Compartment Review Presentation

Gwinn Forest Management Unit

Compartment 32015
Entry Year 2024
Acreage: 1,661
County Marquette
Management Area: Dead Horse Moraines

Stand Examiner: Eric Brolin

Legal Description:

T45N-R24W, Sections 3,10,14,22, and 24

Identified Planning Goals:

Improve the quality and diversity of the extensive Northern Hardwoods stands through selective management while maintaining the conifer component, legacy trees and den trees for wildlife. Additional goals are to provide age-class distribution of aspen by harvesting selected stands.

Soil and topography:

Topography ranges from gently rolling to very steep hills and ravines. Soils are predominantly loamy sands including the Kalkaska, Munising, and Keweenaw series.

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

This compartment is fragmented into essentially two “blocks”. The northern tier is located approx. 3 miles NE of Little Lake, MI and surrounded by private land with extremely limited access. The southern “block” lies 2 miles due east of Little Lake, MI and is bordered by additional State land as well as corporate and private lands. Primary land use is for timber production and low key recreation.

Unique Natural Features:

Kirtland Warbler and loon to west. Eagle, GBH rookery and osprey to sw. Potential for wood turtle in Sheen creek. Potential for RSH or goshawk in M6 stands.

Archeological, Historical, and Cultural Features:

None identified with HAL but the compartment does contain evidence of old mine pits.

Special Management Designations or Considerations:

Riparian corridor stands, black spruce bogs and natural hemlock and cedar cover types providing diversity.

Watershed and Fisheries Considerations:

Three lakes are located within this compartment including Three Lake, Brown Lake, and Grimm Lake. Fisheries Division does not have any records for surveys done on these waters, but standard BMP’s should be followed when harvesting around these lakes. A 100’ no clearcut buffer should be in place around these waters. Also Sheen Creek is an excellent groundwater source for the headwaters of the East Branch Chocolay River which contains brook trout in sections. It is recommended to keep a 100’ setback from the creek with no harvest within the 100’ buffer. In particular, treatments in stand 5 should maintain 100’ from the creek.

Wildlife Habitat Considerations:

Compartment 015 is found within the Dead Horse Moraines Management Area, on Ground Moraines in southeastern Marquette, southwestern Alger, and northwestern Delta Counties. The dominant Natural Communities are poor conifer swamps, mesic northern forests, and dry northern forests. Major forest cover types include Northern Hardwood, Aspen, and Mixed Lowland Conifer. This management area contains a large proportion of hardwood forest which regenerates well partly due to the heavier snow cover and lower deer numbers than the southern portion of this Management Area. The most significant wildlife management issues in the management area are: mast (hard and soft); mature forest (upland deciduous, especially aspen and mixed forest with little understory); course woody debris, early successional forest, and deer wintering complexes.

The following have been identified as featured species for the Dead Horse Moraines Management Area: black bear, pileated woodpecker, ruffed grouse, and white-tailed deer.

Mineral Resource and Development Concerns and/or Restrictions

Compartment 15 Sections 3,10, 14, 22, & 24, T45N-R24W and Section 34, T46N-R24W, Marquette County
No known potential exists for commercial oil & gas production in this part of the state. The closest active sand/gravel pit is roughly four miles to the west. There may be some potential for sand & gravel within the compartment on the uplands. Bedrock may be near the surface in the compartment in places. The compartment is about five miles northeast from the

nearest past metallic mineral mining. Some sparse iron ore exploration occurred two miles west in the mid-1950s. There is no current mineral leasing activity in the area. Potential for metallic minerals is considered low at this time. The State does not own all the mineral rights within the compartment. Because the mineral estate is the dominant estate, the surface owner must provide the owner of the mineral rights reasonable access to the surface for mineral exploration and development.

Vehicle Access:

Access to the northern unit is via Co. Rd 545 but is extremely limited due to gated private land. The southern portion of the compartment is easily accessible from several county roads, two-tracks, and the old abandoned Duluth-Superior railroad bed/snowmobile trail.

Survey Needs:

Needed for numerous treatment areas across the Compartment.

Recreational Facilities and Opportunities:

The old Duluth/Superior railroad bed serves as State designated snowmobile trail #8 running east and west. In addition, part of the compartment abuts Forsyth Twp lands near the old ski hill which now serves as the Twp shooting range.

Fire Protection:

Low to moderate wildland fire potential.

Additional Compartment Information:

The following reports from the Inventory are attached:

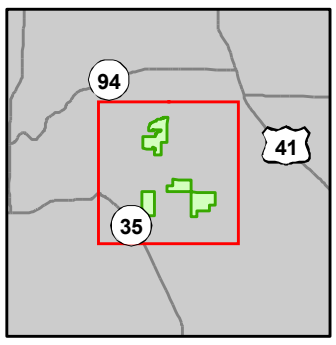
- **Total Acres by Cover Type and Age Class**
- **Cover Type by Harvest Method**
- **Proposed Treatments – No Limiting Factors**
- **Proposed Treatments – With Limiting Factors**
- **Stand Details (Forested and Nonforested)**
- **Dedicated and Proposed Special Conservation Areas**
- **Site Condition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

Overview Map

Compartment: 15
T45N,R24W, Sec. 03, 10, 14, 22, 24
County: Marquette
Unit: Gwinn
Mgmt Area: Dead Horse Moraines
YOE: 2024
Acres: 1660.8 GIS Calculated
Examiner: Eric Brolin
Map Revised: 8/4/2022
Map Phase: Web-Post



N

- Miris Corners
- Remonumented Section Corners
- Survey Grade Corners
- Counties
- DNR - Primary Forest Road
- DNR - Secondary Forest Road
- DNR - Forest Access Route
- Federal / State Highway
- Federal / State / County - Paved Road
- Federal / State - Dirt / Gravel Road
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- Private - Paved Road
- Private - Dirt / Gravel Road
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- Snowmobile Trails
- Designated Snowmobile Trails
- Designated RailTrail
- Intermittent Stream
- Island in Lake or River
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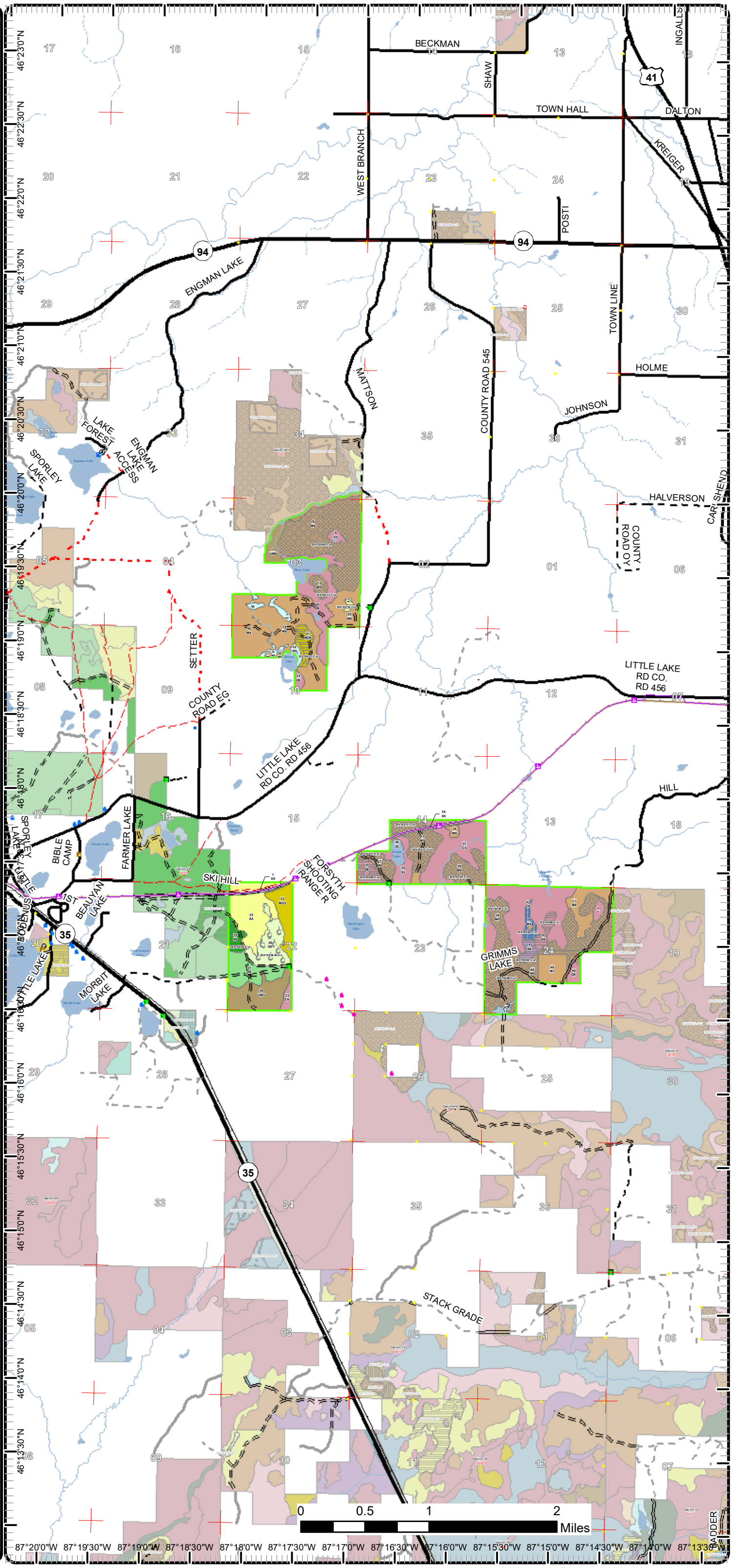
- Perennial River
- Lakes and Rivers
- House
- Structure, Seasonal Dwelling
- Berms
- Gate
- Boating Access Site
- Campground
- City
- Fishing Access Site
- Tower
- Pipeline
- Compartment Boundary
- Selection (Group, Single Tree)
- Clearcut (w/Reserves)
- Prescribed Burn
- Seed Tree (w/Reserves)
- 411 - Northern Hardwood
- 413 - Aspen Types
- 419 - Mixed Upland Deciduous
- 421 - Planted Pines
- 422 - Natural Pines
- 430 - Upland Mixed Forest
- 611 - Lowland Deciduous Forest
- 612 - Lowland Coniferous Forest
- 122 - Roads/Parking Lot
- 310 - Herbaceous Openland
- 500 - Water
- 622 - Lowland Shrub
- 623 - Emergent Wetland



Cover Type & Treatments Map

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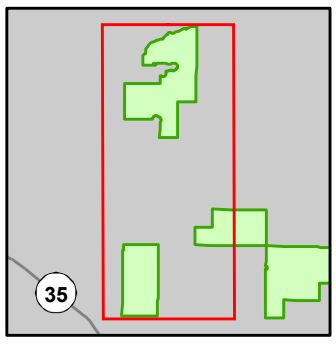

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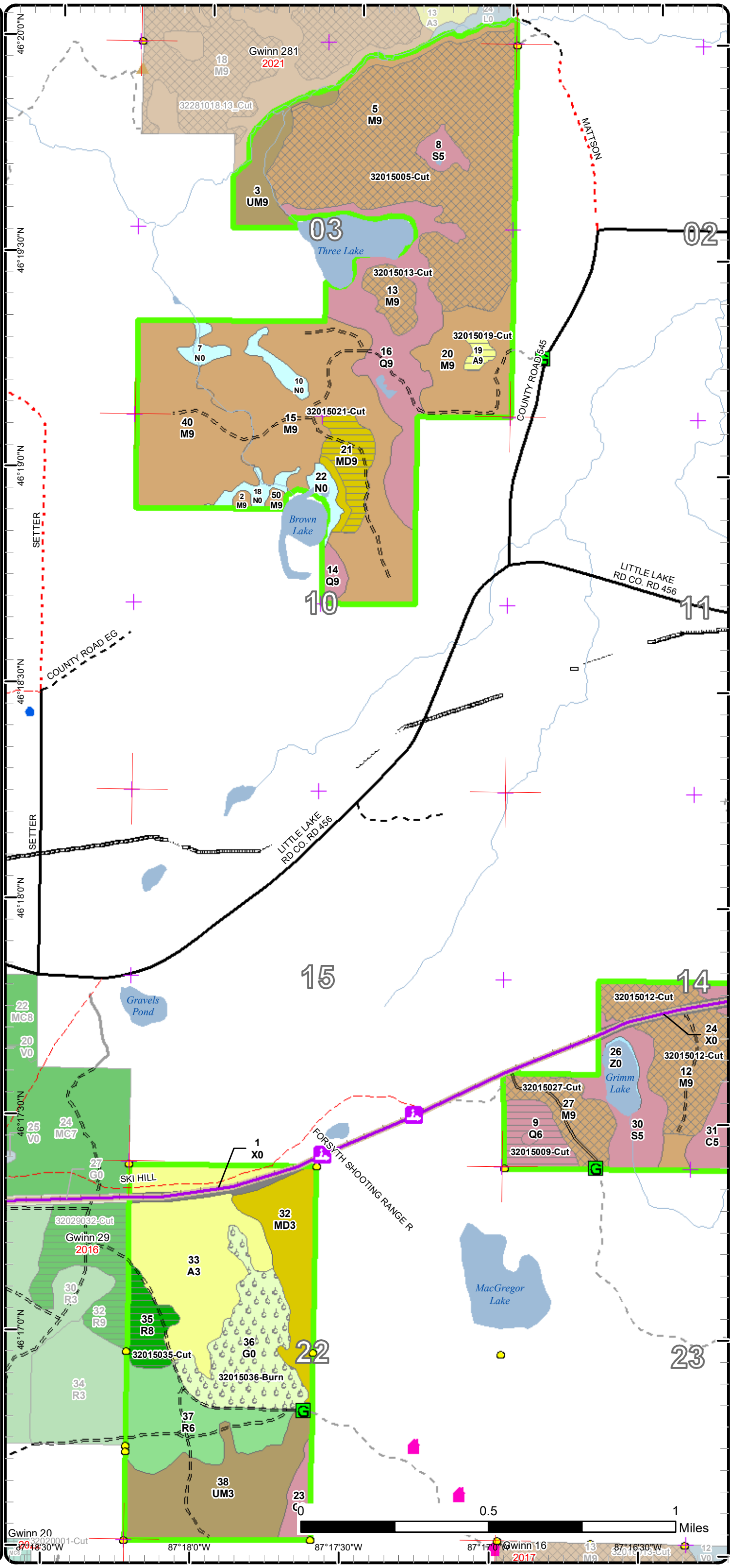

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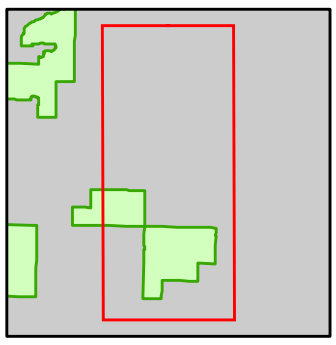

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COUNTY ROAD 545
COUNTY ROAD OY
LITTLE LAKE RD CO. RD 456
LITTLE LAKE RD CO. RD 456
GRIMMS LAKE
GRIMMS LAKE
HILL
Branch Chocolay River
Gwinn 4 2018
Gwinn 16 2017
24 X0
32015012-Cut
29 M9
12 M9
31 C5
32015012-Cut
38
34 M9
32015034-Cut
43 C6
32015039-Cut
39 M9
17 M8
59 C6
32004004-Cut
44 M9
32015006-Cut
32015044-Cut
6 S6
4 B6
46 M9
32015004-Cut
32015046-Cut
49 M3
48 Q6
32004005-Cut
32004003-Cut
19 M6
32004019-Cut
53 M6
47 L0
20 Q6
16 T4
11 F5
10 M6
12 V0
13 M9
9 C6
6 LM6
5 Q6
4 M9
32016013-Cut
2 M9
6 C6
5 M6
3 Q6
8 M8
46°19'30"N
46°19'0"N
46°18'30"N
46°18'0"N
46°17'0"N
46°16'30"N
87°16'0"W
87°15'30"W
87°15'0"W
87°14'30"W
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Miles

Stand Boundary Map

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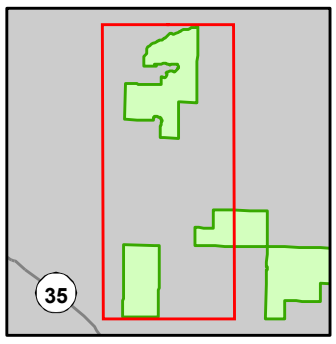

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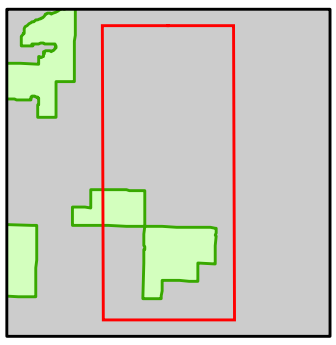

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HILL

24
122 - X0
30
6122 - S5
29
4112 - M9
31
6120 - C5
12
4112 - M9
34
4110 - M9
39
4112 - M9
43
6120 - C6
17
4119 - M8
59
6120 - C6
44
4112 - M9
6
6122 - S6
4
6116 - B6
46
4112 - M9
49
4112 - M3
48
6128 - Q6
53
M6
47
6229 - L0
20
Q6
8
L0
11
F5
10
M6
12
V0
9
C6
6
LM6
5
Q6
4
M9
7
2
M9
6
C6
5
M6
19
M6
3
Q6
8
M8
16
T4
13
M9
44

46°17'0"N
46°16'30"N
87°16'0"W
87°15'30"W
87°15'0"W
87°14'30"W

0 0.5 1 Miles

Special Conservation Areas

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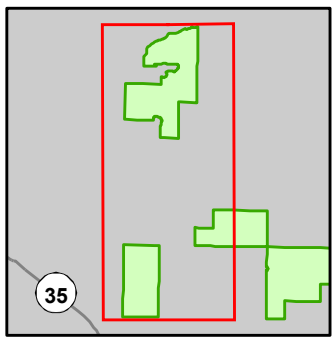

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- Compartment Boundary
- Unavailable
  - 2F: Too steep
  - 2G: Too wet (sensitive soils, does not include access issues)
  - 2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)
  - 3J: Water quality / BMPs (stream, river, or lake)
  - 3L: Other wildlife concerns
  - 5E: Long-Term Retention
- Stand Boundaries
- SCA
- Cold Water Streams
- Cold Water Lakes
- High Priority Trout Stream Buffer
- Trail - Trail Corridor

Special Conservation Areas

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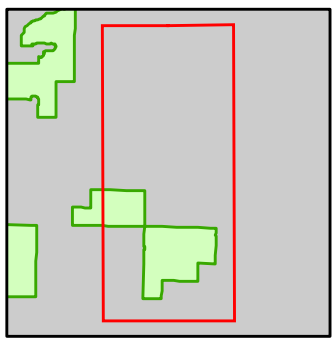

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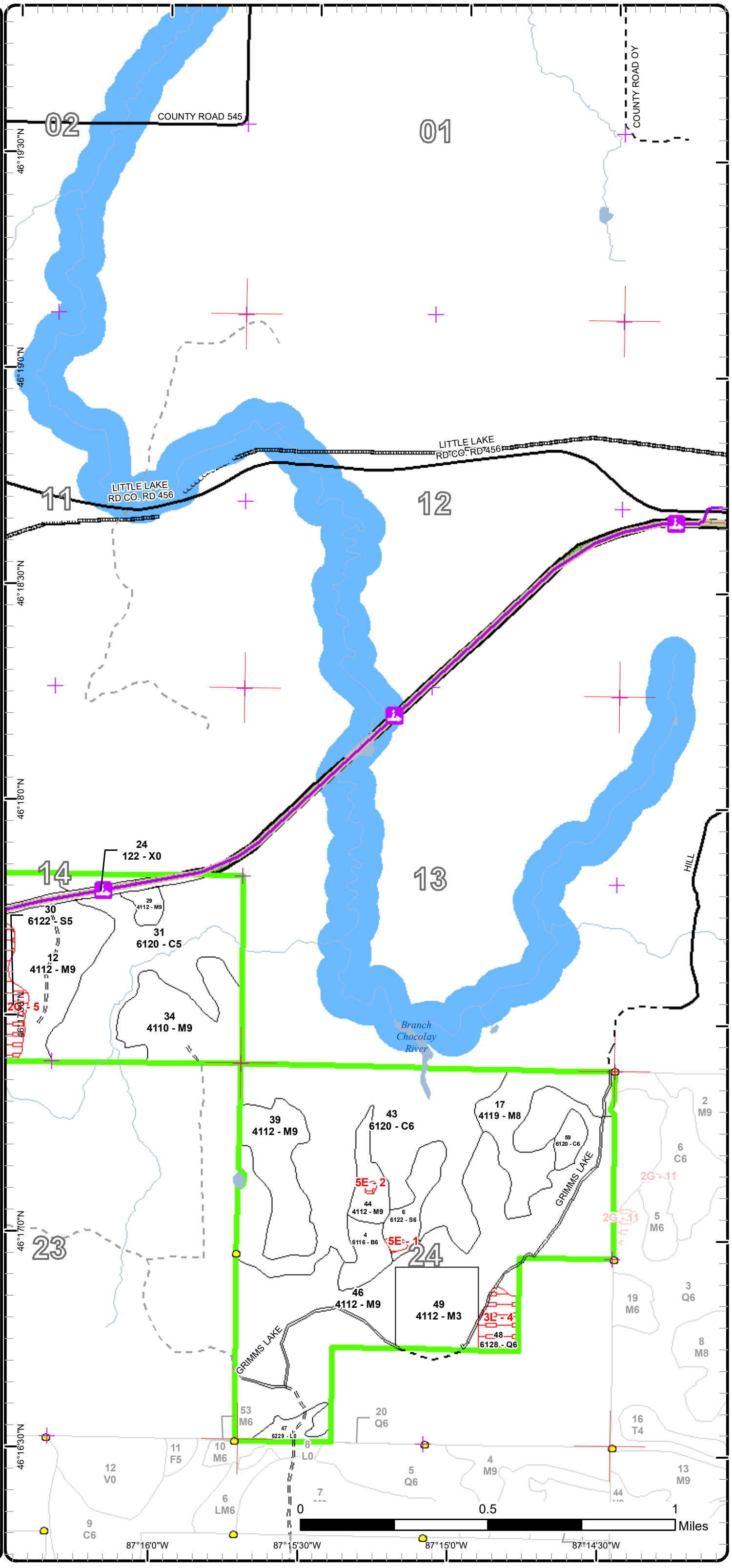

Report 1 – Total Acres by Cover Type and Age Class

Gwinn Mgt. Unit **Compartment 15** **Year of Entry 2024**

Eric Brolin : Examiner

Age Class

	Non-Forest	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100-109	110-119	120-129	130-139	140-149	150+	Uneven-Aged	Total
Aspen	0	0	82	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	**86**
Cedar	0	0	0	0	0	0	0	0	0	0	9	237	0	0	0	0	0	0	**245**
Herbaceous Openland	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**50**
Lowland Conifers	0	0	0	0	0	0	0	0	0	0	18	82	0	0	0	0	0	0	**100**
Lowland Shrub	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**7**
Lowland Spruce/Fir	0	0	0	0	0	0	0	0	0	6	0	40	0	0	0	0	0	0	**46**
Marsh	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**22**
Mixed Upland Deciduous	0	39	0	0	0	0	0	20	0	0	0	0	0	0	0	0	0	0	**59**
Northern Hardwood	0	31	0	0	0	0	0	0	0	0	12	811	0	0	0	0	0	0	**854**
Paper Birch	0	0	0	0	0	0	0	0	0	0	0	11	0	0	0	0	0	0	**11**
Red Pine	0	0	0	0	47	0	0	0	0	15	0	0	0	0	0	0	0	0	**62**
Upland Mixed Forest	0	0	0	0	0	67	0	0	0	0	0	22	0	0	0	0	0	0	**89**
Urban	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**18**
Water	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**10**
Total	**107**	**70**	**82**	**0**	**47**	**67**	**4**	**20**	**0**	**21**	**39**	**1203**	**0**	**0**	**0**	**0**	**0**	**0**	**1659**

DOHMN

Report 2 – Treatment Summary

Gwinn Mgt. Unit

Year of Entry: 2024

Acres of Harvest

Compartment 15

Total Compartment Acres: 1,661

Commercial Harvest - 613

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	4	0	0	0	0	0	0	0	0	**4**
Lowland Conifers	18	0	0	0	0	0	0	0	0	**18**
Lowland Spruce/Fir	13	0	0	0	0	0	0	0	0	**13**
Mixed Upland Deciduous	17	0	0	0	0	0	0	0	0	**17**
Northern Hardwood	0	524	0	11	0	0	0	0	0	**536**
Paper Birch	11	0	0	0	0	0	0	0	0	**11**
Red Pine	15	0	0	0	0	0	0	0	0	**15**
Total	**78**	**524**	**0**	**11**	**0**	**0**	**0**	**0**	**0**	**613**

Proposed and Next Step Treatments by Method

	Harvest	Site Prep	Planting	Seeding	Burning	Pesticide	Monitoring	Other	Non-Forest Mgt.	Total Acres
Current	613	0	0	0	50	0	0	0	0	**664**
Next Step	0	31	31	0	0	31	694	0	0	**786**
Total	**613**	**31**	**31**	**0**	**50**	**31**	**694**	**0**	**0**	**1450**

Proposed Treatments:

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
4	32015004-Cut	11.0	6116 - Lowland Birch	Poletimber Well	101	111-140	Harvest	Clearcut with Retention	6116 - Lowland Birch	Even-Aged	No

Prescription Specs: Harvest to a 2" spec to promote mixed conifer/hardwood and birch regeneration. Retention should include a mix of species. Leave cedar and hemlock. Favor retention of yellow birch.

Next Step Treatments: Monitoring, Natural Regen (Re-Inventory)

Acceptable Regen: birch, hardwood, mixed conifer

Other Comment:

Site Condition

Proposed Start Date: 10/1 /2023

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
5	32015005-Cut	178.7	4112 - Maple, Beech, Cherry Association	Sawtimber Well	108	141-170	Harvest	Single Tree Selection	411 - Northern Hardwood	Uneven-Aged	No

Prescription Specs: Mark stand to 70-90 BA. Focus on removing larger poor quality trees, maintain and create canopy gaps to release saplings, while maintaining desired BA. Remove all merchantable spruce/fir. Leave some large future snag trees for wildlife. Leave cedar, hemlock, pine, and yellow birch. Favor species diversity while marking.

Next Step Treatments: Monitoring, Natural Regen (Re-Inventory)

Acceptable Regen: northern hardwood

Other Comment: Removing larger poor quality trees will create excellent canopy gaps to release the established regeneration. Patches denser to hemlock should be excluded if operations can't occur without damage to trees. Fisheries recommended a 100' stream buffer on Sheen Creek.

Site Condition

Proposed Start Date: 10/1 /2023

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
6	32015006-Cut	13.1	6122 - Black Spruce	Poletimber Well	101	81-110	Harvest	Clearcut with Retention	612 - Lowland Coniferous Forest	Even-Aged	No

Prescription Specs: Harvest to a 2" spec to promote regeneration. Retention should include a diverse mix of species. Leave cedar and hemlock. Favor retention of yellow birch.

Next Step Treatments: Monitoring, Natural Regen (Re-Inventory)

Acceptable Regen: cedar, hemlock, spruce/fir

Other Comment: Long term retention patch in SW corner will include a small dense cedar patch with a mix of other edge species.

Site Condition

Proposed Start Date: 10/1 /2023

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
9	32015009-Cut	17.6	6129 - Mixed Coniferous Lowland Forest	Poletimber Well	96	81-110	Harvest	Clearcut with Retention	613 - Lowland Mixed Forest	Even-Aged	No

Prescription Specs: Harvest to a 2" spec to promote regeneration. Retention should include a diverse mix of species. Green tree to leave some log sized white pine. Leave cedar and hemlock.

Next Step Treatments: Monitoring, Natural Regen (Re-Inventory)

Acceptable Regen: lowland conifer, hemlock, pine, mixed hardwood

Other Comment: Look at leaving a central stand retention patch to capture a mix of all species.

Site Condition

Proposed Start Date: 10/1 /2023

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
12	32015012-Cut	54.0	4112 - Maple, Beech, Cherry Association	Sawtimber Well	108	111-140	Harvest	Single Tree Selection	411 - Northern Hardwood	Uneven-Aged	No

Prescription Specs: Mark stand to 70-90 BA. Focus on removing larger poor quality trees, maintain and create canopy gaps to release saplings, while maintaining desired BA. Remove all merchantable spruce/fir. Leave some large future snag trees for wildlife. Leave cedar, hemlock, and pine. Favor species diversity, especially black cherry and yellow birch, while marking.

Next Step Treatments: Monitoring, Natural Regen (Re-Inventory)

Acceptable Regen: northern hardwood

Other Comment: Removing larger poor quality trees will create excellent canopy gaps to release the established regeneration. Patches denser to hemlock should be excluded if operations can't occur without damage to trees.

Site Condition

Proposed Start Date: 10/1 /2023

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
13	32015013-Cut	11.4	4112 - Maple, Beech, Cherry Association	Sawtimber Well	108	111-140	Harvest	Single Tree Selection	411 - Northern Hardwood	Uneven-Aged	No

Prescription Specs: Mark stand to 70-90 BA. Focus on removing larger poor quality trees, maintain and create canopy gaps to release saplings, while maintaining desired BA. Remove all merchantable spruce/fir. Leave some large future snag trees for wildlife. Leave cedar, hemlock, and pine. Favor species diversity, especially black cherry and yellow birch, while marking.

Next Step Treatments: Monitoring, Natural Regen (Re-Inventory)

Acceptable Regen: northern hardwood

Other Comment: Removing larger poor quality trees will create excellent canopy gaps to release the established regeneration. Treatment lines along the edges should not push into areas that may become too dense to hemlock and cause damage. A trail will have to be made to access this stand through adjacent, dense hemlock strip from the west. May have to remove a few hemlock during sale administration for access.

Site Condition

Proposed Start Date: 10/1 /2023

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
19	32015019-Cut	3.6	4130 - Aspen	Sawtimber Well	56	81-110	Harvest	Clearcut	413 - Aspen	Even-Aged	No

Prescription Specs: Harvest to a 2" spec to promote aspen regeneration. Leave hemlock.

Next Step Treatments: Monitoring, Natural Regen (Re-Inventory)

Acceptable Regen: aspen, maple

Other Comment: No retention for small size.

Site Condition

Proposed Start Date: 10/1 /2023

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
21	32015021-Cut	17.1	4191 - Mixed Upland Deciduous with Conifer	Sawtimber Well	66	81-110	Harvest	Clearcut with Retention	4199 - Other Mixed Upland Deciduous	Even-Aged	No

Prescription Specs: Harvest to a 2" spec to promote regeneration. Leave hemlock and pine.

Next Step Treatments: Monitoring, Natural Regen (Re-Inventory)

Acceptable Regen: pine, aspen, hardwood, spruce/fir

Other Comment: 100' buffer along flooded lowland to the east will be used as long term stand retention.

Site Condition

Proposed Start Date: 10/1 /2023

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
27	32015027-Cut	24.0	4112 - Maple, Beech, Cherry Association	Sawtimber Well	108	111-140	Harvest	Single Tree Selection	411 - Northern Hardwood	Uneven-Aged	No

Prescription Specs: Mark stand to 70-90 BA. Focus on removing larger poor quality trees, maintain and create canopy gaps to release saplings, while maintaining desired BA. Remove all merchantable spruce/fir. Leave some large future snag trees for wildlife. Leave cedar, hemlock, and pine. Favor species diversity, especially black cherry and yellow birch, while marking.

Next Step Treatments: Monitoring, Natural Regen (Re-Inventory)

Acceptable Regen: northern hardwood

Other Comment: Removing larger poor quality trees will create excellent canopy gaps to release the established regeneration. Patches denser to hemlock should be excluded if operations can't occur without damage to trees. Include any upland fir patches along the edges for management.

Site Condition

Proposed Start Date: 10/1 /2023

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
34	32015034-Cut	41.7	4110 - Sugar Maple Association	Sawtimber Well	108	111-140	Harvest	Single Tree Selection	411 - Northern Hardwood	Uneven-Aged	No

Prescription Specs: Mark stand to 70-90 BA. Focus on removing larger poor quality trees, maintain and create canopy gaps to release saplings, while maintaining desired BA. Remove all merchantable spruce/fir. Leave some large future snag trees for wildlife. Leave cedar, hemlock, pine, and yellow birch. Favor species diversity, especially black cherry, while marking.

Next Step Treatments: Monitoring, Natural Regen (Re-Inventory)

Acceptable Regen: northern hardwood

Other Comment: Removing larger poor quality trees will create excellent canopy gaps to release the established regeneration.

Site Condition

Proposed Start Date: 10/1 /2023

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
35	32015035-Cut	15.3	42210 - Natural Red Pine	Sawtimber Medium	84	81-110	Harvest	Clearcut with Retention	4211 - Planted Red Pine	Even-Aged	No

Prescription Specs: Harvest to a 2" spec to prepare site for planting red pine. Leave edge long-term retention for stand.

Next Step Treatments: SitePrep, Trenching; Pesticide, Aerial - Site Prep; Planting, Initial Plant; Monitoring, Artificial Regen(1yr); Monitoring, Artificial Regen(3yr); SitePrep, Roller Chopping; Planting, Replant; Pesticide, Skidder - Site Prep; Monitoring, He

Acceptable Regen: red pine

Other Comment:

Site Condition

Proposed Start Date: 10/1 /2023

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
39	32015039-Cut	33.3	4112 - Maple, Beech, Cherry Association	Sawtimber Well	108	111-140	Harvest	Single Tree Selection	411 - Northern Hardwood	Uneven-Aged	No

Prescription Specs: Mark stand to 70-90 BA. Focus on removing larger poor quality trees, maintain and create canopy gaps to release saplings, while maintaining desired BA. Remove all merchantable spruce/fir. Leave some large future snag trees for wildlife. Leave cedar, hemlock, and pine. Favor species diversity while marking.

Next Step Treatments: Monitoring, Natural Regen (Re-Inventory)

Acceptable Regen: northern hardwood

Other Comment: Removing larger poor quality trees will create excellent canopy gaps to release the established regeneration.

Site Condition

Proposed Start Date: 10/1 /2023

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
44	32015044-Cut	11.4	4112 - Maple, Beech, Cherry Association	Sawtimber Well	91	141-170	Harvest	Seed Tree with Retention	411 - Northern Hardwood	Even-Aged	No

Prescription Specs: Harvest to a 2" spec to promote regeneration from stump sprouts and seed. Leave cedar, and hemlock. Favor to leave yellow birch. In combination with leave species, green mark approximately 1 better quality maple per acre for seed.

Next Step Treatments: Monitoring, Natural Regen (Re-Inventory)

Acceptable Regen: northern hardwoods, mixed conifer, cedar, hemlock

Other Comment: Push treatment lines up to cedar. Look at leaving a central stand retention patch to capture both maple species as well as some conifer.

Site Condition

Proposed Start Date: 10/1 /2023

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
46	32015046-Cut	181.0	4112 - Maple, Beech, Cherry Association	Sawtimber Well	108	111-140	Harvest	Single Tree Selection	411 - Northern Hardwood	Uneven-Aged	No

Prescription Specs: Mark stand to 70-90 BA. Focus on removing larger poor quality trees, maintain and create canopy gaps to release saplings, while maintaining desired BA. Remove all merchantable spruce/fir. Leave some large future snag trees for wildlife. Leave cedar, hemlock, and pine. Favor species diversity, especially yellow birch and black cherry, while marking.

Next Step Treatments: Monitoring, Natural Regen (Re-Inventory)

Acceptable Regen: northern hardwood

Other Comment: Removing larger poor quality trees will create excellent canopy gaps to release the established regeneration.

Site Condition

Proposed Start Date: 10/1 /2023

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
13	32016013-Cut	105.2	4112 - Maple, Beech, Cherry Association	Sawtimber Well	102	111-140	Harvest	Single Tree Selection	411 - Northern Hardwood	Uneven-Aged	No

Prescription Specs: Mark stand to 60-80 BA to open up more canopy for release of dense maple saplings. Focus on removing larger poor quality trees, maintain and create canopy gaps to release saplings, while maintaining desired BA. Remove all merchantable spruce/fir. Leave some large future snag trees for wildlife. Leave cedar, hemlock, and pine. Favor species diversity, especially black cherry and yellow birch, while marking.

Next Step Treatments: Monitoring, Natural Regen (Re-Inventory)

Acceptable Regen: northern hardwood

Other Comment: May have to exclude areas of south and east along private for steep terrain. Pay special attention to marking access up/down slopes for management. Include all upland edges of fir/hardwood mix for management without pushing into lowland ground.

Site Condition

Proposed Start Date: 10/1 /2023

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
32	32029032-Cut	38.2	42210 - Natural Red Pine	Sawtimber Well	90	81-110	Harvest	Clearcut with Retention	4211 - Planted Red Pine	Even-Aged	No

Prescription Specs: Harvest to a 2" spec to prepare site for planting red pine. Leave edge long-term retention for stand.

Next Step Treatments: Pesticide, Aerial - Site Prep; SitePrep, Trenching; Planting, Initial Plant; Monitoring, Artificial Regen(1yr); Monitoring, Artificial Regen(3yr); SitePrep, Roller Chopping; Planting, Replant; Pesticide, Aerial - Release; Monitoring, Herbi

Acceptable Regen: red pine

Other Comment:

Site Condition

Proposed Start Date: 10/1 /2023

Approved Treatments:

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
36	32015036-Burn	50.4	3105 - Mixed Upland Herbaceous	Nonstocked		Unspecified	Burn	Opening	31022 - Warm Season Grass		No

Prescription Specs: W32803

Next Step Treatments: Monitoring, Other - Specify

Acceptable Regen:

Other Comment: Percent to Treat = 100%

Site Condition

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut

Proposed Start Date: 5 /1 /2024

Total Treatment Acreage Proposed: **807**

Report 4 – Site Conditions

Gwinn Mgt. Unit

Eric Brolin : Examiner

Compartment: 15

Year of Entry: 2024

Availability for Management

Total Acres	Acres Available	*Acres Avail With Condition*	Acres Not Available		Dominant Site Conditions 2F	2G	2H	3J	3L	5E
86	86	*0*	0	**Aspen**						
245	245	*0*	0	**Cedar**						
50	50	*0*	0	**Herbaceous Openland**						
101	18	*0*	83	**Lowland Conifers**					82	1
7	7	*0*	0	**Lowland Shrub**						
47	20	*0*	27	**Lowland Spruce/Fir**		26				1
22	22	*0*	0	**Marsh**						
59	56	*0*	3	**Mixed Upland Deciduous**						3
854	822	*0*	32	**Northern Hardwood**	21		3	7		1
11	11	*0*	0	**Paper Birch**						
62	62	*0*	0	**Red Pine**						
89	67	*0*	22	**Upland Mixed Forest**			22			
18	18	*0*	0	**Urban**						
10	10	*0*	0	**Water**						
1,661	1,493		168	Total Forested Acres	21	26	25	7	82	5
	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	Availability	Dominant Site Condition	Acres	Other Site Condition	Other Site Condition	Other Site Condition	Other Site Condition
1		**Unavailable**	**5E: Long-Term Retention**	1	Unspecified	Unspecified	Unspecified	Unspecified
	Comments: Long term retention for stand 6.							
2		**Unavailable**	**5E: Long-Term Retention**	1	Unspecified	Unspecified	Unspecified	Unspecified
	Comments: Long term retention for stand 44.							
3		**Unavailable**	**5E: Long-Term Retention**	1	Unspecified	Unspecified	Unspecified	Unspecified
	Comments: Long term retention for stand 9.							

4	**Unavailable**	**3L: Other wildlife concerns**	10	Unspecified	Unspecified	Unspecified	Unspecified

Comments:

Hemlock is too dense and evenly dispersed in this stand. Any operations will have a high risk of significantly damaging hemlock resource from compaction/root rutting damage and/or residual damage.

5	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	26	5D: Unproductive Forest Land	Unspecified	Unspecified	Unspecified

Comments:

Unproductive bog type ground. Too wet and small to harvest.

6	**Unavailable**	**2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)**	1	2B: Unknown if access through adjacent landowner(s) is possible	Unspecified	Unspecified	Unspecified

Comments:

Stand blocked by surrounding lowland/stream and difficult private access.

7	**Unavailable**	**2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)**	2	2B: Unknown if access through adjacent landowner(s) is possible	Unspecified	Unspecified	Unspecified

Comments:

Stand blocked by surrounding lowland/stream and difficult private access.

8	**Unavailable**	**3L: Other wildlife concerns**	5	Unspecified	Unspecified	Unspecified	Unspecified

Comments:

Very dense hemlock with other species mixed in. Stand could not be managed without significant damage to hemlock resource.

9	**Unavailable**	**3L: Other wildlife concerns**	67	3J: Water quality / BMPs (stream, river, or lake)	Unspecified	Unspecified	Unspecified

Comments:

Dense hemlock large pole overstory with hemlock pole understory. Any management in this stand would significantly damage hemlock resource. Also area for lake buffer in the north.

10	**Unavailable**	**5E: Long-Term Retention**	3	3J: Water quality / BMPs (stream, river, or lake)	Unspecified	Unspecified	Unspecified

Comments:
Buffer strip used for 100' buffer along lowland edge and also as long term retention for stand 21.

11	**Unavailable**	**2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)**	22	Unspecified	Unspecified	Unspecified	Unspecified

Comments:
Blocked by streams and no access from any other routes.

13	**Unavailable**	**2F: Too steep**	21	Unspecified	Unspecified	Unspecified	Unspecified

Comments:
This area can not be managed. It is cut off from the south by a drainage ravine with very steep slopes up each side. Any access from private would require new road construction across private through difficult terrain.

14	**Unavailable**	**3J: Water quality / BMPs (stream, river, or lake)**	7	Unspecified	Unspecified	Unspecified	Unspecified

Comments:
100' buffer for Sheen Creek per fisheries division.

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 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.

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
1	122 - Road/Parking Lot	Nonstocked	7.5			No	Utility ROW.
2	4110 - Sugar Maple Association	Sawtimber Well	1.4	108	111-140	N/A	Hardwood patch surrounded by flooded lowland and difficult private access.
3	4319 - Mixed Upland Forest	Sawtimber Well	22.3	108	81-110	N/A	Used past inventory data and edge call. Blocked by streams and dense lowland swale with saturated ground. Near impossible access from any other direction, would require lengthy new road construction across private for management. Remote upland knob surrounded by wetlands. Large red maple, hemlock, white pine with heavy fir saplings in the understory.

Canopy Species	% Cover	Size Class	DBH	Age
White Pine	11	Log	18	
Black Spruce	15	Pole	8	
Hemlock	12	Log	14	
Red Maple	40	Log/Pole	12	108
Balsam Fir	10	Pole	8	
Sugar Maple	12	Log/Pole	11	

Sub-Canopy Species	Density	Avg. Height	Size
Balsam Fir	Full	5 - 10 feet	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
4	6116 - Lowland Birch	Poletimber Well	11.0	101	111-140	N/A	Dense to paper birch, a majority is small sawlog sized trees. Low, wetter ground with conifers mixed in.

Canopy Species	% Cover	Size Class	DBH	Age
Black Spruce	7	Log/Pole	11	
Balsam Fir	6	Pole	8	
Yellow Birch	5	Log/Pole	12	
Northern White Cedar	5	Pole/Log	9	101
Hemlock	2	Log/Pole	11	
Black Ash	5	Pole	9	
Paper Birch	60	Pole/Log	9	101
Red Maple	10	Log/Pole	11	

Sub-Canopy Species	Density	Avg. Height	Size
Northern White Cedar	Low	Variable	Sapling
Balsam Fir	Low	Variable	Sapling
Red Maple	Low	Variable	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
5	4112 - Maple, Beech, Cherry Association	Sawtimber Well	186.1	108	141-170	N/A	Larger diameter hardwood log stand. Overall moderate to good quality with a good component of larger, poor quality mixed in. Areas very dense to larger diameter declining cherry, especially along the north border and lower portions of slopes. A roughly 30 acre area was treated in 2006 in the NE corner that has been merged with this stand to manage as one. BA can be lighter around 100 in this area but includes patches that are much more dense. Past notes say that aspen was removed, it seems they did not focus enough on thinning the residual hardwood. 170 140 140 140 Average of 150 BA across majority of stand, some lighter areas in the NE corner.

Canopy Species	% Cover	Size Class	DBH	Age
Paper Birch	2	Log/Pole	11	
Balsam Fir	2	Pole	7	
White Spruce	2	Log	14	
Hemlock	2	XLog	20	
Yellow Birch	3	Log	12	
Sugar Maple	54	Log	14	108
Red Maple	10	Log	14	
Black Cherry	25	Log	12	108

Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	Medium	Variable	Sapling
Balsam Fir	Low	Variable	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
6	6122 - Black Spruce	Poletimber Well	14.1	101	81-110	N/A	Nice black spruce with a minor component of other species mixed in. Excellent cedar and hemlock regen across stand ranging from 2' to 10'+ tall depending on canopy light.

Canopy Species	% Cover	Size Class	DBH	Age
Yellow Birch	2	Log/Pole	10	
Balsam Fir	5	Pole	8	
White Spruce	2	Log	12	
Hemlock	5	Log/Pole	12	
Northern White Cedar	20	Pole/Log	9	101
Red Maple	5	Pole	9	
Black Spruce	58	Pole/Log	9	101
Black Ash	3	Pole	8	

Sub-Canopy Species	Density	Avg. Height	Size
Red Maple	Low	Variable	Sapling
Balsam Fir	Medium	Variable	Sapling
Black Ash	Low	Variable	Sapling
Hemlock	Medium	Variable	Sapling
Northern White Cedar	Medium	Variable	Pole

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
7	623 - Emergent Wetland	Nonstocked	4.6		Immature	No	Flooded lowland marsh.

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
8	6122 - Black Spruce	Poletimber Medium	6.4	86	51-80	N/A	Small black spruce sinkhole surrounding water.

Canopy Species	% Cover	Size Class	DBH	Age
White Pine	10	Log/XLog	12	
Red Maple	10	Pole	9	
Balsam Fir	20	Pole/Sapling	8	
Black Spruce	60	Pole/Sapling	9	86

Sub-Canopy Species	Density	Avg. Height	Size
Balsam Fir	Low	Variable	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
9	6129 - Mixed Coniferous Lowland Forest	Poletimber Well	18.3	96	81-110	N/A	Mixed lowland flat. All species are pretty evenly dispersed across entire stand. Patch of lowland hardwood in SW corner. Some smaller lowland conifer but increasing in size in the west half of the stand.

Canopy Species	% Cover	Size Class	DBH	Age
Red Maple	10	Pole/Log	9	
Hemlock	6	Pole/Log	9	
Black Spruce	18	Pole	7	96
Northern White Cedar	10	Pole	8	
White Pine	20	Log/Pole	11	
Tamarack	31	Pole	8	96
Balsam Fir	5	Pole/Sapling	6	

Sub-Canopy Species	Density	Avg. Height	Size
Black Spruce	Low	Variable	Pole
Hemlock	Low	Variable	Sapling
Northern White Cedar	Low	Variable	Sapling
Balsam Fir	Low	Variable	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
10	623 - Emergent Wetland	Nonstocked	5.7			No	Lowland flat of brush and marsh grass.

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
12	4112 - Maple, Beech, Cherry Association	Sawtimber Well	58.3	108	111-140	N/A	Good quality maple log stand with excellent sapling regen across the entire area. A lot of the larger diameter, log sized trees, have large lower forks. Average of 130+ BA. Patch of low, dense hemlock in the south tip should be excluded from future management.

Canopy Species	% Cover	Size Class	DBH	Age
Red Maple	14	Log	12	108
Yellow Birch	2	Log	14	
Hemlock	8	Log	14	
Balsam Fir	2	Pole	8	
Black Cherry	4	Log	12	
Sugar Maple	70	Log	14	108

Sub-Canopy Species	Density	Avg. Height	Size
Red Maple	Low	Variable	Sapling
Hemlock	Low	Variable	Sapling
Balsam Fir	Low	Variable	Sapling
Sugar Maple	Full	Variable	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
13	4112 - Maple, Beech, Cherry Association	Sawtimber Well	11.4	108	111-140	N/A	Larger diameter hardwood log stand. Overall moderate to good quality with a good component of larger, poor quality mixed in. Most of the west/south area transitions to more red maple with some conifer mixed in. Very dense maple saplings, some reaching 3"+ size in old canopy gaps. Average near 140 BA

Canopy Species	% Cover	Size Class	DBH	Age
Red Maple	27	Log	14	
Black Cherry	20	Log	12	108
Paper Birch	2	Log/Pole	11	
White Spruce	2	Log	14	
Hemlock	2	XLog	20	
Yellow Birch	5	Log	12	
Sugar Maple	40	Log	14	108
Balsam Fir	2	Pole	7	

Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	Medium	Variable	Sapling
Balsam Fir	Low	Variable	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
14	6129 - Mixed Coniferous Lowland Forest	Sawtimber Well	5.4	108		N/A	Lowland flat very dense with hemlock. Any management would damage hemlock resource. H5C4F4M4 on higher ground with C4F4H4 lower. Southern end of stand contains old mine pits. Good hemlock regeneration.

Canopy Species	% Cover	Size Class	DBH	Age
Hemlock	55	Log/Pole	11	108
Northern White Cedar	10	Pole/Log	9	
Red Maple	15	Log/Pole	10	
Balsam Fir	15	Pole	8	
White Pine	5	Log	14	

Sub-Canopy Species	Density	Avg. Height	Size
Hemlock	Medium	Variable	Sapling
Balsam Fir	Medium	Variable	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
15	4112 - Maple, Beech, Cherry Association	Sawtimber Well	120.4	108	81-110	N/A	Larger log sized, good quality maple stand. Evenly spaced canopy across much of the stand with a lot of gaps and rooms for canopies to grow. A few unmanaged hardwood areas in the center narrow strip due to steep terrain. Stand is split along a north to south flowing bed and bank stream along the west border, be mindful of appropriate buffers for future management. Abundance of 5'-10' healthy hemlock saplings are dispersed across the understory in most areas. 120 80 90 90 Average of 95 BA.

Canopy Species	% Cover	Size Class	DBH	Age
White Pine	3	XLog/Log	18	
Hemlock	6	Log	14	
Black Cherry	5	Log	12	
White Spruce	2	Log	12	
Sugar Maple	72	Log	15	108
Red Maple	10	Log	14	
Yellow Birch	2	Log	14	

Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	High	Variable	Seeding
Hemlock	Medium	5 - 10 feet	Sapling
Balsam Fir	Low	Variable	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
16	6129 - Mixed Coniferous Lowland Forest	Sawtimber Well	66.9	108	111-140	N/A	Mainly a lowland drainage way. Small ridge veins with low swales across entire stand. VERY dense with hemlock overstory and understory poles with other species speckled in across stand. Hemlock ranges from suppressed pole sized trees to small sawlogs. A few small merchantable black spruce patches within could not be accessed and/or managed without removing hemlock species. H5C4F4M4 on higher ground with C4F4H4 lower. Southern end of stand contains old mine pits. Good hemlock regeneration.

Canopy Species	% Cover	Size Class	DBH	Age
White Pine	5	Log	14	
Hemlock	56	Log/Pole	10	108
Black Spruce	12	Pole	8	
Balsam Fir	5	Pole/Sapling	6	
Red Maple	12	Log/Pole	10	
Northern White Cedar	10	Pole/Log	9	

Sub-Canopy Species	Density	Avg. Height	Size
Balsam Fir	Medium	Variable	Sapling
Hemlock	High	Variable	Pole

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
17	4119 - Mixed Northern Hardwoods	Sawtimber Medium	35.9	101	81-110	N/A	Flatter low hardwood stand with a lot of open canopy patches. A few small interior patches may be manageable at this time but more regen would be damaged than what it's worth. Very dense hardwood saplings with room to grow upwards. A fair amount of black cherry in the north has almost died out.

Canopy Species	% Cover	Size Class	DBH	Age
Yellow Birch	8	Log/Pole	10	
Northern White Cedar	10	Pole	8	101
Balsam Fir	5	Pole/Sapling	6	
Hemlock	10	Log/Pole	10	
Black Cherry	10	Log/Pole	12	
Sugar Maple	15	Log	12	
Red Maple	42	Log	12	101

Sub-Canopy Species	Density	Avg. Height	Size
Red Maple	Medium	Variable	Sapling
Balsam Fir	Medium	Variable	Sapling
Sugar Maple	Medium	Variable	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
18	623 - Emergent Wetland	Nonstocked	5.6			No	Flooded shrub flat.

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
19	4130 - Aspen	Sawtimber Well	3.6	56	81-110	N/A	Small aspen patch with overmatured declining aspen within.

Canopy Species	% Cover	Size Class	DBH	Age
Quaking Aspen	90	Log/Pole	10	56
Sugar Maple	10	Pole/Sapling	6	

Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	Low	Variable	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
20	4110 - Sugar Maple Association	Sawtimber Well	38.9	108	81-110	N/A	High quality sugar maple log stand with some steep rolling ridges. Canopies have a lot of room to grow yet. Abundance of 5'-10' healthy hemlock saplings are dispersed across the understory in most areas. Small patch of conifer, dense to hemlock, in the NE tip of stand. 90 100 100 Average of 95 BA. Select cut in winter of 2006-2007 by Premier under contract 09-04-01. M9M6. Primarily a high quality sugar maple stand with scattered large white pine, hemlock, occasional black cherry and yellow birch. A few soft maple in some transition zones. Terrain is quite hilly with steep slopes. FTP # W32-682. Underplanted with hemlock May, 2007. Planting rate was approximately 435 seedlings/acre. 78,840 containerized hemlock seedlings were planted in stands 12 and 56.

Canopy Species	% Cover	Size Class	DBH	Age
Yellow Birch	2	Log/Pole	12	
Hemlock	6	Log	14	
White Pine	2	XLog/Log	18	
Black Cherry	5	Log	12	
Red Maple	8	Log	14	
Sugar Maple	77	Log	14	108

Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	Low	Variable	Seeding
Balsam Fir	Low	Variable	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
21	4191 - Mixed Upland Deciduous with Conifer	Sawtimber Well	20.1	66	81-110	N/A	Diverse mix of upland species. Large diameter white pine scattered mainly across the north half. Aspen mixed in areas is large diameter. Also includes mature spruce/fir and paper birch near decline.

Canopy Species	% Cover	Size Class	DBH	Age
White Pine	10	XLog	18	85
Balsam Fir	15	Pole	7	
Red Maple	33	Pole	8	66
Paper Birch	8	Pole/Log	9	
Quaking Aspen	15	Log	12	
Hemlock	2	Log	16	
White Spruce	5	Log	14	
Sugar Maple	10	Pole	8	
Bigtooth Aspen	2	Log	12	

Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	Medium	Variable	Sapling
Red Maple	Medium	Variable	Sapling
Balsam Fir	Medium	Variable	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
22	623 - Emergent Wetland	Nonstocked	5.7			No	Flooded shrub area with veins of water.
23	6120 - Lowland Cedar	Poletimber Well	9.1	95		N/A	Dense cedar patch with some spruce speckled in. Wet ground area.
24	122 - Road/Parking Lot	Nonstocked	10.6			No	Powerline ROW and snowmobile trail/road down center.
26	500 - Water	Nonstocked	10.0			No	Grimms Lake
27	4112 - Maple, Beech, Cherry Association	Sawtimber Well	24.0	108	111-140	N/A	Good quality maple log stand. Average of 130 BA. Hemlock and fir around edges.
29	4112 - Maple, Beech, Cherry Association	Sawtimber Well	4.8	108	81-110	N/A	Moderate quality maple at best. Medium stocked understory of maple saplings across stand. Black cherry is nearly dead. Fir found along the edges.
30	6122 - Black Spruce	Poletimber Medium	26.3	104	1-50	N/A	Stunted lowland conifer bog with open cattail areas.

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Canopy Species	% Cover	Size Class	DBH	Age
Black Spruce	20	Pole	7	
Northern White Cedar	78	Pole	8	95
White Pine	2	Log	14	

Sub-Canopy Species	Density	Avg. Height	Size
Balsam Fir	Low	Variable	Sapling
Black Spruce	Low	Variable	Sapling

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Canopy Species	% Cover	Size Class	DBH	Age
Balsam Fir	3	Pole	8	
Hemlock	3	Log	14	
Sugar Maple	74	Log	12	108
Red Maple	10	Log/Pole	11	108
Yellow Birch	5	Log	14	
Black Cherry	5	Log	12	

Sub-Canopy Species	Density	Avg. Height	Size
Hemlock	Low	Variable	Sapling
Red Maple	Low	Variable	Sapling
Sugar Maple	High	Variable	Sapling
Balsam Fir	Low	Variable	Sapling

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Canopy Species	% Cover	Size Class	DBH	Age
Hemlock	5	Log	14	
Balsam Fir	5	Pole	8	
Black Cherry	7	Log	14	
Yellow Birch	3	Log	14	
Red Maple	30	Log/Pole	12	108
Sugar Maple	50	Log	14	108

Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	Medium	Variable	Sapling
Red Maple	Low	Variable	Sapling
Balsam Fir	Low	Variable	Sapling

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Canopy Species	% Cover	Size Class	DBH	Age
Northern White Cedar	10	Pole/Sapling	8	
Tamarack	15	Pole/Sapling	7	
Black Spruce	60	Sapling/Pole	4	104
Balsam Fir	15	Pole/Sapling	6	

Sub-Canopy Species	Density	Avg. Height	Size
Balsam Fir	Low	Variable	Sapling
Black Spruce	Medium	Variable	Pole

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
31	6120 - Lowland Cedar	Poletimber Medium	88.5	101		N/A	Very wet lowland flat with a stream running across the center. Veins of dense cedar, black ash swales with alder/cattails, and open flooded shrub areas. Small patches of lowland hardwood mixed within. Sparser canopy with more alder in the west with denser cedar areas and ash/cattail in the N-NE.

Canopy Species	% Cover	Size Class	DBH	Age
Black Spruce	10	Pole	8	
Northern White Cedar	50	Pole/Log	9	101
Hemlock	5	Log/Pole	11	
Black Ash	10	Pole	8	
Red Maple	10	Pole/Log	9	
Yellow Birch	5	Pole/Log	10	
White Spruce	5	Log	14	
Balsam Fir	5	Pole	8	

Sub-Canopy Species	Density	Avg. Height	Size
Alder	Medium	5 - 10 feet	Tall Shrub
Balsam Fir	Low	Variable	Sapling
Northern White Cedar	Low	Variable	Sapling
Hemlock	Low	Variable	Sapling
Red Maple	Low	Variable	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
32	4199 - Other Mixed Upland Deciduous	Sapling Well	39.0	7	1-50	N/A	Dense aspen and maple sapling mix with scattered residual pine and hardwoods. Stand is a large slope. Primarily a big-tooth aspen stand with red maple and birch growing on a steep side hill. Scattered wp especially along the large opening. This stand is located on the back side of Forsyth Twp rifle range. Stand harvested as "Ski Hill Aspen" sale #012-14-01 June-July, 2015. White pine and oak retained.

Canopy Species	% Cover	Size Class	DBH	Age
White Pine	4	Log/Pole	12	
Red Pine	2	Log	12	
Red Oak	2	Pole/Log	9	
Bigtooth Aspen	36	Sapling	2	7
Paper Birch	20	Sapling	2	7
White Spruce	1	Log	14	
Red Maple	35	Sapling	1	7

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
33	4133 - Aspen, Mixed Pine	Sapling Well	82.0	18	1-50	N/A	Mixed aspen stand reaching pole size where enough sunlight from patchy pine canopy allows. Saplings around pine canopy are smaller average diameter. Treated in 2004 under contract # 11-04-01 by St. John. Mixed red and white pine with scattered red oak over young aspen, red pine, white pine, jack pine.

Canopy Species	% Cover	Size Class	DBH	Age
White Pine	10	Log	14	
Red Oak	5	Log/Pole	12	
Red Pine	20	Log	14	84
Quaking Aspen	40	Sapling/Pole	4	18
Bigtooth Aspen	25	Pole/Sapling	5	

Sub-Canopy Species	Density	Avg. Height	Size
Jack Pine	Low	Variable	Sapling
White Pine	Low	Variable	Sapling
Quaking Aspen	Medium	Variable	Sapling
Black Cherry	Low	Variable	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
34	4110 - Sugar Maple Association	Sawtimber Well	41.7	108	111-140	N/A	Maple log stand with moderate to better quality. Spruce/fir and hemlock saplings in understory as well as dense sugar maple across most areas. Larger diameter trees have poorer quality and low forks. Berm is blocking access from south. Blue line appears to be in and fresher. Average of 130+ BA. Good quality hardwood stand treated in 2006 under contract # 10-04-01. Good hardwood regeneration from the past cutting. 20,250 hemlock seedlings were planted within the Spider Nest sale boundary (#32-010-04) during May, 2006. Stands 28 and 30 from this compartment make up the sale area. The planting rate was approximately 338 seedlings/acre. Planting success was excellent, with these seedlings 2-3" tall.

Canopy Species	% Cover	Size Class	DBH	Age
Yellow Birch	2	Log	16	
Hemlock	7	Log	16	
Sugar Maple	80	Log	14	108
Red Maple	3	Log/Pole	11	
Black Cherry	8	Log	12	

Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	High	Variable	Sapling
Hemlock	Medium	Variable	Sapling
Cherry (spp.)	Low	Variable	Sapling
Balsam Fir	Low	10 - 20 feet	Sapling
Red Maple	Low	Variable	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
35	42210 - Natural Red Pine	Sawtimber Medium	15.3	84	81-110	N/A	Cut in 97. Red pine logs at rotation age. A couple patches of aspen near pole size within otherwise the understory is fairly open. Pine canopy is closer to about 75%. This stand extends into the compartment west for another 40 acres and should be managed together. This stand in compartment 29 to the west has less to almost no sapling understory and a bit more even canopy stocking of pine.

Canopy Species	% Cover	Size Class	DBH	Age
White Pine	20	Log/Pole	12	
Red Pine	80	Log	14	84

Sub-Canopy Species	Density	Avg. Height	Size
Quaking Aspen	Medium	>20 feet	Sapling
Red Pine	Low	Variable	Sapling
White Pine	Low	Variable	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
36	3105 - Mixed Upland Herbaceous	Nonstocked	50.4		Unspecified	Managed Opening	Grass opening with scattered conifer and aspen patches. Cohen Field large opening. Mostly grass, sweet fern with scattered juneberry, cherry brush
37	42110 - Planted Red Pine	Poletimber Well	47.2	30	81-110	N/A	Initial third row thinning will have to wait until next YOE. Patchy areas, some bent over snow damage, and row spacing contribute to open grown trees still at this time. Odd row spacing alternates each row 6' to 12'. So two rows are tighter on one side but are still fully open growing on the outer edges leaving plenty of room for trees to grow out and up yet. Red pine planted in 1991 (FTP C-32-442) with jack pine volunteers, scattered cherry, aspen, sugar plum.

Canopy Species	% Cover	Size Class	DBH	Age
Red Pine	90	Pole	6	30
Jack Pine	10	Pole	5	

Sub-Canopy Species	Density	Avg. Height	Size
Cherry (spp.)	Low	5 - 10 feet	Tall Shrub

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
38	4319 - Mixed Upland Forest	Sapling Well	66.6	42	51-80	N/A	Dense sapling/pole sized trees, most being below merchantable size due to dense growing conditions and less sunlight in pine patches. Thick to aspen and maple but especially fir. Trees are right around pole sized. Most fir is toasted and will not live much longer. Thin strip across the whole south edge was retained and contains some larger mixed conifer and hardwood. Some small patches of larger jack pine along areas of the north edge. Small aspen with fir and overstory wp. Cut in 1979. Has just transitioned to a pole stand.

Canopy Species	% Cover	Size Class	DBH	Age
Quaking Aspen	22	Pole/Sapling	5	42
Balsam Fir	35	Sapling/Pole	4	42
White Pine	6	Log	14	
Paper Birch	8	Sapling/Pole	4	
Red Maple	25	Sapling	4	
Jack Pine	2	Log	10	
Black Spruce	2	Pole	8	

Sub-Canopy Species	Density	Avg. Height	Size
Balsam Fir	High	Variable	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
39	4112 - Maple, Beech, Cherry Association	Sawtimber Well	33.3	108	111-140	N/A	Moderate quality hardwood with a lot of poorer quality mixed in. A lot of areas are dense to pole/small sawlog sized trees while other areas have larger, lighter BA. Dense sapling understory, a majority being maple with patches of hemlock, white pine, and spruce/fir saplings. Where larger old canopy gaps are present there is a good number of black cherry saplings mixed in. Average of 130 BA. Good quality hardwood stand treated in 2006 under contract # 10-04-01. Good hardwood regeneration from the past cutting. 20,250 hemlock seedlings were planted within the Spider Nest sale boundary (#32-010-04) during May, 2006. Stands 28 and 30 from this compartment make up the sale area. The planting rate was approximately 338 seedlings/acre. Planting success was excellent, with these seedlings 2-3" tall.

Canopy Species	% Cover	Size Class	DBH	Age
Hemlock	2	Log	14	
Black Cherry	8	Log/Pole	10	
Sugar Maple	68	Log/Pole	12	108
Yellow Birch	2	Log	12	
Red Maple	20	Log/Pole	11	

Sub-Canopy Species	Density	Avg. Height	Size
Black Cherry	Medium	Variable	Sapling
Red Maple	Low	Variable	Sapling
Balsam Fir	Medium	Variable	Sapling
Hemlock	Medium	Variable	Seeding
White Pine	Low	Variable	Sapling
Sugar Maple	High	Variable	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
40	4119 - Mixed Northern Hardwoods	Sawtimber Well	71.9	108	81-110	N/A	Larger log sized, good quality maple stand. Evenly spaced canopy across much of the stand with a lot of gaps and rooms for canopies to grow. Some mixed pine/hemlock canopy in the east half. Unmanaged area in the NW corner due to very steep terrain and a drainage at the bottom. It also appears that a majority of the south and east border area was left out from past management. This area should be managed with the stand in the future as it contains mature spruce/fir, paper birch, and poor quality red maple. The east edge of this stand is split by a bed and bank stream from the adjacent stand. Abundance of 5'-10' healthy hemlock saplings are dispersed across the understory in most areas. 120 80 90 90 Average of 95 BA.

Canopy Species	% Cover	Size Class	DBH	Age
Sugar Maple	55	Log	15	108
Balsam Fir	4	Pole	8	
Red Maple	19	Log	14	
Paper Birch	3	Log/Pole	11	
White Pine	4	XLog/Log	18	
Hemlock	3	Log	14	
White Spruce	3	Log	12	
Red Pine	2	XLog	18	
Black Cherry	5	Log	12	
Yellow Birch	2	Log	14	

Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	High	Variable	Seeding
Hemlock	Medium	5 - 10 feet	Sapling
Balsam Fir	Low	Variable	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
43	6120 - Lowland Cedar	Poletimber Well	141.9	101	111-140	N/A	Dense mix of lowland species heavy to cedar. Areas in the west have patchier canopy with alder and black ash saplings, areas in the east are more dense to a cedar canopy. Very poorly drained ground.

Canopy Species	% Cover	Size Class	DBH	Age
Balsam Fir	2	Pole	9	
White Spruce	2	Pole/Log	10	
Northern White Cedar	65	Pole/Log	9	101
Hemlock	3	Pole/Log	8	
Black Spruce	10	Pole	8	
Red Maple	7	Pole	8	
Yellow Birch	3	Log/Pole	10	
Black Ash	8	Pole	8	

Sub-Canopy Species	Density	Avg. Height	Size
Balsam Fir	Medium	Variable	Sapling
Northern White Cedar	Medium	Variable	Pole
Black Ash	Medium	Variable	Sapling
Alder	Medium	5 - 10 feet	Tall Shrub
Red Maple	Low	Variable	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
44	4112 - Maple, Beech, Cherry Association	Sawtimber Well	11.9	91	141-170	N/A	Very densely grown maple stand that has moderate to poor quality trees. Crowns are tight, small, and poor form from lack of past management. Majority of trees have sweeps, conks, and low forks. Higher ground patch in center is more dominant with sugar maple quickly transitioning to red maple along the edges and up the north finger.

Canopy Species	% Cover	Size Class	DBH	Age
Yellow Birch	5	Log	14	
Hemlock	2	Log	12	
Northern White Cedar	4	Pole	8	
Balsam Fir	3	Pole	8	
Red Maple	66	Log/Pole	11	91
Sugar Maple	20	Log/Pole	10	108

Sub-Canopy Species	Density	Avg. Height	Size
Red Maple	Low	Variable	Pole
Balsam Fir	Medium	Variable	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
46	4112 - Maple, Beech, Cherry Association	Sawtimber Well	181.0	108	111-140	N/A	Great quality maple log stand. West half and ridges across the east have excellent quality that decreases a bit along some edges or softer ground flats. Dense maple saplings across entire stand. Rolling terrain in areas but all should be operable for management. Patches along the north edge transition to flatter red maple with some conifer mixed in. Water was flowing just past the berm that blocks access to the NE portion of the stand. 120 150 150 100 150 Average of 135 BA. Good quality northern hardwoods with cherry and occasional cedar and red oak sawtimber tree. Quite rolling terrain with scattered swales which drain into the Chocolay River system. Low density of Gypsy moth egg masses on stems.

Canopy Species	% Cover	Size Class	DBH	Age
Yellow Birch	3	Log	14	
Black Cherry	8	Log/Pole	12	
Hemlock	4	Log/Pole	10	
Red Maple	20	Log/Pole	11	
Sugar Maple	65	Log	12	108

Sub-Canopy Species	Density	Avg. Height	Size
Cherry (spp.)	Low	Variable	Sapling
Red Maple	Low	Variable	Sapling
Balsam Fir	Low	Variable	Pole
Sugar Maple	High	Variable	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
47	6229 - Mixed lowland shrub	Nonstocked	6.7			No	Old beaver flooding with marsh grass and tag alder.
48	6128 - Lowland Coniferous, Mixed Deciduous	Poletimber Well	10.0	101	81-110	N/A	Low ground flat with larger hemlock and cedar with maple and black ash filling in gaps.
49	4112 - Maple, Beech, Cherry Association	Sapling Well	31.1	4	1-50	N/A	Stand is fully stocked with 5' saplings. Appears heaver to sugar maple than red maple. Black cherry saplings visible mixed in. Scattered residual seed trees of birch, cherry, maple, and oak. Cut under Grimms Lake MWR ,13-17-01 as part of research project.
50	4110 - Sugar Maple Association	Sawtimber Well	1.7	108	111-140	N/A	Hardwood patch surrounded by flooded lowland and difficult private access.
59	6120 - Lowland Cedar	Poletimber Well	6.0	101	81-110	N/A	Somewhat patchy overstory of mixed species with otherwise dense cedar.

Stand 48

Canopy Species	% Cover	Size Class	DBH	Age
Yellow Birch	3	Log/Pole	11	
Balsam Fir	5	Pole/Sapling	6	
Northern White Cedar	25	Pole/Log	9	101
Hemlock	35	Log/Pole	11	101
Black Ash	12	Pole	8	
Black Spruce	5	Pole	7	
Red Maple	15	Log/Pole	11	

Sub-Canopy Species	Density	Avg. Height	Size
Hemlock	Low	Variable	Sapling
Red Maple	Low	Variable	Sapling
Balsam Fir	Medium	Variable	Sapling
Northern White Cedar	Low	Variable	Sapling

Stand 49

Canopy Species	% Cover	Size Class	DBH	Age
Black Cherry	15	Sapling	1	4
Sugar Maple	45	Sapling	1	4
Red Maple	40	Sapling	1	4

Stand 59

Canopy Species	% Cover	Size Class	DBH	Age
Northern White Cedar	61	Pole/Log	8	101
Black Ash	4	Pole	8	
Yellow Birch	8	Log/Pole	10	
White Spruce	3	Log	14	
Balsam Fir	5	Pole	9	
Red Maple	15	Pole/Log	9	
Hemlock	4	Pole/Log	8	

Sub-Canopy Species	Density	Avg. Height	Size
Red Maple	Low	Variable	Sapling
Balsam Fir	Low	Variable	Sapling
Northern White Cedar	Medium	Variable	Pole