



Compartment Review Presentation

Gwinn Forest Management Unit

Compartment 32050

Entry Year 2017

Acreage: 1,881

County Marquette

Management Area: Chain Lakes Moraine

Revision Date: 2015-07-23

Stand Examiner: Theresa Sysol

Legal Description:

T44N R26W Section(s) 13 - 15

Identified Planning Goals:

To maintain and enhance the health and sustainability of the forest and its associated communities. Northern portion of the GEMS (Grouse Enhanced Management System) wildlife project.

Soil and topography:

Mostly flat to rolling. Some moraines and other glacial features present. Lowlands of Carbondale and Tawas soils with uplands of predominately Emmet/ Emmet-Escanaba fine sandy loams, Rubicon and Croswell sands, and Kalkaska/Keweenaw-Kalkaska complex.

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

One private 40 acre parcel within, otherwise surrounded by State ownership.

Unique Natural Features:

One cedar stand within where cutting study was done in the 1940's. Dry-mesic northern forest to west and rich conifer swamp to east.

Archeological, Historical, and Cultural Features:

Some old logging camp sites and grades within. Most of the remains are mounds in the soil.

Special Management Designations or Considerations:

Potential for red-shouldered hawk, goshawk, great blue heron rookery, eagle, and osprey. Potential for wood turtle. Potential for moose and wolf.

Potential for auricled tway-blade, western dock, Farwell's water-milfoil, alternate leaved water-milfoil and linear-leaved gentian along riparian areas. Potential for submergent and emergent marsh species in small lake: auricled tway-blade, autumnal water starwort, alternate-leaved water-milfoil, Farwell's water-milfoil, alga pondweed, small yellow water-lily, American shore-grass, linear-leaved gentian and veiny meadow-rue.

Watershed and Fisheries Considerations:

Landon Lake, Chandler Brook, Bob's Lake, Little Bob's Lake, and Bob's Creek.

Wildlife Habitat Considerations:

Compartment 50 is found within the Chain Lakes Moraine Management Area; on a Disintegration Moraine in Southwestern Marquette County. The dominant Natural Communities are dry mesic northern forests, poor conifer swamps, and mesic northern forests. This management area offers opportunities to increase diversity and perhaps long-term oak sustainability through under planting white and red pine. Another priority is to maintain or increase wildlife corridors especially along riparian corridors. Wildlife management issues in the management area are: mast (hard and soft); habitat fragmentation; mature forest conditions; mesic conifer; course woody debris; and retention or development of large living and dead standing trees (for cavities). This management area represents approximately ¼ of the oak resource on WUP state forest.

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

Mineral Resource and Development Concerns and/or Restrictions

Surface sediments consist of medium-textured till, glacial outwash sand and gravel and postglacial alluvium, and peat and muck. There is insufficient data to determine the glacial drift thickness. The Cambrian Trempealeau Formation and Munising Group subcrop below the glacial drift. The Trempealeau could be used for stone. There are no gravel pits in the area, but potential is good on the uplands. Abandoned iron mines are located five miles to the northeast. This area has not been previously leased. There is no economic oil and gas production in the UP.

Vehicle Access:

Good throughout the higher grounds along the Perrin Bros. Road corridor. No access on wetland areas west of Bob's Lake and near Landon Lake.

Survey Needs:

Treatment surrounding private lands may require some control, although private lands have been harvested recently.

Recreational Facilities and Opportunities:

The Gwinn to Arnold snowmobile trail (trail #33) runs down the Perrin Bros. Road during the winter months. Area is also popular for hunting and fishing. Chandler Brook is a trout stream.

Fire Protection:

Low risk area, although heavy recreational activities can create the potential for human-caused fires.

Additional Compartment Information:

Harvests should be confined to the spring and summer months, if possible, to avoid conflicts with the snowmobile trail.

The following reports from the Inventory are attached:

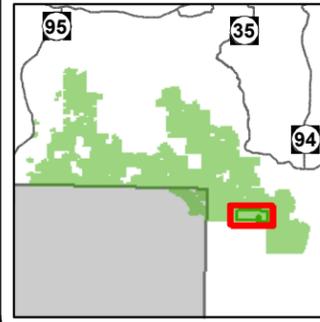
- Total Acres by Cover Type and Age Class**
- Cover Type by Harvest Method**
- Proposed Treatments – No Limiting Factors**
- Proposed Treatments – With Limiting Factors**
- Stand Details (Forested and Nonforested)**
- Dedicated and Proposed Special Conservation Areas**
- Site Condition Details**

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

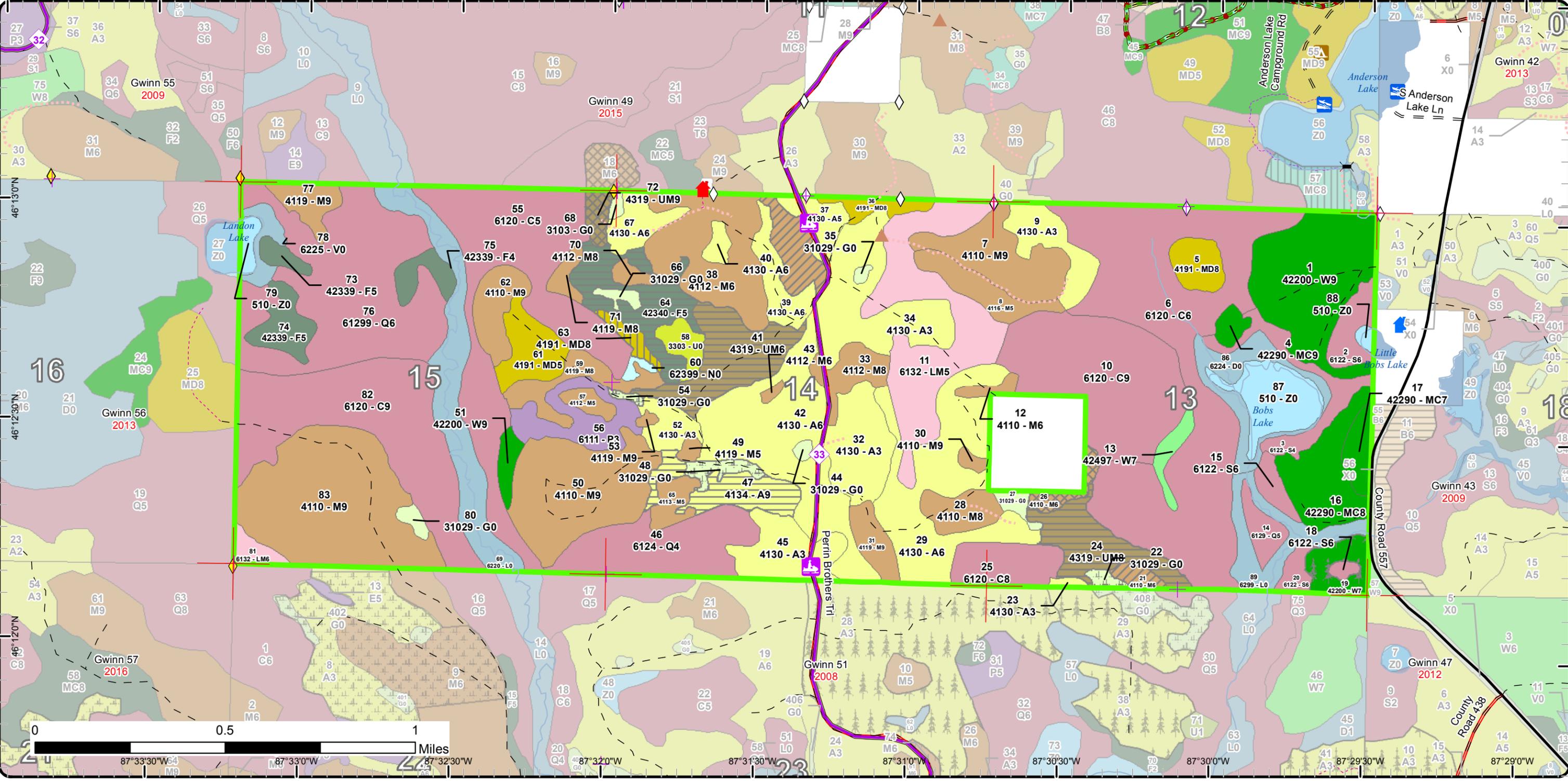
- Base feature information, stand boundaries, cover types, and numbers**
- Proposed treatments**
- Site condition boundaries**
- Details on the road access system**

Cover Type & Treatments

Compartment: 50
 T44N,R26W, Sec. 13,14,15
 County: Marquette
 Unit: Gwinn
 Mgmt Area: Chain Lakes Moraine
 YOE: 2017
 Acres: 1881 GIS Calculated
 Examiner: Theresa Sysol
 Map Revised: 7/31/2015
 Map Phase: Pre-Review

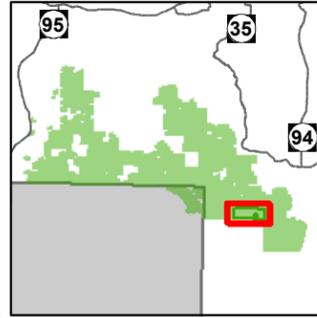


- ✚ Remonumented Section Corners
- ◆ Survey Grade GPS Corners
- ◇ Field Grade GPS Corners
- Miris Corners
- Paved Roads
- Gravel Roads
- Poor Dirt Roads
- Trail (Non-Recreation)
- Closed Roads
- Designated Hiking Pathways
- Designated Equestrian Trails
- Designated Ski Trails
- Snowmobile
- Snowmobile Trails
- ▲ Berms
- ▲ Cabin
- ▲ House
- ▲ Toilet
- ▲ Bridges
- ▲ Boating Access Site
- ▲ Campground
- Rivers
- Lakes
- ▨ Selection (Group, Single Tree)
- ▨ Clearcut (w/Reserves)
- ▨ Planting (tree species)
- ▨ Other Treatment - See Comments
- ▨ Thinning (Crown, Low, Systematic)
- ▨ Shelter Wood (w/Reserves)
- 411 - Northern Hardwood
- 413 - Aspen
- 419 - Mixed Upland Deciduous
- 422 - Natural Pines
- 423 - Other Upland Conifers
- 424 - Pine (OI)
- 430 - Upland Mixed Fores
- 611 - Lowland Deciduous Forest
- 612 - Lowland Coniferous Forest
- 613 - Lowland Mixed Forest
- Non-Forest Covertypes
- 310 - Herbaceous Openland
- 330 - Low Density Trees
- 500 - Water
- 622 - Lowland Shrub
- 623 - Emergent Wetland



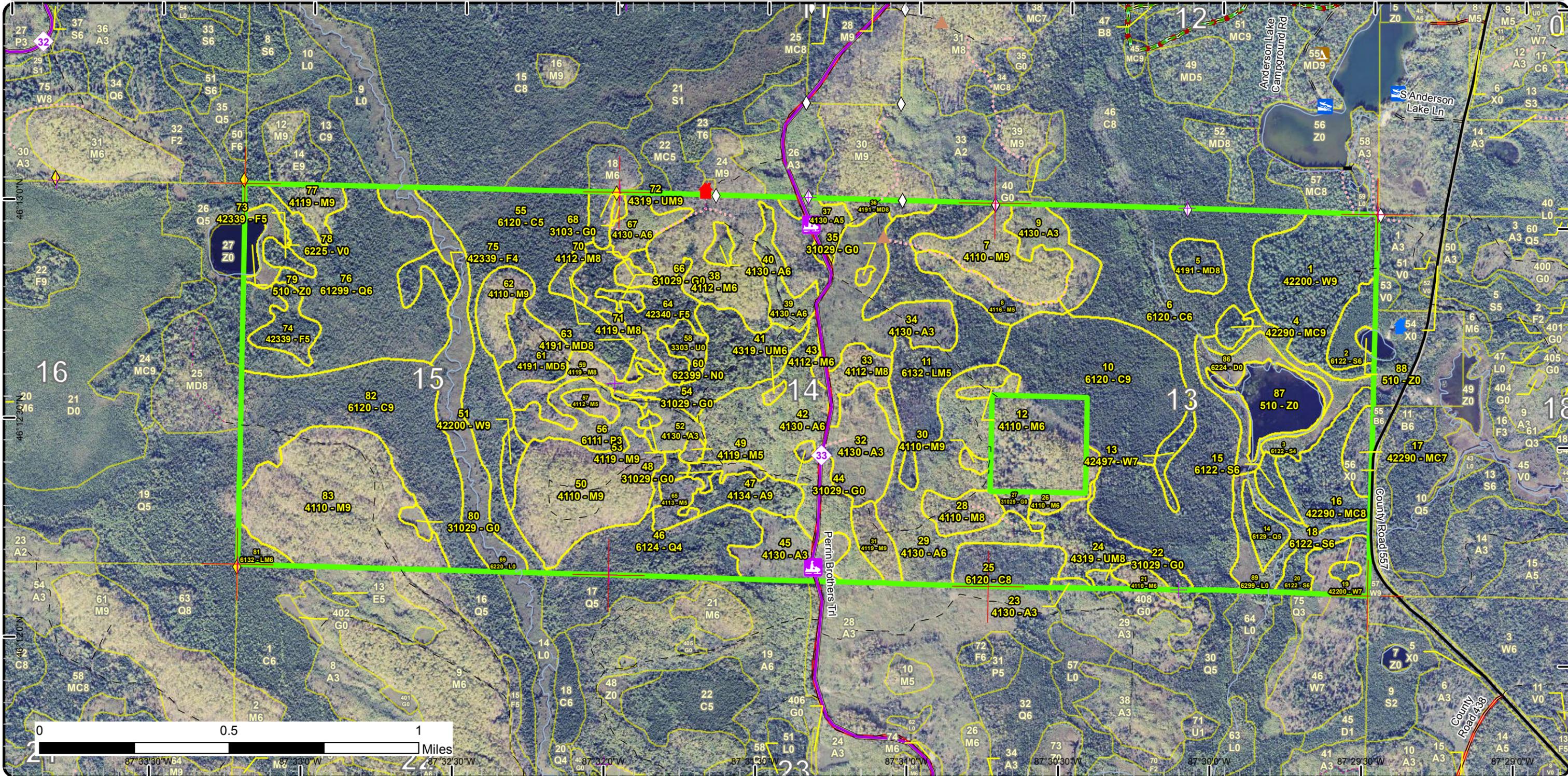
Stand Boundary Map

Compartment: 50
 T44N,R26W, Sec. 13,14,15
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- ▲ House
- ▲ Toilet
- ▲ Bridges
- ▲ Boating Access Site
- ▲ Campground
- Rivers
- Stand Boundaries
- Forest Coverture
- Non-Forest Coverture

- 413 - Aspen
- 419 - Mixed Upland Deciduous
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- 613 - Lowland Mixed Forest
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- 310 - Herbaceous Openland
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- 411 - Northern Hardwood
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Report 1 – Total Acres by Cover Type and Age Class

Gwinn Mgt. Unit

Compartment 50

Year of Entry 2017

Theresa Sysol : 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	97	27	30	143	0	20	0	0	0	0	0	0	0	0	0	0	0	317
Bog	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
Cedar	0	0	0	0	0	0	0	0	0	0	113	0	0	0	0	99	245	0	457
Herbaceous Openland	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21
Low-Density Trees	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
Lowland Aspen/Balsam Poplar	0	0	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21
Lowland Conifers	0	0	0	0	0	0	0	0	0	45	8	0	0	108	0	0	0	0	161
Lowland Mixed Forest	0	0	0	0	0	0	0	0	5	66	0	0	0	0	0	0	0	0	71
Lowland Shrub	68	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	68
Lowland Spruce/Fir	0	0	0	0	0	0	0	18	19	0	6	0	0	0	0	0	0	0	43
Marsh	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Mixed Upland Deciduous	0	0	0	0	0	0	0	4	0	0	17	0	0	0	0	0	0	17	38
Natural Mixed Pines	0	0	0	0	0	0	0	0	9	0	29	4	0	0	0	0	0	0	42
Northern Hardwood	0	0	0	0	15	0	0	0	0	0	137	1	0	0	0	0	0	218	371
Treed Bog	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20
Upland Mixed Forest	0	0	0	0	0	0	33	26	0	0	0	0	0	0	0	0	0	5	64
Upland Spruce/Fir	0	0	0	0	0	30	0	0	0	0	25	0	0	0	0	0	0	0	55
Water	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30
White Pine	0	0	0	0	0	0	0	0	0	0	5	18	61	0	0	0	0	0	84
Total	155	97	48	30	158	30	53	30	18	33	408	62	65	0	108	99	245	240	1879



Report 2 – Treatment Summary

Gwinn Mgt. Unit

Year of Entry: 2017

Acres of Harvest

Compartment 50

Total Compartment Acres: 1,881

Commercial Harvest - 143
 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	20	0	0	0	0	0	0	0	0	20
Mixed Upland Deciduous	0	0	0	0	4	0	0	0	0	4
Northern Hardwood	0	6	0	0	0	19	0	0	0	24
Upland Mixed Forest	59	5	0	0	0	0	0	0	0	64
Upland Spruce/Fir	30	0	0	0	0	0	0	0	0	30
Total	109	11	0	0	4	19	0	0	0	143

Proposed and Next Step Treatments by Method

	Harvest	Site Prep	Planting	Seeding	Burning	Pesticide	Monitoring	Other	Non-Forest Mgt.	Total Acres
Current	143	0	12	0	0	0	0	0	9	164
Next Step	0	0	0	0	0	0	149	0	0	149
Total	143	0	12	0	0	0	149	0	9	312



Stand Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
19 32050019-Plant	12.2	42200 - Natural White Pine	Sawtimber Poor	101	1-50	Planting	Underplant	4220 - Natural White Pine	Even-Aged	Proposal
Habitat Cut: Yes		Site Condition:								
<u>Prescription</u> Formal regeneration check for successful regeneration of white pine, red pine completed 6/19/2015. Understocked for white and red pine;										
<u>Specs:</u> supplement with hand planting (FTP C32-863).										
<u>Next Step</u> Monitoring, Artificial Regen(3yr); Monitoring, Artificial Regen(3yr)										
<u>Treatments:</u>										
<u>Acceptable Regen:</u> white pine, red pine, some mixed spruce/fir and aspen										
<u>Other Comment:</u> Obtain seedlings from Wyman nursery, if available. Old next step comments:										
<u>Proposed Start Date:</u> 10/1 /2015										
21 32050021-Cut	4.4	4110 - Sugar Maple Association	Poletimber Well	95	111-140	Harvest	Low Thinning	411 - Northern Hardwood	Uneven-Aged	Proposal
Habitat Cut: No		Site Condition:								
<u>Prescription</u> Selectively thin hardwoods to 70-90 BA, using hardwood marking guidelines. Retention will include some of the under-represented species (i.e. yellow birch, cherry). Look for opportunities to retain supercanopy wildlife trees. Leave some windfirm white spruce for seed trees and diversity. Cut all balsam fir and aspen.										
<u>Specs:</u>										
<u>Next Step</u>										
<u>Treatments:</u>										
<u>Acceptable Regen:</u> mixed northern hardwoods with conifer component										
<u>Other Comment:</u> Old next step comments:										
<u>Proposed Start Date:</u> 10/1 /2016										
22 32050022-NF	2.5	31029 - Grass (OI)	Nonstocked		Unspecified	NonForestMgt	Other - Specify	310 - Herbaceous Openland		Proposal
Habitat Cut: Yes		Site Condition:								
<u>Prescription</u> Remove merchantable timber with adjacent timber sale harvest. Part of FTP W32-813.										
<u>Specs:</u>										
<u>Next Step</u>										
<u>Treatments:</u>										
<u>Acceptable Regen:</u>										
<u>Other Comment:</u> Wildlife Division would like to plant shrubs/trees to enhance forage for game species. We would like to evaluate this stand for possible future opening maintenance. If planting this opening is desirable, then the goal will be to plant to a wildlife mix. If a perennial wildlife mix is chosen, then herbicide use may be needed to reduce competition from undesirable weed plants. Old next step comments:										
<u>Proposed Start Date:</u> 10/1 /2016										
24 32050024-Cut	25.6	4319 - Mixed Upland Forest	Sawtimber Medium	65	81-110	Harvest	Clearcut with Retention	413 - Aspen	Even-Aged	Proposal
Habitat Cut: No		Site Condition:								
<u>Prescription</u> Harvest all aspen, balsam fir, maple, paper birch, spruce. Leave/mark a few paper birch, aspen, and white spruce for seed trees and diversity -										
<u>Specs:</u> use diameter cut to identify, if not practical to mark. Leave all cedar, hemlock, white and red pine.										
<u>Next Step</u>										
<u>Treatments:</u>										
<u>Acceptable Regen:</u> Aspen, birch and component of mixed conifers.										
<u>Other Comment:</u> Overmature aspen with spruce, fir. Quite a bit is dead/dying already. Heavier wet areas with cedar/ash swale in stand - use these areas for retention/exclusion, if possible - and thicker fir/spruce along lowland edge. Some maple in stand is scattered low crowned and poor timber quality - harvest all. Falls within GEM's area - follow guidelines. Harvesting should also not occur during the winter months, if possible, to avoid conflict with the snowmobile trail. If that is not feasible, then operations should be restricted to later winter months and no weekend operations. Old next step comments:										
<u>Proposed Start Date:</u> 10/1 /2016										

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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
26 32050026-Cut	5.7	4110 - Sugar Maple Association	Poletimber Well	95	81-110	Harvest	Single Tree Selection	411 - Northern Hardwood	Uneven-Aged	Proposal

Habitat Cut: No**Site Condition:**

Prescription Selectively thin hardwoods to 70-90 BA, using hardwood marking guidelines. Retention should include some of the under-represented species
Specs: (i.e. yellow birch, cherry). Efforts can be made to try and regenerate these species also. Look for opportunities to retain supercanopy wildlife trees. Create regeneration openings, where appropriate, and enhance existing regeneration areas. Harvest all balsam fir; leave some white spruce, even if budworm is detected.

Next Step
Treatments:

Acceptable Mixed northern hardwoods with a component of conifers.
Regen:

Other Stand BA average is 100-110, but due to surrounding treatments, managerial ready to treat now. Private lands have been thinned (2014?) -
Comment: property line established. Old next step comments:

Proposed Start Date: 10/1 /2016

38 32050038-Cut	14.3	4112 - Maple, Beech, Cherry Association	Poletimber Well	96	81-110	Harvest	Low Thinning	411 - Northern Hardwood	Uneven-Aged	Proposal
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Habitat Cut: No**Site Condition:**

Prescription Thin primarily pure hardwood area to 70-90 BA, using hardwood marking guidelines. Where heavier to spruce/fir, lower residual BA is
Specs: acceptable, removing all fir and spruce, aspen, due to budworm issues. Leave all hemlock, cherry, and most yellow birch - encourage regeneration in these areas, where possible.

Next Step
Treatments:

Acceptable Mixed northern hardwoods and component of conifers, aspen.
Regen:

Other Higher BA in this portion of the stand (90-140) with heavier fir/spruce. Predominately red maple in this portion. Old next step comments:
Comment:

Proposed Start Date: 10/1 /2016

41 32050041-Cut	33.5	4319 - Mixed Upland Forest	Poletimber Well	57	51-80	Harvest	Clearcut	413 - Aspen	Even-Aged	Proposal
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Habitat Cut: No**Site Condition:**

Prescription Harvest all aspen, balsam fir, paper birch, and spruce. Aspen is in decline; a lot is dead already. Budworm present.
Specs:

Next Step
Treatments:

Acceptable Aspen, birch, cherry and component of mixed conifers.
Regen:

Other Part of GEM's area - follow plan guidelines. Some sugar maple, cherry within - might wish to retain. Old next step comments:
Comment:

Proposed Start Date: 10/1 /2016

47 32050047-Cut	19.6	4134 - Aspen, Spruce/Fir	Sawtimber Well	55	81-110	Harvest	Clearcut	413 - Aspen	Even-Aged	Proposal
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Habitat Cut: No**Site Condition:**

Prescription Harvest all aspen, paper birch, spruce and fir. Budworm within - do not retain any spruce/fir. Some cherry, maple within which could be left, if
Specs: desired, otherwise harvest.

Next Step
Treatments:

Acceptable Aspen, birch, spruce, fir.
Regen:

Other Part of GEM's area - follow plan guidelines. Old next step comments:
Comment:

Proposed Start Date: 10/1 /2016



S t a n d	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
48	32050048-NF	5.1	31029 - Grass (OI)	Nonstocked			Unspec ified	NonForestMgt	Other - Specify	310 - Herbaceous Openland	Proposal

Habitat Cut: Yes**Site Condition:**

Prescription Harvest merchantable timber with adjacent stand 47 - budworm present in spruce/fir. Leave black cherry.

Specs:

Next Step

Treatments:

Acceptable

Regen:

Other Opening may be used for decking and landings. Old next step comments:

Comment:

Proposed Start Date: 10/1 /2016

54	32050054-NF	1.2	31029 - Grass (OI)	Nonstocked			Unspec ified	NonForestMgt	Other - Specify	310 - Herbaceous Openland	Proposal
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Habitat Cut: Yes**Site Condition:**

Prescription Remove any merchantable timber with adjacent sale.

Specs:

Next Step

Treatments:

Acceptable

Regen:

Other Old next step comments:

Comment:

Proposed Start Date: 10/1 /2016

63	32050063-Cut	4.4	4191 - Mixed Upland Deciduous with Conifer	Sawtimber Medium	60	51-80	Harvest	Shelterwood	4199 - Other Mixed Upland Deciduous	Uneven- Aged	Proposal
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Habitat Cut: No**Site Condition:**

Prescription Harvest all balsam fir, spruce - no retention due to budworm; leave most maple, cherry and basswood - mark, if necessary. Harvest most paper

Specs: birch, except for those trees designated as leave trees.

Next Step

Treatments:

Acceptable Northern hardwoods, paper birch, component of mixed conifers.

Regen:

Other Leave buffer area along marsh/vernal pond. Through contract specs, have logger identify and leave healthy paper birch crop trees. Protect

Comment: advanced hardwood regeneration as much as possible. Old next step comments:

Proposed Start Date: 10/1 /2016

64	32050064-Cut	30.1	42340 - Upland Spruce/Fir	Poletimber Medium	46	51-80	Harvest	Clearcut with Retention	42330 - Upland Fir	Even-Aged	Proposal
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Habitat Cut: No**Site Condition:**

Prescription Harvest all spruce, fir, aspen, paper birch. Harvest most maple, other than those designated through leave-tree marking or contract spec. Leave

Specs: all yellow birch and black cherry.

Next Step

Treatments:

Acceptable Spruce/fir with aspen, cherry, paper birch, maple acceptable.

Regen:

Other Little retention of spruce/fir due to budworm in area. Through contract harvesting specs or on-the-ground designation, retain some healthy S/F patches (10-15 trees), as well as scattered leave trees of paper birch, maple, and a few larger aspen. Include some larger diameter paper birch as retention, if possible. Old next step comments:

Proposed Start Date: 10/1 /2016



S t a n d	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
72	32050072-Cut	5.3	4319 - Mixed Upland Forest	Sawtimber Well	96	81-110	Harvest	Single Tree Selection	4319 - Mixed Upland Forest	Uneven- Aged	Proposal

Habitat Cut: No**Site Condition:**

Prescription Selectively thin hardwoods to 70-90 BA, using hardwood marking guidelines. Retention should include under-represented species (i.e. yellow birch, cherry). Efforts can be made to try and regenerate these species also. Look for opportunities to retain supercanopy wildlife trees. Leave all cedar, hemlock, and most yellow birch but harvest all balsam fir, paper birch.

Next Step
Treatments:

Acceptable Northern hardwoods, hemlock, component of S/F
Regen:

Other Stand was previously marked in orange; will need to re-mark. Include with C. 49 stand 18 prescription from 2015 POW. Old next step
Comment: comments:

Proposed Start Date: 10/1 /2016

**Total Treatment
Acreage Proposed: 163.9**

Report 5 – Site Conditions

Gwinn Mgt. Unit
Theresa Sysol : Examiner

Compartment: 50
Year of Entry: 2017

Availability for Management

Total Acres	Acres Available	Acres Avail		Dominant Site Conditions	Dominant Site Conditions						
		With Condition	Not Available		4A	5B	1C	2G	2H	3J	
317	317	0	0	Aspen							
7	7	0	0	Bog							
457	214	0	242	Cedar			242				
21	21	0	0	Herbaceous Openland							
7	7	0	0	Low-Density Trees							
21	21	0	0	Lowland Aspen/Balsam Poplar							
161	0	0	161	Lowland Conifers				45	8	108	
71	71	0	0	Lowland Mixed Forest							
68	68	0	0	Lowland Shrub							
43	2	12	29	Lowland Spruce/Fir	12						29
2	2	0	0	Marsh							
39	22	7	11	Mixed Upland Deciduous		7			11		
42	9	29	4	Natural Mixed Pines	29				4		
371	361	0	10	Northern Hardwood					10		
20	0	0	20	Treed Bog							20
64	64	0	0	Upland Mixed Forest							
55	30	0	25	Upland Spruce/Fir					25		
30	28	0	1	Water							1
84	12	66	6	White Pine	66				6		
1,881	1,258	113	510	Total Forested Acres	107	7	242	45	64	159	
	67%	6%	27%	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	2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)	35	3D: Recreational / Scenic values	Unspecified	Unspecified	Unspecified
Comments: islands within lowland swamp; also Landon Lake diversity							

Report 5 – Site Conditions

Gwinn Mgt. Unit
Theresa Sysol : Examiner

Compartment: 50
Year of Entry: 2017

2	Unavailable	1C: Other dept or div proc/practices	242	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Cedar cutting restraints							
3	Unavailable	2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)	29	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
4	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	50	5D: Unproductive Forest Land	Unspecified	Unspecified	Unspecified
Comments:							
5	Available	4A: No Markets Available for these Forest Products	61	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Thick fir understory with little merchantable products. Pine BA is too low for another cut.							
6	Available	4A: No Markets Available for these Forest Products	35	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Low BA and small S/F							
7	Available	4A: No Markets Available for these Forest Products	5	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							

Report 5 – Site Conditions

Gwinn Mgt. Unit
Theresa Sysol : Examiner

Compartment: 50
Year of Entry: 2017

8	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	108	2G: Too wet (sensitive soils, does not include access issues)	Unspecified	Unspecified	Unspecified
Comments:							
9	Available	4A: No Markets Available for these Forest Products	5	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
10	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	45	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
11	Available	5B: Maintain for regeneration purposes	7	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Treat when larger hardwood stand to north is harvested again.							



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

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

SCA Name	SCA Category	Detail Type	Recommendation	Acres
Bob's Creek hardwood island	Habitat Areas or Corridors	Other Habitat Area	Proposed SCA	9
Comments Overstory is mostly red maple, white birch, upland white cedar, a few spruce and white pine. Could call M5 or B5 but birch shows signs of decline. Sparse stand due to fir dieoff in spruce budworm epidemic late 1980's. Isolated stand.				
Bob's Lake pine	Habitat Areas or Corridors	Other Habitat Area	Proposed SCA	3
Comments White Pine is 24-30" dbh but low crowned with dead branches so poor timber quality. Some forking and mortality. Thick F3 3'-20' with some 2-4 stick. Birch shows mortality and dieback too. Areas of semi open understory. Poor access.				
C. 50 Removal 1	Other SCA		SCA Removal	0
Comments Incorporate into surrounding SCA type				
C. 50 Removal 2	Other SCA		SCA Removal	46
Comments Protected by static wetlands SCA				
C. 50 Removal 4	Other SCA		SCA Removal	15
Comments Small pole sized trees mixed with seedlings and saplings scattered. Some tamarack along with the black spruce. Mostly unproductive. Protected by BMP's.				
C. 50 Removal 5	Other SCA		SCA Removal	22
Comments Bobs lake shore mostly lowland shrubs and marsh but scattered trees cedar, tamarack, and spruce. A few white pine. High riparian value. Protected by BMP's				
C. 50 Removal 6	Other SCA		SCA Removal	8
Comments Most of stand is protected by wetlands SCA. Poor access across Bob's creek. Access would involve high BMP cost. Large w.pine on higher hummocks. Cedar on edge to L. 3-5 stick mostly smaller trees well-stocked. High riparian value.				
C. 50 Removal 7	Other SCA		SCA Removal	22
Comments Lowland brush mostly alder 8' tall along Bob's creek. Protected by BMP's				
Chandler Brook island	Habitat Areas or Corridors	Other Habitat Area	Proposed SCA	8
Comments This stand put into biodiversity stewardship to protect riparian and scenic values of Landon Lake and Chandler brook. Stand was mostly fir which was killed in budworm outbreak late 1980's. Now very sparse overstory.				
Chandler Brook lowlands	Habitat Areas or Corridors	Habitat Corridor	Proposed SCA	51
Comments Sparse and thick areas. Small streams in the stand connect Landon Lake and Chandler Brook. This stand is biodiversity stewardship for those riparian values. Thick cedar patches and thin areas with other species such as black spruce and tamarack.				



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

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

SCA Name	SCA Category	Detail Type	Recommendation	Acres
Landon Fir	Habitat Areas or Corridors	Other Habitat Area	Proposed SCA	12
Comments				
Scattered big black spruce over thick fir understory 10-15' tall all upland. Center higher ground mostly big red maple and w. pine poorly stocked over thick fir. A few w. birch. Fir dieoff in 1980's spruce budworm. Hazel thick. Moose sign everywhere.				
Landon Lake	Spring-Seeps, Riparian Areas	Riparian Area	Proposed SCA	7
Comments				
Near Landon lake. Stand put into biodiversity stewardship to protect riparian and scenic values. Stand is very sparse and contains lowland brush or bog type vegetation near the lake but trees scattered and in clumps elsewhere in stand.				
Landon Lake fir	Habitat Areas or Corridors	Other Habitat Area	Proposed SCA	5
Comments				
This stand is put into biodiversity stewardship to protect riparian and other values of the area around Landon Lake. Some of this could be called F6 but most of stand sparse due to fir dying in budworm attack in the late 1980's. Scattered large WP.				
Landon Lowlands	Habitat Areas or Corridors	Habitat Corridor	Proposed SCA	90
Comments				
SCA - Maintain closed canopy conifer and mature forest attributes that provide thermal protection, snow intercept, and complex forest structure. Former POG stand, it is a part of a large wetland complex. Low, extremely wet mixed swamp conifer stand.				
Landon Upland	Habitat Areas or Corridors	Other Habitat Area	Proposed SCA	10
Comments				
West part of stand from ridge down is fir and w. birch and reflects possible past fire history. Also white pine, birch and pine are large. East part is hardwood sugar maple poor timber quality but big den trees. Upland cedar and some pine also (40" WP)				
Landon/Chandler lowland	Spring-Seeps, Riparian Areas	Riparian Area	Proposed SCA	56
Comments				
Sparse trees mostly cedar. Wet soil here. Thick alder. Stream goes through towards Chandler brook. Biodiversity stewardship to protect riparian values and core area around Landon Lake.				
Little Bob's Lake spruce bog	Other SCA		SCA Removal	11
Comments				
Dense upland edges, sparse inland toward lake. Low productivity in most of stand. Little Bob's lake riparian stand, mostly bog type vegetation. Protected by BMP's.				
W. Bob's Lake	Habitat Areas or Corridors	Other Habitat Area	Proposed SCA	166
Comments				
Part of rich conifer swamp to the north. Cedar is sparse in spots especially south near white pine stand. Gets thicker north but still lower Basal area than most cedar stands in forest. Larger trees up to 16" dbh but most smaller.				



Report 7 – EXISTING SPECIAL CONSERVATION AREA DETAILS

* This is a list of SCA's for this compartment along with a 1/4 mile buffer surrounding the compartment. Refer to the Special Conservation Area Map for locations of the below listed Conservation Areas.

ERA = Ecological Reference Area
 HCVA = High Conservation Value Area
 SCA = Special Conservation Area

Conservation Area	Type	Description
SCA	Cold Water 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.
ERA	Ecological Reference Areas	Ecological Reference Areas (ERAs) are high quality examples of natural communities that have been identified as Element Occurrences (EOs) by the Michigan Natural Features Inventory (MNFI) within the context of their natural community classification system. Element Occurrences with viability ranks of A (Excellent) or B (Good) and a Global (G) or State (S) element (rarity) ranking of endangered (1), threatened (2), or rare (3) serve as an initial base of ERAs. They may be located upon any ownership in the State. The system is comprised of individual or associations of natural community types that are managed for restoration and maintenance of natural ecological processes and values. The public may submit recommendations for lands as ERAs using the DNR Conservation Area Recommendation Form.

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Gwinn Mgt. Unit

Report 8 – Forested Stands

Compartment: 50
Year of Entry: 2017

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
1	42200 - Natural White Pine	Sawtimber Well	60.9	110	51-80	OPIC - FMD: Cut 1972-73 under permit #7/72A (aspen, F/S, hardwood). Cut 1980 under permit #20/80 - white and red pine only. BA low for pine. Well-spaced, mostly white pine large and nice 18"-24" dbh mostly. 2015: Top dieback noted in white pine, as well as heavy weeviling. Some smaller red pine poles, mainly noted at south end near lake. Thick/full understory of fir/spruce - heavy blowdown, of stems, esp. along old access road. No pine regeneration to speak of.
2	6122 - Black Spruce	Poletimber Well	11.8	87	51-80	OPIC - FMD: S6S3, Dense along upland edges, more sparse inland toward lake. Look barely productive in most of stand. Little Bob's lake riparian stand, mostly bog type vegetation.
3	6122 - Black Spruce	Poletimber Poor	17.7	75	1-50	OPIC - FMD: S3S4, Small pole sized trees mixed with seedlings and saplings scattered. Some tamarack along with the black spruce. Mostly unproductive.
4	42290 - Natural Mixed Pine	Sawtimber Well	4.3	113	81-110	OPIC - FMD: White Pine is 24-30"dbh but low crowned with dead branches so poor timber quality. Some forking and mortality. Thick F3 3'-20' with some 2-4 stick. Birch shows mortality and dieback too. Areas of semi open understory. Poor access is across low swamp with running stream. Good wildlife values and adjacent to riparian zone along with mature white pine relative rarity in the landscape make this stand an ideal candidate for inclusion in biodiversity stewardship.
5	4191 - Mixed Upland Deciduous with Conifer	Sawtimber Medium	10.6	95	51-80	OPIC - FMD: Overstory is mostly red maple, white birch, upland white cedar, a few spruce and white pine. Could call M5 or B5 but birch shows signs of decline. Sparse stand due to fir dieoff in spruce budworm epidemic late 1980's. thick fir understory throughout 10-20 feet tall. Stand is on a moraine or kame quite high above the surrounding swamp 50-100' with steep sides in spots. Difficult access due to swamp and stream crossing. Recommend for biodiversity stewardship because of diversity in species, unique land form, difficulty in access prevents access by atv's, and to protect riparian values in adjacent stand.
6	6120 - Lowland Cedar	Poletimber Well	163.9	155	81-110	OPIC - FMD: Cedar is sparse in spots especially south near white pine stand. Gets thicker north but still lower Basal area than most cedar stands in forest. Larger trees up to 16" dbh but most smaller. Some canopy gaps contain 1 stick black ash, w. birch or fir. Alder and fir understory somewhat thick especially south part of stand.
7	4110 - Sugar Maple Association	Sawtimber Well	30.3	96	81-110	Thinned 1954, 1974. 1998 cut permit #15-97-01 "Twin Porkies Sale" by K&K logging. West part of stand has a higher BA - more of a pole stand. The east 2/3 of stand BA is 90 -110. Some regen in gaps east side 5 - 20 ft high sugar maple. Not the best log quality here but OK. Some low forks etc. Some legacy maple, basswood.
8	4116 - Mixed N. Hardwood - Aspen	Poletimber Medium	14.8	32	1-50	OPIC - FMD: Wildlife habitat cut 1983 - FTP W32-206. Scattered large basswood and sugar maple were left and are +14" . Regeneration is now 6" dbh well-stocked mostly sugar maple, other hardwood, and aspen. Some sprout origin hardwoods but many single stems. Good potential on the stand. Could be considered regeneration area for hardwood stand north. Some areas F6 or A6 especially center. Some semi-open areas with cherry. Probably could be considered for thinning in 10 or 20 years.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
9	4130 - Aspen	Sapling Well	17.5	17	Immature	OPIC - FMD: Cut in 1998 K&K logging permit #15-97-01 "Twin Porkies Sale" (unit 6 and 7). Balm on lower edge near swamp. Raspberry ground cover.
10	6120 - Lowland Cedar	Sawtimber Well	81.2	165	81-110	OPIC - FMD: This area is a cedar regeneration and harvesting experimental area with square 10 acre blocks harvested at various stocking levels interspersed with uncut blocks. This was done in the 1940's. In the harvested areas the cedar levels can be quite low with alder and sometimes thick balsam fir understory. There is a small stream running through the stand and merging with Bob's creek. Some of the harvested areas have thick patches of cedar adjacent to non-stocked alder areas. In the north under is 2" dbh fir thickly stocked. Possible long term research value in this stand. The year of origin is on the uncut portion but parts of the stand manipulated in the 1940's. Also included is a small two acre stand of upland fir and spruce on an island in the cedar just south of the hardwood stand. That is mainly upland black spruce on a small kame or moraine but also containing small amounts of red maple, aspen, white birch and white pine. Stand is too small to type out separate and inside the cedar.
11	6132 - Mixed Lowland Forest with Cedar	Poletimber Medium	66.0	95	51-80	Cedar swale with slightly higher grounds of aspen/birch. Thick balsam fir. Heavy rabbit sign. OPIC - FMD: Q6, smaller trees somewhat sparse in areas. More P type along road to the private land. Alder understory. Wetter soil. Stream originates in stand.
12	4110 - Sugar Maple Association	Poletimber Well	3.4	96	81-110	OPIC - FMD: Small stand, fair quality, good potential. Need line work and possible stream crossing. Underplant hemlock for diversity by wildlife division after harvest. Summer logging restrictions if possible. Stand treated fall of 2009 by Triest under contract # 17-07-01 "Denn's Old Camp Hardwood". No underplanting ever completed.
13	42497 - White Pine (OI)	Sawtimber Poor	6.0	105	1-50	OPIC - FMD: Scattered large W. Pine. Fir and W. Pine Understory 1-6'tall in 1995. Remote stand not visited in 2005 nor 2015 (due to time constraints) but could see a few white pine crowns across the intervening swamp from the nearest high ground..
14	6129 - Mixed Coniferous Lowland Forest	Poletimber Medium	7.9	104	81-110	OPIC - FMD: S6S2, Poor access across Bob's creek. Access would involve high BMP cost. Large w.pine on higher hummocks. Cedar on edge to L. 3-5 stick mostly smaller trees well-stocked. High riparian value. 2015: Agree with last entry comments. Smaller cedar on edges with tamarack overtop with larger diameter cedar within interior and more black spruce. Slightly higher ground contains some red maple, paper birch. Very good rabbit sign noted.
15	6122 - Black Spruce	Poletimber Well	6.2	104	81-110	Small black spruce with cedar, white pine. tamarack. Ground cover of Labrador tea. Low site index.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
16	42290 - Natural Mixed Pine	Sawtimber Medium	29.0	101	81-110	Pine is large but overall BA low for pine. A majority of the larger diameter white pine is weeviled; also noted several dead snags. A few narrow strips with higher BA of red pine logs. Natural seed origin stand. Dry-mesic forest. Fir, black spruce (2 or more sticks) and white spruce (10" and larger) were cut out of stand under permit #21/71 in 1973. Small black spruce stand inclusions within. Other than a few pine sawlogs to remove, stand is not ready for treatment; recommend waiting until S/F is merchantable for harvest and then use natural methods to regenerate pine. Good rabbit sign.
17	42290 - Natural Mixed Pine	Sawtimber Poor	9.0	88	1-50	OPIC - FMD: Birch is dying back and should be cut. There is some healthy white birch here. Some could be marked to leave for seed but would prefer to leave all white pine and try to convert stand to white pine through cutting and leaving pine. Pine should continue to seed in from adjacent stand. Some spots will regenerate to aspen but aspen is not present throughout stand. Possible to pick up part of adjacent compartment since it is a small part of this same stand. 2011- Stand harvested under permit # 015-07-01 " Bob's Lake Aspen/Birch" by C. J. Logging. 2015: A lot of the paper birch left is dead now. S/F regeneration just becoming visible at snow level (1.5 - 2 feet).
18	6122 - Black Spruce	Poletimber Well	1.9	81	51-80	OPIC - FMD: S6S3, Somewhat sparse and small trees 2-3 stick. W.Pine in swamp along with spruce and tamarack. Larger trees and higher BA along higher ground. Gets smaller and more lightly stocked into stand. Bog vegetation on ground (lab tea). 2015: Agree with last examiner comments.
19	42200 - Natural White Pine	Sawtimber Poor	12.2	101	1-50	OPIC - FMD: Cut all but pine in Spring, 2000 under permit #37-97-01 "Gimse Lake Sale". Aspen regeneration is only in from road 3 chains and in a couple other patches. Otherwise regeneration is mostly balsam fir 1-4" tall. A few pine seeding in from scattered large red and white pine. Some red maple clumps. Recommend burning stand in a surface fire to knock back fir regeneration and promote a good seedbed for pine regeneration. Stand Rx burn completed under FTP F32-647 was completed 5/18/2008. Completion report complete and filed. 2015: Prescribed burn (Burn ID 2008520003) unsuccessful for regeneration- numerous dead and top-kill white pine within interior; heavy scorching. Little/no pine regeneration noted. Aspen filling in, as well as S/F along S6 edges. Small balsam was knocked back, though.
20	6122 - Black Spruce	Poletimber Well	5.4	81	81-110	OPIC - FMD: S6S3, Somewhat sparse and small trees 2-3 stick. W.Pine in swamp along with spruce and tamarack. Larger trees and higher BA along higher ground. Gets smaller and more lightly stocked into stand. Bog vegetation (lab tea, tagalder) on ground. High riparian value. Low timber value.
21	4110 - Sugar Maple Association	Poletimber Well	4.4	95	111-140	OPIC - FMD: Small stand with good timber potential. North aspect side hill slopes to swamp but is not steep. Treat with adjacent aspen cut. Ground cover of leatherwood noted.
23	4130 - Aspen	Sapling Well	1.6	25	1-50	Cut with stand to the south under permit #19-88-1.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
24	4319 - Mixed Upland Forest	Sawtimber Medium	25.6	65	81-110	Partial cut 1976. Overmature aspen with spruce, fir. Quite a bit is dead/dying already. Heavier wet areas with cedar/ash swale in stand and thicker fir/spruce along lowland edge. Some maple in stand is scattered low crowned and poor timber quality - harvest all. Falls within GEM's area.
25	6120 - Lowland Cedar	Sawtimber Medium	20.1	95	1-50	OPIC - FMD: Q5P4L, Wet Alder with scattered trees. High and low ground; cedar both scattered and in pockets.
26	4110 - Sugar Maple Association	Poletimber Well	5.7	95	81-110	OPIC - FMD: Good quality small stand. Need to do property lines. Most of the nicer trees are on private land here but should thin with adjacent aspen sale. Wait 10 years until adjacent aspen is cut. 2015: Private stand has been thinned and lines are established. Thin with adjacent aspen harvest. Leatherwood ground cover noted as well as heavy princess pine at far east end of stand.
28	4110 - Sugar Maple Association	Sawtimber Medium	12.2	96	51-80	OPIC - FMD: Removed aspen and fir under permit #5/76A in 1976. TSI and elm salvage in 1977. Need line work here but should be able to do it. Good potential but a lot of basswood clumps and poor quality to come out. Some sparse areas but most areas need thinning. Underplant hemlock for diversity after harvest by wildlife division. Summer logging restrictions if possible. Stand treated fall of 2009 by Triest under contract # 17-07-01 "Denn's Old Camp Hardwood". 2015: Fairly heavy maple regeneration <2' ht. Raspberry, leatherwood, hazel all noted in understory.
29	4130 - Aspen	Poletimber Well	65.0	38	51-80	2015: Some decline in aspen noted. Thick maple regeneration (1-3" dbh) doing well - manage for both A/M or let convert to M. Fringe of older aspen (10-12" dbh) along stand 28 boundary. Heavier S/F, in pockets. OPIC - FMD: Well-stocked 2-4 stick aspen. Fir under 10' tall medium stocked. South is more 4-stick, north is slightly smaller aspen. Raspberry ground cover. Cut in 1976 under permit #5/76A "Bob's Lake West".
30	4110 - Sugar Maple Association	Sawtimber Well	2.1	96	81-110	OPIC - FMD: Some basswood here but mostly sugar maple. Underplant hemlock for diversity after harvest by wildlife division. Stand treated fall of 2009 by Triest under contract # 17-07-01 "Denn's Old Camp Hardwood". 2015: No underplanting ever completed. Little new regeneration noted from cut; some sedge, grass, raspberry ground cover now.
31	4119 - Mixed Northern Hardwoods	Sawtimber Well	10.1	98	81-110	2015: Possibly select cut; BA averages only around 100 - 110. Aspen and paper birch within are dying. OPIC - FMD: Cut permit #15-97-01 K. K. Logging in 1998. Still crown room and BA ok but some thick areas where stand was not marked enough last time. Not enough to cut this cycle. Good quality yellow birch here but some have dieback. Good sugar maple regeneration is 3-6' tall.
32	4130 - Aspen	Sapling Well	27.2	6	Immature	Stand treated under contract # 018-07-01 "Perrin Central Sale" (unit 5 and 6) - harvested summer, 2009. Scattered residual hardwoods left with patchy spruce/fir clumps. Visual retention patch of hardwood/aspen left along Co Rd.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
33	4112 - Maple, Beech, Cherry Association	Sawtimber Medium	13.0	96	51-80	Stand treated under contract # 018-07-01 "Perrin Central Sale" (unit 4) in fall, 2010; was to be underplanted with hemlock after harvest, but never accomplished. Aspen which was left is dying out; some uprooting/maple snap noted. Not a whole lot of seedling maple regeneration noted. OPIC - FMD: Thinned 1980. Some poor timber quality trees here but good potential especially the sugar maple.
34	4130 - Aspen	Sapling Well	46.1	6	Immature	Stand treated under contract # 018-07-01 "Perrin Central Sale" (unit 1 - 3) - harvested spring/summer, 2009.
36	4191 - Mixed Upland Deciduous with Conifer	Sawtimber Medium	6.6	97	51-80	Joins with the larger block of hardwood to the north and treated under permit #003-05 "Big Rock Hardwoods" in 2006. More open-grown maple with overmature aspen; heavier conifer component along edges. High defects to maple; lots of forking.
37	4130 - Aspen	Poletimber Medium	9.2	30	51-80	OPIC - FMD: Stand is mostly well-stocked south. North and NE part of stand sparse clumps of red maple and semi-open areas.
38	4112 - Maple, Beech, Cherry Association	Poletimber Well	60.5	96	81-110	OPIC - FMD: Cut permit #15-97-01 "Twin Porkies Sale" (unit 1 - 3) by K&K. logging in 1998. Good quality stand in most areas but about 1/3 of stand is red maple and poorer quality, but still OK for hardwood management. Some areas were left with a higher BA but most areas are 80-100 sq.ft. and no thinning is recommended at this time. Good regeneration in sugar maple areas getting up to 6 feet tall. 2015: Stand could almost be split into two different stands - south end contains higher ridge with very nice sugar maple logs, with some basswood, ironwood, birch and cherry. Some maple regeneration starting. Leatherwood also present here. North end (including Perrin Bros Road edge) transitions into slightly lower grounds with more mixed species; heavier fir/spruce component, some aspen, and lower quality maple. Ground cover changes to club moss, princess pine. Budworm evidence along road.
39	4130 - Aspen	Poletimber Well	13.6	27	1-50	OPIC - FMD: well-stocked 4" dbh. Fir understory in areas 4-6' tall but some larger. Cut in 1988 under permit #010-97-1 "Perrin Brothers Island Sale" (unit 1). 2015: Some uprooting noted and dieback. Ground cover of raspberry, hazel and bracken fern all present. Nice sugar maple in understory. Small vernal area within north tip of stand - smaller aspen here as well.
40	4130 - Aspen	Poletimber Well	3.6	27	1-50	OPIC - FMD: Mostly A3, 4" dbh. 1/3 M3M2 at old landing which is cherry and red maple sprout clumps. Balsam poplar north. Some sugar maple 4" NW. Overall A3, almost pole sized medium to well stocked. Cut in 1988 (Jan-May) under permit #010-87-1 "Perrin Brothers Island Sale" (unit 2). 2015: Small depression stand within hardwood. Blowdown within. Trace amount of ironwood saplings. Good sugar maple regeneration present.
41	4319 - Mixed Upland Forest	Poletimber Well	33.5	57	51-80	Thick fir understory in most areas. A few semi-open areas within. Trace amount of large-diameter maple. Budworm evidence in spruce; aspen in decline - a lot dead already. Treat now.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
42	4130 - Aspen	Poletimber Well	69.0	39	81-110	Mix of species in areas, Hardwood is maple (low quality), white birch and cherry. Some uprooting and blowdown of aspen occurring. M3 understory(sugar maple) in areas, F3 elsewhere most under 2" dbh. Hazel and raspberry, some elderberry, juneberry in the shrub layer. Cut spring, 1976 under permit # 7/76A "Perrin Brothers Road Block".
43	4112 - Maple, Beech, Cherry Association	Poletimber Well	1.2	105	111-140	OPIC - FMD: M6, Small hardwood knoll. Poor quality hardwood but good crop trees and potential is here. Not worth thinning stand alone due to relatively low BA, small acreage, and poor quality and access. Thin when adjacent aspen is harvested. Mostly maple stand with fringe of spruce/fir against smaller aspen, cherry. Lycopodium ground cover noted.
45	4130 - Aspen	Sapling Well	24.1	7	Immature	OPIC - FMD: Left some scattered mature trees when cut November, 2007 by Heidtman permit #32-016-07-01 "Perrin Midsouth Sale".
46	6124 - Lowland Spruce- Fir	Poletimber Poor	44.6	90	1-50	OPIC - FMD: Q5Q3, most of stand is poorly stocked. Wet and close to non-productive. Thick alder understory south of aspen stand and is mostly scattered w. birch, tamarack, spruce and fir. Small trees.
47	4134 - Aspen, Spruce/Fir	Sawtimber Well	19.6	55	81-110	OPIC - FMD: Mix of aspen and fir. Some sparse areas filling in with fir west and is almost F6 there. Moist and wetter areas west as well but most of stand is upland. Some mature aspen is mixed in and may be a remnant of the previous stand. Most of stand not quite mature but is merchantable. 2015: Budworm issues were noted fall, 2014, especially along grass type. Stand should be harvested.
49	4119 - Mixed Northern Hardwoods	Poletimber Medium	2.2	95	81-110	OPIC - FMD: Thinned Nov-Dec, 1997 permit #16-97-01 "Perrin Camp Sale" by Tri-forestry. Mostly a poorer timber quality red maple stand but some sugar on the higher elevations. Good regeneration 6' tall in spots being fed on by deer but may escape. Overall timber quality has improved with the last harvest and good potential is here. 2015: More open-grown maple - clumps and still numerous defects, but stand has future potential. Leatherwood noted in ground cover with lycopodium.
50	4110 - Sugar Maple Association	Sawtimber Well	57.9	95	81-110	OPIC - FMD: Thinned Dec, 1997 - June, 1998 Tri-Forestry permit #16-97-01 "Perrin Camp Sale". Also C32-382: TSI removing ironwood and some marked trees completed in Dec, 1981. Nice timber quality here and is sawlog size. Lower elevation along clearcut trees show some dieback from possible soil compaction during last harvest but most of the stand is healthy and good quality. Some higher BA areas but crown room in most areas. M3 gaps from 1970s harvest 2-4 inches dbh. New M3 regeneration is 3-4' tall and is mostly in the west part of stand. Some feeding by deer but seedlings may escape. Some scarlet elderberry on landings. 2015: regeneration in west part of stand is now 10' + range.
51	42200 - Natural White Pine	Sawtimber Well	5.3	99	81-110	OPIC - FMD: Scattered large white pine. Stand was cut all but pine cedar and some large maple and spruce about 1980. Thick balsam fir understory is 15-20+ foot tall. 2015: no white pine regeneration noted.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
52	4130 - Aspen	Sapling Well	9.2	16	Immature	OPIC - FMD: Cut permit #16-97-01 "Perrin Camp Sale" (unit 6) in July, 1998 by Tri-Forestry. Mostly well-stocked A3. Some P2 balsam poplar and some F1/G. 3/4 of stand well-stocked with hardwoods. MO was originally fir, but aspen sprouted vigorously here. The part of the stand not fully stocked has seeded in with fir. Some larger A,P along old skid trail should be harvested with adjacent stand.
53	4119 - Mixed Northern Hardwoods	Sawtimber Well	1.1	96	81-110	OPIC - FMD: Thinned 1998 permit #16-97-01 by Tri-Forestry. Mostly a poorer timber quality maple stand. 2015: Small island of hardwood within aspen types. Borer damage to sugar maple; basswood in clumps. Thick fir understory.
55	6120 - Lowland Cedar	Poletimber Medium	98.6	143	81-110	OPIC - FMD: Mix of cedar and other lowland conifer. Cedar occurs in pure stands not typed out separately here but also fir, spruce, tamarack, balm, and w. birch. Cedar is more north part of stand where it gets wider between upland and Chandler Brook. Some larger white pines in areas especially along upland edges. Alder thick in areas especially where overstory is scant. Chandler brook riparian values protected with this stand. 2015: Lots of standing water.
56	6111 - Lowland Balsam Poplar	Sapling Well	21.0	16	Immature	OPIC - FMD: Cut July, 1998 by Tri-forestry permit #16-97-01 "Perrin Camp Sale" (unit 7). Small patch left uncut north due to wetter soil and is less than 2 acres. 1" dbh average but some up to 2" dbh due to staggered cutting by contractor. Well-stocked mostly but some sparse areas with red maple sprouting and fir seeding in those areas. Fir is seeding in throughout stand. Cedar left throughout stand and only a minor amount has blown down. Some aspen clones but most of this stand is balsam poplar. A wetter soil here but not as low as the typical lowland conifer stand.
57	4112 - Maple, Beech, Cherry Association	Poletimber Medium	4.6	96	81-110	OPIC - FMD: Thinned Oct, 1997 and May, 2000 under permit #16-97-01 "Perrin Camp Sale" (unit 5) by Tri-Forestry. Mostly a poorer timber quality red maple stand but some sugar on the higher elevations. Good regeneration 6' tall in spots being fed on by deer but may escape. Overall timber quality has improved with the last harvest and good potential is here. Good species diversity in this stand. Softwoods are Hemlock, cedar, spruce and fir. 2015: Not much new maple regeneration noted.
59	4119 - Mixed Northern Hardwoods	Sawtimber Medium	15.9	96	81-110	OPIC - FMD: Thinned Oct, 1997 and May, 2000 permit #16-97-01 "Perrin Camp Sale" (unit 5) by Tri-Forestry. Mostly a poorer timber quality red maple stand but some sugar on the higher elevations. Good regeneration 6' tall in spots being fed on by deer but may escape. Overall timber quality has improved with the last harvest and good potential is here. Good species diversity in this stand. Softwoods are Hemlock, cedar, spruce and fir. 2015: Paper birch heavy along marsh type with heavy fir understory and smaller sugar maple. Transitions into more pure hardwood with 10-15' maple saplings. Larger white spruce is dying - budworm. Black stain on sugar maple noted.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
61	4191 - Mixed Upland Deciduous with Conifer	Poletimber Medium	17.2	96	51-80	OPIC - FMD: This stand was heavy to balsam fir which mostly died about 1989 by spruce budworm. Mostly M6 south and M5 or M4 north but good regeneration of hardwoods 5-10' tall sugar and red maple in those sparse areas. Some fir, spruce and aspen in the stand. Probably could thin in 10-20 years. Would take a couple thinnings to get the timber quality up but the regeneration here makes the hardwood have good potential. There is also Yellow and white birch, cherry, basswood in the stand. Some good den trees and good vertical structure and species diversity offer good wildlife habitat currently. 2015: Mixed and variable stand, as previously noted. Areas with more pole/saplings and extra large stems - missing log class. Black stain heavy on maple. Sprout origin red maple. Pockets of predominately spruce/fir and some wet ground interspersed. Princess pine, club moss ground cover noted.
62	4110 - Sugar Maple Association	Sawtimber Well	14.9	96	81-110	OPIC - FMD: Thinned for 2nd time Jan,1998 Tri-Forestry permit #16-97-01 "Perrin Camp Sale" (unit 8). Good quality stand except no regeneration. Steep slope down to wetland riparian area next to chandler brook uncut about 3 acres total. Part of stand is M6 but most of stand is M9 now. Some upland cedar. Most of stand is sugar maple but other hardwoods are basswood, red maple, white birch, yellow birch, and black cherry. 2015; Still little maple regeneration; on NW facing slope there is 5-10' seedlings established, though. Borer damage and canker defects still within stand.
63	4191 - Mixed Upland Deciduous with Conifer	Sawtimber Medium	4.4	60	51-80	OPIC - FMD: Birch looks healthy and younger near No stand east but older west and some dieback is happening there. Converting to red maple and fir west and birch is larger. Younger birch is healthy. Stand is about evenly split between the two ages. After separating out a buffer on the vernal area of the No stand not much timber to be harvested in this stand. Recommend waiting 10 years and harvest with nearby hardwood and other stands if ready. 2015: Areas more to maple now; birch is dead/dying out - retain buffer along marsh type and treat stand with adjacent aspen/fir harvest, where feasible. North end of stand has some advanced maple regeneration already.
64	42340 - Upland Spruce/Fir	Poletimber Medium	30.1	46	51-80	OPIC - FMD: This area was semi-open from the old logging days and also a spruce budworm attack in the 1980's and gradually became reforested naturally after several decades. It is still a mix of seedlings and pole size spruce and fir with patches of aspen or hardwood scattered. Patches of aspen occur and are mostly 4 stick. A few open areas are left but most are too small to map and are continuing to fill in with fir seedlings. Stand is medium to fully stocked but somewhat uneven-aged ranging from 1-50 years old. Average age is 30-40 and most of the stand 4-8" dbh. Still seeding in open areas and semi-stocked areas. 2015: Lower quality mixed stand, due to old logging origins. Some of the fir is breaking up, and there are areas where saplings have been blown down. Sugar maple with black stain, black cherry saplings with black knot. Remnant legacy maple noted. Budworm damage is increasing - harvest stand now with adjacent stand.
65	4113 - R.Maple, Conifer	Poletimber Medium	7.7	95	81-110	Low quality red maple with some sugar maple; heavy balsam fir. Ground cover of lycopodium; trace hazel.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
67	4130 - Aspen	Poletimber Well	11.4	27	1-50	OPIC - FMD: 4" average well-stocked except about 2-3 acres non-stocked with raspberry NW along hardwood edge. Looks to be gradually seeding in with some balsam fir. Balsam poplar in some areas. Cut as "Perrin Brothers Island Sale" #010-87-1 in 1988. 2015: South end of stand with numerous blowdown, snapped stems - poor shape. Being replaced by sugar maple.
70	4112 - Maple, Beech, Cherry Association	Sawtimber Medium	3.4	96	81-110	OPIC - FMD: Small stand with some natural mortality occurring due to large size and advanced age of some hardwood. Upland cedar here. Good quality potential but larger trees are low in timber quality but have high wildlife value presently. Low end of a sugar maple site. Only half or less of this small stand basal area adequate for thinning. 2015: Log sized maple, but pulp quality. Leatherwood ground cover.
71	4119 - Mixed Northern Hardwoods	Sawtimber Medium	4.6	96	81-110	OPIC - FMD: Mostly poor timber quality red maple stand. Some thick areas but lower basal area in more than 1/2 the stand. Some white birch showing dieback and is overmature. Fir regeneration in stand. Probably 10 years would be better for thinning if managed for hardwood. Some sugar maple and quality potential is here. Some yellow birch here too. Softwoods are mostly white spruce and balsam fir. Some aspen but not throughout stand. 2015: Remnant old low quality hardwoods along swamp edge. Blowdown, snapped off large white spruce noted. Some maple regeneration areas where overstory timber is gone.
72	4319 - Mixed Upland Forest	Sawtimber Well	5.3	96	81-110	OPIC - FMD: Poor timber quality larger red maple and yellow birch. Possible to thin with compartment to north to get larger sale. Some areas not stocked well with hardwood but thick fir under. Good potential for red maple to improve but many cull trees here. Good wildlife stand with hemlock, den trees, large diameter hardwood. Access not good enough for sale alone at this time. Will cut with stand to the north. Underplant hemlock for diversity after harvest by wildlife division. Summer log if possible. 2009: Prepared as #029-07-02 "Half 'N Half" sale, but never cut. No underplanting done either.
73	42339 - Upland Spruce/Fir (OI)	Poletimber Medium	4.5	96	51-80	OPIC - FMD: This stand is put into biodiversity stewardship to protect riparian and other values of the area around Landon Lake. Some of this could be called F6 but most of stand sparse due to fir dying in budworm attack in the late 1980's. Scattered large white pine, some very large up to 30+ dbh. Thick fir understory 10' tall but also some areas of thick red maple seedlings same size. Stand is upland with scattered large spruce and fir mostly. Red maple and w. birch present, also cedar and hemlock. 2015: Stand not visited due to time constraints. Previous inventory very reliable.
74	42339 - Upland Spruce/Fir (OI)	Poletimber Medium	12.5	96	51-80	OPIC - FMD: Scattered big black spruce over thick fir understory 10-15' tall all upland. Center higher ground mostly big red maple and w. pine poorly stocked over thick fir. A few w. birch. Fir dieoff in 1980's spruce budworm. Hazel thick. Moose sign everywhere from last fall and winter (2004-05). This stand part of core biodiversity stewardship area protecting riparian and wild values around Landon Lake. 2015: Not visited due to time constraints. Previous inventory very reliable.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
75	42339 - Upland Spruce/Fir (OI)	Poletimber Poor	8.0	95	1-50	OPIC - FMD: This stand put into biodiversity stewardship to protect riparian and scenic values of Landon Lake and Chandler brook. Stand was mostly fir which was killed in budworm outbreak late 1980's. Now very sparse overstory, BA less than 20 square feet west near Chandler Brook over very thick fir regeneration 10-15 feet tall. East has more overstory trees including White birch, red maple, black spruce, and cedar along with fir. Mostly upland but just barely in some areas. Some well-stocked areas west with less understory. 2015: Time constraints prevented visit to stand. Previous inventory is very reliable.
76	61299 - Mixed Swamp Conifer (OI)	Poletimber Well	108.2	130	81-110	OPIC - FMD: Sparse and thick areas. Small streams in the stand connect Landon Lake and Chandler Brook. This stand is biodiversity stewardship for those riparian values. Thick cedar patches and thin areas with other species such as black spruce and tamarack. Most trees are small and poor timber quality. A couple of small upland islands in this stand with hardwood are very remote. Some areas poorly stocked with trees contain thick alder may have been flooded by beaver in the distant past. Area included in this stand south of hardwood in NW1/4 becomes upland but contains cedar. 2015; Stand not visited due to time constraints. Previous inventory very reliable.
77	4119 - Mixed Northern Hardwoods	Sawtimber Well	10.2	96	81-110	OPIC - FMD: West part of stand from ridge down is fir and w. birch and reflects possible past fire history. Also white pine, birch and pine are large. East part is hardwood sugar maple poor timber quality but big den trees. Upland cedar and some pine also. 40" w.pine se. A bull moose spent substantial time this past year in this area. This stand has been put into biodiversity stewardship due to these values and to protect the larger core area surrounding Landon lake. 2015: Stand not visited due to time constraints, although stands within compartment to the north are likely similar. Previous inventory reliable.
81	6132 - Mixed Lowland Forest with Cedar	Poletimber Well	5.5	89	111-140	OPIC - FMD: Some fir and w.birch. Mostly cedar.
82	6120 - Lowland Cedar	Sawtimber Well	92.9	90	111-140	OPIC - FMD: Big cedar towards upland, smaller in toward drainage. Cedar mostly wide spaced. W. birch, Balsam poplar, spruce scattered throughout. Some lower BA areas with alder. Some of stand is P type (w.birch) overall C9. Best cedar within 3 chains of hardwood edge. Biodiversity stewardship to protect riparian value of Chandler Brook.
83	4110 - Sugar Maple Association	Sawtimber Well	90.5	96	81-110	OPIC - FMD: Cut under permit # 017-97-01 "South Landon Lake" in Jan, Feb, 2002 also part in permit #9-98-01 see comp # 51. Also east of road cut in 1989 ("Landon Lake Balm" #018-88-2), a lot of aspen and balsam poplar removed. One area of about 2 acres unthinned will have to wait until feasible, probably when total stand thinned again. Some blowdown and also larger gaps created due to large amount of balsam poplar removed. Excellent regeneration 4-10' sugar maple in most areas of stand. Mostly good quality larger trees. Not much crowding of trees yet, lots of crown room. 2015: BA still a little low for treatment (100-110).



Stand	Cover Type	Acres	Managed Site	General Comments:
22	31029 - Grass (OI)	2.5	Yes	Part of approved GEM work under FTP W32-813. Treat merchantable timber with adjacent stands.
27	31029 - Grass (OI)	3.5	No	Leatherwood noted along edges. Cut merchantable timber when adjacent stand is prescribed, esp. if used for access.
35	31029 - Grass (OI)	1.0	No	Old opening within aspen type - some encroachment.
44	31029 - Grass (OI)	1.4	No	Some raspberry within.
48	31029 - Grass (OI)	5.1	No	Fringed with aspen, spruce, fir - spruce and fir have budworm damage. Opening should be treated with adjacent harvest.
54	31029 - Grass (OI)	1.2	No	Very small opening with some encroachment.
58	3303 - Mixed Low Density Trees	7.5	No	OPIC - FMD: This area was semi-open from the old logging days and also a spruce budworm attack in the 1980's and gradually became reforested naturally after several decades. It is still a mix of seedlings and pole size spruce and fir with patches of aspen or hardwood scattered. Patches of aspen occur and are mostly 4 stick. A few open areas are left but most are too small to map and are continuing to fill in with fir seedlings. Stand is medium to fully stocked but somewhat uneven-aged ranging from 1-50 years old. Average age is 30-40 and most of the stand 4-8" dbh. Still seeding in open areas and semi-stocked areas. 2015: Dead spruce from recent budworm activity and old remnant white pine stumps within.
60	62399 - Marsh (OI)	1.7	No	OPIC - FMD: Wet marsh grass, not bog. Filled with water and wood frogs singing when visited early april. A ring of cedar and other conifers around this wetland will be left in future harvests to protect and enhance riparian values.
66	31029 - Grass (OI)	2.5	No	Old logging opening.
68	3103 - Rubus-Fern	1.5	No	OPIC - FMD: 2-3 acres non-stocked with raspberry NW along hardwood edge. Looks to be gradually seeding in with some balsam fir. Balsam poplar in some areas. Cut as "Perrin Brothers Island Sale" #010-87-1 in 1988. 2015: Portion of old harvest area now separated out. Heavy raspberry south and some cherry saplings (with black knot) more to north with balsam poplar.
69	6220 - Alder/willow	46.3	No	Lowland brush mostly alder 8' tall along Chandler Brook.
78	6225 - Bog	6.9	No	OPIC - FMD: Near Landon lake. Stand put into biodiversity stewardship to protect riparian and scenic values. Stand is very sparse and contains lowland brush or bog type vegetation near the lake but trees scattered and in clumps elsewhere in stand.
79	510- Water (OI)	4.1	No	OPIC - FMD: LANDON LAKE
80	31029 - Grass (OI)	2.7	No	Previously treated under FTP W32-426: cleared 9/24/91 and seeded 6/92.



Stand	Cover Type	Acres	Managed Site	General Comments:
86	6224 - Treed Bog	19.7	No	OPIC - FMD: Bobs lake shore mostly lowland shrubs and marsh but scattered trees cedar, tamarack, and spruce. A few white pine. High riparian value. Low timber value.
87	510- Water (OI)	23.8	No	OPIC - FMD: BOB'S LAKE
88	510- Water (OI)	1.8	No	OPIC - FMD: LITTLE BOB'S LAKE
89	6299 - Lowland Shrub (OI)	21.3	No	OPIC - FMD: Lowland brush mostly alder 8' tall along Bob's creek.