</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>32</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>107</b>

### Proposed and Next Step Treatments by Method

	Harvest	Site Prep	Planting	Seeding	Burning	Pesticide	Monitoring	Other	Non-Forest Mgt.	Total Acres
Current	107	0	0	0	0	0	0	0	0	107
Next Step	0	0	0	0	0	0	75	0	0	75
<b>Total</b>	<b>107</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>75</b>	<b>0</b>	<b>0</b>	<b>182</b>



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
3	32260003-Cut	10.7	6128 - Lowland Coniferous, Mixed Deciduous	Poetimber Well	78	1-50	Harvest	Clearcut with Retention	613 - Lowland Mixed Forest	Even-Aged	Proposal

**Habitat Cut: No****Site Condition:**

Prescription Clearcut leaving only Cedar and Hemlock

Specs:

Next Step

Treatments:

Acceptable a mix of current species

Regen:

Other Old next step comments:

Comment:

Proposed Start Date: 10/1 /2016

6	32260006-Cut	9.7	4119 - Mixed Northern Hardwoods	Sawtimber Well	87	111-140	Harvest	Shelterwood with Retention	411 - Northern Hardwood	Even-Aged	Proposal
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**Habitat Cut: No****Site Condition:**

Prescription Leave 50-60 sq. ft. of hardwood for seed quite hilly site leave the steepest slopes as retention. look at doing overstory removal next entry period.

Specs: Favor oak and white pine though tree selection.

Next Step

Treatments:

Acceptable Maple, birch, oak, basswood, aspen, white pine, and red pine

Regen:

Other Old next step comments:

Comment:

Proposed Start Date: 10/1 /2016

7	32260007-Cut	13.6	42200 - Natural White Pine	Sawtimber Well	78	141-170	Harvest	Crown Thinning	4220 - Natural White Pine	Even-Aged	Proposal
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**Habitat Cut: No****Site Condition:**

Prescription Thin stand to about 100 sf mark for best tree in place. Favor hemlock though tree selection, retain some white spruce. Retain legacy trees where they exist within the stand.

Next Step

Treatments:

Acceptable

Regen:

Other Old next step comments:

Comment:

Proposed Start Date: 10/1 /2016

13	32260013-Cut	14.8	4119 - Mixed Northern Hardwoods	Sawtimber Well	78	111-140	Harvest	Single Tree Selection	4119 - Mixed Northern Hardwoods	Uneven-Aged	Proposal
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**Habitat Cut: No****Site Condition:**

Prescription Mark stand using complete marker as guide. Leave as much oak as possible for wildlife. Do not cut hemlock or white pine. favor yellow birch though selection.

Next Step

Treatments:

Acceptable A mix of maple, oak, yellow birch, hemlock, and white pine

Regen:

Other Consider cutting stand 33 in compartment 258 with this stand. 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
14	32260014-Cut	14.6	42290 - Natural Mixed Pine	Sawtimber Well	78	141- 170	Harvest	Group Selection	4220 - Natural White Pine	Uneven- Aged	Proposal

**Habitat Cut: No****Site Condition:**

Prescription Cut using a selection system. Cut high risk trees, as well as trees of poor form. Mark all trees for harvest. Release advanced white pine  
Specs: regeneration and create some new gaps. leave some aspen for cavity trees. Target BA including gaps is 90 square feet.

Next Step  
Treatments:

Acceptable White pine, red pine, oak  
Regen:

Other Old next step comments:  
Comment:

Proposed Start Date: 10/1 /2016

15	32260015-Cut	17.7	42200 - Natural White Pine	Sawtimber Well	78	141- 170	Harvest	Group Selection	4220 - Natural White Pine	Uneven- Aged	Proposal
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**Habitat Cut: No****Site Condition:**

Prescription Cut using a selection system. Cut high risk trees, as well as trees of poor form. Mark all trees for harvest. Release advanced white pine  
Specs: regeneration and create some new gaps. leave some aspen for cavity trees. Target BA including gaps is 90 square feet.

Next Step  
Treatments:

Acceptable White pine, oak, red pine  
Regen:

Other This treatment will encourage the white pine regeneration allowing for future refuge trees for young black bears. Old next step comments:  
Comment:

Proposed Start Date: 10/1 /2016

18	32260018-Cut	18.8	4191 - Mixed Upland Deciduous with Conifer	Sawtimber Well	83	81-110	Harvest	Crown Thinning	412 - Oak Types	Even-Aged	Proposal
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**Habitat Cut: No****Site Condition:**

Prescription Thin to release best tree in place. Mark all trees for removal do not cut all aspen as the goal is to reduce aspen in the stand. Reduce stand to  
Specs: around 80 square feet.

Next Step  
Treatments:

Acceptable  
Regen:

Other Old next step comments:  
Comment:

Proposed Start Date: 10/1 /2016

21	32260021-Cut	5.6	42200 - Natural White Pine	Sawtimber Well	78	141- 170	Harvest	Group Selection	4220 - Natural White Pine	Uneven- Aged	Proposal
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**Habitat Cut: No****Site Condition:**

Prescription Cut using a selection system. Cut high risk trees, as well as trees of poor form. Mark all trees for harvest. Release advanced white pine  
Specs: regeneration and create some new gaps. leave some aspen for cavity trees. Target BA including gaps is 90 square feet. Leave any oak present in the stand.

Next Step  
Treatments:

Acceptable White pine, red pine, and oak  
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
29	32260029-Cut	1.7	42200 - Natural White Pine	Sawtimber Well	78	111- 140	Harvest	Group Selection	4220 - Natural White Pine	Uneven- Aged	Proposal

**Habitat Cut: No****Site Condition:**

Prescription Cut using a selection system. Cut high risk trees, as well as trees of poor form. Mark all trees for harvest. Release advanced white pine regeneration and create some new gaps. leave some aspen for cavity trees. Target BA including gaps is 90 square feet.

Specs:

Next Step

Treatments:

Acceptable White pine, red pine, and oak

Regen:

Other Old next step comments:

Comment:

Proposed Start Date: 10/1 /2016

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**Total Treatment  
Acreage Proposed: 107.2**

## Report 5 – Site Conditions

Gwinn Mgt. Unit  
Rick Hill : Examiner

Compartment: 260  
Year of Entry: 2017

### Dominant Site Conditions

3J

Aspen	
Bog	
Cedar	
Herbaceous Openland	
Jack Pine	
Low-Density Trees	
Lowland Conifers	
Lowland Shrub	
Mixed Upland Deciduous	12
Natural Mixed Pines	
Northern Hardwood	
Treed Bog	
Upland Mixed Forest	25
Upland Shrub	
Water	
White Pine	
Total Forested Acres	37
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)	25	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
2	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	12	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							



## 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
<b>Other 1</b>	Other SCA		<b>SCA Removal</b>	12
<b>Comments</b>				
Potential biodiversity mgt area. See cmpt header for additional comments. Outlet of Hay Lake flows easterly through stand.				
<b>Other 2</b>	Other SCA		<b>SCA Removal</b>	35
<b>Comments</b>				
Potential biodiversity mgt area. See cmpt header for additional comments. Small creek flows northeasterly though stand and tiny swamp pond (stand 24) occupies northwest corner of stand. Some tamarack near pond.				
<b>POG 1</b>	Potential Old Growth		<b>SCA Removal</b>	17
<b>Comments</b>				
Potential biodiversity mgt area. See cmpt header for additional comments. Very good diversity here, somewhat unique for this area. In addition to red & white pine, there is hemlock, yellow birch, sugar maple, cedar, oak, spruce & fir, etc. Pine is tall				
<b>POG 2</b>	Potential Old Growth		<b>SCA Removal</b>	62
<b>Comments</b>				
Potential biodiversity mgt area. See cmpt header for additional comments.				
<b>POG 3</b>	Potential Old Growth		<b>SCA Removal</b>	29
<b>Comments</b>				
Potential biodiversity mgt area. See cmpt header fo additional comments. Essentially a buffer water influence zone around Hay Lake.				
<b>POG 4</b>	Potential Old Growth		<b>SCA Removal</b>	6
<b>Comments</b>				
Biodiversity mgt area or high conservation area. Somewhat of an inclusion within stand 9. This stand perhaps represents the original presettlement forest cover type that was dominant in this area before logging and fires changed the landscape. It is a re				
<b>POG 5</b>	Potential Old Growth		<b>SCA Removal</b>	5
<b>Comments</b>				
Potential biodiversity mgt area. See cmpt header for additional comments. Treed bog in the bottom of a "bowl" surrounded by steep ridges.				
<b>POG 6</b>	Potential Old Growth		<b>SCA Removal</b>	9
<b>Comments</b>				
Potential biodiversity mgt area, or high conservation area. See cmpt header for additional comments. The wildlife benefits alone ( in addition to aesthetics) dictate that we reserve this area for potential den/nest trees, etc. It slopes down steeply to				



## 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.

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## Gwinn Mgt. Unit

## Report 8 – Forested Stands

Compartment: 260  
Year of Entry: 2017

	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
1	4136 - Aspen, Mixed Conifer	Sapling Well	42.4	27	Immature	Was commercially cut in Fall 1988 by John Kirkpatrick of Gwinn, permit #015-87-01, "Chain Lake Road Block". All oak & cherry was left. Stand has both quaking & targettooth aspen, but quaking seems more abundant.
2	4319 - Mixed Upland Forest	Sapling Medium	43.2	6	Immature	Stand is coming back ok it was cut under TS#32-117-07-01, Boot Lake Sale. Cut by Gazan Timber Contracting, Inc., November/December 2008.
3	6128 - Lowland Coniferous, Mixed Deciduous	Poletimber Well	72.3	78	1-50	Small creek flows northeasterly though stand.
5	4311 - Pine, Aspen Mix	Sapling Well	10.7	25	Immature	Was commercially cut 1989/91 by Milo Palm of Negaunee, permit #016-87-01, "Hay Lake Block". All oak, cedar, hemlock, & cherry was left.
6	4119 - Mixed Northern Hardwoods	Sawtimber Well	9.7	87	111-140	
7	42200 - Natural White Pine	Sawtimber Well	13.6	78	141-170	Very good diversity here, somewhat unique for this area.
8	4130 - Aspen	Sapling Well	47.2	25	Immature	Was commercially cut in 1989/91 by Milo Palm of Negaunee, permit #016-87-01, "Hay Lake Block". All oak, cedar, hemlock, & cherry was left.
10	4319 - Mixed Upland Forest	Poletimber Well	24.9	50	81-110	This stand is on a steep slope dropping down to the shores of Hay Lake. As a result this area will be factor limited for BMPs and water quality. The birch is slowly falling out of the stand and being replaced by fir and red maple.
11	4130 - Aspen	Sapling Well	100.7	15	Immature	Was commercially cut in summer of 1999/2000 by St. John Forest Products, Inc. permit #003-97-01, "Hay Lake Sale". All oak, red & white pine, all other softwoods, and birch marked with greenpaint were left.
12	4130 - Aspen	Sapling Well	129.1	24	Immature	Was commercially cut in 1990/91 by Escanaba Paper Co. permit #023-87-01, "Boot Lake Aspen Block". Oak were marked with green paint to leave (approx 5 trees /acre). Terrain has some steep slopes and potholes. Gravel present in places. Access was from the north off Hemmings Lake Road.
13	4119 - Mixed Northern Hardwoods	Sawtimber Well	14.9	78	111-140	Was commercially cut in 2000 by St. John Forest Products, Inc., permit #003-97-01, "Hay Lake Sale". All aspen, paper birch, and fir were cut out of this. All other hwdws were left. Access was from the northwest. The residual stand has good species diversity which includes some hemlock & white pine, yellow birch & ironwood. Oak is a dominant component, nearly all of sawlog size. The ground is covered with sugar maple seedlings, and leatherwood shrub is present also.
14	42290 - Natural Mixed Pine	Sawtimber Well	14.6	78	141-170	Stand was selectively cut in 2000 by St. John Forest Products, Inc., permit #003-97-01, "Hay Lake Sale". Some hemlock present here also, high quality white pine logs present here.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
15	42200 - Natural White Pine	Sawtimber Well	17.7	78	141-170	Nice quality pine residual trees. Was selectively (mostly pine-high risk) cut in 2000 by St.John Forest Products, Inc., permit #003-97-01, "Hay Lake Sale". Aspen was purposely left uncut in 2000 to discourage sprouting following the cut.
18	4191 - Mixed Upland Deciduous with Conifer	Sawtimber Well	18.8	83	81-110	Oak & white pine are dominant species here. Manage all species selectively here. Aspen & birch will disappear. Maple will persist and provide diversity. Red pine present also. White pine regen quite heavy in places, eg on west edge of stand. Some steep slopes on north & south boundaries. Combine with a cut in stand 15.
21	42200 - Natural White Pine	Sawtimber Well	5.6	78	141-170	Selectively cut in 2000 by St.John Forest Products Inc., permit #003-97-01, "Hay Lake Sale".
22	42220 - Natural Jack Pine	Sapling Well	10.2	14	Immature	Stand was commercially cut during Feb/March of 2001 by Minerick Logging under permit #04-97-01, "Chain Lakes Road Sale". All oak, red & white pine was left. Followed by herbicide treatment on 8/17/2001 by Steve Arkens under FTP #C31-429 using liquid Tordon 101 at the rate of 5 qts/acre. This followed by disk trenching and simultaneous seeding of jack pine on 10/5/2001. See FTP and completion form for details.
23	4134 - Aspen, Spruce/Fir	Sapling Well	100.6	4	Immature	East part of stand slopes down to the north. Note that the 1/4 corner between Sec 14/13 is located beneath the east-west private fence line. 2011 Treated by LaFleur under contract # 116-07-01.
25	4130 - Aspen	Sapling Well	19.8	14	Immature	Stand was commercially cut under permit #104-97-01, "Chain Lake Road Sale", by Minerick Logging Inc. during Feb/March 2001. All oak, red & white pine were left, and the Gwinn Unit ORV trail was preserved.
26	4191 - Mixed Upland Deciduous with Conifer	Sawtimber Well	11.6	78	51-80	
29	42200 - Natural White Pine	Sawtimber Well	1.7	78	111-140	Nice quality pine residual trees. Was selectively (mostly pine-high risk) cut in 2000 by St.John Forest Products, Inc., permit #003-97-01, "Hay Lake Sale".
32	4134 - Aspen, Spruce/Fir	Poletimber Well	2.0	39	Unspecified	Stand is carryover from stand 25 of c35 treat with that stand.
35	6120 - Lowland Cedar	Poletimber Well	20.5	78	141-170	
36	4136 - Aspen, Mixed Conifer	Sapling Well	5.8	9	141-170	Cut in 2005 with stand 29 of compartment 35 to the east.
405	42290 - Natural Mixed Pine	Sapling Medium	1.5	19	Immature	Cleared & seeded in June 1993, FTP W-31-279, After commercial sale #23-87. Now in June of 2005, natural red pine seedlings are invading this opening.



Stand	Cover Type	Acres	Managed Site	General Comments:
4	320 - Upland Shrub	2.2	No	Frost pocket with a woods road running though it.
9	6220 - Alder/willow	4.6	No	OPIC - FMD: Was commercially cut 1989/91 by Milo Palm of Negaunee, permit #016-87-01, "Hay Lake Block". All oak, cedar, hemlock, & cherry was left.
16	6229 - Mixed lowland shrub	17.6	No	
17	500 - Water	18.0	No	Hay Lake, essentially formed by and old beaver dam. Fresh aspen saplings were cut south of the lake in June of 2005 and dragged north across the road towards Hay Lake. Also, there is a tiny island on Hay Lake, visible from the road, and stocked with cedar trees. Very senic!
19	6225 - Bog	5.7	No	
20	6224 - Treed Bog	4.4	No	
24	500 - Water	1.6	No	Tiny swamp pond. Beaver house present in June 2005. Hydrology map shows an outlet creek on east side, but field check found none. Possibly flows subterraneously through swamp on east side.
33	6224 - Treed Bog	1.1	No	
400	3201 - Sweet Fern	1.9	No	MOST OF OPENING HAS BEEN DISKED. COULD EXPAND TO THE NORTHEAST.
402	3201 - Sweet Fern	3.2	No	CLEARED & SEEDED TRAIL RD 6/1990-FTP W-31-197.
403	3201 - Sweet Fern	1.5	No	CLEARED & SEEDED TRAIL RD 6/1990 FTP W-31-197.
404	3201 - Sweet Fern	3.0	No	
406	3102 - Grass	2.7	No	Cleared & seeded in June 1993, FTP W-31-279 , following commercial sale #23-87. Also in good condition in June 2005. Note that roads were seeded and bermed also. This is a valid reason for delaying commercial cutting in this area till the 2017 yr of entry. By that time these roads and openings may need re- treatment for wildlife.
407	330 - Low-Density Trees	0.9	No	Cleared & seeded in June 1993, FTP W-31-279 , following commercial sale #23-87. Also in good condition in June 2005. Note that roads were seeded and bermed also. This is a valid reason for delaying commercial cutting in this area till the 2017 yr of entry. By that time these roads and openings may need re- treatment for wildlife.