



Compartment Review Presentation

Shingleton Forest Management Unit

Compartment 41133

Entry Year 2019

Acreage: 2,363

County Alger

Management Area: Pictured Rocks Buffer

Revision Date: 2017-07-14

Stand Examiner: Bob Burnham

Legal Description:

T49N R15W Sections 16, 20, 21, 28, 29 & 32

Identified Planning Goals:

The main goal in this compartment is to conduct multiple resource management for current and future generations.

Soil and topography:

The topography in this compartment is rolling to flat overall. However, there is a ridge which is quite steep in places running through the center of the compartment in an east west fashion and it extends all the way across the compartment. Rubicon sand and Houghton Muck are the two soils. The Rubicon sand, which is naturally low in fertility, carries the upland species in this compartment and the muck soils are for the cedar and low marsh areas.

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

The compartment is entirely State owned. Pictured Rocks National Lake Shore is immediately adjacent to the north. It is also mostly State ownership adjacent the remainder of the compartment.

Unique Natural Features:

Sullivan Lake is with the Compartment and there is at least one hemlock stand being nominated for Type 2 Old Growth.

Archeological, Historical, and Cultural Features:

This area is just north of what is locally known as the Kingston Plains which was logged at the turn of the last Century to rebuild Chicago.

Special Management Designations or Considerations:

The compartment lies within the Picture Rocks National Lakeshore Buffer Zone and has a high amount of traffic use during the summer months for camping and other recreation near the lake shore.

Watershed and Fisheries Considerations:

Fisheries Values: Good-to-Excellent.

Fisheries Concerns: Sullivan Creek and its small tributaries into Sections 16 & 21 are all classified as Type 1 trout water. Although this system supports native brook trout and its Type does not keep it open for salmon or steelhead, its primary fisheries value is for anadromous production. The gravel/rock spawning habitat near Lake Superior must be protected from any sand bedload moving downstream as a result of raw banks further upstream.

Wildlife Habitat Considerations:

Mineral Resource and Development Concerns and/or Restrictions

A potential former sand/gravel pit exists in Section 27, but otherwise gravel pits are not located in this area. There could be some sand and gravel potential within the compartment. There is no known metallic mineral potential in this region, and there is no commercial oil and gas production in the UP.

Vehicle Access:

Access is good. Two county roads border the west and south with many two-tracks with in the compartment.

Survey Needs:

None

Recreational Facilities and Opportunities:

H-58 and the Hurricane Truck Trail are both Snowmobile Trails. Kingston Lake State Forest Campground is just south of the Compartment. The Pictured Rocks National Lakeshore borders to the north and the popular 12 Mile Beach entrance is

adjacent the compartment near the north end.

Fire Protection:

Fire response is much improved due to the improvements made on H-58. There are obvious concerns in regards to fire protection given the fuel types present in the compartment. There is however often some relief given the proximity to Lake Superior and the influence it can have on weather patterns.

Additional Compartment Information:

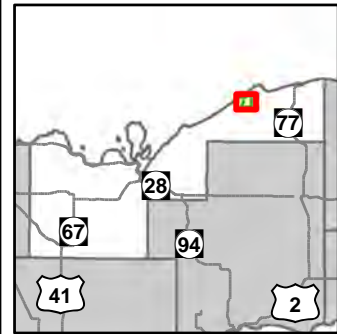
The following reports from the Inventory are attached:

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

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

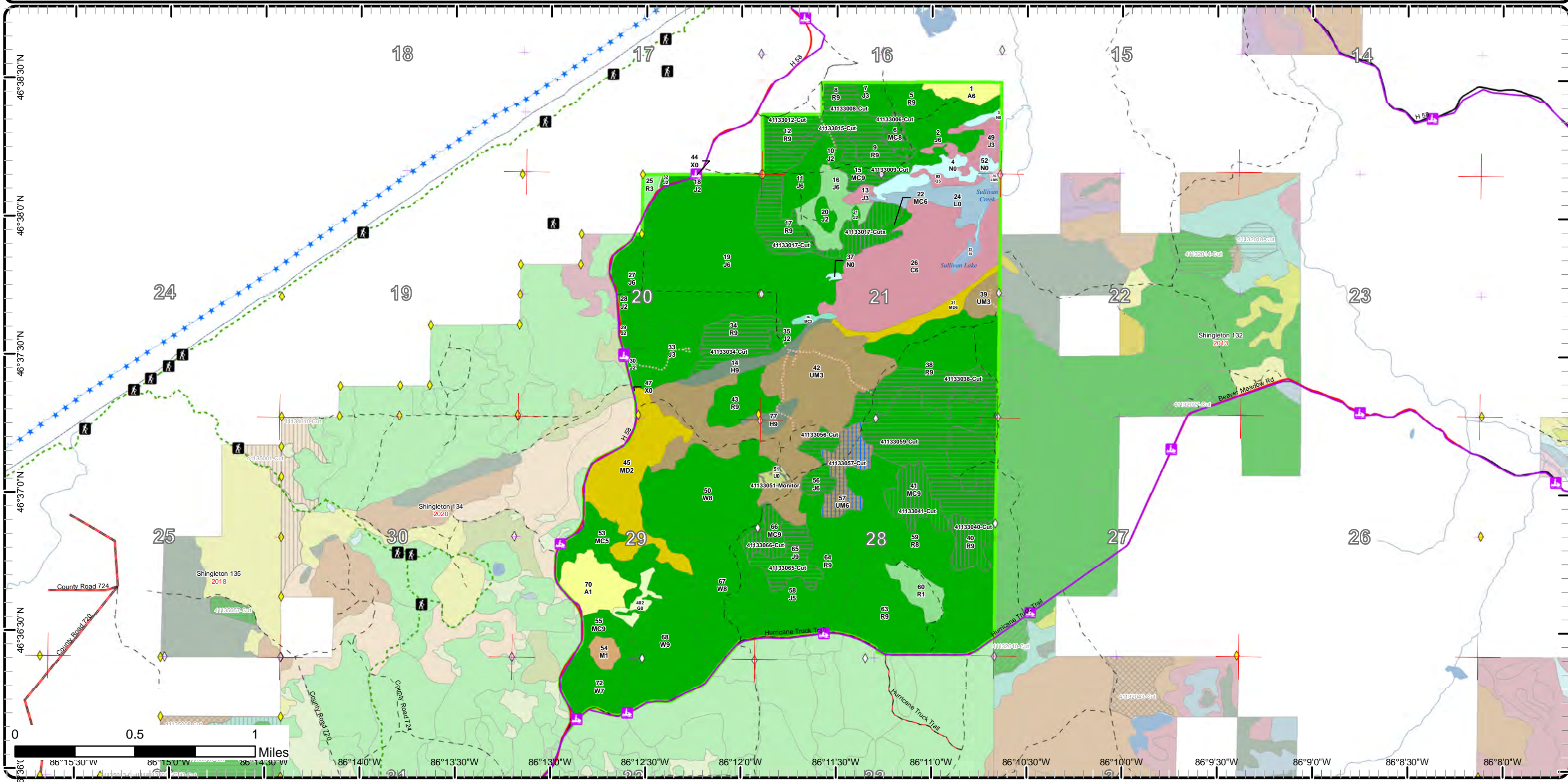
- Base feature information, stand boundaries, cover types, and numbers**
- Proposed treatments**
- Site condition boundaries**
- Details on the road access system**

Cover Type & Treatments Map

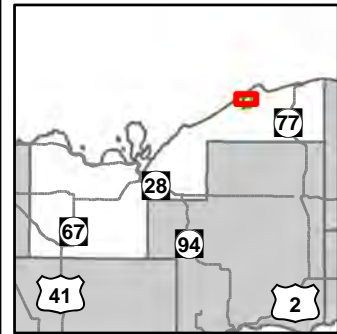


Compartment: 133
 T49N, R15W, Sec:16, 20, 21, 28,
 29, 32
 County: Alger
 Unit: Shingleton
 Mgmt Area: Pictured Rocks Buffer
 YOE: 2019
 Acres: 2362.8 GIS Calculated
 Examiner: Bob Burnham
 Map Revised: 8/23/2017
 Map Phase: Review

- | | | | |
|--|---|--|---|
| <ul style="list-style-type: none"> — Miris Corners — Remonumented Section Corners ◆ Survey Grade GPS Corners ◇ Field Grade GPS Corners — Counties — Hiking Trails — Snowmobile Trails ★ Designated Water Trails — Designated Hiking Trails — Designated Snowmobile Trails — County Paved Roads — Paved Roads | <ul style="list-style-type: none"> — County Poor Dirt Roads — Poor Dirt Roads — Closed — Streams — Lakes and Rivers All — State Boundary — Compartment Boundary — Clearcut (w/Reserves) — Harvest, Overstory Removal — Seed Tree (w/Reserves) — Regeneration Survey — Shelter Wood (w/Reserves) — 411 - Northern Hardwood — 413 - Aspen — 419 - Mixed Upland Deciduous | <ul style="list-style-type: none"> 421 - Planted Pines 422 - Natural Pines 423 - Other Upland Conifers 424 - Pine (OI) 429 - Mixed Upland Conifers 430 - Upland Mixed Forest 612 - Lowland Coniferous Forest 613 - Lowland Mixed Forest 122 - Roads/Parking Lot 310 - Herbaceous Openland 320 - Upland Shrub 500 - Water 622 - Lowland Shrub 623 - Emergent Wetland 790 - Other Bare/Sparsely Vegetated | <ul style="list-style-type: none"> — Lakes |
|--|---|--|---|

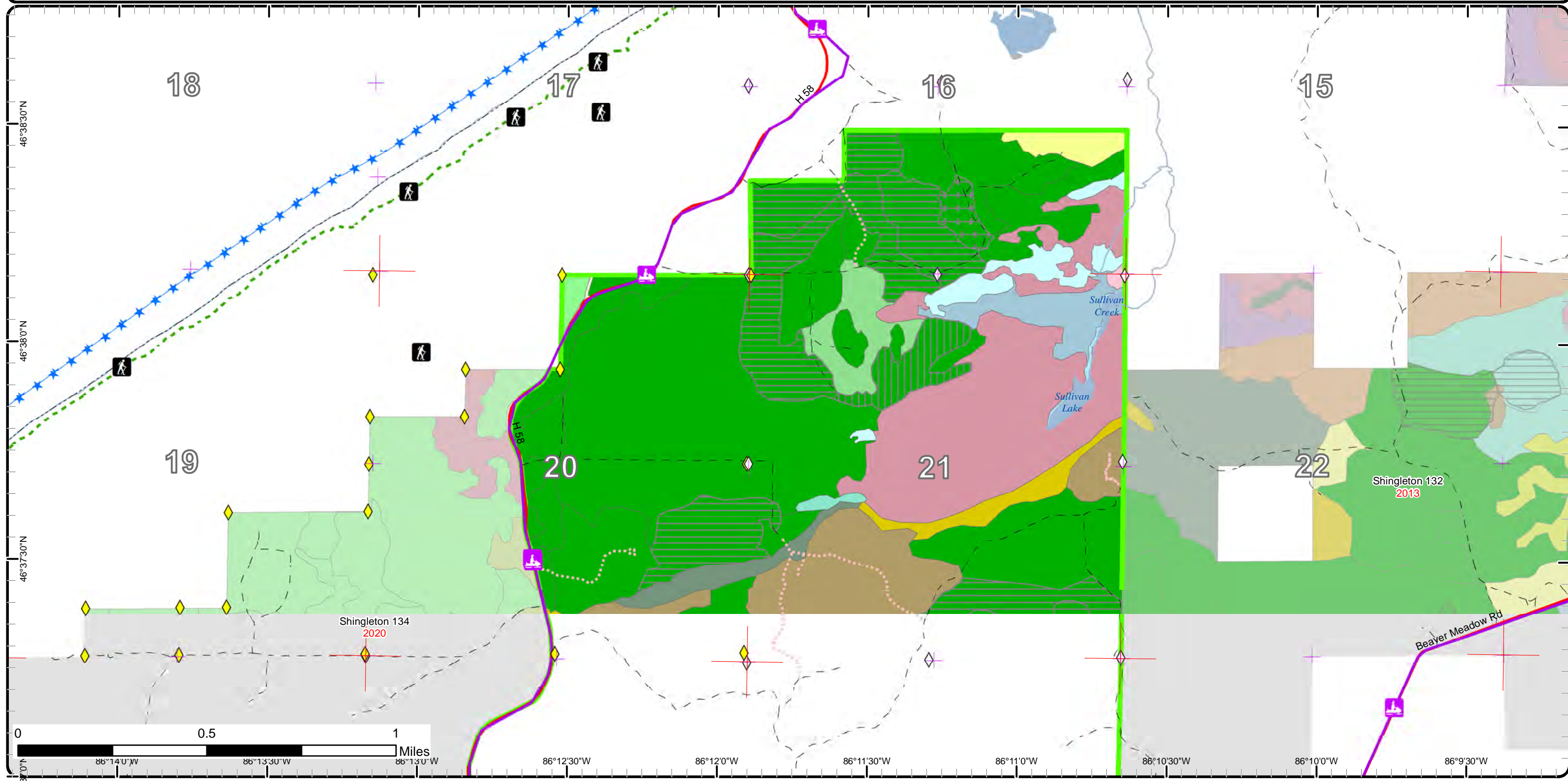


Cover Type & Treatments Map



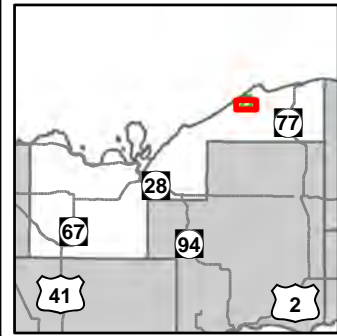
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- Streams
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- Lakes

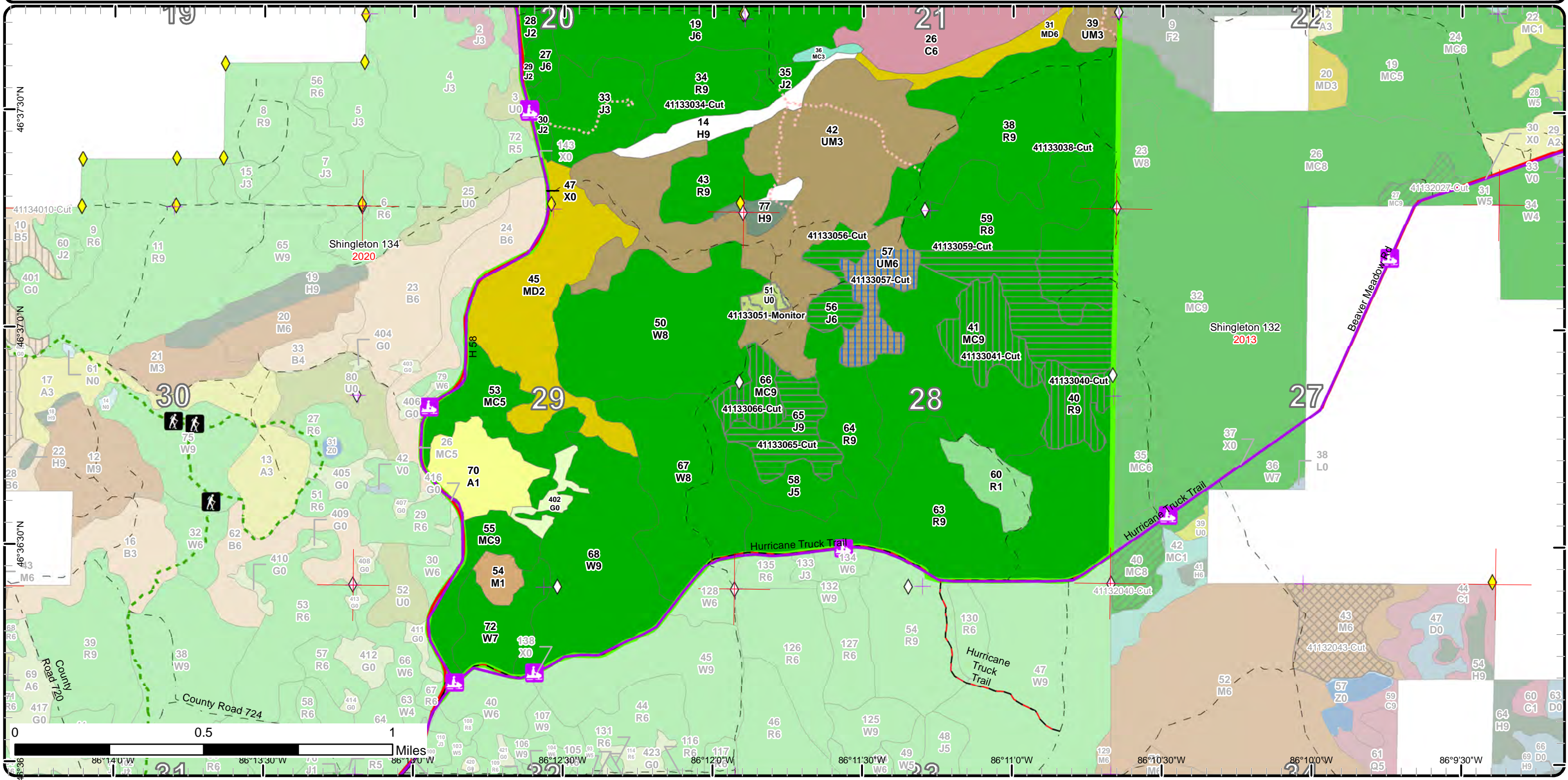


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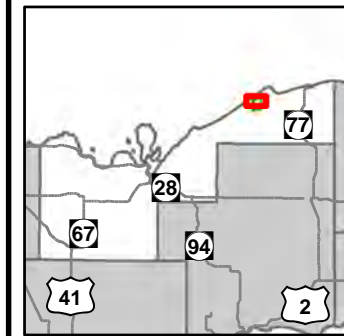


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- Compartment Boundary
- Clearcut (w/Reserves)
- Seed Tree (w/Reserves)
- Regeneration Survey
- Shelter Wood (w/Reserves)
- 411 - Northern Hardwood
- 413 - Aspen
- 419 - Mixed Upland Deciduous
- 421 - Planted Pines
- 422 - Natural Pines
- 423 - Other Upland Conifers
- 429 - Mixed Upland Conifers
- 430 - Upland Mixed Forest
- 612 - Lowland Coniferous Forest
- 122 - Roads/Parking Lot
- 310 - Herbaceous Openland
- 320 - Upland Shrub
- Lakes

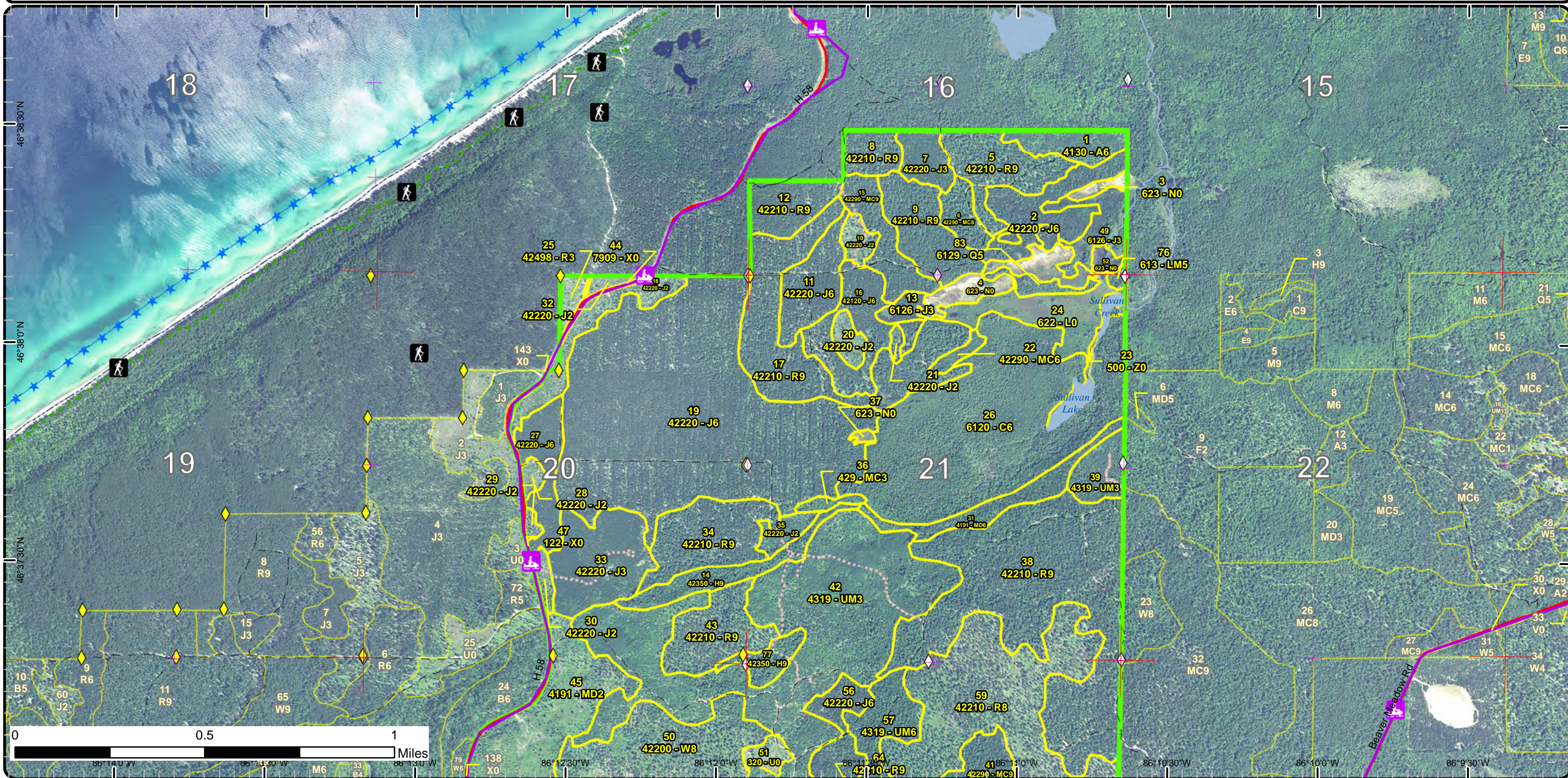


Stand Boundary Map

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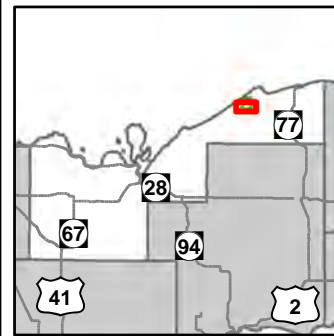


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- 500 - Water
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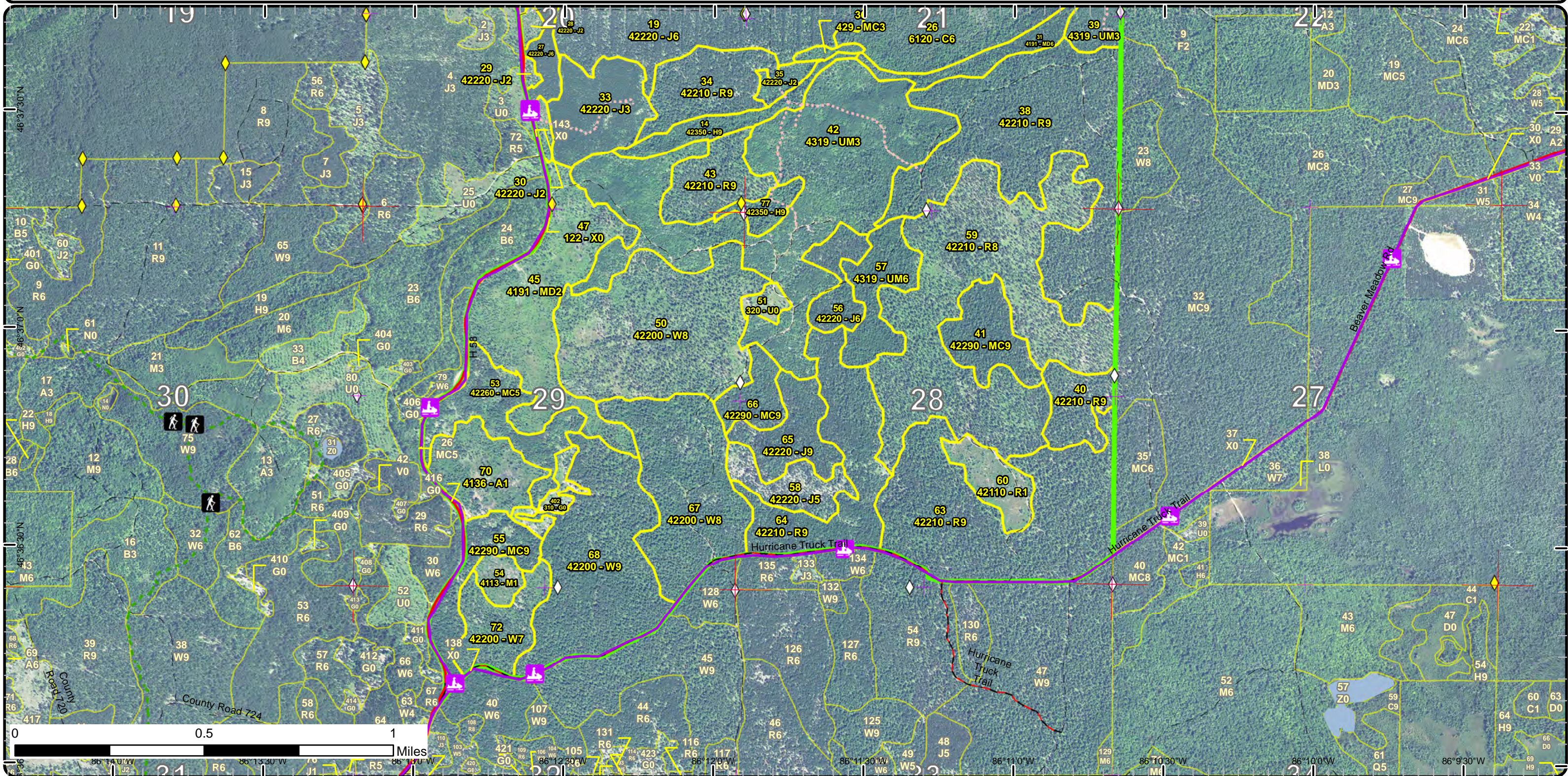


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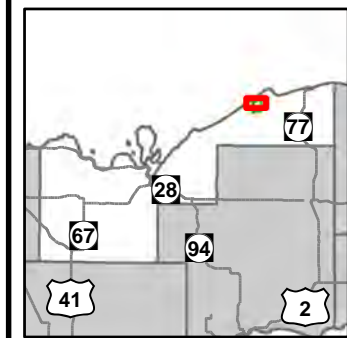


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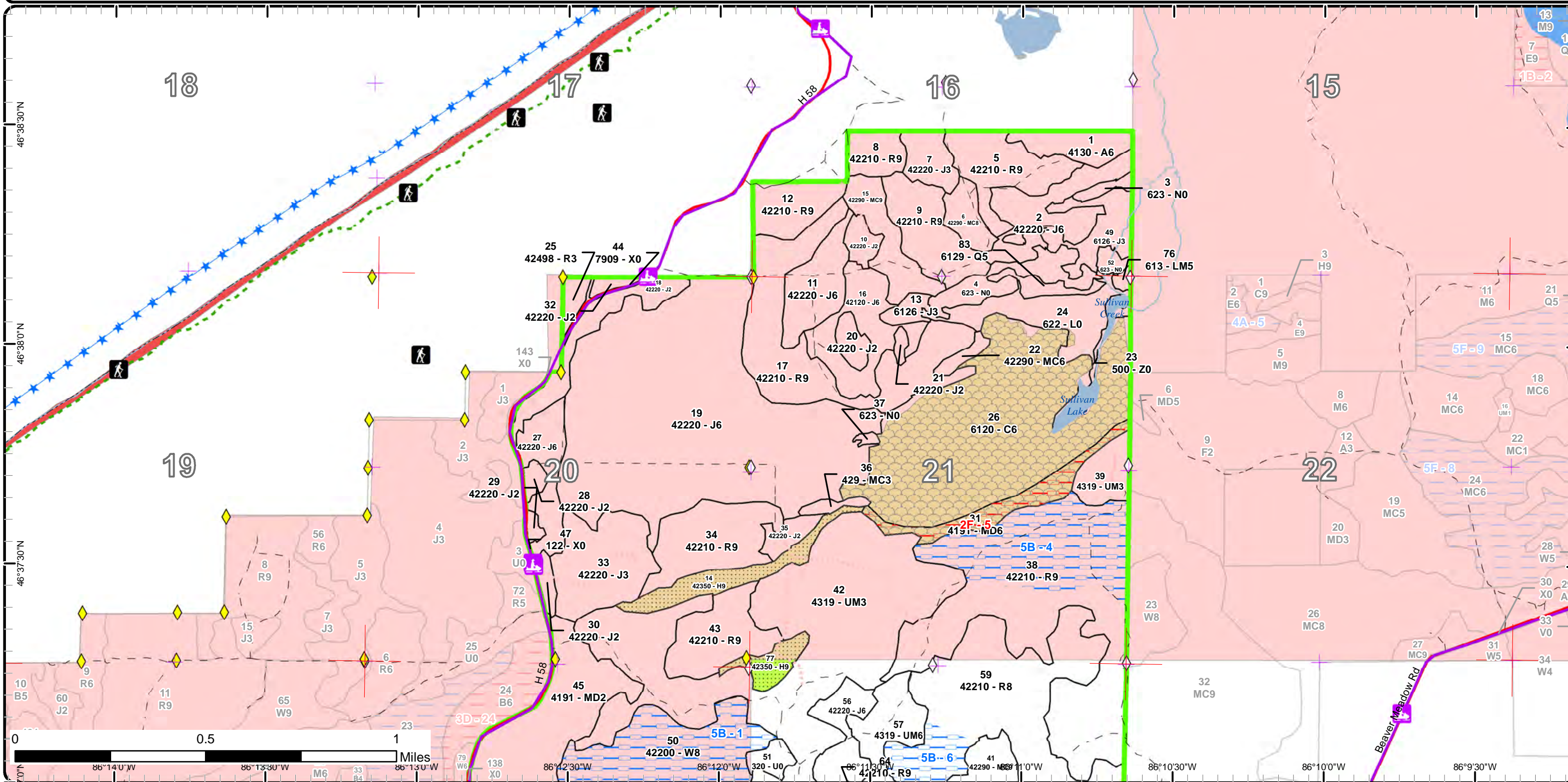


Special Conservation Areas & Site Conditions Map

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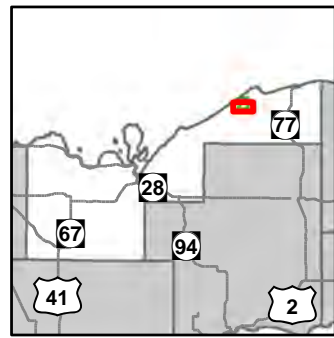


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- State Boundary
- ▭ Compartment Boundary
- ▭ SCA Proposed
- ▭ SCA Removal
- Available w/ Constraints
- Unavailable
- 5B: Maintain for regeneration purposes
- 2F: Too steep
- ▭ Stand Boundaries
- ▭ Ecological Reference Areas
- Cold Water Streams
- Cold Water Lakes
- ▭ High Priority Trout Stream Buffer
- ▭ Contiguous Resource Area
- ▭ Possible Type 2 Old Growth

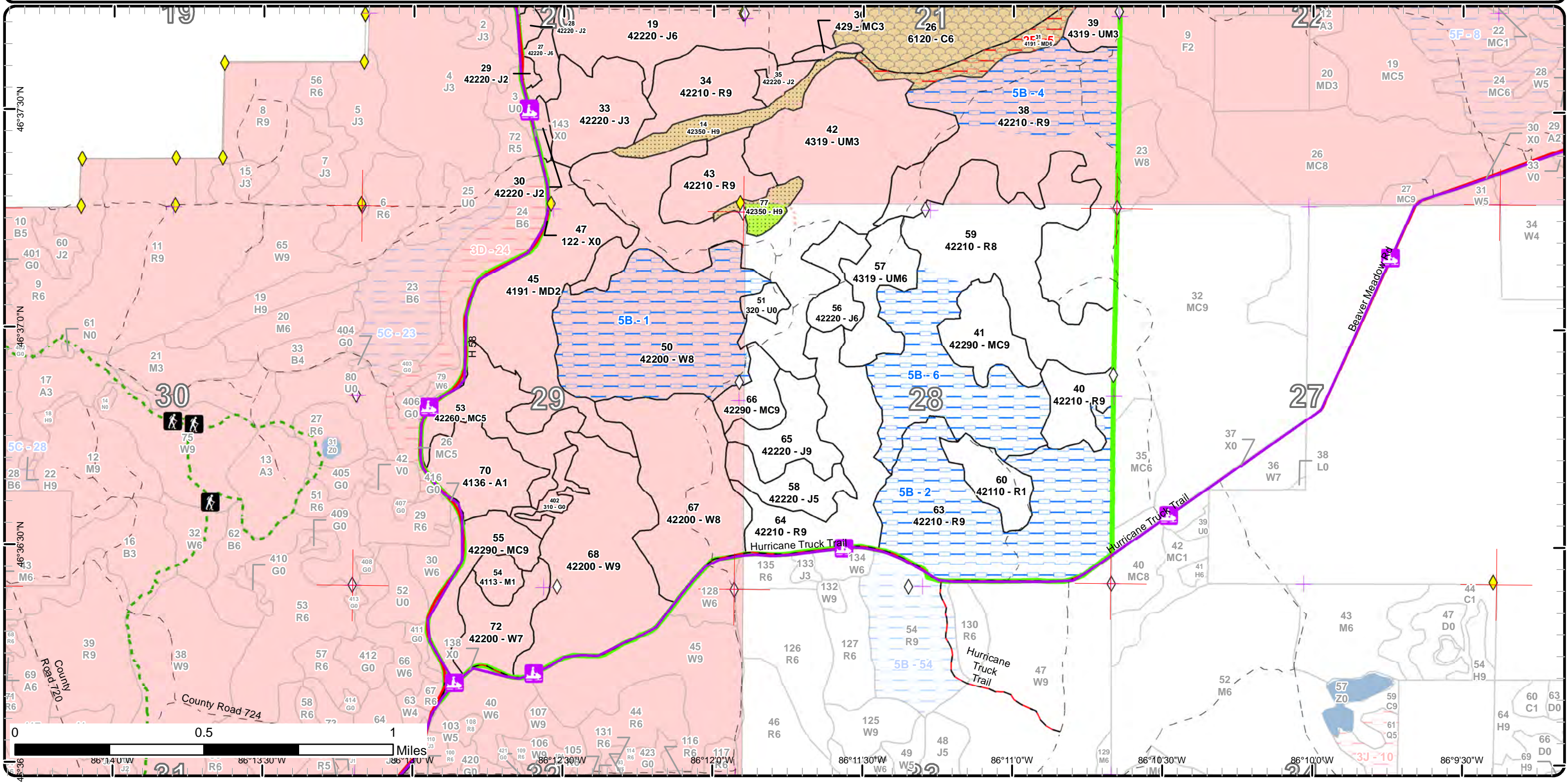


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- 2F: Too steep
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- Contiguous Resource Area
- Possible Type 2 Old Growth





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	33	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	47
Bare/Sparsely Vegetated	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Cedar	0	0	0	0	0	0	0	0	0	0	149	0	0	0	0	0	0	0	149
Hemlock	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	18	0	27
Herbaceous Openland	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
Jack Pine	0	0	43	78	69	246	28	45	0	0	0	0	0	0	0	0	0	0	509
Lowland Conifers	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	5
Lowland Mixed Forest	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
Lowland Shrub	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27
Marsh	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25
Mixed Upland Deciduous	0	85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	103
Natural Mixed Pines	0	0	0	0	4	37	26	16	0	0	57	0	0	0	0	0	0	0	140
Northern Hardwood	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
Red Pine	0	19	5	0	0	0	62	0	0	0	208	373	0	0	0	0	90	757	
Upland Conifers	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Upland Mixed Forest	0	0	0	196	0	0	0	0	0	0	29	0	0	0	0	0	0	0	224
Upland Shrub	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Urban	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
Water	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
White Pine	0	0	0	0	0	0	28	0	0	0	96	110	0	0	0	0	78	312	
Total	80	146	48	291	73	283	149	61	0	0	304	720	0	0	0	0	9	204	2367



Report 2 – Treatment Summary

Shingleton Mgt. Unit

Year of Entry: 2019

Acres of Harvest

Compartment 133

Total Compartment Acres: 2,363

Commercial Harvest - 499
 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
Jack Pine	45	0	0	0	0	0	0	0	0	45
Natural Mixed Pines	20	0	0	0	43	0	10	0	0	73
Red Pine	309	0	0	0	44	0	0	0	0	353
Upland Mixed Forest	0	0	0	29	0	0	0	0	0	29
Total	373	0	0	29	87	0	10	0	0	499

Proposed and Next Step Treatments by Method

	Harvest	Site Prep	Planting	Seeding	Burning	Pesticide	Monitoring	Other	Non-Forest Mgt.	Total Acres
Current	499	0	0	0	0	5	0	0	0	504
Next Step	0	781	379	0	329	0	913	0	0	2401
Total	499	781	379	0	329	0	918	0	0	2905



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
6	41133006-Cut	9.9	42290 - Natural Mixed Pine	Sawtimber Medium	101	1-50	Harvest	Overstory Removal	429 - Mixed Upland Conifers	Two-Aged	Proposal

Habitat Cut: No**Site Condition:**

Prescription Remove the residual overstory which is mainly log size red and white pine. This will be achieved with a diameter limit harvest cutting everything larger than 10 inches except oak and hemlock.

Next Step
Treatments:

Acceptable Mix of current species currently found in the understory.
Regen:

Other
Comment:

Proposed Start Date: 10/01/2018

8	41133008-Cut	10.9	42210 - Natural Red Pine	Sawtimber Well	98	81-110	Harvest	Clearcut with Retention	4211 - Planted Red Pine	Even-Aged	Proposal
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Habitat Cut: No**Site Condition:**

Prescription Final Harvest stand and regenerate red pine. Cut all species except oak and hemlock. Chipping slash is preferred but if no markets exist insert burn specs into the sale contract. If the slash can sit for 2 years post-harvest and is well distributed a burn may be avoided. Roller chopping is acceptable as well to prepare slash for trenching. Retention will be patch style but will be determined at the time of sale prep, make sure it includes large red and white pine.

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

Acceptable Red Pine
Regen:

Other
Comment:

Proposed Start Date: 10/01/2018

9	41133009-Cut	27.3	42210 - Natural Red Pine	Sawtimber Well	100	111-140	Harvest	Clearcut with Retention	4211 - Planted Red Pine	Even-Aged	Proposal
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Habitat Cut: No**Site Condition:**

Prescription Final Harvest stand and regenerate red pine. Cut all species except oak and hemlock. Chipping slash is preferred but if no markets exist insert burn specs into the sale contract. If the slash can sit for 2 years post-harvest and is well distributed a burn may be avoided. Roller chopping is acceptable as well to prepare slash for trenching. Consider placing patch retention on the southern boundary near the marsh.

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

Acceptable Red Pine
Regen:

Other
Comment:

Proposed Start Date: 10/01/2018

12	41133012-Cut	18.0	42210 - Natural Red Pine	Sawtimber Well	100	141-170	Harvest	Clearcut with Retention	4211 - Planted Red Pine	Even-Aged	Proposal
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Habitat Cut: No**Site Condition:**

Prescription Final Harvest stand and regenerate red pine. Cut all species except oak and hemlock. Chipping slash is preferred but if no markets exist insert burn specs into the sale contract. If the slash can sit for 2 years post-harvest and is well distributed a burn may be avoided. Roller chopping is acceptable as well to prepare slash for trenching. Consider putting retention in the northwest corner to increase visual buffer.

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

Acceptable Red Pine
Regen:

Other
Comment:

Proposed Start Date: 10/01/2018



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
15	41133015-Cut	19.7	42290 - Natural Mixed Pine	Sawtimber Well	100	111- 140	Harvest	Clearcut with Retention	4211 - Planted Red Pine	Even-Aged	Proposal
Habitat Cut: No			Site Condition:								
<u>Prescription</u> Final Harvest stand and regenerate red pine. Cut all species except oak and hemlock. Chipping slash is preferred but if no markets exist insert											
<u>Specs:</u> burn specs into the sale contract. If the slash can sit for 2 years post-harvest and is well distributed a burn may be avoided. Roller chopping is acceptable as well to prepare slash for trenching. Consider locating patch retention on the southern boundary near the marsh type.											
<u>Next Step</u> Burn, Slash; SitePrep, Roller Chopping; SitePrep, Trenching; Planting, Initial Plant; Monitoring, Artificial Regen(1yr); Monitoring, Artificial											
<u>Treatments:</u> Regen(3yr)											
<u>Acceptable</u> Red Pine											
<u>Regen:</u>											
<u>Other</u>											
<u>Comment:</u>											
<u>Proposed Start Date:</u> 10/01/2018											
17	41133017-Cut	43.5	42210 - Natural Red Pine	Sawtimber Well	100	111- 140	Harvest	Clearcut with Retention	4211 - Planted Red Pine	Even-Aged	Proposal
Habitat Cut: No			Site Condition:								
<u>Prescription</u> Final Harvest stand and regenerate red pine. Cut all species except oak and hemlock. Chipping slash is preferred but if no markets exist insert											
<u>Specs:</u> burn specs into the sale contract. If the slash can sit for 2 years post-harvest and is well distributed a burn may be avoided. Roller chopping is acceptable as well to prepare slash for trenching. Retention will mainly be in the un-harvested portion of the stand.											
<u>Next Step</u> Burn, Slash; SitePrep, Roller Chopping; SitePrep, Trenching; Planting, Initial Plant; Monitoring, Artificial Regen(1yr); Monitoring, Artificial											
<u>Treatments:</u> Regen(3yr)											
<u>Acceptable</u> Red Pine											
<u>Regen:</u>											
<u>Other</u>											
<u>Comment:</u>											
<u>Proposed Start Date:</u> 10/01/2018											
17	41133017- Cutx	22.8	42210 - Natural Red Pine	Sawtimber Well	100	111- 140	Harvest	Shelterwood with Retention	42210 - Natural Red Pine	Uneven- Aged	Proposal
Habitat Cut: No			Site Condition:								
<u>Prescription</u> This portion of the stand has more of a white pine component as well as some pockets of jack pine. Manage this portion of stand as a natural											
<u>Specs:</u> stand harvesting with a shelterwood system. Mark to release advanced regen if present otherwise mark stand to 40 square feet of evenly spaced trees to provide seed. Retention should be incorporated in red line along marsh or Q Type.											
<u>Next Step</u> Monitoring, Natural Regen (Re-Inventory)											
<u>Treatments:</u>											
<u>Acceptable</u> Red Pine is preferred but white pine is acceptable.											
<u>Regen:</u>											
<u>Other</u>											
<u>Comment:</u>											
<u>Proposed Start Date:</u> 10/01/2018											
34	41133034-Cut	34.6	42210 - Natural Red Pine	Sawtimber Well	98	111- 140	Harvest	Clearcut with Retention	42110 - Planted Red Pine	Even-Aged	Proposal
Habitat Cut: No			Site Condition:								
<u>Prescription</u> Final Harvest stand and regenerate red pine. Cut all species except oak and hemlock. Chipping slash is preferred but if no markets exist insert											
<u>Specs:</u> burn specs into the sale contract. If the slash can sit for 2 years post-harvest and is well distributed a burn may be avoided. Roller chopping is acceptable as well to prepare slash for trenching. Patch retention is preferred and will be done during sale prep, make sure it includes large red and white pine.											
<u>Next Step</u> Burn, Slash; SitePrep, Roller Chopping; SitePrep, Trenching; Planting, Initial Plant; Monitoring, Artificial Regen(1yr); Monitoring, Artificial											
<u>Treatments:</u> Regen(3yr)											
<u>Acceptable</u> Red Pine											
<u>Regen:</u>											
<u>Other</u>											
<u>Comment:</u>											
<u>Proposed Start Date:</u> 10/01/2018											



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
38	41133038-Cut	79.3	42210 - Natural Red Pine	Sawtimber Well	100	51-80	Harvest	Clearcut with Retention	4211 - Planted Red Pine	Even-Aged	Proposal
Habitat Cut: No			Site Condition:								
<u>Prescription</u> Final Harvest stand and regenerate red pine. Cut all species except oak and hemlock. Chipping slash is preferred but if no markets exist insert											
<u>Specs:</u> burn specs into the sale contract. If the slash can sit for 2 years post-harvest and is well distributed a burn may be avoided. Roller chopping is acceptable as well to prepare slash for trenching. Retention is part of the parent stand not being harvested.											
<u>Next Step</u> Burn, Slash; SitePrep, Roller Chopping; SitePrep, Trenching; Planting, Initial Plant; Monitoring, Artificial Regen(1yr); Monitoring, Artificial											
<u>Treatments:</u> Regen(3yr)											
<u>Acceptable</u> Red Pine											
<u>Regen:</u>											
<u>Other</u> Splitting stand to manage south half for red pine, the north half of stand will be managed for natural mixed pine with an oak component.											
<u>Comment:</u>											
<u>Proposed Start Date:</u> 10/01/2018											
40	41133040-Cut	21.0	42210 - Natural Red Pine	Sawtimber Well	95	51-80	Harvest	Shelterwood with Retention	42210 - Natural Red Pine	Uneven- Aged	Proposal
Habitat Cut: No			Site Condition:								
<u>Prescription</u> Manage this stand as a natural stand harvesting with a shelterwood system. Mark to release advanced regen if present otherwise mark stand to											
<u>Specs:</u> 40 square feet of evenly spaced trees to provide seed. Retention will be determined at the time of sale prep.											
<u>Next Step</u> Monitoring, Natural Regen (Re-Inventory)											
<u>Treatments:</u>											
<u>Acceptable</u> red and white pine with a component of other species on site.											
<u>Regen:</u>											
<u>Other</u> The goal is to move this stand into at least a 3 aged state managing for natural pine which will be dominated over time by white pine. Red pine											
<u>Comment:</u> should be encouraged whenever possible. Which may include post harvest scarification if warranted.											
<u>Proposed Start Date:</u> 10/01/2018											
41	41133041-Cut	27.6	42290 - Natural Mixed Pine	Sawtimber Well	100	111- 140	Harvest	Shelterwood	4220 - Natural White Pine	Uneven- Aged	Proposal
Habitat Cut: No			Site Condition:								
<u>Prescription</u> Manage this stand as a natural stand harvesting with a shelterwood system. Mark to release advanced regen if present otherwise mark stand to											
<u>Specs:</u> 40 square feet of evenly spaced trees to provide seed. Retention will be determined at the time of sale prep.											
<u>Next Step</u> Monitoring, Natural Regen (Re-Inventory)											
<u>Treatments:</u>											
<u>Acceptable</u> Mixed white and red pine with a component of species currently on site.											
<u>Regen:</u>											
<u>Other</u> The goal is to move this stand into at least a 3 aged state managing for natural pine which will be dominated over time by white pine. Red pine											
<u>Comment:</u> should be encouraged whenever possible. Which may include post harvest scarification if warranted.											
<u>Proposed Start Date:</u> 10/01/2018											
51	41133051- Monitor	5.3	320 - Upland Shrub	Nonstocked	0	Unspec ified	Monitoring	Natural Regen (Intermediate)	4222 - Natural Jack Pine	Even-Aged	Draft Field Boundary
Habitat Cut: No			Site Condition:								
<u>Prescription</u> Monitor for jack pine regen.											
<u>Specs:</u>											
<u>Next Step</u> SitePrep, Trenching; Planting, Initial Plant; Monitoring, Artificial Regen(1yr)											
<u>Treatments:</u>											
<u>Acceptable</u> Jack pine											
<u>Regen:</u>											
<u>Other</u> Percent to Treat = 100%											
<u>Comment:</u>											
<u>Proposed Start Date:</u> 04/01/2018											



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
56	41133056-Cut	17.5	42220 - Natural Jack Pine	Poletimber Well	68	51-80	Harvest	Clearcut with Retention	4222 - Natural Jack Pine	Even-Aged	Proposal

Habitat Cut: No**Site Condition:**

Prescription Final Harvest stand leaving some scattered red pine for seed. Scarify post harvest to regenerate jack pine. If regen fails trench and plant jack
Specs: pine. Retention patch will be left during sale prep, make sure it includes large red and white pine.

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

Acceptable Natural Jack pine with component of red and white pine. If natural fails plant jack pine.
Regen:

Other
Comment:

Proposed Start Date: 10/01/2018

57	41133057-Cut	28.5	4319 - Mixed Upland Forest	Poletimber Well	102	81-110	Harvest	Seed Tree with Retention	4319 - Mixed Upland Forest	Two-Aged	Proposal
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Habitat Cut: No**Site Condition:**

Prescription Mark seed trees to leave. Mark mainly white and red pine to approximately 20-30 square feet leaving the jumbo sized class. Mark some white
Specs: birch as well for initial seed and later snag trees.

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

Acceptable Mix of current species on site.
Regen:

Other The adjacent stand will be scarified, consider scarifying this stand concurrently to provide the best chance for red pine regen but only if the work
Comment: can take place soon after harvest.

Proposed Start Date: 10/01/2018

59	41133059-Cut	95.3	42210 - Natural Red Pine	Sawtimber Medium	95	51-80	Harvest	Clearcut with Retention	4211 - Planted Red Pine	Even-Aged	Proposal
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Habitat Cut: No**Site Condition:**

Prescription Final Harvest stand and regenerate red pine. Cut all species except oak and hemlock. Chipping slash is preferred but if no markets exist insert
Specs: burn specs into the sale contract. If the slash can sit for 2 years post-harvest and is well distributed a burn may be avoided. Roller chopping is acceptable as well to prepare slash for trenching. Retention will be a component of the parent stand not being treated.

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

Acceptable Red Pine
Regen:

Other Stand was just harvested last entry, the way it was harvested will move the stand to white pine. Therefore, the stand is being split allowing a
Comment: portion to go natural which will include the shift to white pine and the harvest portion will be managed more intensively to keep red pine on the landscape.

Proposed Start Date: 10/01/2018

65	41133065-Cut	27.3	42220 - Natural Jack Pine	Sawtimber Well	66	81-110	Harvest	Clearcut with Retention	4222 - Natural Jack Pine	Even-Aged	Proposal
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Habitat Cut: No**Site Condition:**

Prescription Final Harvest stand leaving some scattered red pine for seed. Scarify post harvest to regenerate jack pine. If regen fails trench and plant jack
Specs: pine. Retention patch will be left during sale prep, make sure it includes large red and white pine.

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

Acceptable Natural jack pine with mix of red and white pine is acceptable if natural fails plant jack pine.
Regen:

Other
Comment:

Proposed Start Date: 10/01/2018



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Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
66 41133066-Cut	15.8	42290 - Natural Mixed Pine	Sawtimber Well	63	111-140	Harvest	Shelterwood	42141 - Planted Mixed Pine, Mixed Deciduous	Uneven-Aged	Proposal

Habitat Cut: No

Site Condition:

Prescription Do a shelterwood harvest releasing as much of the 50-60 year old red pine as possible. The areas of poles could left at a higher BA. Cut all other species except oak and hemlock, make sure retention includes large red and white pine.

Next Step Monitoring, Natural Regen (Re-Inventory)

Treatments:

Acceptable Regen: Red and white pine with a mix of other species currently on-site

Other

Comment:

Proposed Start Date: 10/01/2018

Total Treatment Acreage Proposed: 504.3

Report 4 – Site Conditions

Shingleton Mgt. Unit
Bob Burnham : Examiner

Compartment: 133
Year of Entry: 2019

Availability for Management

Total Acres	Acres Available	Acres Avail With Condition	Acres Not Available	Dominant Site Conditions	
Acres	Available	With Condition	Not Available	5B	2F
46	46	0	0	Aspen	
2	2	0	0	Bare/Sparsely Vegetated	
149	149	0	0	Cedar	
27	27	0	0	Hemlock	
9	9	0	0	Herbaceous Openland	
508	508	0	0	Jack Pine	
5	5	0	0	Lowland Conifers	
2	2	0	0	Lowland Mixed Forest	
27	27	0	0	Lowland Shrub	
25	25	0	0	Marsh	
103	85	0	18	Mixed Upland Deciduous	18
140	140	0	0	Natural Mixed Pines	
9	9	0	0	Northern Hardwood	
756	494	262	0	Red Pine	262
3	3	0	0	Upland Conifers	
224	224	0	0	Upland Mixed Forest	
5	5	0	0	Upland Shrub	
6	6	0	0	Urban	
6	6	0	0	Water	
312	202	110	0	White Pine	110
2,363	1,973	372	18	Total Forested Acres	372 18
	83%	16%	1%	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	Available	5B: Maintain for regeneration purposes	110	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Stand just harvested residual is seed source.							

Report 4 – Site Conditions

Shingleton Mgt. Unit
 Bob Burnham : Examiner

Compartment: 133
 Year of Entry: 2019

2	Available	5B: Maintain for regeneration purposes	119	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
4	Available	5B: Maintain for regeneration purposes	63	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
5	Unavailable	2F: Too steep	18	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
6	Available	5B: Maintain for regeneration purposes	80	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							



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
	Type 1 or Type 2 Old Growth	Possible Type 2 Old Growth Area	SCA Removal	175
Comments Proposed removal from old growth				
	Type 1 or Type 2 Old Growth	Possible Type 2 Old Growth Area	Proposed SCA	
Comments				
	Type 1 or Type 2 Old Growth	Possible Type 2 Old Growth Area	Proposed SCA	175
Comments Old growth already existed here but was adjusted to propose entire stand as type 2 old growth.				



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.



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
1	4130 - Aspen	Poletimber Well	13.8	24	Immature	Stand was part of Sullivan Plains Mixed Product Sale, Unit 2. Stand is now transitioning to poles. Aspen fades out on west side.
2	42220 - Natural Jack Pine	Poletimber Well	27.5	51	81-110	Stand will be ready to harvest next entry, old notes say it was harvested in 61 the cored age matches pretty close. There are pockets of an older age class of jack pine especially near the N type to the south.
5	42210 - Natural Red Pine	Sawtimber Well	27.4	98	81-110	I believe the regen counts from previous notes are somewhat erroneous. Most of the regen is white pine but much of the area is heavily stocked and there is no regen to release. Traditional red pine management is the way to go keep the site in red pine. Old notes from previous inventory. [1/17/03] Partial completion of FTP #C41-909 - Scarified 6/30/02; schedule regen survey for 2005. 615 T/A, some areas were hand planted with inmates in '05. In ten years may need to thin again to release the regeneration. There are also many stems of white pine coming in.
6	42290 - Natural Mixed Pine	Sawtimber Medium	9.9	101	1-50	Stand was cut in 1993, Payment Unit 1 of Sullivan Hills Mixed Product Sale. Stand is now 2 aged, could consider removing over-story.
7	42220 - Natural Jack Pine	Sapling Well	11.4	24	Immature	Sale was part of Sullivan Plains Mixed Product Sale, Scarified in 1993. Nice jack pine regen, residual oak is mainly on east edge.
8	42210 - Natural Red Pine	Sawtimber Well	10.9	98	81-110	2 aged stand with the dominant red and white pine being mature. Jack pine would benefit from one more decade of growth but since its a small component of stand consider harvest now.
9	42210 - Natural Red Pine	Sawtimber Well	27.3	100	111-140	Extremely nice red pine stand. Like most stands in the compartment there are a couple age classes but this stands is heavily to the older mature age class. Some ground hemlock in the understory but sporadic.
10	42220 - Natural Jack Pine	Sapling Medium	5.7	15	Immature	Stand was Part of Sullivan Lake Pine, Unit 3; TCR dtd 11-3-00; SEE FTP C41-910.[1/17/03] Scarified 6/30/02; 2005 regen survey showed 685 T/A 1-5' tall. Oak, white birch and white pine were left, the white birch is small or dying out from the cut.
11	42220 - Natural Jack Pine	Poletimber Well	21.8	47	51-80	OPIC - FMD: Stand was treated in 1970. Red and white Pine over story is variable, give stand one more decade for jack pine to get larger then consider harvesting.
12	42210 - Natural Red Pine	Sawtimber Well	18.0	100	141-170	Stand was treated in '61 and '90. All species except pine were removed with previous sale Sullivan Plains Cabin Logs Sale. Stand is very nice pine and mature.
13	6126 - Lowland Jack Pine	Sapling Well	4.7	22	1-50	Stand was once marsh but changes in water table and or beaver activity allowed jack pine to fill in.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
14	42350 - Upland Hemlock	Sawtimber Well	17.8	115	141-170	Stand contains a steep hill side which is not operable unless it was very heavy harvest. Hemlock is regenerating in stand. This stand does have characteristics consistent with type 2 old growth.
15	42290 - Natural Mixed Pine	Sawtimber Well	19.7	100	111-140	Stand was treated in the 70's which created the second age class of jack pine. There is also pockets of older decadent jack pine. Stand could hold but consider harvesting now to capture the older jack pine. Sporadic oak in the overstory and ground hemlock in the understory.
16	42120 - Planted Jack Pine	Poletimber Well	28.3	36	51-80	Much of the stand was planted and records indicate planting was done by inmates. Trenches are present through much of stand. Jack pine is healthy. There are a few pockets where the red pine is more dense.
17	42210 - Natural Red Pine	Sawtimber Well	66.3	100	111-140	East side of stand was cut in 1991, Sullivan Hills Cabin Logs Sale. Red Pine is mature, consider a harvest.
18	42220 - Natural Jack Pine	Sapling Medium	18.7	15	Immature	Sale was part of Sullivan Lake Pine Sale cut in 1999. Scarified in 2002 resulting in 438 tpa of jack pine and 109 tpa of red pine during the 2005 regen counts. White birch that was left from the sale has mostly died.
19	42220 - Natural Jack Pine	Poletimber Well	223.9	47	51-80	This is a true 2 aged jack pine stand. Stand was strip cut in 1961 which resulted in the oldest current age class of jack pine in the stand. The remaining strips were harvested in 1971 resulting in the second age class which is the dominant age class by acreage. The entire stand is healthy and can hold but due to the size of the stand it should be broken up and at least a portion harvested now.
20	42220 - Natural Jack Pine	Sapling Medium	5.8	15	Immature	Stand was Part of Sullivan Lake Pine, Unit 3; TCR dtd 11-3-00; SEE FTP C41-910. [1/17/03] Scarified 6/30/02; 2005 regen survey showed 685 T/A 1-5' tall. Oak, white birch and white pine were left, the white birch is small or dying out from the cut. Red Pine saplings were planted by inmates intermittently, most appear to have died.
21	42220 - Natural Jack Pine	Sapling Medium	1.7	15	Immature	Stand was Part of Sullivan Lake Pine, Unit 3; TCR dtd 11-3-00; SEE FTP C41-910. [1/17/03] Scarified 6/30/02; 2005 regen survey showed 685 T/A 1-5' tall. Oak, white birch and white pine were left, the white birch is small or dying out from the cut.
22	42290 - Natural Mixed Pine	Poletimber Well	3.6	30	51-80	Stand is in transition from sapling to poles, very good red pine regeneration.
25	42498 - Red Pine (OI)	Sapling Well	4.6	14	Immature	OPIC - FMD: Mix of red and jack pine. Residual red pine, paper birch and red maple <10BA. Next to PRNL and H-58/snowmobile trail. Habitat type=PVE soil=rubicon sand 0-6% slopes[8/14/03 RFT] 5100 red pine and 2100 acorns were planted by inmates in 2003 under FTP #C41-968.[06-14-06] 1500 acorns handplanted by inmates under FTP W41-992.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
26	6120 - Lowland Cedar	Poletimber Well	149.4	102	51-80	Old notes indicate this stand was at one time considered potential old growth but then subsequently reviewed and it was determined that it had been partially harvested. Stand is variable in quality and stocking with many areas very stunted potentially due to high water.
27	42220 - Natural Jack Pine	Poletimber Well	19.7	35	Unspecified	Found old document in file saying this was an experimental site. Stand was cut with a feller buncher and flail delimeter. They apparently left 5 acres on north end un-scarified to see if there was a difference. No other documentation in file. North end looks the same as the rest.
28	42220 - Natural Jack Pine	Sapling Medium	2.9	15	Immature	Sale was part of Sullivan Lake Pine Sale cut in 1999. Scarified in 2002 resulting in 438 tpa of jack pine and 109 tpa of red pine during the 2005 regen counts. White birch that was left from the sale has mostly died.
29	42220 - Natural Jack Pine	Sapling Medium	1.7	15	Immature	Sale was part of Sullivan Lake Pine Sale cut in 1999. Scarified in 2002. White birch that was left from the sale has mostly died.
30	42220 - Natural Jack Pine	Sapling Medium	3.6	15	Immature	Sale was part of Sullivan Lake Pine Sale cut in 1999. Scarified in 2002.
31	4191 - Mixed Upland Deciduous with Conifer	Poletimber Well	18.2	70	81-110	Stand is a steep ridge that is in-operable. When adjacent stand on top of ridge is harvested again push down slope as far as practical into this stand.
32	42220 - Natural Jack Pine	Sapling Medium	2.6	15	Immature	Sale was part of Sullivan Lake Pine Sale cut in 1999. Scarified in 2002 resulting in 438 tpa of jack pine and 109 tpa of red pine during the 2005 regen counts. White birch that was left from the sale has mostly died.
33	42220 - Natural Jack Pine	Sapling Well	37.6	24	Immature	Part of Sullivan Jack Pine Sale, scarified in 1993. Trees are becoming merchantable, looks good.
34	42210 - Natural Red Pine	Sawtimber Well	34.6	98	111-140	Stand was cut in 1999, Sullivan Lake Pine Sale which removed all species except red and white pine as well as any hemlock and oak. Stand is mature and needs a harvest. Terrain is slightly rolling.
35	42220 - Natural Jack Pine	Sapling Medium	6.2	24	Immature	Stand was cut with Sullivan Lake Jack Pine in 1993.
36	429 - Mixed Upland Conifers	Sapling Well	3.0	26	Immature	Stand was cut in 1991 and has come back to quite a hodge-podge.
38	42210 - Natural Red Pine	Sawtimber Well	142.5	100	51-80	Stand was cut in early 90's Sullivan Hills Sale. The species mix of regen is quite different on the north end where there is more deciduous and fir as you go south the soils change and seem to be more droughty which means more pine.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
39	4319 - Mixed Upland Forest	Sapling Well	13.1	25	Immature	Stand was cut in 1992. Regen is coming back to a mix of species and it is nicely transitioning to poles.
40	42210 - Natural Red Pine	Sawtimber Well	21.0	95	51-80	Stand was treated in early 90's, Sullivan Hills Sale. The understory is mainly white pine which is heavy but there is some red pine and other species. Stand will convert to white pine without radical intervention.
41	42290 - Natural Mixed Pine	Sawtimber Well	27.6	100	111-140	Stand was picked through with adjacent sale in early 90's. Slightly more white pine vs red pine but most of the second age is red pine..
42	4319 - Mixed Upland Forest	Sapling Well	182.8	24	Immature	Stand originated from the Sullivan Hills Sale cut early 90's. Regen is good but variable, there are a couple larger aspen areas that could be typed out but the other species are present there as well. Stand is very rolling.
43	42210 - Natural Red Pine	Sawtimber Well	27.5	102	51-80	Stand was cut in 2014, part of Lotsa Logs Sale. Stand has fairly high BA still. Stand will convert to white pine unless another harvest is done to manage for red pine, due to the steep slopes and oak/hemlock component allowing this stand to convert to a more mixed pine type is ok.
45	4191 - Mixed Upland Deciduous with Conifer	Sapling Medium	84.7	4	Immature	Stand was cut in 2013, part of Playing Chicken Pulpwood. Pine Residual that was left for aesthetics is quite variable, the white birch that was left has mostly all died. The stand is regenerating nicely to aspen, maple and pine.
49	6126 - Lowland Jack Pine	Sapling Well	18.1	24	1-50	Stand is seasonally in-undated with water, some areas are looking quite water stressed due to high water table.
50	42200 - Natural White Pine	Sawtimber Medium	109.6	102	1-50	Stand was cut in 2014-2015 as part of Truck Dodger Pine Sale. Original prescription called for under planting red pine and white pine. This was cancelled because the stand is regenerating fine on its own to a mix of species but mainly white pine, aspen and maple. Under planting red pine is not realistic due to the amount of canopy.
53	42260 - Natural Pine, Mixed Deciduous	Poletimber Medium	37.1	48	51-80	Stand is a mix of species. Jack Pine and aspen could be cut but are healthy and will hold. Due to the amount of harvesting adjacent H-58 recently wait 10 to break up age classes.
54	4113 - R.Maple, Conifer	Sapling Poor	8.6	4	Immature	Stand was harvested with Playing Chicken Pulpwood. Stand is regenerating mainly to soft maple with a mix of other species. Paper birch doesn't seem to be stump sprouting. Stand is still filling in.
55	42290 - Natural Mixed Pine	Sawtimber Well	26.0	54	51-80	Stand could be treated now but it is healthy and due to the amount of recent harvesting along H-58 hold stand till next entry period.
56	42220 - Natural Jack Pine	Poletimber Well	17.5	68	51-80	There is actually 2 age classes of jack pine the older is falling apart and needs to be cut.



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
57	4319 - Mixed Upland Forest	Poletimber Well	28.5	102	81-110	Stand is 2 aged with larger diameter white and red pine being older than the birch and maple. Stand should be harvested and managed for mixed pine and mixed deciduous.
58	42220 - Natural Jack Pine	Poletimber Medium	20.8	37	1-50	Looks like an old G type that has naturally filled in. Stocking is sparse maybe to do with frost pocket issues.
59	42210 - Natural Red Pine	Sawtimber Medium	175.5	95	51-80	Stand was cut in 2012-2014 Lotsa Logs Sale. Original Prescription called for under planting red pine in the understory. This really isn't feasible since there is too much shade. If managing for mixed pine wait 10 years and remove the overstory, if red pine is the true MO treat now.
60	42110 - Planted Red Pine	Sapling Poor	19.0	6	Immature	UPDATED TCR 1/12/99 - 020-91-01. Cut in '95 with an MO of red pine. No cultural treatment was ever done.. Trenched in 2012 by Holli Forest products. Planted on 5/10/13 by Superior forestry at a cost of \$3256.82. Regeneration check is scheduled for 2014. (3/7/14)RH Regen survey done Nov. 2015 = 613 T/A of regen pine. FTP closed.
63	42210 - Natural Red Pine	Sawtimber Well	119.1	104	81-110	Stand has two predominate age classes. Due to mix of pine and variability in the understory consider managing for mixed pine through a shelterwood seed type system. Stand was last harvested in 2003, Hurricane Pine sale. Notes say paper birch was left 100' from road.
64	42210 - Natural Red Pine	Sawtimber Well	61.9	54	81-110	Natural pine stand, there are scattered older trees but the bulk of the stand is one age class which is healthy.
65	42220 - Natural Jack Pine	Sawtimber Well	27.3	66	81-110	Stand is mature and needs to be harvested.
66	42290 - Natural Mixed Pine	Sawtimber Well	15.8	63	111-140	The stand contains 2 age classes, there are some very large diameter trees within stand but the younger age class is quite dense in areas. Stand will need to be managed for a mixed pine type when adjacent stands are harvested.
67	42200 - Natural White Pine	Sawtimber Medium	78.1	104	51-80	Stand actually has 3 age classes of trees. Stand was harvested in the early 90's, Sullivan Hills Sale. Due to the amount of mature timber in the area consider harvesting by removing the over-story.
68	42200 - Natural White Pine	Sawtimber Well	95.8	92	51-80	Nice natural pine stand, area of birch in the center of stand. Stand was harvested in 2003 with Hurricane Pine. White pine regen is very prolific. Stand could hold to let understory get a little larger if needed for diversity.
70	4136 - Aspen, Mixed Conifer	Sapling Poor	32.6	4	Immature	Stand was part of Playing Chicken Pulpwood sale. Residual red and white pine were left as well as white birch seed trees. The seed trees have died and there are virtually no stump sprouts. Residual stocking was left higher near H-58. There are also a couple old G types included in stand that have regenerated to aspen.



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
72	42200 - Natural White Pine	Sawtimber Poor	28.3	56	1-50	Part of Playing Chicken Pulpwood, cut in 2013. Stand has around 50 square feet of over-story. Understory is filling in nicely with a mix of species. Consider removing over-story next entry period.
76	613 - Lowland Mixed Forest	Poletimber Medium	1.5	104	1-50	
77	42350 - Upland Hemlock	Sawtimber Well	9.1	169	141-170	This stand has old growth characteristics in which much of the hemlock meets the age and size requirements. There is evidence of past logging in much of the stand. The stand is predominantly on a steep hillside.
83	6129 - Mixed Coniferous Lowland Forest	Poletimber Medium	5.4	54	Unspecified	



Stand	Cover Type	Acres	Managed Site	General Comments:
3	623 - Emergent Wetland	3.0	No	Area is seasonally inundated. Jack pine was starting to fill in on edges but recent high water table has killed most of them.
4	623 - Emergent Wetland	17.9	No	Area is seasonally inundated. Jack pine was starting to fill in on edges but recent high water table has killed most of them.
23	500 - Water	6.1	No	Sullivan Lake
24	622 - Lowland Shrub	27.2	No	
37	623 - Emergent Wetland	1.0	No	OPIC - FMD: There are areas where jack pine is reaching 15' tall with some blue flag and bog birch coming in as well. Water will pool in the spring but dries in the summer months.
44	7909 - Nonstocked (OI)	1.9	No	OPIC - FMD: H-58 and 12 Mile Beach Rd R-O-W.
47	122 - Road/Parking Lot	5.5	No	
51	320 - Upland Shrub	5.2		7/13/11 BB Sale is now on proposal 35-10, Truck Dodger Pine it was held due to H-58 construction. FTP C41-1484 submitted to regenerate jack pine. Residual BA = oak 7'. Sale cut TCR 8/10/15 FTP is now active. Scarified summer 2015.
52	623 - Emergent Wetland	2.9	No	
402	310 - Herbaceous Openland	8.6	No	