



Compartment Review Presentation

Gwinn Forest Management Unit

Compartment 32024

Entry Year 2017

Acreage: 1,925

County Marquette

Management Area: Dead Horse Moraines

Revision Date: 2015-07-06

Stand Examiner: Theresa Sysol

Legal Description:

T44N R24W Section(s) 19, 30, 31

Identified Planning Goals:

To maintain and enhance the sustainability of the forest and its associated communities.

Soil and topography:

Level swamps and wetland drainages with a small amount of gently rolling uplands.

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

Mainly State owned with a few private hunting camps.

Unique Natural Features:

Large lowland conifer swamps in the north part of the compartment are a part of the Cyr Swamp (Sawmill Creek Complex PLU).

Archeological, Historical, and Cultural Features:

None identified

Special Management Designations or Considerations:

Potential for eagle, osprey, and great blue heron rookery. Potential for red-shouldered hawk and northern goshawk.

Potential for moose and wolf. Potential for wood turtle.

Potential for calypso orchid, Ram's-head orchid, and rayless mountain ragwort in mixed conifer swamps. Potential for auricled tway-blade, western dock, Farwell's water-milfoil, alternate leaved water-milfoil and linear-leaved gentian along riparian areas.

Watershed and Fisheries Considerations:

Mud Creek and Sawmill Creek flow through the compartment.

Wildlife Habitat Considerations:

Compartment 24 is found within the Dead Horse Moraines Management Area; on Ground Moraines in southeastern Marquette, southwestern Alger, and northwestern Delta Counties. The dominant Natural Communities are poor conifer swamps, mesic northern forests, and dry northern forests. Major forest cover types include Northern Hardwood, Aspen, and Mixed Lowland Conifer. This management area contains a large proportion of hardwood forest which regenerates well partly due to the heavier snow cover and lower deer numbers than the southern portion of this Management Area. The most significant wildlife management issues in the management area are: mast (hard and soft); mature forest (upland deciduous, especially aspen and mixed forest with little understory); coarse woody debris, early successional forest, and deer wintering complexes.

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

Mineral Resource and Development Concerns and/or Restrictions

Surface sediments consist of an end moraine of medium-textured glacial till and peat and muck. There is insufficient data to determine the glacial drift thickness (~10-100+ feet). The Ordovician Prairie du Chien Group and Cambrian Trempealeau Formation subcrop below the glacial drift. These formations could be used for stone. A quarry is located four miles to the east. There are no gravel pits in the area, but there is potential on the uplands. Abandoned iron mines are located four miles to the northwest. This State land has not been previously leased for metallic mineral exploration. There is no economic oil and gas production in the UP.

Vehicle Access:

County Road RM, a poor gravel road, and the Swampbuck Road, a poor dirt State-maintained road provide limited access to the south portion of the compartment. Also restricted access through private lands via Parker Spur, another poor dirt State-maintained road.

Survey Needs:

None at this time.

Recreational Facilities and Opportunities:

Mainly hunting and fishing, although some berry picking, wildlife viewing is available.

Fire Protection:

Low fire risk area, although suppression activities would be severely hampered, due to lack of roads and access.

Additional Compartment Information:

The following reports from the Inventory are attached:

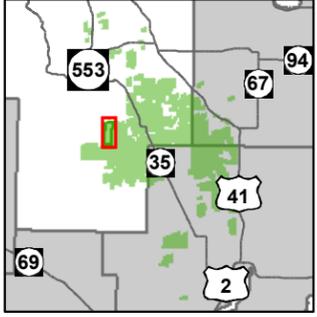
- Total Acres by Cover Type and Age Class
- Cover Type by Harvest Method
- Proposed Treatments – No Limiting Factors
- Proposed Treatments – With Limiting Factors
- Stand Details (Forested and Nonforested)
- Dedicated and Proposed Special Conservation Areas
- Site Condition Details

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

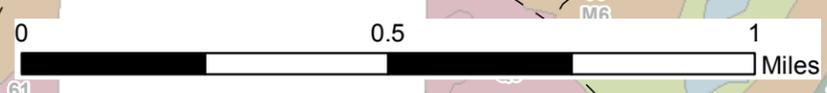
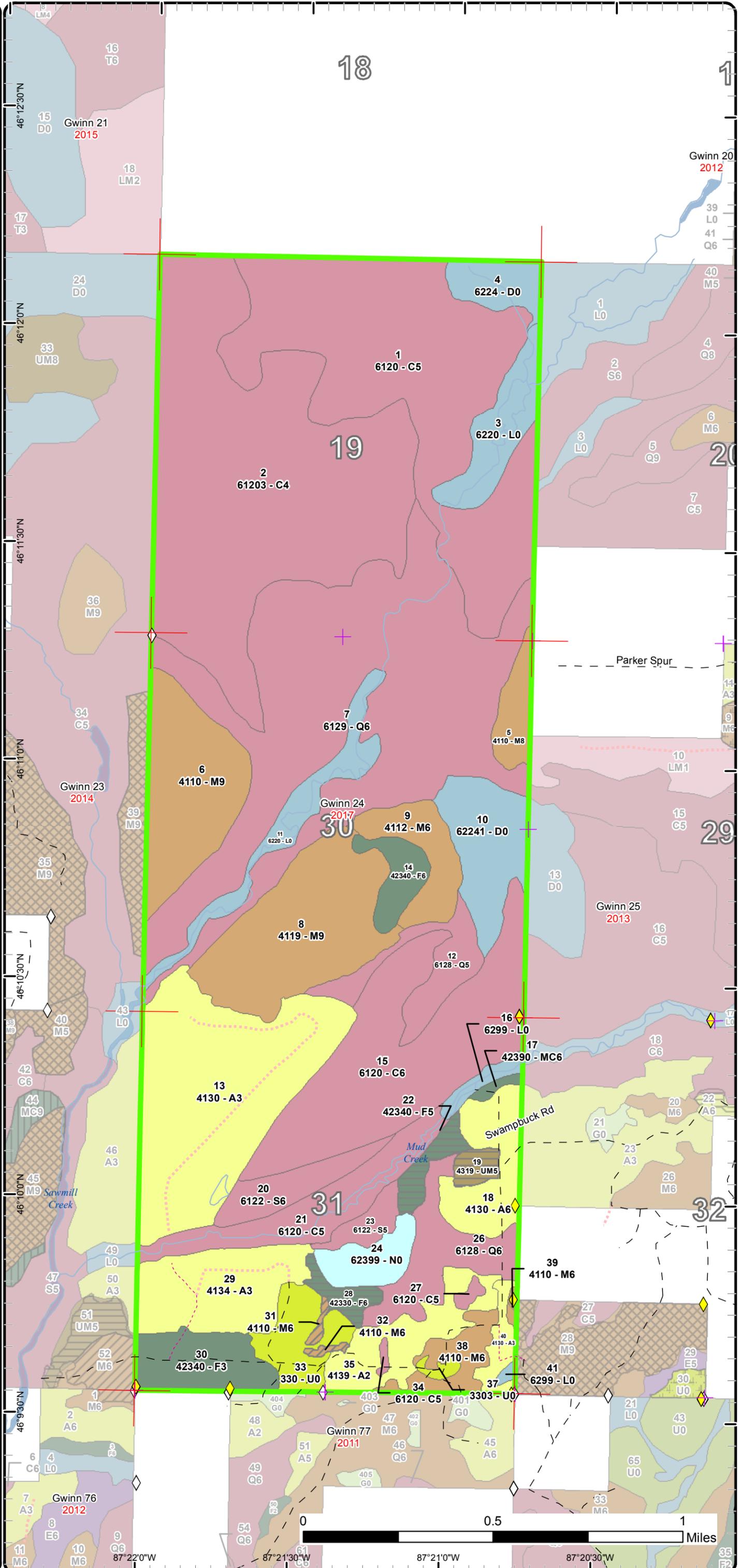
- Base feature information, stand boundaries, cover types, and numbers
- Proposed treatments
- Site condition boundaries
- Details on the road access system

Cover Type & Treatments

Compartment: 24
 T44N, R24W, Sections. 19, 30, 31
 County: Marquette
 Unit: Gwinn
 Mgmt Area: Dead Horse Moraines
 YOE: 2017
 Acres: 1925 GIS Calculated
 Examiner: Theresa Sysol
 Map Revised: 7/30/2015
 Map Phase: Pre-Review



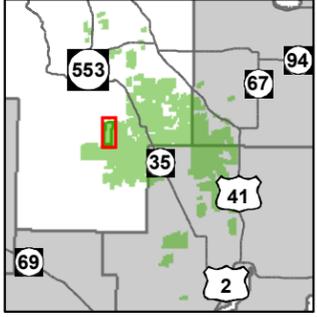
- ✚ Remonumented Section Corner
- ◆ Survey Grade GPS Corners
- ◇ Field Grade GPS Corners
- Miris Corners
- - Poor Dirt Roads
- - - Trail (Non-Recreation)
- ⋯ Closed Roads
- Rivers
- Lakes
- Treatments**
- ▨ Clearcut (w/Reserves)
- ▨ Thinning (Crown, Low, Systematic)
- Forest Covertype**
- 411 - Northern Hardwood
- 413 - Aspen
- 423 - Other Upland Conifers
- 430 - Upland Mixed Fores
- 612 - Lowland Coniferous Forest
- Non-Forest Covertype**
- 330 - Low Density Trees
- 622 - Lowland Shrub
- 623 - Emergent Wetland



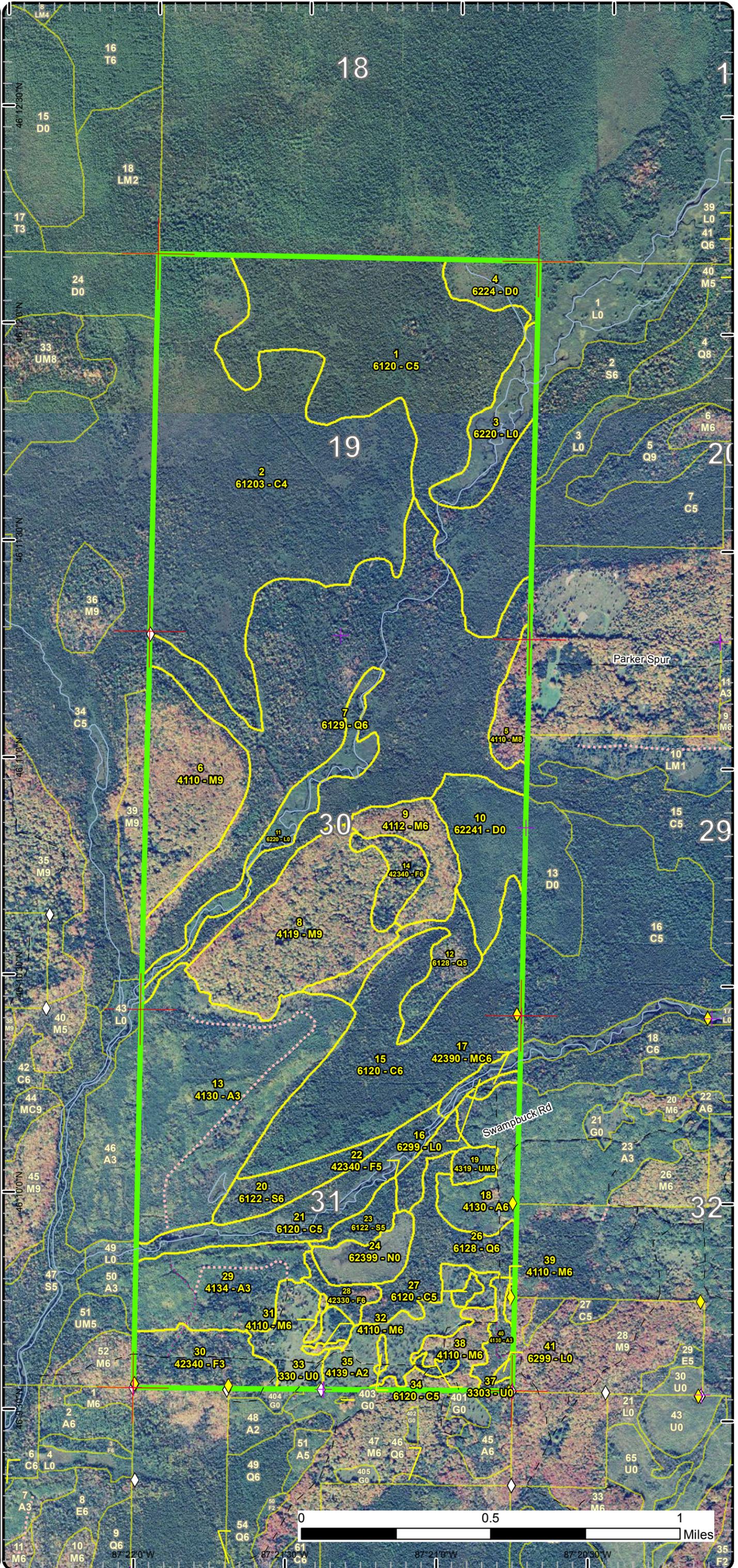
87°22'0"W 87°21'30"W 87°21'0"W 87°20'30"W

Stand Boundary Map

Compartment: 24
 T44N, R24W, Sections. 19, 30, 31
 County: Marquette
 Unit: Gwinn
 Mgmt Area: Dead Horse Moraines
 YOE: 2017
 Acres: 1925 GIS Calculated
 Examiner: Theresa Sysol
 Map Revised: 7/30/2015
 Map Phase: Pre-Review

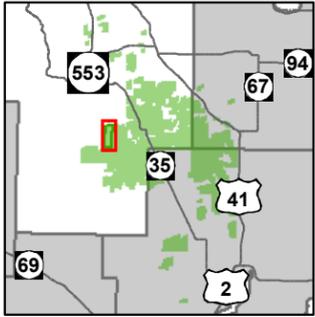


- ✚ Remonumented Section Corner
 - ◆ Survey Grade GPS Corners
 - ◇ Field Grade GPS Corners
 - Miris Corners
 - - Poor Dirt Roads
 - - - Trail (Non-Recreation)
 - ⋯ Closed Roads
 - Rivers
 - ▭ Stand Boundaries
- Forest Covertypes**
- 411 - Northern Hardwood
 - 413 - Aspen
 - 423 - Other Upland Conifers
 - 430 - Upland Mixed Fores
 - 612 - Lowland Coniferous Forest
- Non-Forest Covertypes**
- 330 - Low Density Trees
 - 622 - Lowland Shrub
 - 623 - Emergent Wetland

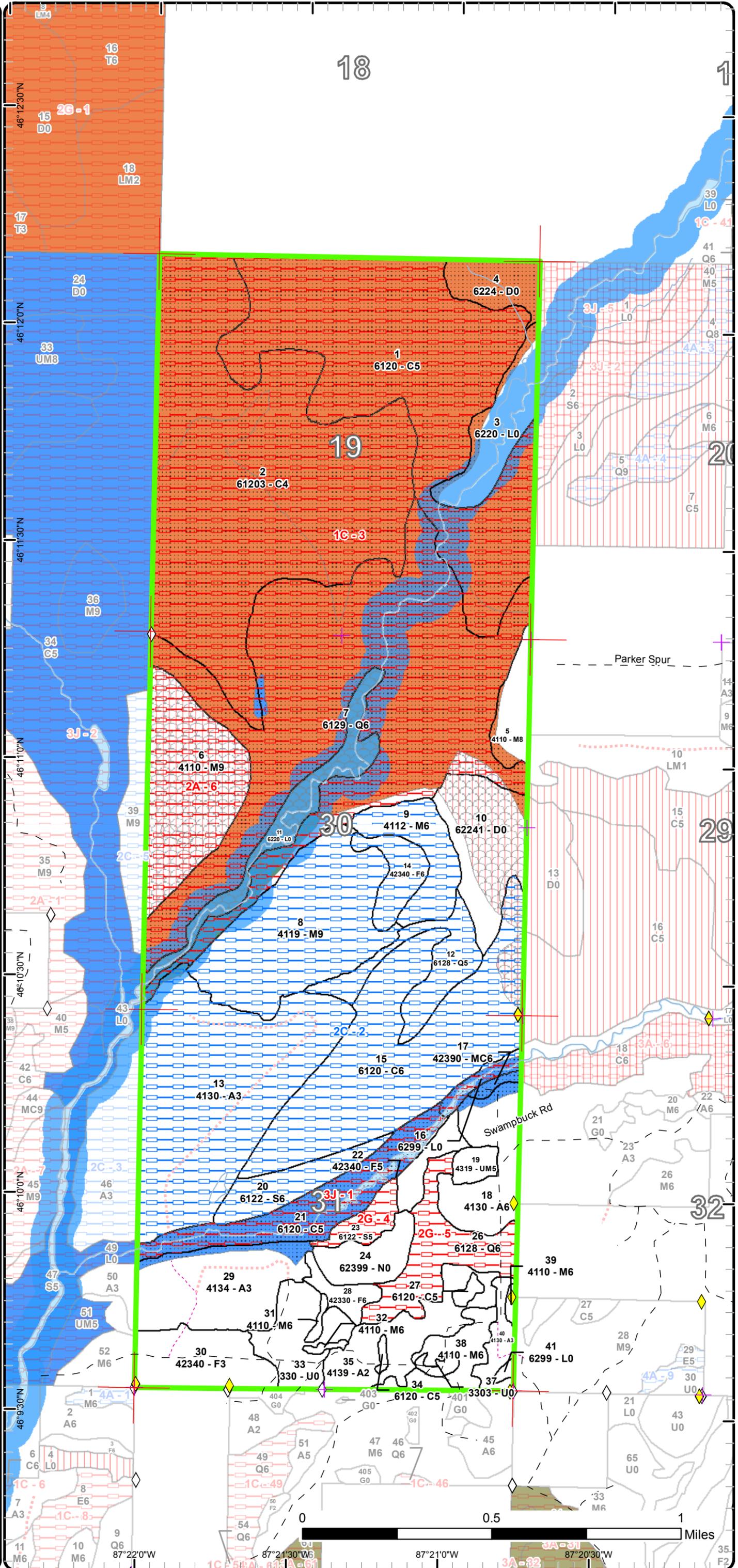


Special Conservation Areas & Site Conditions Map

Compartment: 24
 T44N, R24W, Sections. 19, 30, 31
 County: Marquette
 Unit: Gwinn
 Mgmt Area: Dead Horse Moraines
 YOE: 2017
 Acres: 1925 GIS Calculated
 Examiner: Theresa Sysol
 Map Revised: 7/30/2015
 Map Phase: Pre-Review



- ✚ Remonumented Section Corner
- ◆ Survey Grade GPS Corners
- ◇ Field Grade GPS Corners
- Miris Corners
- - Poor Dirt Roads
- - - Trail (Non-Recreation)
- ⋯ Closed Roads
- Rivers
- Stand Boundaries
- Reviewable SCAs (dq)
- Recommendation
- ▨ SCA
- ▨ SCA Removal
- Site Condition
- Available w/ Constraints
- Unavailable
- Available Factors W/ Constraints
- 2C: Engineered Bridge Needed (Dept. portable bridge not available or inadequate)
- Unavailable Factors
- 1C: Other dept or div proc/practices
- 2A: Adjacent landowner denied access
- 2G: Too wet (sensitive soils, does not include access issues)
- 3J: Water quality / BMPs (stream, river, or lake)
- Special Conservation Areas
- Cold Water Streams
- Cold Water Lakes
- High Priority Trout Stream Buffer
- Riparian Area
- Habitat Corridor
- Other Habitat Area



Report 1 – Total Acres by Cover Type and Age Class



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	36	10	241	0	0	0	0	0	0	0	0	0	0	0	0	0	0	287
Cedar	0	0	0	0	0	0	0	0	0	2	0	0	305	423	0	0	0	0	730
Low-Density Trees	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30
Lowland Conifers	0	0	0	0	0	0	0	0	0	70	0	0	0	0	304	0	0	0	374
Lowland Shrub	72	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	72
Lowland Spruce/Fir	0	0	0	0	0	0	0	0	0	0	0	33	0	0	0	0	0	0	33
Marsh	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19
Northern Hardwood	0	0	0	0	0	0	0	0	0	46	5	0	0	0	0	0	0	187	238
Treed Bog	64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	64
Upland Conifers	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3
Upland Mixed Forest	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	7
Upland Spruce/Fir	0	0	0	34	0	0	10	9	0	16	0	0	0	0	0	0	0	0	69
Total	185	36	10	275	0	0	17	9	0	134	8	33	305	423	304	0	0	187	1926



Report 2 – Treatment Summary

Gwinn Mgt. Unit

Year of Entry: 2017

Acres of Harvest

Compartment 24

Total Compartment Acres: 1,925

Commercial Harvest - 29
 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
Northern Hardwood	0	0	0	0	3	0	0	0	0	3
Upland Mixed Forest	7	0	0	0	0	0	0	0	0	7
Upland Spruce/Fir	19	0	0	0	0	0	0	0	0	19
Total	26	0	0	0	3	0	0	0	0	29

Proposed and Next Step Treatments by Method

	Harvest	Site Prep	Planting	Seeding	Burning	Pesticide	Monitoring	Other	Non-Forest Mgt.	Total Acres
Current	29	0	0	0	0	0	0	0	0	29
Next Step	0	0	0	0	0	26	0	0	0	26
Total	29	0	0	0	0	26	0	0	0	54



S t a n d	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
19	32024019-Cut	6.6	4319 - Mixed Upland Forest	Poletimber Medium	50	81-110	Harvest	Clearcut	4134 - Aspen, Spruce/Fir	Even-Aged	Proposal

Habitat Cut: No**Site Condition:**

Prescription Harvest all aspen, fir, red maple, spruce and paper birch. Retain basswood, sugar maple, elm for diversity. Any smaller diameter (6" or less) paper birch could be retained for diversity also. Do not cut any cedar which may fall within stand.

Next Step
Treatments:

Acceptable aspen, birch, spruce, fir
Regen:

Other Due to small stand size, no aspen or fir retention. Old next step comments:
Comment:

Proposed Start Date: 10/1 /2016

22	32024022-Cut	10.4	42340 - Upland Spruce/Fir	Poletimber Medium	50	51-80	Harvest	Clearcut	4319 - Mixed Upland Forest	Even-Aged	Proposal
----	--------------	------	---------------------------	-------------------	----	-------	---------	----------	----------------------------	-----------	----------

Habitat Cut: No**Site Condition:**

Prescription Harvest all spruce, fir, aspen. Harvest most paper birch, except for smaller, healthier poles (use diameter spec or mark leave trees) and a few larger diameter trees. Variable stand, based on terrain. Leave all cedar, black cherry.

Next Step
Treatments:

Acceptable aspen, birch, spruce, fir
Regen:

Other Difficult access into stand may prevent treatment (possible through NW portion of stand 19). Crane mats and/or frozen conditions will likely be required. Heavy blowdown of fir/aspen on upland ridge. Leave appropriate buffer along Sawmill Creek. Old next step comments:
Comment:

Proposed Start Date: 10/1 /2016

28	32024028-Cut	8.6	42330 - Upland Fir	Poletimber Well	65	51-80	Harvest	Clearcut with Retention	4319 - Mixed Upland Forest	Even-Aged	Proposal
----	--------------	-----	--------------------	-----------------	----	-------	---------	-------------------------	----------------------------	-----------	----------

Habitat Cut: No**Site Condition:**

Prescription Harvest all balsam fir, aspen. Mark hardwoods to cut. Harvest most spruce, especially larger diameter, health-risk trees. Leave black cherry, cedar.

Next Step
Treatments:

Acceptable fir, spruce, aspen and mixed northern hardwoods
Regen:

Other Heavy submerchantable balsam fir. Could delay treatment if salvage of older S/F is not desired at this time. Old next step comments:
Comment:

Proposed Start Date: 10/1 /2016

31	32024031-Cut	1.7	4110 - Sugar Maple Association	Poletimber Well	95	81-110	Harvest	Crown Thinning	411 - Northern Hardwood	Uneven-Aged	Proposal
----	--------------	-----	--------------------------------	-----------------	----	--------	---------	----------------	-------------------------	-------------	----------

Habitat Cut: No**Site Condition:**

Prescription Thin to 70 - 90 BA using hardwood marking guidelines. Remove any aspen, fir.
Specs:

Next Step
Treatments:

Acceptable mixed northern hardwoods
Regen:

Other Treatment with adjacent stands only; not marketable by itself. Delay treatment otherwise. 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
32	32024032-Cut	1.4	4110 - Sugar Maple Association	Poletimber Well	98	81-110	Harvest	Crown Thinning	411 - Northern Hardwood	Uneven-Aged	Proposal

Habitat Cut: No

Site Condition:

Prescription Thin to 70 - 90 BA using hardwood marking guidelines. Remove any aspen, fir.

Specs:

Next Step

Treatments:

Acceptable mixed northern hardwoods

Regen:

Other Stand is not marketable on its own; only treat if adjacent stand is treated also. Delay treatment otherwise. Old next step comments:

Comment:

Proposed Start Date: 10/1 /2016

Total Treatment Acreage Proposed: 28.7

Report 5 – Site Conditions

Gwinn Mgt. Unit
Theresa Sysol : Examiner

Compartment: 24
Year of Entry: 2017

Availability for Management

Total Acres	Acres Available	Acres Avail With Condition	Acres Not Available
----------------	--------------------	-------------------------------	------------------------

Dominant Site Conditions

2C 1C 2A 2G 3J

Total	Acres	Acres Avail	Acres	Dominant Site Conditions	2C	1C	2A	2G	3J
287	138	150	0	Aspen	150				
730	4	142	584	Cedar	142	537			47
30	30	0	0	Low-Density Trees					
374	0	30	344	Lowland Conifers	30	304		40	
72	66	1	6	Lowland Shrub	1				6
33	0	22	11	Lowland Spruce/Fir	22			11	
19	19	0	0	Marsh					
237	41	124	72	Northern Hardwood	124		72		
64	64	0	0	Treed Bog					
3	3	0	0	Upland Conifers					
7	7	0	0	Upland Mixed Forest					
69	53	16	0	Upland Spruce/Fir	16				
1,925	423	485	1,017	Total Forested Acres	485	842	72	50	53
	22%	25%	53%	Relative Percent					

**Due to limitations in the current Site Conditions Analysis tool, all nonforested acres are considered available. Future development will enable analysis of nonforested types.*

Site No.	Dominant Site Cond Availability	Dominant Site Condition	Acres	Other Site Condition	Other Site Condition	Other Site Condition	Other Site Condition
1	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	53	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Mud Creek							
2	Available	2C: Engineered Bridge Needed (Dept. portable bridge not available or inadequate)	485	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Lowland approaches plus 40 foot bridge required to access. Beaver impacting crossing site also.							

Report 5 – Site Conditions

Gwinn Mgt. Unit
Theresa Sysol : Examiner

Compartment: 24
Year of Entry: 2017

3	Unavailable	1C: Other dept or div proc/practices	842	2G: Too wet (sensitive soils, does not include access issues)	Unspecified	Unspecified	Unspecified
Comments: Cedar cutting restrictions.							
4	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	11	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
5	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	40	3J: Water quality / BMPs (stream, river, or lake)	Unspecified	Unspecified	Unspecified
Comments:							
6	Unavailable	2A: Adjacent landowner denied access	72	2C: Engineered Bridge Needed (Dept. portable bridge not available or inadequate)	Unspecified	Unspecified	Unspecified
Comments: If access from west - landowner and lowland issues. If access from SE - lowland approaches plus 40 foot bridge required to access. Beaver impacting crossing site also.							



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
C. 24 Removal 2 Comments	Other SCA		SCA Removal	1
C. 24 Removal 3 Comments Protected by Static wetlands value.	Potential Old Growth		SCA Removal	32
C. 24 Removal 4 Comments NON-PRODUCTIVE TREED BOG. Not old growth.	Other SCA		SCA Removal	33
C. 24 Removal 5 Comments Protect riparian area with BMP guidelines. Not old growth.	Other SCA		SCA Removal	13
Mud Creek Comments SCA - Riparian and wildlife corridor along Mud Creek. Maintain sufficient zone to protect watershed integrity. Maintain large closed canopy conifer for snow intercept and thermal protection. Provide forest structure in the form of dead and down.	Spring-Seeps, Riparian Areas	Riparian Area	Proposed SCA	2
Mud Creek 2 Comments SCA - Riparian and wildlife corridor along Mud Creek. Maintain sufficient zone to protect watershed integrity. Maintain large closed canopy conifer for snow intercept and thermal protection. Provide forest structure in the form of dead and down.	Spring-Seeps, Riparian Areas	Riparian Area	Proposed SCA	4
Mud Creek 3 Comments MUD CK. STREAM BUFFER STAND.	Spring-Seeps, Riparian Areas	Riparian Area	Proposed SCA	5
Mud Creek 4 Comments SCA - Riparian and wildlife corridor along Mud Creek. Maintain sufficient zone to protect watershed integrity. Maintain large closed canopy conifer for snow intercept and thermal protection. Provide forest structure in the form of dead and down.	Spring-Seeps, Riparian Areas	Riparian Area	Proposed SCA	6
Mud Creek confluence Comments SCA - Riparian and wildlife corridor along Mud Creek. Maintain sufficient zone to protect watershed integrity. Maintain large closed canopy conifer for snow intercept and thermal protection. Provide forest structure in the form of standing/dead & down.	Spring-Seeps, Riparian Areas	Riparian Area	Proposed SCA	47
Sawmill Comments SCA - wildlife travel corridor. Part of Sawmill Creek proposed BSA (northern forested wetlands). Maintain large closed canopy conifer for snow intercept and thermal protection. Provide forest structure in the form of standing/dead and down.	Habitat Areas or Corridors	Other Habitat Area	Proposed SCA	414



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
Sawmill "Y" hardwood island	Other SCA		SCA Removal	71
Comments LARGE TREES, POOR QUALITY, POOR ACCESS. Need two bridges to get to stand, and a large expanse of Q type to cross. Not old growth.				
Sawmill Creek	Habitat Areas or Corridors	Other Habitat Area	Proposed SCA	252
Comments SCA - wildlife travel corridor. Part of Sawmill Creek proposed BSA (northern forested wetlands). Maintain large closed canopy conifer for snow intercept and thermal protection.				
Sawmill Creek upland	Habitat Areas or Corridors	Habitat Corridor	SCA Removal	16
Comments Protected by riparian SCA				
Sawmill shrub	Spring-Seeps, Riparian Areas	Riparian Area	Proposed SCA	2
Comments Protect erodable riparian area with BMP's - not old growth, but incorporate into surrounding habitat SCA.				
Sawmill Swamp	Habitat Areas or Corridors	Other Habitat Area	Proposed SCA	178
Comments SCA - wildlife travel corridor. Part of Sawmill Creek proposed BSA (northern forested wetlands). Maintain large closed canopy conifer for snow intercept and thermal protection.				



Report 7 – EXISTING SPECIAL CONSERVATION AREA DETAILS

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

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

Conservation Area	Type	Description
SCA	Cold Water Lake	A coldwater lake has temperature and dissolved oxygen conditions that allow naturally-reproduced or stocked trout populations and those of other coldwater fish species to persist from year to year. Suitable conditions for coldwater fishes may occur in Michigan lakes if they are relatively deep, have substantial groundwater inflows, or are located in colder (northern) areas of the state. Such lakes are established by Director's action and designated as trout resources by Fisheries Order 200.
SCA	Cold Water Stream	A coldwater stream has temperature and dissolved oxygen conditions that allow naturally-reproduced or stocked trout populations and those of other coldwater fish species (e.g., slimy sculpin) to persist from year to year. Coldwater streams in Michigan typically provide these conditions due to substantial contributions of groundwater to their stream flows. Such streams are established by Director's action and designated as trout resources by Fisheries Order 210.
SCA	Riparian Area	A transitional area between aquatic and terrestrial ecosystems in which the terrestrial ecosystem influences the aquatic ecosystem and vice-versa. Because of the unique conditions adjacent to lakes, streams and open water wetlands, riparian areas harbor a high diversity of plants and wildlife. Riparian communities are ecologically and socially significant in their effects on water quality and quantity, as well as aesthetics, habitat, bank stability, timber production, and their contribution to overall biodiversity.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
1	6120 - Lowland Cedar	Poletimber Medium	233.2	128	51-80	Smaller diameter cedar within tagalder. Some scattered spruce, tamarack. Soils are Carbondale and Tawas mucks. Part of Cyr Swamp.
2	61203 - Cedar (OI)	Poletimber Poor	303.9	117	1-50	Lower stocking than adjacent cedar stand - more tagalder and intermittent drainages. Soils are Carbondale and Tawas. Part of Cyr Swamp.
5	4110 - Sugar Maple Association	Sawtimber Medium	16.7	85	81-110	NENE cut in 1976-77 under permit #18/76A (mainly elm, fir) and SENE under #31/77 (mainly removing fir and some hardwood) in 1978-79. Also thinned under "Parker Spur Hardwood" #004-07-01 - March, 2008. Stand still contains heavy defects; forks, crook, sweep, some black stain on maple. Snag yellow birch. Not much younger maple regeneration noted; mainly heavier to ironwood and fir. Interior conifer patch included, which contains 10-15' aspen patches. Ground cover of raspberry, leatherwood. Soils are Shoepac-Trenary with Charlevoix silt loam (edges).
6	4110 - Sugar Maple Association	Sawtimber Well	72.3	115	111-140	OPIC - FMD: POG, LARGE TREES, POOR QUALITY, POOR ACCESS. Need two bridges to get to stand, and a large expanse of Q type to cross. 2015: stand was not visited due to time and access constraints.
7	6129 - Mixed Coniferous Lowland Forest	Poletimber Well	304.5	130	81-110	OPIC - FMD: SAWMILL CREEK FLOWS THROUGH STAND. 2015: Mainly cedar, especially along Sawmill Creek, with scattered higher grounds containing more merchantable mixed spruce/fir and remnant old white pine, hemlock. Any treatments would be greatly limited by heavy cedar component, access, and bridge would be required over Sawmill Creek.
8	4119 - Mixed Northern Hardwoods	Sawtimber Well	95.8	115	111-140	OPIC - FMD: REMOTE, LARGE TREES. Poles in NE part of stand, with larger diameters interior. Need bridge over Mud Creek to access. Long snowplow (approximately 7 miles) of Swamp Buck Road, plus A3 to cross to get to the sale. Access from north, across treed bog and through private lands, might be possible but not likely due to questionable ability to freeze bog. Stand was previously set-up as "Mud Creek Sale" #005-07 - sale was cancelled without any activity, due to site conditions restricting access. Portable bridge would be insufficient, due to additional beaver flooding at crossing. Old orange and red paint is still visible. Heavy defects noted throughout - some areas more to small poles, saplings. Dead white spruce, fir and aspen within, as well as snapped spruce, basswood and aspen. Legacy trees present. Some rolling topography and ridges, esp. along lowland areas. Leatherwood noted.
9	4112 - Maple, Beech, Cherry Association	Poletimber Well	28.6	87	81-110	Higher ridge of smaller timber. A few legacy red and sugar maple within. Could almost be combined with adjacent hardwood stand.
12	6128 - Lowland Coniferous, Mixed Deciduous	Poletimber Medium	29.6	80	51-80	Stand was set-up as "Mud Creek Sale" #005-07 - sale was cancelled without any activity, due to site limitations. Older balsam fir, aspen has died out of stand. Majority of stand is lower site.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
13	4130 - Aspen	Sapling Well	149.8	23	Immature	"Mud Creek" sale #036-88 (unit 3,5) - cut Feb, 1991 and Feb, 1992. Some sparse and wet areas, but overall well-stocked. Small opening along north end. Scattered conifers.
14	42340 - Upland Spruce/Fir	Poletimber Well	16.2	80	51-80	OPIC - FMD: OLD HABITAT CUT.SPROUT ORIGIN TREES. SOME BIG RESIDUAL. Thicker balsam fir with spruce; clump red maple and black cherry. Fir is overmature and should be harvested; some already standing dead. Soils are Charlevoix-Ensley.
15	6120 - Lowland Cedar	Poletimber Well	141.7	125	51-80	Lab tea ground cover noted.
17	42390 - Mixed Non-Pine Upland Conifers	Poletimber Well	2.6	95	81-110	Stand provides upland buffer to Mud Creek.
18	4130 - Aspen	Poletimber Well	35.4	25	Immature	"Swampbuck Aspen" sale #002-87 - cut sp/su 1989 with C. 25 to the east. A 1 acre patch of hardwood was retained within stand. Ground cover of trillium, hazel, raspberry noted.
19	4319 - Mixed Upland Forest	Poletimber Medium	6.6	50	81-110	Stand is in decline - blowdown large white spruce, dead aspen and fir. Harvest now. Trace hardwoods from early 30's stand. Trace elm. Transitions into lower ground with more paper birch, spruce.
20	6122 - Black Spruce	Poletimber Well	22.3	106	81-110	Need bridge over Mud Creek and DEQ permit; winter job. Stand was set-up as "Mud Creek Sale" #005-07 (unit 1) - sale was cancelled without any activity, due to site conditions and inability to get bridge installed.
21	6120 - Lowland Cedar	Poletimber Medium	47.3	125	51-80	Contains Mud Creek and buffer. Some dead timber, due to beaver activity along creek. Patchy timber.
22	42340 - Upland Spruce/Fir	Poletimber Medium	10.4	50	51-80	OPIC - FMD: MORaine, AREA., VARIETY OF SPECIES , LEAVE FOR BUFFER ALONG CREEK. Narrow ridge with swamp/lowlands on either sides. Cedar along edges. Paper birch is dying out; being replaced by fir/spruce. Trace cherry within. Heavy fir blowdown noted at south end of ridge. Stand transitions into more black spruce/fir on lower grounds. Some of the smaller paper birch (4-6" dbh noted) are healthy - leave as retention.
23	6122 - Black Spruce	Poletimber Medium	10.9	106	51-80	OPIC - FMD: WELL-STOCKED 3-STICK B,SPRUCE. LEAVE FOR BUFFER ALONG CREEK
26	6128 - Lowland Coniferous, Mixed Deciduous	Poletimber Well	39.6	87	51-80	OPIC - FMD: WELL STOCKED C MIXED WITH POORLY STOCKED Q+P AREAS.MOSTLY SMALL WOOD. 2015: Drainage flows through stand with high cedar component; other areas of stand more mixed.
27	6120 - Lowland Cedar	Poletimber Medium	2.3	87	81-110	Lowland retention patch within aspen harvest.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
28	42330 - Upland Fir	Poletimber Well	8.6	65	51-80	FORMER OPEN AREA SEEDING IN TO FIR,SOME HARDWOODS. 2015: Very mixed stand. Some areas of stand can be very wet - swales - with ridge of smaller maple poles to the east. Lots of smaller fir regeneration (from budworm kill in the 80's) under older fir, which is blowing down/dying, and some scattered maple, cherry, basswood within as well.
29	4134 - Aspen, Spruce/Fir	Sapling Well	55.8	22	Immature	"Mud Creek" sale #036-88 (unit 1, 2) cut Feb 1990 and Jan- March, 1991. East half of stand has lower stocked areas with heavier conifer component; semi-open.
30	42340 - Upland Spruce/Fir	Sapling Well	34.2	24	Immature	"Mud Creek" sale #036-88 (unit 1,2) cut winter,1990. Some residual fir and aspen within. Heavy soils; lots of rutting in old roadbed, due to ORV's and trucks. Lots of ponding water in those areas.
31	4110 - Sugar Maple Association	Poletimber Well	1.7	95	81-110	Small patch of hardwoods around opening. High quality site, but numerous defects. Some areas up to 120 BA. More aspen interior. Ground cover of trillium, trout lily noted.
32	4110 - Sugar Maple Association	Poletimber Well	1.4	98	81-110	Narrow ridge of maple.
34	6120 - Lowland Cedar	Poletimber Medium	1.3	115	51-80	Narrow strip of cedar left following adjacent harvest.
35	4139 - Aspen, Mixed Deciduous	Sapling Medium	35.8	3	Immature	Stand harvested as "Swampbuck Aspen" #006-07 - cut November-December, 2011. Trace residual spruce, cedar, maple.
38	4110 - Sugar Maple Association	Poletimber Well	19.1	90	81-110	Permit #006-97-01 "Mud Creek Sale" (unit 1). Cut Feb, 1998. Trace amount of black cherry, yellow birch present. Some areas of stand more to poles. High quality site - ground cover of trillium, blue cohosh.
39	4110 - Sugar Maple Association	Poletimber Well	1.6	90	81-110	Permit #006-97-01 "Mud Creek Sale" (part of unit 1). Cut Feb, 1998. Majority of stand also prepped under permit #017-13 "Swampbuck Steeler" with Compt 25, due to proximity.
40	4130 - Aspen	Sapling Well	10.5	16	Immature	"Mud Creek Sale" #006-97-01 (unit 2), cut fall, 1998. In 2005 aspen was 1-2 " dbh, 10-20 ft tall. Some sparse areas. Trace elm, cedar.



Stand	Cover Type	Acres	Managed Site	General Comments:
3	6220 - Alder/willow	32.5	No	Lowland brush/tagalder containing Sawmill Creek.
4	6224 - Treed Bog	19.1	No	Mainly spruce, cedar. Part of Cyr Swamp.
10	62241 - Treed Bog (OI)	45.2	No	Lab tea ground cover. Stand edges contain slightly larger dbh stems.
11	6220 - Alder/willow	31.7	No	Lowland brush along Sawmill Creek.
16	6299 - Lowland Shrub (OI)	6.8	No	contains Mud Creek
24	62399 - Marsh (OI)	19.1	No	OPIC - FMD: MARSH AND BEAVER DROWNED TIMBER
33	330 - Low-Density Trees	27.1	No	Stand is being maintained as a natural opening. Stand was last treated in 1982 with Tordon. If stand 31, 32 and 28 are treated, may wish to remove some of the fir/spruce adjoining those areas as well.
37	3303 - Mixed Low Density Trees	2.6	No	Stand was last treated with Tordon in 1982; now being maintained as a natural opening and treated commercially as adjacent stands are prescribed. Trillium, strawberry also noted.
41	6299 - Lowland Shrub (OI)	1.4	No	OPIC - FMD: BRUSH AND MARSH