



Compartment Review Presentation

Gwinn Forest Management Unit

Compartment 32224

Entry Year 2019

Acreage: 1,436

County Marquette

Management Area: Chain Lakes Moraine

Revision Date: 2017-08-01

Stand Examiner: Jason Caron

Legal Description:

T46N-R29W, Sections 22, 23, 24 and 25.

Identified Planning Goals:

Perform timber harvests within older stands of pine, aspen, spruce and fir to promote a healthy, sustainable forest.

Soil and topography:

Ranging from relatively level wetlands to upland areas. Terrain consists of rolling hills.

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

Corporate ownership exists along the west side of this compartment. A few private inholdings do occur within this compartment as well. Very little development exists within this compartment other than the hunting camps and cottages. The NMU TV tower exists just southeast of this compartment. Land use in and around this compartment consists of hunting, fishing, gathering, trapping and ATV riding.

Unique Natural Features:

Numerous lakes and wetlands exist in and around the compartment.

Archeological, Historical, and Cultural Features:

County roads FFH & FFI (established by the McNitt Act of 1931) point to the historic use of the area for homestead sites. Remnants of these persist in the form of building foundations, abandoned farm fields, cedar posts and barbed wire. Two archaeological sites are located in this compartment. 20MQ252 is located in stands 9 and 97. 20MQ253 is located in stands 8 and 407. Of these stands, stand 97 is scheduled to be cut. 20MQ252 is recorded as an historic homestead site, and would need to be avoided with a buffer during work in stand 97.

Special Management Designations or Considerations:

No special management designations for this compartment.

Watershed and Fisheries Considerations:

Wildlife Habitat Considerations:

Compartment 224 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

Sections 22-25, T46N R29W, Marquette County

Sand/gravel pits are not located in this area, and sand and gravel potential may be limited within the compartment due to shallow bedrock. Bedrock consists of gneiss, which could be used as dimension stone. The abandoned Republic iron mine is located just to the northwest, but there is no known iron ore potential within the compartment. There may be potential for other metallic minerals. There is no history of prior metallic mineral leasing within the compartment, but there has been past leasing to the south. There is no economic oil and gas production in the UP.

Vehicle Access:

County road FF & FFH provide the primary access into this compartment. Secondary roads leading into the compartment are generally poor dirt two tracks.

Survey Needs:

Need to do more research for the treatment in the SE corner of section 25.

Recreational Facilities and Opportunities:

The main recreational feature within this compartment is the groomed snowmobile trail passing through the NENW of section 22. Other recreational opportunities would consist of deer hunting, gathering, hiking and trapping.

Fire Protection:

Fire protection within this compartment is good with numerous road existing for access.

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**

Report 1 – Total Acres by Cover Type and Age Class

Gwinn Mgt. Unit
Jason Caron : Examiner

Compartment 224 Year of Entry 2019

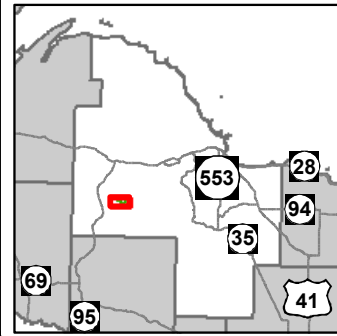


Age Class

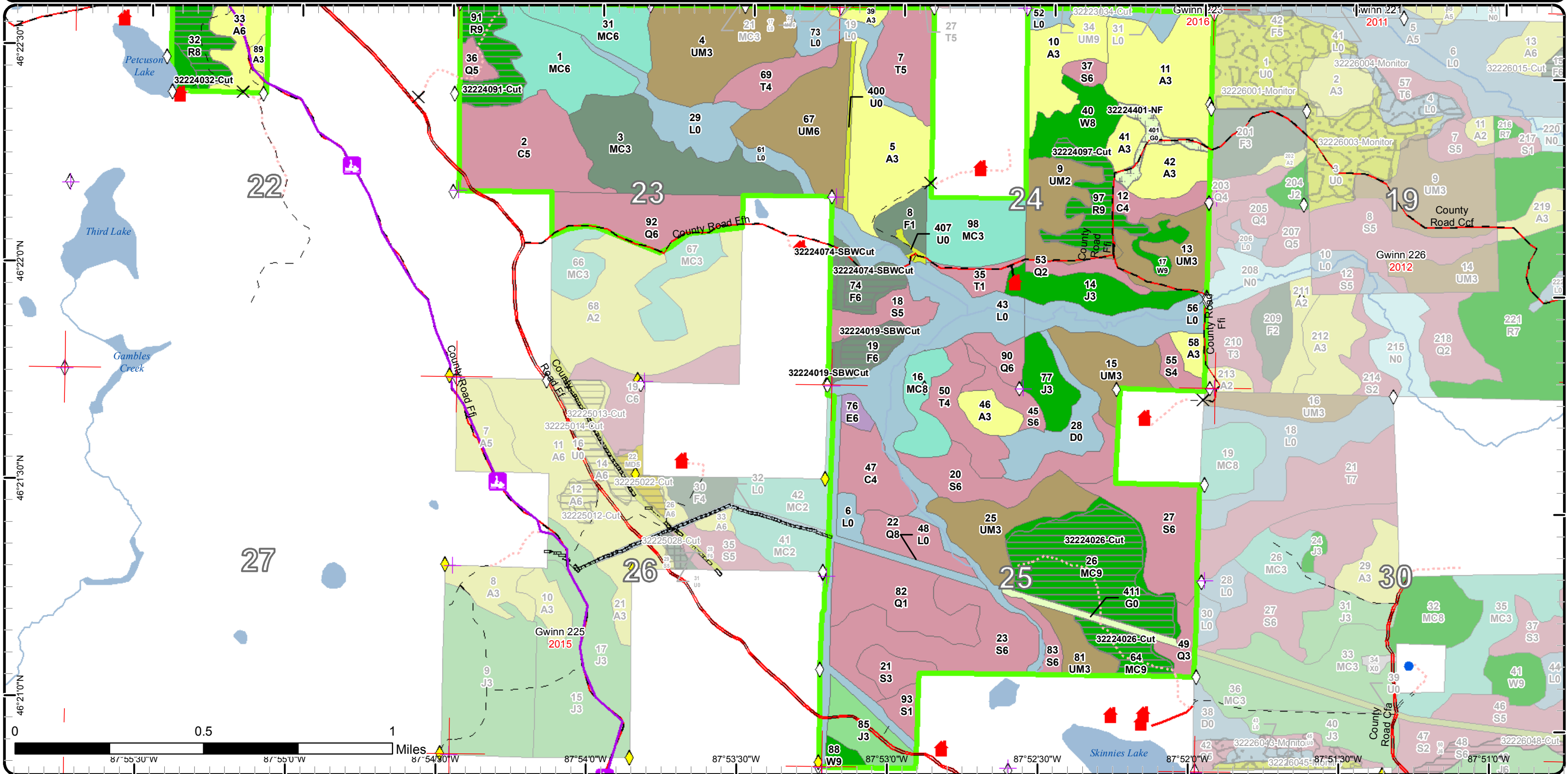
	Non-Forest	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100-109	110-119	120-129	130-139	140-149	150+	Uneven-Aged	Total
Aspen	0	0	28	84	43	18	0	0	0	0	0	0	0	0	0	0	0	0	173
Cedar	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0	0	0	70	80
Herbaceous Openland	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14
Jack Pine	0	0	18	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	54
Low-Density Trees	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Lowland Conifers	0	0	0	7	36	0	5	8	36	0	16	0	0	0	0	0	0	8	116
Lowland Deciduous	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	4
Lowland Shrub	169	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	169
Lowland Spruce/Fir	0	6	0	0	0	10	0	43	85	6	4	0	0	13	0	0	0	0	167
Natural Mixed Pines	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	77	76
Red Pine	0	0	0	0	0	0	0	0	0	0	0	0	0	19	0	0	0	38	57
Tamarack	0	0	8	0	0	0	0	0	20	26	0	0	0	0	0	0	0	15	69
Treed Bog	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21
Upland Conifers	0	0	0	30	108	0	0	0	0	16	0	0	0	0	0	0	0	0	154
Upland Mixed Forest	0	26	65	26	93	0	0	0	0	0	0	0	0	0	0	0	0	0	210
Upland Spruce/Fir	0	10	0	0	0	29	0	0	0	0	0	0	0	0	0	0	0	0	39
White Pine	0	0	0	0	0	0	0	0	0	4	0	0	0	24	0	0	0	0	28
Total	209	42	119	183	280	57	5	51	145	52	20	10	0	56	0	0	0	208	1436

Cover Type & Treatments Map

Compartment: 224
 T46N, R29W, Sec: 22-25
 County: Marquette
 Unit: Gwinn
 Mgmt Area: Chain Lakes Moraine
 YOE: 2019
 Acres: 1436.4 GIS Calculated
 Examiner: Jason Caron
 Map Revised: 1/11/2018
 Map Phase: Post-Review

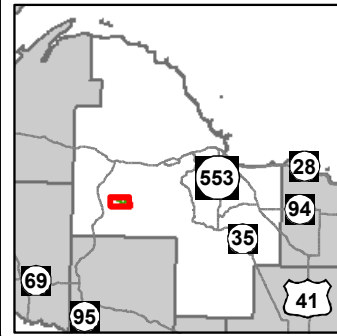


- Miris Corners
- + Remonumented Section Corners
- ◆ Survey Grade GPS Corners
- ◇ Field Grade GPS Corners
- Counties
- X Gate
- Bridge
- Cabin
- Tower
- Snowmobile Trails
- Designated Snowmobile Trails
- County Paved Roads
- Paved Roads
- County Gravel Roads
- Gravel Roads
- County Poor Dirt Roads
- - Poor Dirt Roads
- - - Closed
- Streams
- Lakes and Rivers All
- Pipeline
- Powerline
- Compartment Boundary
- Other Treatment - See Comments
- Clearcut (w/Reserves)
- 413 - Aspen Types
- 421 - Planted Pines
- 422 - Natural Pines
- 423 - Other Upland Conifers
- 429 - Mixed Upland Conifers
- 430 - Upland Mixed Forest
- 611 - Lowland Deciduous Forest
- 612 - Lowland Coniferous Forest
- 310 - Herbaceous Openland
- 330 - Low Density Trees
- 622 - Lowland Shrub
- Lakes

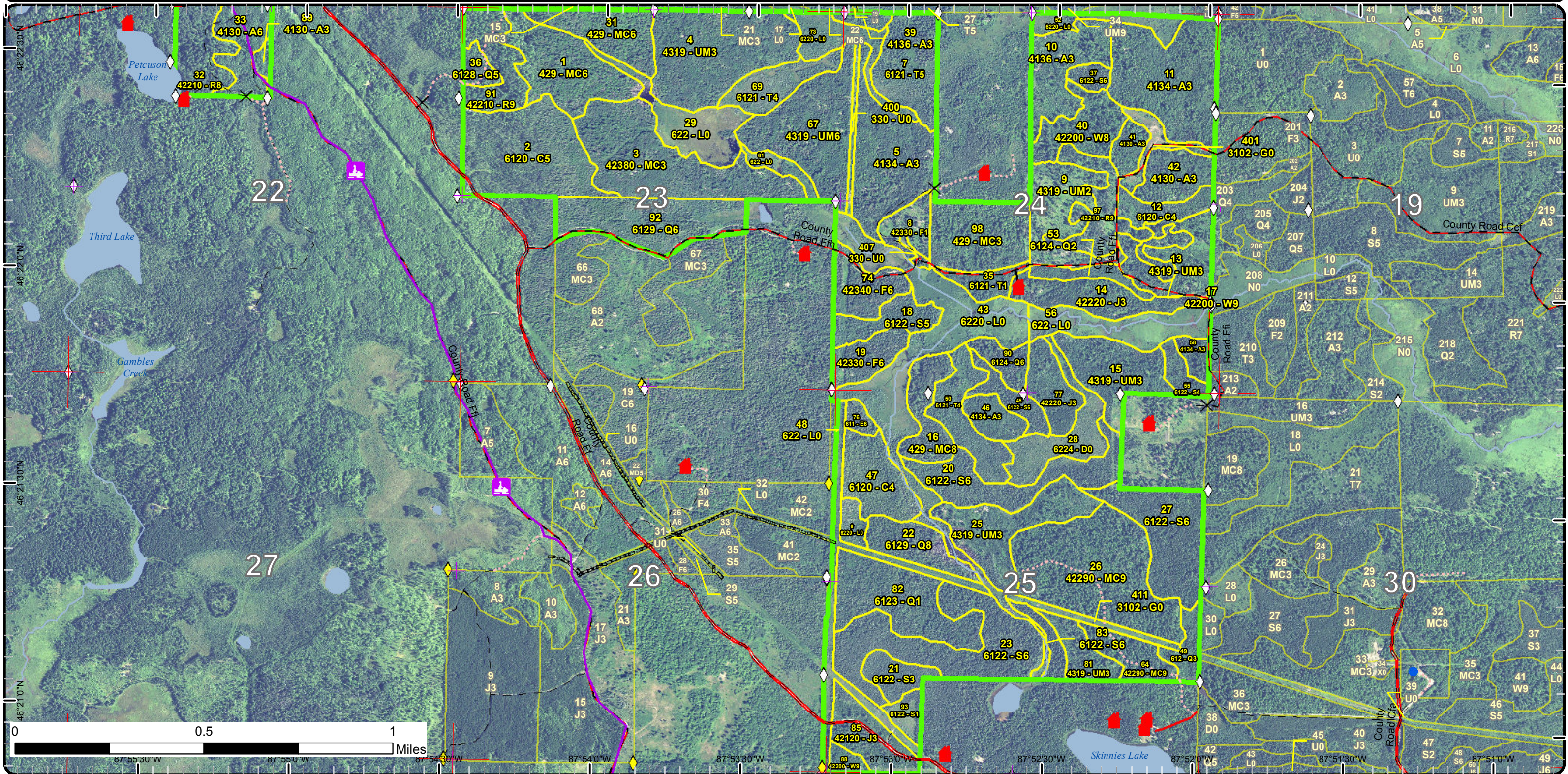


Stand Boundary Map

Compartment: 224
 T46N, R29W, Sec: 22-25
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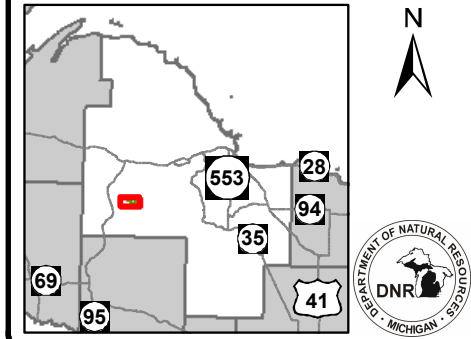


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|--|---|--|
| <ul style="list-style-type: none"> — Miris Corners + Remonumented Section Corners ◆ Survey Grade GPS Corners ◇ Field Grade GPS Corners Counties X Gate — Bridge ■ Cabin ● Tower — Snowmobile Trails — Designated Snowmobile Trails — County Paved Roads — Paved Roads | <ul style="list-style-type: none"> — County Gravel Roads — Gravel Roads — County Poor Dirt Roads - - Poor Dirt Roads - - - Closed — Streams — Lakes and Rivers All — Pipeline — Powerline Compartment Boundary Stand Boundaries 413 - Aspen Types 421 - Planted Pines 422 - Natural Pines 423 - Other Upland Conifers | <ul style="list-style-type: none"> 429 - Mixed Upland Conifers 430 - Upland Mixed Forest 611 - Lowland Deciduous Forest 612 - Lowland Coniferous Forest 310 - Herbaceous Openland 330 - Low Density Trees 622 - Lowland Shrub |
|--|---|--|

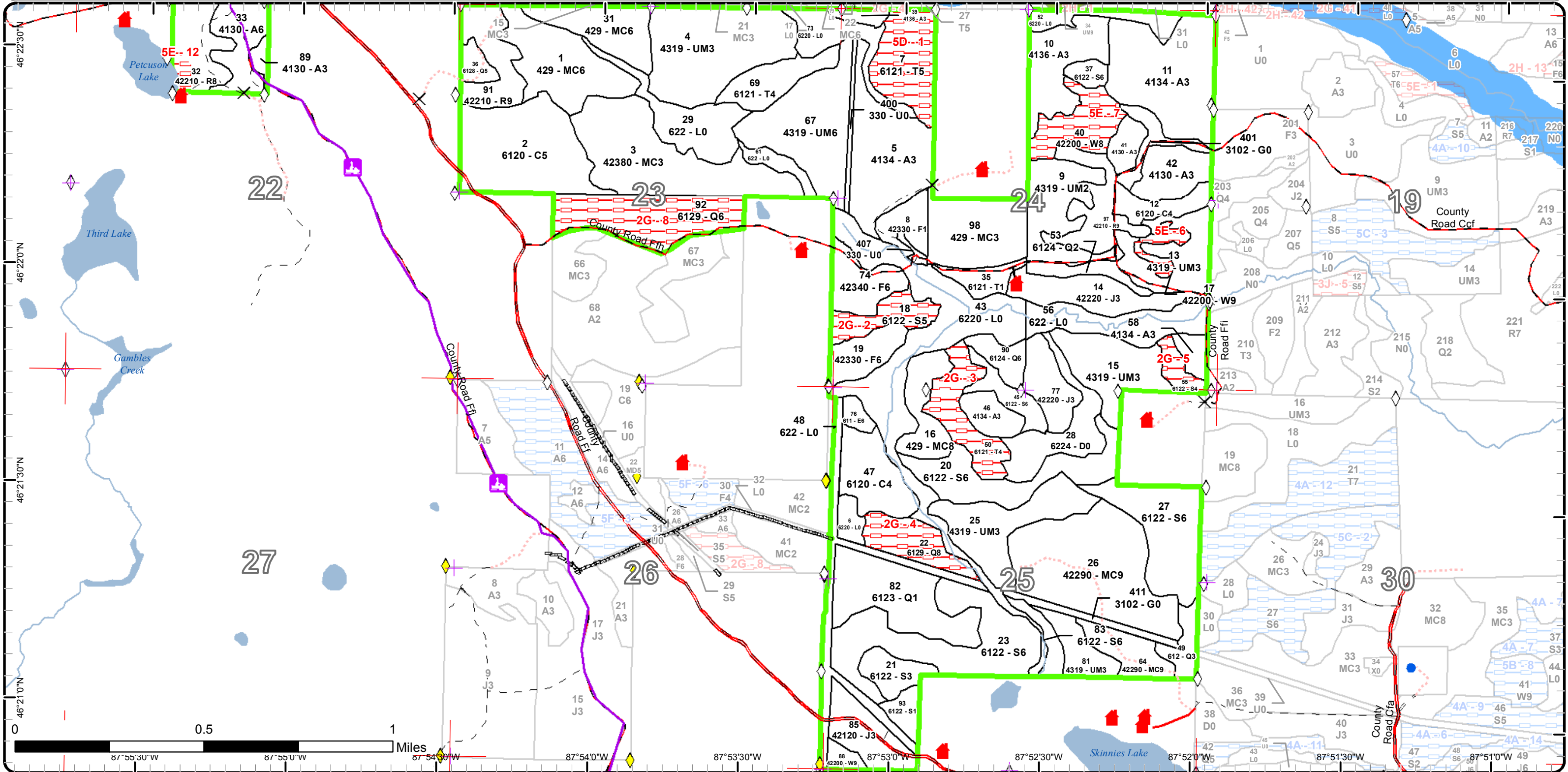


Special Conservation Areas & Site Conditions Map

Compartment: 224
 T46N, R29W, Sec: 22-25
 County: Marquette
 Unit: Gwinn
 Mgmt Area: Chain Lakes Moraine
 YOE: 2019
 Acres: 1436.4 GIS Calculated
 Examiner: Jason Caron
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- Miris Corners
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 - Gravel Roads
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 - - Poor Dirt Roads
 - - - Closed
 - Streams
 - Lakes and Rivers All
 - Pipeline
 - Powerline
 - Compartment Boundary
 - - - Unavailable
 - Stand Boundaries
 - Cold Water Streams
 - High Priority Trout Stream Buffer
 - Verified Type 2 Old Growth
- 2G: Too wet (sensitive soils, does not include access issues)
 5D: Unproductive Forest Land
 5E: Long-Term Retention





Report 2 – Treatment Summary

Gwinn Mgt. Unit

Year of Entry: 2019

Acres of Harvest

Compartment 224

Total Compartment Acres: 1,436

Commercial Harvest - 144
 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
Natural Mixed Pines	70	0	0	0	0	0	0	0	0	70
Red Pine	54	0	0	0	0	0	0	0	0	54
Upland Spruce/Fir	20	0	0	0	0	0	0	0	0	20
Total	144	0	0	0	0	0	0	0	0	144

Proposed and Next Step Treatments by Method

	Harvest	Site Prep	Planting	Seeding	Burning	Pesticide	Monitoring	Other	Non-Forest Mgt.	Total Acres
Current	144	0	0	0	0	0	0	8		152
Next Step	0	191	105	0	0	105	144	0	8	552
Total	144	191	105	0	0	105	144	0	16	704



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
19	32224019- SBWCut	9.6	42330 - Upland Fir	Poletimber Well	42	51-80	Harvest	Clearcut with Retention	42330 - Upland Fir	Even-Aged	Draft Field Boundary

Habitat Cut: No**Site Condition:**

Prescription Prescribed due to the budworm infestation. Clearcut all species except white pine and oak. Retention includes the wetland buffer along the south and southeast edge of the treatment. The treatment boundary was adjusted to account for this retention.

Specs:

Next Step Monitoring, Natural Regen (Re-Inventory)

Treatments:

Acceptable Fir, spruce, aspen, maple and pine.

Regen:

Other This stand might be a good candidate for an optional payment unit? The elf line will need to be froze to access this stand. Also, consider putting a 2" spec on the contract to utilize the small fir.

Proposed Start Date: 10/01/2017

26	32224026-Cut	70.4	42290 - Natural Mixed Pine	Sawtimber Well	90	81-110	Harvest	Clearcut with Retention	4211 - Planted Red Pine	Even-Aged	Draft Field Boundary
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Habitat Cut: No**Site Condition:**

Prescription Clearcut with retention. The treatment boundary was adjusted along the perimeter of the stand to account for the retention. Clearcut all trees within the stand. Red line out wet areas if they exist.

Specs:

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

Treatments:

Acceptable Red pine

Regen:

Other WLD - Retain all Red Oak (5%) and any over-sized white pine – black bear

Comment:

Proposed Start Date: 10/01/2018

32	32224032-Cut	15.3	42210 - Natural Red Pine	Sawtimber Medium	92	81-110	Harvest	Clearcut with Retention	4211 - Planted Red Pine	Even-Aged	Draft Field Boundary
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Habitat Cut: No**Site Condition:**

Prescription Clearcut with retention. Retention will be the buffer that was placed along Petcuson Lk. Treatment boundary was adjusted.

Specs:

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

Treatments:

Acceptable Red pine

Regen:

Other WLD - Retain any over-sized white pine (10%) – black bear, eagle nesting sites

Comment:

Proposed Start Date: 10/01/2018

74	32224074- SBWCut	10.1	42340 - Upland Spruce/Fir	Poletimber Well	41	1-50	Harvest	Clearcut with Retention	4136 - Aspen, Mixed Conifer	Even-Aged	Draft Field Boundary
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Habitat Cut: No**Site Condition:**

Prescription Prescribed due to the budworm infestation. Clearcut all species except white pine and oak. Mark a few of the red pine in the northeast corner for seed trees. Cut the remainder. Retention includes the wetland buffer along the north and south. The treatment boundary was adjusted to account for this retention.

Specs:

Next Step Monitoring, Natural Regen (Re-Inventory)

Treatments:

Acceptable Fir, spruce, aspen, maple and pine.

Regen:

Other Consider putting a 2" spec within the contract to maximize the utilization of the small diameter fir.

Comment:

WLD - Retain an island of trees that includes Paper birch (2%) pileated woodpecker.

Proposed Start Date: 10/01/2017



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
91	32224091-Cut	19.2	42210 - Natural Red Pine	Sawtimber Well	90	81-110	Harvest	Clearcut with Retention	4319 - Mixed Upland Forest	Even-Aged	Draft Field Boundary

Habitat Cut: No**Site Condition:**

Prescription Clearcut with retention. Leave a buffer along stand 36 for retention and seed. Also reserve any legacy trees that exist within the stand.

Specs:

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

Treatments:

Acceptable pine, aspen, oak, fir, spruce, maple.

Regen:

Other Scarify the site post harvest to encourage pine regeneration. Possibly put it in the t-sale contract?

Comment:

WLD - Retain any over-sized white pine White Pine (black bear, eagle nesting sites (State Game Fund)

Proposed Start Date: 10/01/2018

97	32224097-Cut	19.2	42210 - Natural Red Pine	Sawtimber Well	120	81-110	Harvest	Clearcut	4221 - Natural Red Pine	Even-Aged	Draft Field Boundary
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Habitat Cut: No**Site Condition:**

Prescription Clearcut the stand. If any trees fit the legacy tree category- reserve them. Do not harvest oak.

Specs:

Next Step Monitoring, Natural Regen (Intermediate); Pesticide, Skidder/Mechanical; Planting, Initial Plant

Treatments:

Acceptable pine, maple, fir, spruce, aspen and birch.

Regen:

Other Clearcut the stand to promote the pine within the understory. Consider timing on the sale (contract) to protect the sapling sized pine that

Comment: currently exists.

WLD - Retain any over-sized white pine (10%) – black bear, eagle nesting sites and all Red Oak (2%) black bear, white-tail deer

Proposed Start Date: 10/01/2018

401	32224401-NF	7.8	3102 - Grass	Nonstocked			NonForestMgt	Other - Specify	3102 - Grass		Draft Field Boundary
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Habitat Cut: No**Site Condition:**

Prescription Plant scattered mast producing trees as appropriate and cover crops in herbaceous openings according to local site conditions to promote forage for specified wildlife species. Hand/mechanical removal of brush/vegetation from the opening will be used to maintain the openings and hunter walking trails--current and future; disking, mowing, cultipacking, pesticide application may be used as necessary to accomplish wildlife goals. Partial completion reports will be completed annually for the duration this FTP is valid, describing completed work.

Next Step NonForestMgt, Other - Specify

Treatments:

Acceptable Site to be maintained as opening.

Regen:

Other Site to be maintained as opening. If adjacent stands are to be harvested, please consult with Wildlife Technician Caleb Eckloff for practices to maintain the opening. Examples include roller-chopping, herbicide, minimum harvest spec., etc. to clear encroaching vegetation.

Proposed Start Date: 01/01/2018

**Total Treatment
Acreage Proposed: 151.6**

Report 4 – Site Conditions

Gwinn Mgt. Unit
Jason Caron : Examiner

Compartment: 224
Year of Entry: 2019

Availability for Management

Total Acres	Acres Available	Acres Avail		Dominant Site Conditions	Dominant Site Conditions		
		With Condition	Not Available		2G	5D	5E
172	172	0	0	Aspen			
81	81	0	0	Cedar			
14	14	0	0	Herbaceous Openland			
54	54	0	0	Jack Pine			
5	5	0	0	Low-Density Trees			
116	64	0	52	Lowland Conifers	52		
4	4	0	0	Lowland Deciduous			
170	170	0	0	Lowland Shrub			
166	147	0	19	Lowland Spruce/Fir	19		
76	76	0	0	Natural Mixed Pines			
58	54	0	4	Red Pine			4
69	23	0	46	Tamarack	20	26	
21	21	0	0	Treed Bog			
155	155	0	0	Upland Conifers			
210	210	0	0	Upland Mixed Forest			
39	39	0	0	Upland Spruce/Fir			
28	4	0	24	White Pine			24
1,436	1,292		145	Total Forested Acres	91	26	28
	90%		10%	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	Dominant Site Availability	Dominant Site Condition	Acres	Other Site Condition	Other Site Condition	Other Site Condition	Other Site Condition
1	Unavailable		5D: Unproductive Forest Land	26	Unspecified	Unspecified	Unspecified	Unspecified
Comments:								
A stagnant tamarack swamp. Too wet for a harvest.								

Report 4 – Site Conditions

Gwinn Mgt. Unit
Jason Caron : Examiner

Compartment: 224
Year of Entry: 2019

2	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	13	Unspecified	Unspecified	Unspecified	Unspecified
Comments: A stagnant stand of black spruce with a high water table.							
3	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	20	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
4	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	16	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Stand has a small stream within it. It was attempted to cut years ago but producer decided it was too wet to harvest.							
5	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	6	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Small stand of spruce that contains very wet soil. Do not harvest.							
6	Unavailable	5E: Long-Term Retention	5	Unspecified	Unspecified	Unspecified	Unspecified
Comments: With clearcutting stand 97 to the west I opted to code this stand as long term retention. The stand contains mostly log sized white pine with a heavy understory of fir and red maple. Leave this stand as an island of mature pine for age diversity and wildlife values.							
7	Unavailable	5E: Long-Term Retention	19	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Stand of log sized white pine that contains a mix of both fir and red maple within the understory. Beings I am clearcutting the stand to the south (stand 97) I am opting to leave this stand for long term retention. Some of the trees could be considered legacy trees given the diameter and age of them.							

Report 4 – Site Conditions

Gwinn Mgt. Unit
Jason Caron : Examiner

Compartment: 224
Year of Entry: 2019

8	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	36	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Stand is essentially a cedar swamp. Too wet of soils and the cedar is poor quality.							
12	Unavailable	5E: Long-Term Retention	4	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							

Mgt. Unit

Compartment: #Type!

Year of Entry:



Report 5 – PROPOSED SPECIAL CONSERVATION AREA* (SCA) DETAILS

* This is a partial list of SCAs for this compartment. Not included are those areas identified under other Department initiatives (Natural Rivers, Deer Wintering Areas, etc.). Those will be identified in separate, future map and report products.

SCA Name	SCA Category	Detail Type	Recommendation	Acres
Comments				



Report 6 – 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 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	Type 1 and Type 2 Old Growth	Old-Growth forest (also termed primary forest, ancient forest, virgin forest, or primeval forest) is an area of forest that has few or no signs of human disturbance and that exhibits unique ecological features related to age, composition and associated structure. Old growth forests are of natural origin. They may be dominated by late successional forest species (i.e. sugar maple and American beech), or may be a very old example of a stand dominated by long-lived early- or mid-seral species (i.e. oak, or red pine).
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.



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
1	429 - Mixed Upland Conifers	Poletimber Well	33.5	35	1-50	The previous inventory notes state that the last cutting was completed in 1970 under permit #11/67A. Stand consists of a mix of balsam, aspen, and red maple. I noticed a pocket of low ground that contained black spruce as well. Scattered mature white pine and red pine were left after the last harvest and are scattered throughout the stand. It appears that in the last cut certain areas were left. In turn there are small areas of older timber, most of which was balsam and is dead or near dead. Fir is in poor shape due to budworm damage. I estimated the age at 35, some timber is older, some younger.
2	6120 - Lowland Cedar	Poletimber Medium	49.2	113	81-110	Stand was strip cut years ago. Cedar is poor quality. I did find some nice cedar regeneration within an old cut strip.
3	42380 - Non Pine Upland Conifer, Mixed Deciduous	Sapling Well	54.4	31	Immature	This stand was part of a very large timber sale (258 acres), "Sleighrunner Sale" permit # 5-79A, and cut between 1982-87. Stand contains a mix of mostly fir, spruce and aspen with a few inclusions of low ground that have a mix of tamarack, black spruce and cedar. Rocky ground throughout most of the stand. Balsam and spruce is in poorer condition due to budworm damage. Aspen is poor quality due to shallow soils. Scattered, large diameter white pine and red pine within the stand which were left after the last harvest.
4	4319 - Mixed Upland Forest	Sapling Well	51.0	31	Immature	This stand was part of a very large timber sale (258 acres), "Sleighrunner Sale" permit # 5-79A, cut by Holli Forest Products, Inc. between 1982-87. Stand currently consists of a mix of quaking aspen, fir, and white spruce. Fir is in poor condition due to budworm.
5	4134 - Aspen, Spruce/Fir	Sapling Well	39.7	31	Immature	Stand cut between 1982 & 87. TS# 5-79A. Stand currently consists of aspen mixed with fir. A small pocket of xlog red pine and white pine exist within the south part of the stand.
7	6121 - Tamarack	Poletimber Medium	25.6	82	81-110	Stand consists of stagnant black spruce and tamarack. A high water table exists with heavy tag alder in the understory. Labrador tea is prevalent within the stand as well.
8	42330 - Upland Fir	Sapling Poor	10.0	6	Immature	Stand harvested in the fall of 2010. TS#103-09. Stand is currently filling in with fir. Scattered mature red and white pine exist within the stand as well.
9	4319 - Mixed Upland Forest	Sapling Medium	26.2	7	Immature	Stand harvested in the fall of 2010. Sale #103-09. Stand currently consists of a mix of red maple stump sprouts, red pine, and white pine regeneration. Red maple has been browsed heavily by moose. Raspberry is thick in spots. Scattered mature oak, red pine, and white pine exist within the stand.
10	4136 - Aspen, Mixed Conifer	Sapling Well	24.8	15	Immature	Stand was harvested in the fall of 2002. TS#105-99-01. Stand consists of a mix of deciduous and conifer. The old skid trails within the stand have regenerated to a dense strip of red pine. It is amazing how well the red pine regenerates within this area. Red maple clumps are heavily browsed by moose during the winter months. The north half of this stand consists of wet ground with more of a mix of fir, tamarack, black spruce and white pine. An island of large pine exists within the northeast corner- 26" dbh pine.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
11	4134 - Aspen, Spruce/Fir	Sapling Well	47.7	25	Immature	Stand was cut in the winter of 1991-92. TS# 36-89. Currently the stand consists of a mixture of aspen, fir, spruce and red maple.
12	6120 - Lowland Cedar	Poletimber Poor	9.9	100		This stand currently consists of poor quality cedar mixed with paper birch and fir. A heavy tag alder component exists within the understory. I did not core a cedar for fear of loosing my increment borer.
13	4319 - Mixed Upland Forest	Sapling Well	22.6	15	Immature	Stand was harvested in 2002. TS#105-99-01. Stand currently consists of a mix of both conifer and deciduous species. Red maple and fir being the most dominant. Decent pine regeneration exists in some locations of the stand.
14	42220 - Natural Jack Pine	Sapling Well	21.5	23	Immature	This stand was harvested in winter of 1991-92 . TS# 36-89. Apparently this site was too rocky to disk trench so we went with natural regeneration, and now in 2017 jack pine has become the dominant specie being most numerous in the west half and south facing slope dropping towards creek bottomland. There are residual trees as well (scattered red & white pine, birch & maple, and spruce/fir). The northern swamp edge is heavier to spruce/fir regen and the eastern half of stand as well. The grass openings have been seeding in to conifers.
15	4319 - Mixed Upland Forest	Sapling Well	26.1	25	Immature	Stand was harvested the winter of 1991-92. TS # 037-89-01. Stand currently consists of aspen and fir with scattered large diameter white pine. More fir exists within the north half, heavier to aspen in the south.
16	429 - Mixed Upland Conifers	Sawtimber Medium	16.3	80	51-80	Stand of both lowland and upland components. The upland contains good quality large diameter red pine and a few white pine, both species are in the 24" dbh range. The lowland contains black spruce in the 8" dbh range. The fir has mostly fallen out of the upland stand. What remains are a few black spruce and a few white birch with the red pine.
17	42200 - Natural White Pine	Sawtimber Well	5.2	120	81-110	Stand was harvested in 2002. TS#105-99-01. Stand was thinned with red and white pine removed. Stand currently consists of mostly white pine with scattered red pine throughout. I considered harvesting but there is a plethora of advanced regeneration under the mature stand. Also, with harvesting the adjacent pine type I opted to leave some mature pine within the compartment. Ground is rugged and rocky within this stand.
18	6122 - Black Spruce	Poletimber Medium	12.8	121		Stand of sparse black spruce, tamarack, and cedar. A heavy tag alder component underneath. Ground is wet. Evidence of past harvest along the north edge of the stand. Previous notes say the parts of the stand were cut under permit #21/70A which was cut between 1970-75.
19	42330 - Upland Fir	Poletimber Well	12.7	42	51-80	Stand was cut between 1970-75 under permit #21/70A. Presently in 2017, this stand is thick with spruce/fir regeneration, 4 to 6 inch dbh, up to 30 ft tall or so. Scattered merchantable size spruce/fir that were probably advance regen left when this stand was cut. A trace of white pine, large sawtimber wildlife trees and a few jack pine.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
20	6122 - Black Spruce	Poletimber Well	29.6	75	51-80	Stand of poor quality black spruce and tamarack. A high water table exists within the stand. Diameter of timber is small due to poor growing conditions.
21	6122 - Black Spruce	Sapling Well	10.0	43		Stand of smaller diameter timber than exists with the stand to the north.
22	6129 - Mixed Coniferous Lowland Forest	Sawtimber Medium	15.9	90	1-50	Stand consists of various species depending on where you stand. Stand has both high and low ground but is mostly swamp. Large diameter pine exists on the high ground. Most of the fir and spruce have fallen out of the stand.
23	6122 - Black Spruce	Poletimber Well	49.1	75	81-110	Stand consists of decent quality spruce with pockets of tamarack. Overall the spruce is in the 60-70 yr range, some areas look ready to harvest while other areas the spruce is small diameter and young. Hold the stand for another 10 years and consider a harvest.
25	4319 - Mixed Upland Forest	Sapling Well	31.0	17	Immature	Stand was seed tree cut in fall/winter of 2000. TS#106-99-01. Stand currently consists of mixed conifer and deciduous regeneration. Stand is fully stocked. Rocky areas exist within the stand.
26	42290 - Natural Mixed Pine	Sawtimber Well	63.7	90	81-110	Stand was cut in the fall/winter of 2000. TS #106-99-01. Stand currently consists of good quality red and white pine of large diameter. A few scattered oak exist as well. Regeneration underneath consists of a mix of red maple, red pine, balsam, and white pine.
27	6122 - Black Spruce	Poletimber Well	33.3	64	51-80	Stand consists of healthy spruce. Overall, the stand consists of smaller diameter spruce. A few scattered tamarack and white birch exist.
31	429 - Mixed Upland Conifers	Poletimber Well	20.5	31	1-50	Stand consists of a mix of red maple, quaking aspen, and balsam fir. Diameter of the trees ranges from 2 to 6 inch dbh. Balsam fir is in very poor condition due to budworm damage. Once balsam dies it will release the red maple and aspen within the stand. Large diameter red and white pine scattered throughout the stand as well.
32	42210 - Natural Red Pine	Sawtimber Medium	19.3	92	81-110	OPIC - FMD: Was commercially cut (thinning) in summer of 2000 by Ken Lanaville (RLR Inc.), under permit #104-99-01, "Petcuson Lake Sale". Shortwood operation. All oak was left and only marked pine was cut. Any other species such as maple, birch, & aspen could be cut as long as it had a merchantable stick of pulpwood. No cutting was allowed within 50 ft of Petcuson Lake..... pockets of mature rp and a few scattered wp. poor quality rp exists w/in the underscore due to diplodia from mature rp... I suggest clearcutting rp to release pine underscore. no cut wp. 2" cut spec on rm,bf, and aspen. put scarily spec on timber sale.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
33	4130 - Aspen	Poletimber Well	17.9	44		OPIC - FMD: Permit #20/69 was issued to Ray Heilala from Republic in June 1969 and closed in March 1971 on about 15 acres. He was to cut all merchantable aspen, birch, jack pine, & fir plus some marked pine. Comment said he failed to cut all merchantable aspen. Another permit was issued to Clarence Antilla of Republic in May 1973 & completed in Feb 1975, for cutting aspen on 10 acres. This apparently finished it up. In 2007, terrain is somewhat rugged in places, ridges and potholes. Scattered red pine sawlogs in stand as well. Just for the record, we had an FTP #F-146 for cutting residual hwd manually on 23.5 acres, removing about 27 sq.ft/acre of basal area. Was put out on bids and completed in April, 1975 by contractor - Joel Frizzell.
35	6121 - Tamarack	Sapling Poor	7.8	16	Immature	contains old building/camp (historic?)
36	6128 - Lowland Coniferous, Mixed Deciduous	Poletimber Medium	5.0	50	51-80	Small swamp on west boundary of Sec 23, provides more benefit to wildlife than timber value. Some larger spruce on edge of high ground. Note that 1/16th corner (iron pipe & cap) is located south of this stand at the ridge top and actually about 30 ft south of and old east-west trail road probably built by Art Antilla circa 1960. Swamp road frozen access road along east side of this stand was built by Holli when cutting the Sleighrunner sale 1982-87.
37	6122 - Black Spruce	Poletimber Well	4.2	92	81-110	Small stand of lowland black spruce. The stand was left when the surrounding high ground was cut in 2002 to provide wildlife cover and visually break up the cutting.
39	4136 - Aspen, Mixed Conifer	Sapling Well	3.4	31	Immature	Stand was cut between 1982 & 87. I was not able to inventory this stand in 2017.
40	42200 - Natural White Pine	Sawtimber Medium	18.9	120	81-110	Stand was cut in fall of 2002. Sale#105-99-01. Scattered large diameter white and red pine exist throughout the stand. Dense regeneration exists within the understory of pine that consists of both deciduous and conifer.
41	4130 - Aspen	Sapling Well	6.7	25	Immature	Stand was cut in the winter of 1991-92. TS# 36-89. Stand consists of poorer quality aspen mixed with fir. Balsam is in poor shape due to the budworm infestation.
42	4130 - Aspen	Sapling Well	15.1	25	Immature	Stand was cut in the winter of 1991-92. TS# 36-89. Stand currently consists of poorer quality aspen with a heavy fir component. Scattered large red pine exist within the stand.
45	6122 - Black Spruce	Poletimber Well	9.4	68	81-110	Stand of small diameter black spruce, tamarack and a few scattered white pine. Tag alder understory is heavy in areas. Density of timber varies depending on where you are standing.
46	4134 - Aspen, Spruce/Fir	Sapling Well	9.1	25	Immature	Stand was cut in 1992. TS #037-89-01. Stand currently consists of decent quality aspen with some balsam and jack pine mixed in.
47	6120 - Lowland Cedar	Poletimber Poor	21.3	85	51-80	Stand of poor quality cedar. Some areas are sparse. Nice cedar regeneration within the understory that is 3-5 foot tall. Heavy tag and balsam fir in the understory as well. A high water table exists w/in the stand.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
49	612 - Lowland Coniferous Forest	Sapling Well	7.6	180	1-50	2007 inventory notes- Stand resembles a treed bog in places. S1/16th corner in stand. I did not make it to this stand in 2017.
50	6121 - Tamarack	Poletimber Poor	20.3	78	51-80	Stand consists of pockets of 5" tamarack with pockets of 5" black spruce. Tag alder understory. High water table exists within the stand.
53	6124 - Lowland Spruce- Fir	Sapling Medium	6.8	25	Immature	This stand consists of a lowland drainage located immediately south of FFH. It has a medium stocking of a mixture of species: black spruce, tamarack, fir, jack pine, balsam, etc. Portions are semi-highland or swamp edges. Stand was harvested in the winter of 1991-92. TS# 36-89-01.
55	6122 - Black Spruce	Poletimber Poor	6.1	80	Immature	Stand consists of stagnant black spruce. A high water table exists.
58	4134 - Aspen, Spruce/Fir	Sapling Well	5.1	25	Immature	Stand was cut in the winter of 1991-92. TS# 037-89-01. Stand currently consists of aspen mixed with fir. Some large white pine exist within the stand, mostly on the west side.
64	42290 - Natural Mixed Pine	Sawtimber Well	12.8	90	111-140	Stand was harvested in Fall/Winter of 2000. TS#106-99-01. Stand currently consists of mature red and white pine. The understory is filling in with both conifer and deciduous species.
67	4319 - Mixed Upland Forest	Poletimber Well	41.6	31	Immature	TS# 5-79A, cut between 1982-87. Stand of decent quality aspen with pockets of balsam throughout. Rocky ground with granite boulders scattered throughout. Fir is in poor condition due to budworm issues.
69	6121 - Tamarack	Poletimber Poor	15.4	100	1-50	Stand consists of a stagnant swamp due to a high water table. Scattered small diameter tamarack and black spruce throughout.
74	42340 - Upland Spruce/Fir	Poletimber Well	15.9	41	1-50	Stand was commercially cut between 1970-75 by Clarence Antilla of Republic under permit #21/70A. Stand currently consists of fir mixed with aspen and white spruce. Fir is very poor quality due to budworm. A fair amount of fir has fallen over already. A pocket of mature red pine exists within the northeast corner of the stand. I combined it with this stand as it is only an acre or two.
76	611 - Lowland Deciduous Forest	Poletimber Well	3.6	75	81-110	2017- was not able to make it to this stand.
77	42220 - Natural Jack Pine	Sapling Well	14.7	25	Immature	Stand was cut 1991-92. TS# 037-89-01. Stand consists of decent quality, dense jack pine within the southern half of the stand. The north half consist of more of an aspen/fir mix. A mix of both high and low ground.
81	4319 - Mixed Upland Forest	Sapling Well	11.3	17	Immature	Stand was cut in Fall/winter of 2000. TS#106-99-01. Did not walk into the stand but it looks similar to stand 25 to the north.
82	6123 - Lowland Fir	Sapling Poor	36.3	30	1-50	Stand consists of older paper birch that is falling apart. The fir component within the understory has now become the overstory due to the dead birch. Stand is in low ground. Fir is in tough shape due to budworm issues.



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
83	6122 - Black Spruce	Poletimber Well	5.9	75	81-110	Stand was left as a buffer for the stream that comes out of Skinnies Lake.
85	42120 - Planted Jack Pine	Sapling Well	17.9	17	Immature	Was cut in summer of 2000. TS#107-99-01. Stand was disk trenched & direct seeded with jack pine in the Fall of 2000, FTP #C31-424. Stand currently consists of good quality jack pine with scattered mature red pine within the stand as well.
88	42200 - Natural White Pine	Sawtimber Well	3.7	80	111-140	Stand was thinned in 2000. TS#107-99-01. This is a sloping hillside site, pine is heaviest at the base of the slope, and at the ridgetop it is quite open with scattered oak/pine, but white pine regen is heavy in these openings. Very little aspen regen, but there is red maple stump sprouting.
89	4130 - Aspen	Sapling Well	2.7	17	Immature	Stand was harvested in the summer of 2000. TS#104-99-01. Stand consists of fully stocked aspen regeneration of good quality. Red pine is growing within the understory and within the small openings that exist within the stand.
90	6124 - Lowland Spruce-Fir	Poletimber Well	8.1	68	81-110	a mix of conifer. stand could be cut depending on access. White spruce and balsam is in very tough condition due to age and budworm. Some very large white pine scattered within the stand. The large pine are mostly within the NW corner of the stand.
91	42210 - Natural Red Pine	Sawtimber Well	19.2	90	81-110	Stand consists of mature red and white pine of good quality. Numerous trees are considered legacy trees as they are over 26" in dbh. Stand was thinned in the past but little to no pine was removed. The understory consists of a mix of spruce, fir, and red maple.
92	6129 - Mixed Coniferous Lowland Forest	Poletimber Well	36.1	78	81-110	Pole sized cedar throughout most of the stand. Parts of the stand were previously managed by the past landowner (St. John Forest Products). Parts of the stand are a bit higher which have a mix of black spruce and cedar. Black spruce does have mistletoe damage. A small stream exists within the stand that runs east/west. Pockets of very wet ground exist which contain a mix of tag alder and young tamarack.
93	6122 - Black Spruce	Sapling Poor	5.9	7	Immature	Stand harvested summer 2010 by Gazan Timber. TS #32-104-09-01. Stand was cut at the end of an extremely droughty spring. Currently the stand is beginning to seed. I noticed a few black spruce poking up through the snow. I am certain there are more spruce that I didn't see during inventory because of the snow.
97	42210 - Natural Red Pine	Sawtimber Well	19.2	120	81-110	Stand cut in 2002. The understory is filling in with red pine, white pine, and stump sprout red maple. Red pine is filling in very well and is in need of a release. White pine and red maple are filling in as well.
98	429 - Mixed Upland Conifers	Sapling Well	29.9	23	Immature	Stand is a mix of species of decent quality. Balsam fir is in tough shape. Mature white pine and red pine scattered throughout the stand. Small pockets of low ground found in the north part of the stand. Most of the stand contains rocky and steep ground.



Stand	Cover Type	Acres	Managed Site	General Comments:
6	6220 - Alder/willow	4.8	No	Former beaver flooding. Stand consists of mostly tag alder.
28	6224 - Treed Bog	20.7	No	Stand consists of a treed bog. Stunted tamarack with a few black spruce mixed in.
29	622 - Lowland Shrub	22.2	No	Former inventory notes state: The center of this stand was a central landing site for the "Sleighrunner Sale" and also a confluence of roads. 2017- I did not make it to this stand but it appears to be a low area.
43	6220 - Alder/willow	66.5	No	Skinnies Lake outlet/creek
48	622 - Lowland Shrub	22.7	No	Stand consists of the abandoned ELF cleared right of way in the swampy portions of Sec 25. A little high ground near W1/4 corner of Sec 25, but it doesn't extend very far eastward.
52	6220 - Alder/willow	9.5	No	Riparian area of the west branch creek flowage. Tag alder and grass throughout most of the opening.
56	622 - Lowland Shrub	23.6	No	Lowland creekbottom - alder, marsh grass, etc.
61	622 - Lowland Shrub	5.4	No	
73	6220 - Alder/willow	15.1	No	Lowland brush, tag alder. ELF row split this stand at one time.
400	330 - Low-Density Trees	3.6	No	This is the former ELF right of way, approx 100 ft wide, first cleared around 1985, and subsequently abandoned about 2005. Poles salvaged in 2006/07.
401	3102 - Grass	7.8	No	This was the residual farm fields cleared by Homesteaders such as the Lyyski family in the 1920's or 30's. Their old barbed wire fences and rock fencerows can still be found. They probably grew hay for their cow, perhaps some potatoes and vegetables. Now these are Wildlife Division grass openings that have received some treatment such as disking & seeding, etc. FTP #W3-629 covered this opening, and also #402,403,404;405 for applying Tordon, then after waiting an appropriate length of time, disking & seeding to wheat, rye, or rye grass, along with fertilizing. This last work was done in August of 1977.
407	330 - Low-Density Trees	1.4	No	This opening is also homestead related and has an old two room poured cement wall basement located within the opening. An apple tree is growing beside it. Opening filling in with conifer, especially jack pine.
411	3102 - Grass	5.9	No	This is the former ELF right of way, approx 100 ft wide, first cleared around 1985, and subsequently abandoned about 2005. Poles salvaged in 2006/07.