



Compartment Review Presentation

Grayling Forest Management Unit

Compartment 72029

Entry Year 2020

Acreage: 1,305

County Oscoda

Management Area: AuSable Outwash

Revision Date: 2018-07-18

Stand Examiner: Kevin Ehlert

Legal Description:

T27N R2E Sec 1, T27N R3E Sections 5 & 6,
T28N R2E Sections 24, 25, & 36., T28N R3E Sections 30,&31, Oscoda County

Identified Planning Goals:

To follow goals and management activities outlined per the management plan for the Frost Pocket Pine Barrens Special Management Area while working to maintain forest health, productivity, sustainability, species diversification, and structural diversity throughout the compartment.

Soil and topography:

Fairly level to slightly sloping terrain over most of the area with some steep slopes off Mt. Tom Road and on edges of a couple kettle holes in the compartment. Soils are dominated by excessively drained soil types which are characteristic of glacial outwash plains. Some Graycalm soils exist on the more hilly terrain along the east edge of the compartment supporting the more closed canopy forested types.

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

The compartment is solid state ownership. There are some private parcels adjacent to the boundaries of this compartment. This compartment encompasses the entire Frost Pocket Pine Barrens Special Management Area. Compartment boundaries were rearranged in 2006 to allow this special management area to reside in one compartment for ease of tracking and treatment. In 2018, Stands North of Bailey Road and South of Pennsylvania Crossing were removed from this compartment and added to adjacent compartments. They were removed as they are not part of the Frost Pocket Management Plan. The compartment has some boundaries that lie on stand lines vs. geographical features such as roads or section lines making it important to identify the accurate boundaries when performing inventory on adjacent compartments.

Unique Natural Features:

The compartment encompasses the Frost Pocket Pine Barrens Special Management Area. It was identified as a large area of potential pine barrens which had a low quality EEO ranking. Through active management of harvest and prescribed burning, the diversity and quality of some units within the area appear to have improved greatly. These actively managed units contain a variety of plant and insect species, some which are of special concern or threatened or endangered species. It is recommended a new survey be conducted to determine if the EEO quality has improved. During this 10 year period, burning in subunit 5 will be added to the rotation with continued burns in other units to maintain and improve the pine barrens ecosystem.

Archeological, Historical, and Cultural Features:

The historic PBB cattle burial site is directly adjacent to this compartment, along the west edge. This area had some homesteading in it in the past but no specific home sites have been identified.

Special Management Designations or Considerations:

The compartment encompasses the Frost Pocket Pine Barrens Special Management Area.

Watershed and Fisheries Considerations:

N/A

Wildlife Habitat Considerations:

Continue to manage as pine barrens habitat and grassy mosaic as per the plan for appropriate wildlife species. A diversity of bird species were noted when performing inventory.

Mineral Resource and Development Concerns and/or Restrictions

An active sand/gravel pit is located less than one mile to the southeast, and sand & gravel potential appears to be very good within the compartment. Two active Antrim Shale gas wells are located in Section 25 and additional Antrim production

around the northern end of the compartment. The remainder of the compartment is not currently being developed and not currently leased. The compartment is at the southern edge of the Antrim play, but there likely is additional Antrim gas potential beneath the compartment. There is no known metallic mineral potential in this part of the state. The state does not own the mineral rights beneath some of the compartment. Private mineral rights owners must be allowed reasonable access to the surface should they choose to explore and/or develop the minerals.

Vehicle Access:

The compartment is bounded by two county roads: Mt. Tom Road and Pennsylvania Crossing. In addition, several trail roads run throughout the compartment. Some trails serve to identify boundaries of the internal management units. Most of the compartment is easily accessible.

Survey Needs:

None at this time.

Recreational Facilities and Opportunities:

Snowmobile trail 4/9 traverses the north west edge of the compartment in Section 25. The Mio 50" ORV trail crosses thru the compartment just north of Esch Road, and ORV Route spurs off the looped trail east of Mount Tom Road to the southeast corner of the compartment. The open barrens provide opportunities for wildlife viewing; but impose special management due to the easily disturbed fragile soil. Continue management efforts to protect the environment yet provide for recreational viewing and restore human impact areas. (A.2018)

Fire Protection:

Sufficient roads are present for access and to serve as fuel breaks for the active prescribed burning management that occurs in this area.

Additional Compartment Information:

The following reports from the Inventory are attached:

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

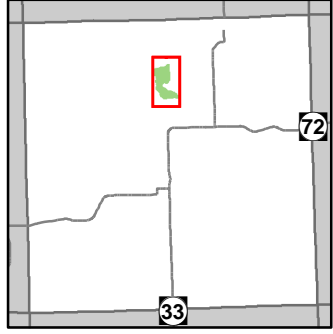
The following information is displayed, where pertinent, on the attached compartment maps:

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

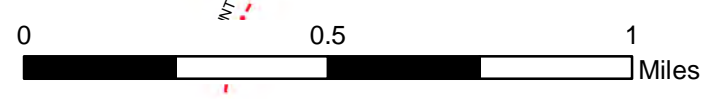
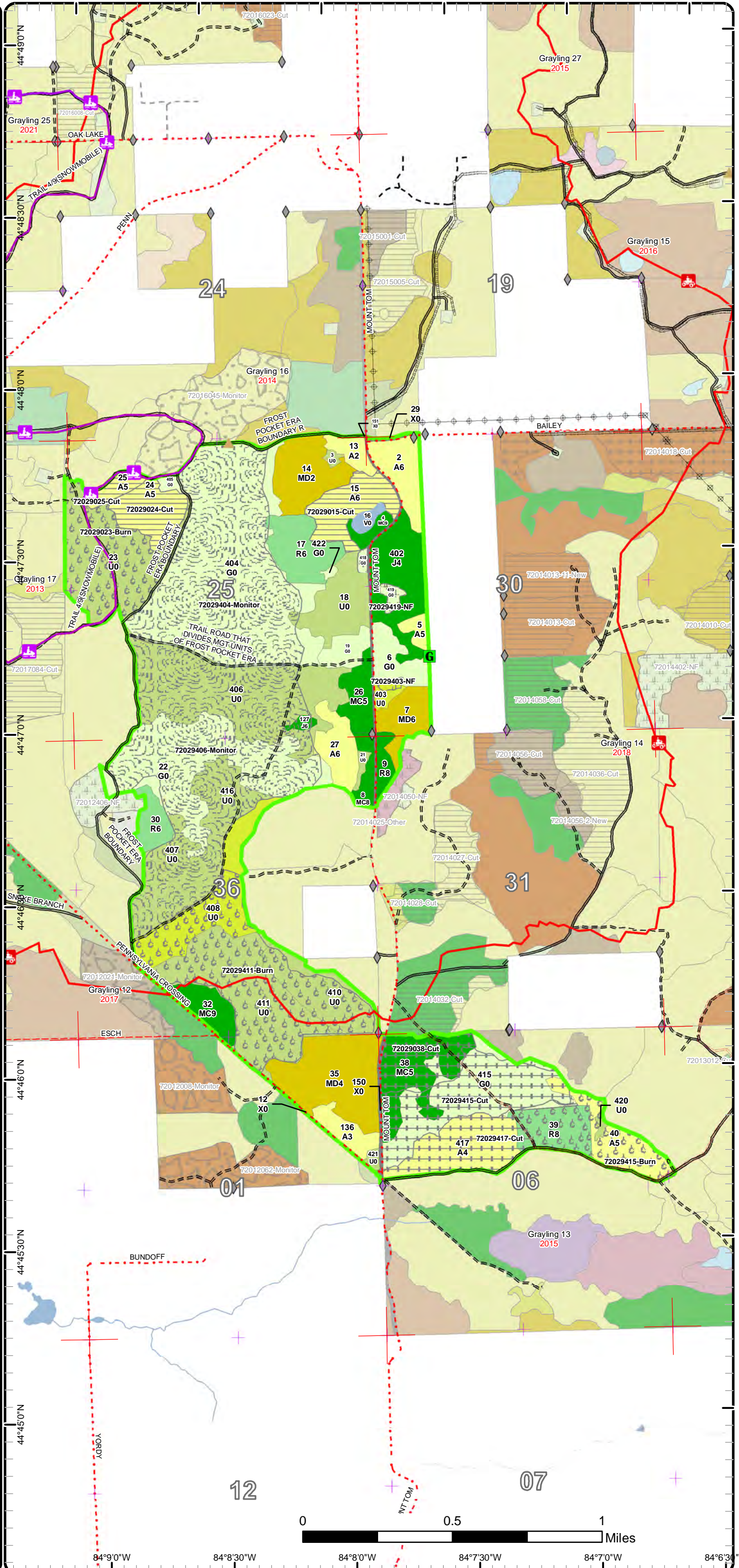
Cover Type & Treatments Map

Compartment: 29
 T28N, R02E, Sec. 25, 36
 T28N, R03E, Sec. 19, 30, 31
 T27N, R02E, Sec. 1
 T27N, R03E, Sec. 6

County: Oscoda
 Unit: Grayling
 Mgmt Area: AuSable Outwash
 YOE: 2020
 Acres: 1,306 GIS Calculated
 Examiner: Kevin Ehlert



- Miris Corners
- + Remonumented Section Corners
- ◆ Field Grade Corners
- Counties
- DNR - Secondary Forest Road
- DNR - Forest Access Route
- Federal / State - Dirt / Gravel Road
- County - Gravel Road
- County - Dirt Road (Seasonal)
- ORV Trails
- ORV Routes
- Snowmobile Trails
- Designated ATV
- Designated ORV Route
- Designated Snowmobile Trails
- Intermittent Stream
- Lake/Pond
- Perennial River
- Lakes and Rivers All
- ▲ Berms
- G Gate
- Pipeline
- Powerline
- Compartment Boundary
- Other Treatment - See Comments
- Clearcut (w/Reserves)
- Harvest, Overstory Removal
- Prescribed Burn
- Monitoring
- 413 - Aspen
- 419 - Mixed Upland Deciduous
- 421 - Planted Pines
- 422 - Natural Pines
- 122 - Roads/Parking Lot
- 310 - Herbaceous Openland
- 320 - Upland Shrub
- 330 - Low Density Trees
- 622 - Lowland Shrub
- Lakes

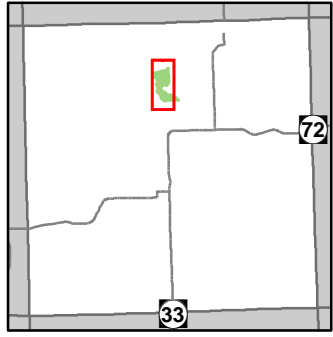


84°9'0"W 84°8'30"W 84°8'0"W 84°7'30"W 84°7'0"W 84°6'30"W

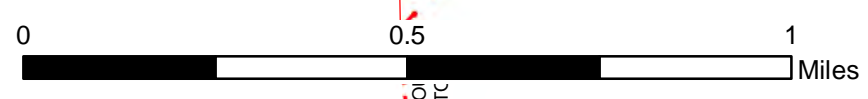
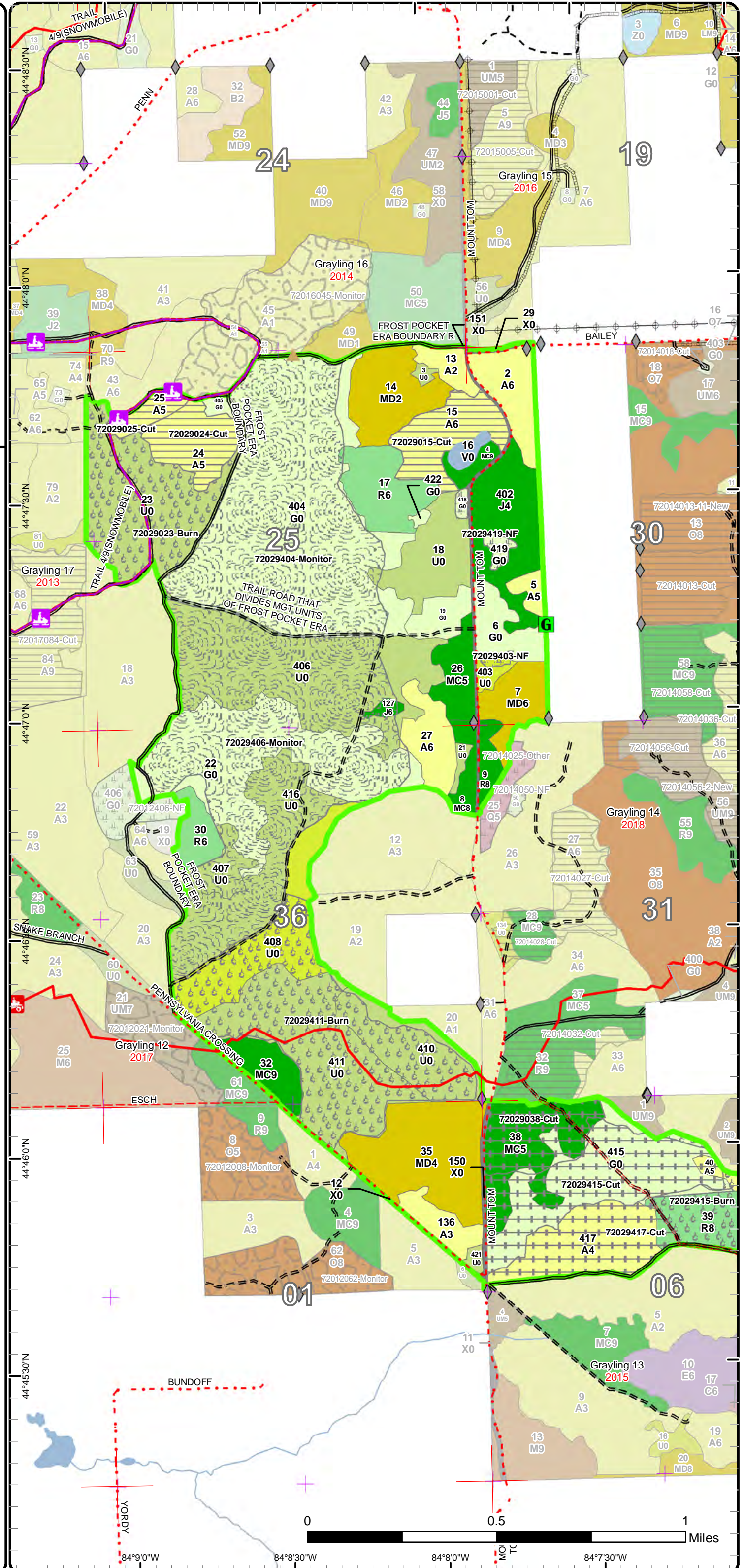
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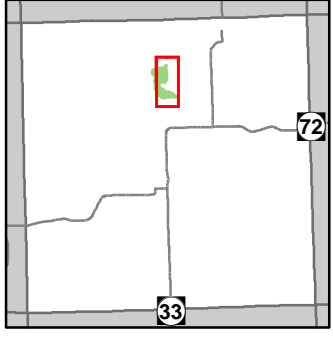


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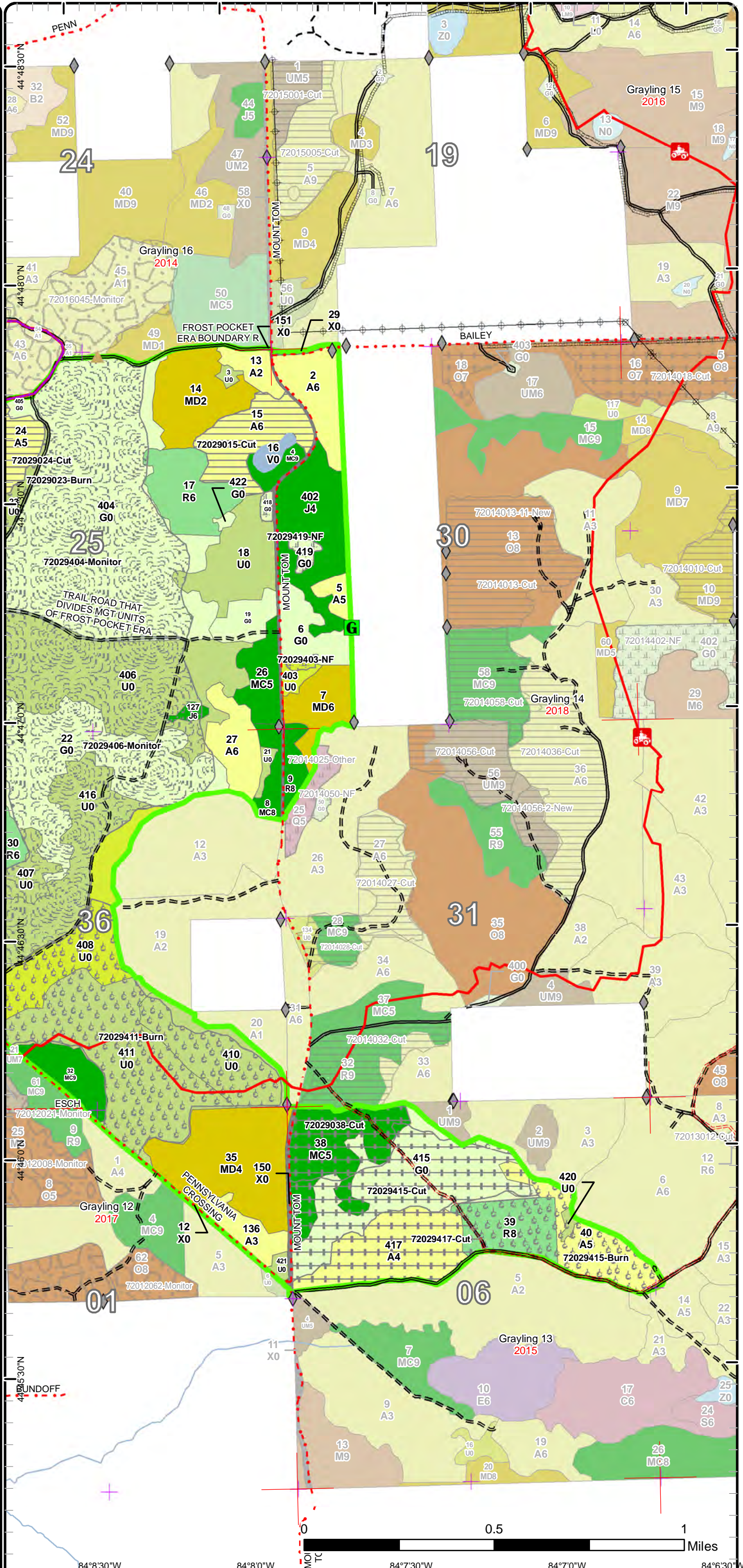
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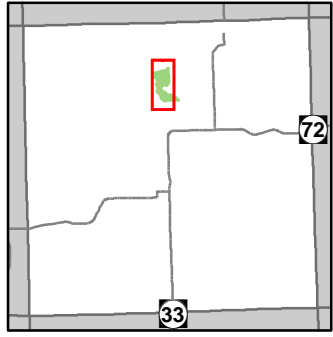
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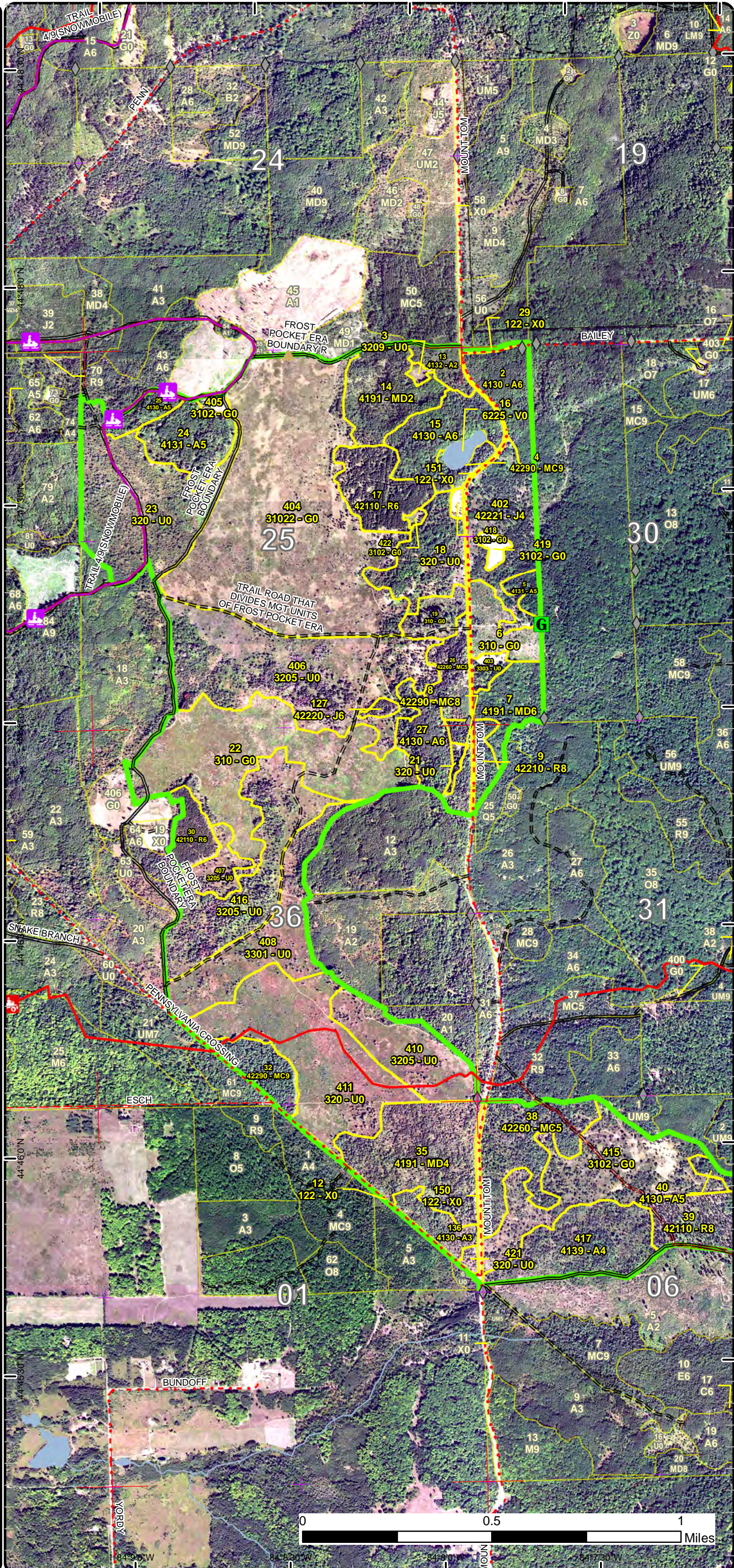
Stand Boundary Map

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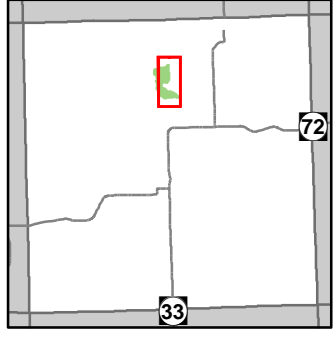
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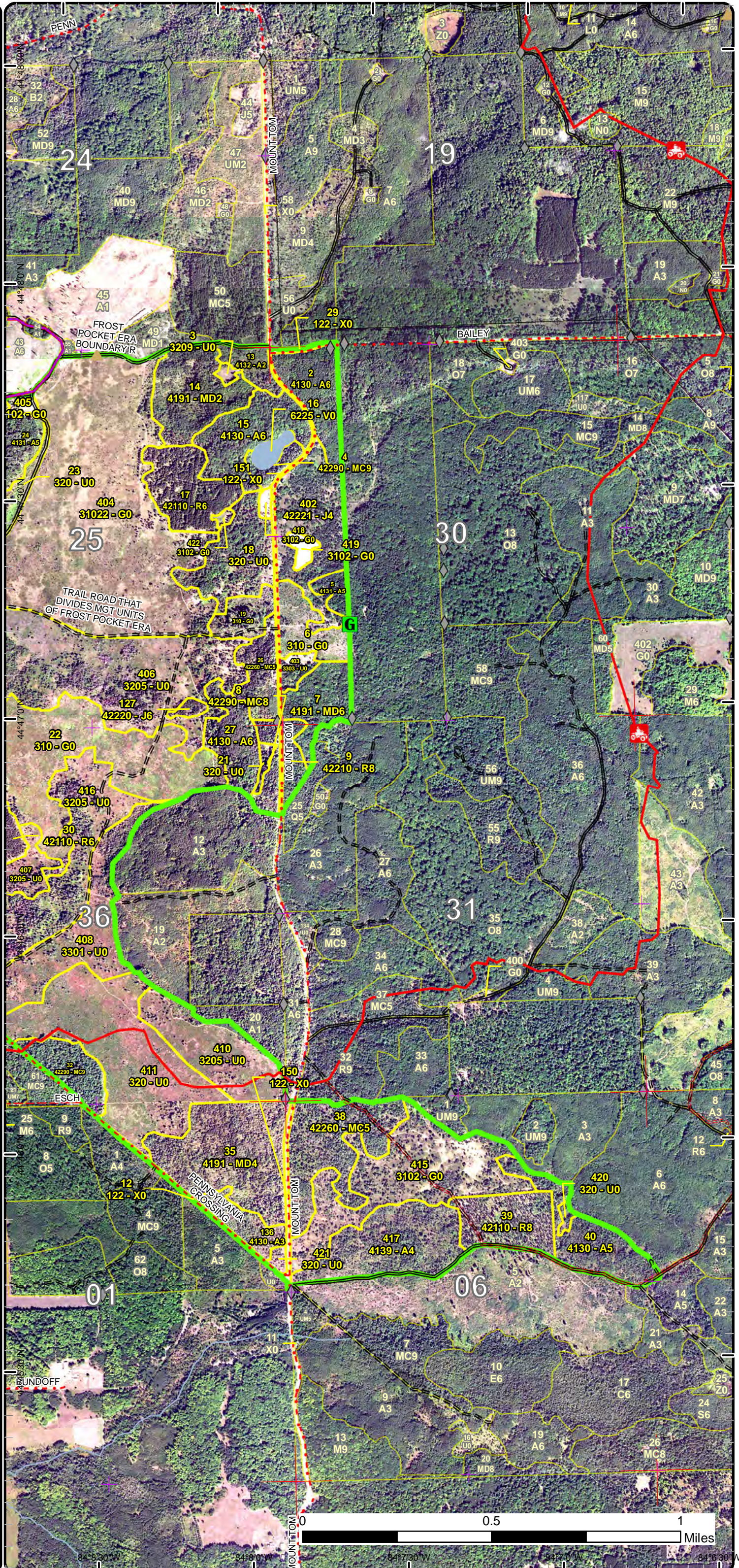
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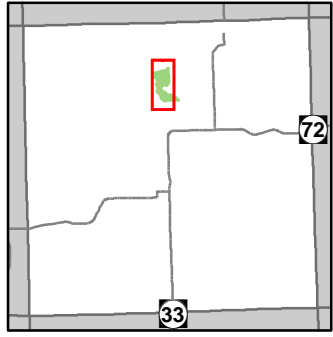
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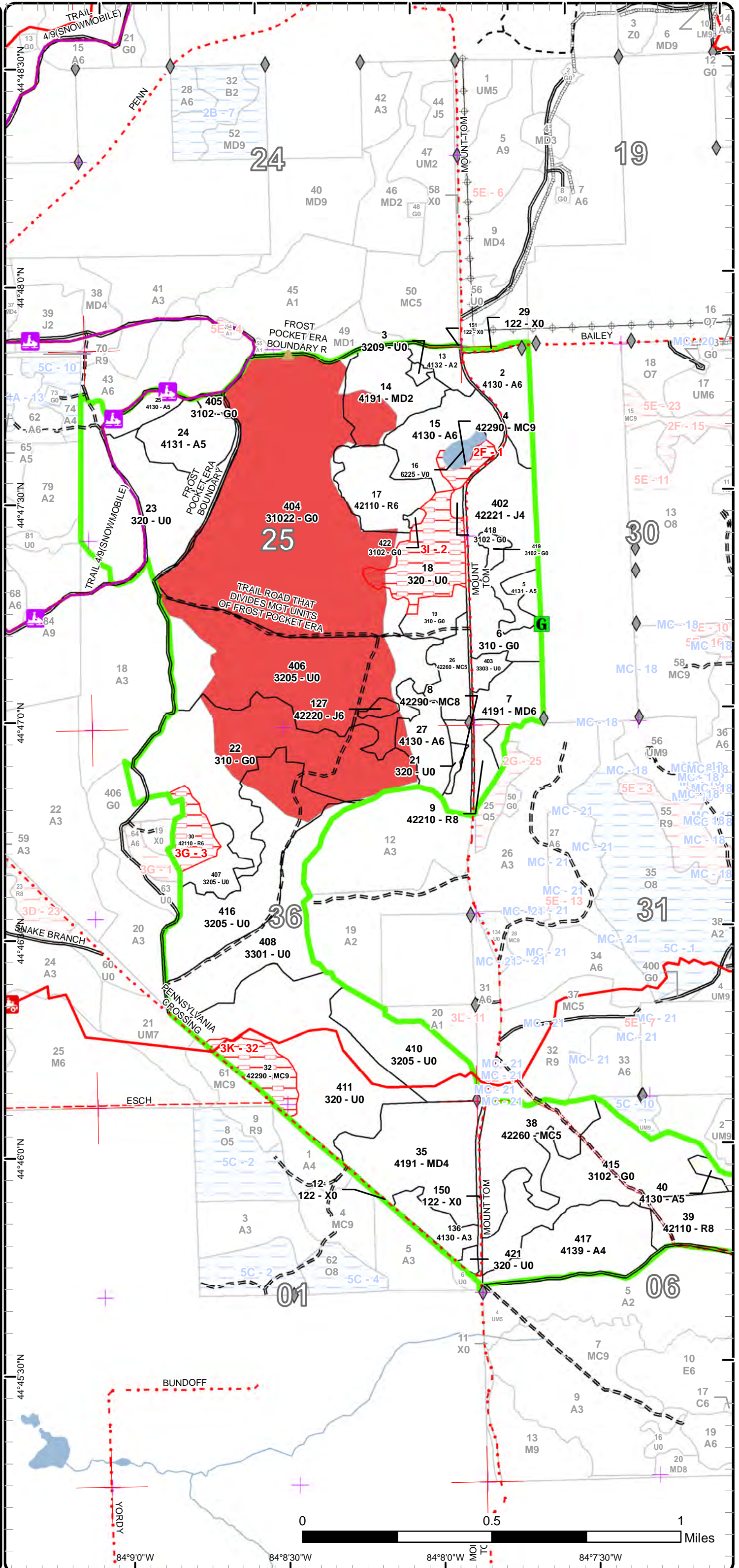
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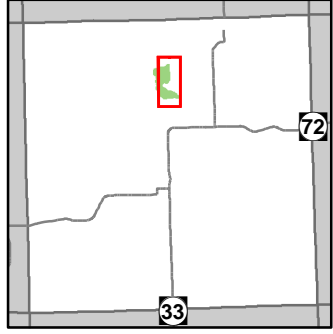
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- Unavailable
- 2F: Too steep
- 3G: Other Influence zones - See comments
- 3I: Historical / archeological (add locked comments)
- 3K: Rare or unique landforms
- Stand Boundaries
- Ecological Reference Areas



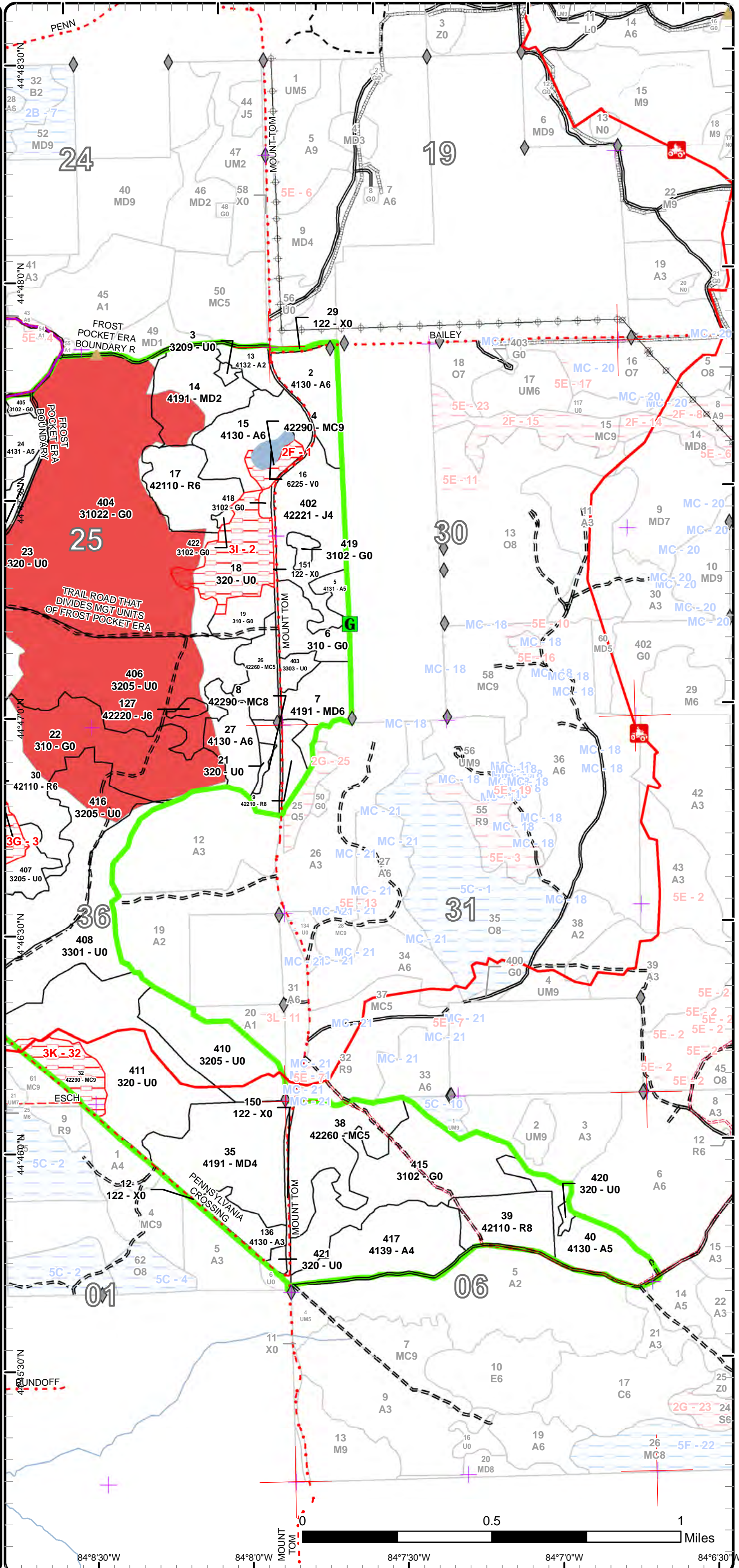
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Report 1 – Total Acres by Cover Type and Age Class



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	0	8	0	11	117	24	0	0	0	0	0	0	0	0	0	0	27	187
Bog	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Herbaceous Openland	378	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	378
Jack Pine	0	0	0	0	0	37	2	0	0	0	0	0	0	0	0	0	0	0	39
Low-Density Trees	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50
Mixed Upland Deciduous	0	0	0	0	53	18	30	0	0	0	0	0	0	0	0	0	0	0	101
Natural Mixed Pines	0	0	0	0	0	0	22	0	39	16	0	5	0	0	0	0	0	0	81
Red Pine	0	0	0	0	0	26	35	0	7	0	0	0	0	0	0	0	0	0	68
Upland Shrub	387	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	387
Urban	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
Total	831	0	8	0	64	198	113	0	46	16	0	5	0	0	0	0	0	27	1306



Report 2 – Treatment Summary

Grayling Mgt. Unit

Year of Entry: 2020

Acres of Harvest

Compartment 29

Total Compartment Acres: 1,305

Commercial Harvest - 201
 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	59	0	0	0	0	0	43	0	0	101
Herbaceous Openland	0	0	0	0	0	0	68	0	0	68
Natural Mixed Pines	0	0	0	0	0	0	32	0	0	32
Total	59	0	0	0	0	0	142	0	0	201

Proposed and Next Step Treatments by Method

	Harvest	Site Prep	Planting	Seeding	Burning	Pesticide	Monitoring	Other	Non-Forest Mgt.	Total Acres
Current	201	0	0	0	253	0	409	0	6	869
Next Step	0	0	0	0	142	0	312	0	0	454
Total	201	0	0	0	395	0	721	0	6	1323



S t a n d	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
15	72029015-Cut	26.9	4130 - Aspen	Poletimber Well	48	81-110	Harvest	Clearcut with Retention	413 - Aspen	Even-Aged	Draft Field Boundary

Habitat Cut: No

Site Condition:

Prescription Final harvest all species. Use area based retention, focused on the steep slope down to stand 16. Include drumming log spec.
Specs:

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

Acceptable Aspen, with small components of maple and oak.
Regen:

Other
Comment:

Proposed Start Date: 10/1 /2019

23	72029023-Burn	69.6	320 - Upland Shrub	Nonstocked		Unspecified	Burn	Opening	310 - Herbaceous Openland		Draft Field Boundary
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Habitat Cut: No

Site Condition:

Prescription Periodically burn to restore and maintain the Frost Pocket Pine Barrens ERA.
Specs:

Next Step Monitoring, Prescribed Burn
Treatments:

Acceptable Pine barrens natural community characteristics described in Frost Pocket Management Plan
Regen:

Other
Comment:

Proposed Start Date: 10/1 /2019

24	72029024-Cut	23.6	4131 - Aspen, Oak	Poletimber Medium	56	51-80	Harvest	Clearcut with Retention	413 - Aspen	Even-Aged	Draft Field Boundary
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Habitat Cut: No

Site Condition:

Prescription Final harvest all species. Leave area based retention through boundary exclusion. Use appropriate specs to protect recreation trails. Use drumming log spec.
Specs:

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

Acceptable Aspen mixed with oak, maple and other associated deciduous species. Stocking level will be a mosaic of forested and non-forested areas as directed by Frost Pocket Plan.
Regen:

Other
Comment:

Proposed Start Date: 10/1 /2019

25	72029025-Cut	8.1	4130 - Aspen	Poletimber Medium	49	51-80	Harvest	Clearcut with Retention	413 - Aspen	Even-Aged	Draft Field Boundary
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Habitat Cut: No

Site Condition:

Prescription Final harvest all species. Leave area based retention through boundary exclusion. Use appropriate specs to protect recreation trails. Use drumming log spec.
Specs:

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

Acceptable Aspen mixed with oak, maple and other associated deciduous species. Stocking level will be a mosaic of forested and non-forested areas as directed by frost pocket plan.
Regen:

Other
Comment:

Proposed Start Date: 10/1 /2019



S t a n d	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
38	72029038-Cut	31.7	42260 - Natural Pine, Mixed Deciduous	Poletimber Medium	73	51-80	Harvest	Overstory Removal	310 - Herbaceous Openland		Draft Field Boundary

Habitat Cut: No

Site Condition:

Prescription Final harvest all species to expand the pine barrens management in stand 415 to this area. Pick up merchantable pockets within Burn Unit 5
Specs: where feasible to remove canopy, may be done at a scale rate.

Next Step Burn, Opening
Treatments:

Acceptable
Regen:

Other Set up stand and add to sale containing stand 32 to the North in compartment 72014. Stand will be added to burn unit 5 to expand pine barrens
Comment: management to this area. Note that this Payment Unit must be cut by XX/XX/XXXX(TBD).

Proposed Start Date: 10/1 /2018

403	72029403-NF	1.6	3303 - Mixed Low Density Trees	Nonstocked		Unspec ified	NonForestMgt	Other - Specify	3102 - Grass		Draft Field Boundary
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Habitat Cut: No

Site Condition:

Prescription 2010 YOE opening maintenance FTP C72-682
Specs:

Next Step
Treatments:

Acceptable
Regen:

Other
Comment:

Proposed Start Date: 7 /30/2017

404	72029404-Monitor	168.5	31022 - Warm Season Grass	Nonstocked		Unspec ified	Monitoring	Other - Specify	31022 - Warm Season Grass		Draft Field Boundary
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Habitat Cut: No

Site Condition:

Prescription evaluate for re-burn needs
Specs:

Next Step
Treatments:

Acceptable Pine Barrens natural community characteristics
Regen:

Other Percent to Treat = 100%
Comment:

Proposed Start Date: 10/2 /2017

22	72029406-Monitor	240.6	310 - Herbaceous Openland	Nonstocked		Unspec ified	Monitoring	Other - Specify	31022 - Warm Season Grass		Draft Field Boundary
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Habitat Cut: No

Site Condition:

Prescription evaluate for re-burn needs
Specs:

Next Step
Treatments:

Acceptable Pine Barrens natural community characteristics
Regen:

Other Percent to Treat = 100%
Comment:

Proposed Start Date: 10/1 /2018



S t a n d	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
411	72029411- Burn	136.1	320 - Upland Shrub	Nonstocked	0	Unspec ified	Burn	Opening	330 - Low- Density Trees		Draft Field Boundary

Habitat Cut: No

Site Condition:

Prescription Periodically burn to restore and maintain the Frost Pocket Pine Barrens ERA.

Specs:

Next Step Monitoring, Prescribed Burn

Treatments:

Acceptable Pine Barrens natural community characteristics

Regen:

Other

Comment:

Proposed Start Date: 10/1 /2009

40	72029415- Burn	47.6	4130 - Aspen	Poletimber Medium	47	1-50	Burn	Opening	310 - Herbaceous Openland		Draft Field Boundary
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Habitat Cut: No

Site Condition:

Prescription Rx burn this stand to promote growth of pine barrens vegetation and set back woody succession. Approved prescription specifications for the

Specs: 10-year entry window that may be carried out include: Managing for shortgrass prairie. Periodic opening maintenance may include disking, fertilizing, seed planting, tree and shrub planting, mowing, brushing, burning, tree pruning, and herbicide application.

Next Step Monitoring, Other - Specify

Treatments:

Acceptable

Regen:

Other Treatment approved through variance on 12-19-2016.

Comment:

Proposed Start Date: 12/19/2016

415	72029415-Cut	67.6	3102 - Grass	Nonstocked		Unspec ified	Harvest	Overstory Removal	310 - Herbaceous Openland		Draft Field Boundary
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Habitat Cut: No

Site Condition:

Prescription Harvest merchantable trees to promote barrens habitat. Due to low density of trees, treatment acreage may vary significantly. After harvest

Specs: complete, Rx burn this stand to promote growth of pine barrens vegetation and set back woody succession. Approved prescription specifications for the 10-year entry window that may be carried out include: Managing for shortgrass prairie. Periodic opening maintenance may include disking, fertilizing, seed planting, tree and shrub planting, mowing, brushing, burning, tree pruning, and herbicide application.

Next Step Burn, Opening

Treatments:

Acceptable

Regen:

Other Set up stand and add to sale containing stand 32 to the North in compartment 72014. Stand will be added to burn unit 5 to expand pine barrens management to this area. Note that this Payment Unit must be cut by XX/XX/XXXX(TBD). Rx burn treatment approved through variance on 12-19-2016. Burn treatment in stand 417 will cover stand 415 and 38 after overstory removal.

Proposed Start Date: 7 /30/2018



S t a n d	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
417	72029417-Cut	42.8	4139 - Aspen, Mixed Deciduous	Poletimber Poor	47	1-50	Harvest	Overstory Removal	310 - Herbaceous Openland		Draft Field Boundary

Habitat Cut: No Site Condition:

Prescription Harvest merchantable trees to promote barrens habitat. Due to low density of trees, treatment acreage may vary significantly. After harvest complete, Rx burn this stand to promote growth of pine barrens vegetation and set back woody succession.

Specs:

Approved prescription specifications for the 10-year entry window that may be carried out include: Managing for shortgrass prairie. Periodic opening maintenance may include disking, fertilizing, seed planting, tree and shrub planting, mowing, brushing, burning, tree pruning, and herbicide application.

Next Step Burn, Opening

Treatments:

Acceptable

Regen:

Other Set up stand and add to sale containing stand 32 to the North in compartment 72014. Stand will be added to burn unit 5 to expand pine barrens management to this area. Note that this Payment Unit must be cut by XX/XX/XXXX(TBD).

Comment:

Rx burn treatment approved through variance on 12-19-2016. Burn treatment in stand 417 will cover stand 415 and 38 after overstory removal.

Proposed Start Date: 8 /2 /2018

418	72029418-NF	1.6	3102 - Grass	Nonstocked		Unspec ified	NonForestMgt	Other - Specify	3102 - Grass		Draft Field Boundary
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Habitat Cut: No Site Condition:

Prescription 2010 YOE opening maintenance FTP C72-681

Specs:

Next Step

Treatments:

Acceptable

Regen:

Other

Comment:

Proposed Start Date: 10/1 /2009

419	72029419-NF	3.0	3102 - Grass	Nonstocked		Unspec ified	NonForestMgt	Other - Specify	3102 - Grass		Draft Field Boundary
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Habitat Cut: No Site Condition:

Prescription 2010 YOE opening maintenance FTP C72-682

Specs:

Next Step

Treatments:

Acceptable

Regen:

Other

Comment:

Proposed Start Date: 10/1 /2009

Total Treatment Acreage Proposed: 869.3

Report 4 – Site Conditions

Grayling Mgt. Unit
Kevin Ehlert : Examiner

Compartment: 29
Year of Entry: 2020

Availability for Management

Total	Acres	Acres Avail	Acres
Acres	Available	<i>With Condition</i>	Not Available

Dominant Site Conditions

	Total	Acres	Acres Avail	Acres	Dominant Site Condition	Dominant Site Conditions							
						5C	MC	2F	2G	3G	3I	3K	
187	187	0	0	0	Aspen			0					
3	3	0	0	0	Bog			0					
377	377	0	0	0	Herbaceous Openland	0		0		0	0		
40	40	0	0	0	Jack Pine								
50	50	0	0	0	Low-Density Trees								
101	101	0	0	0	Mixed Upland Deciduous				0				
81	60	0	21	21	Natural Mixed Pines	0	0	5					16
67	56	0	11	11	Red Pine				0	11	0		
386	358	0	28	28	Upland Shrub			0		0	28	0	
13	12	0	0	0	Urban			0					0
1,305	1,245	0	61	61	Total Forested Acres	0	0	5	0	11	28		16
	95%	0%	5%	5%	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	2F: Too steep	5	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Stand located on steep slope down to bog.							
2	Unavailable	3I: Historical / archeological (add locked comments)	28	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
3	Unavailable	3G: Other Influence zones - See comments	12	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Hold stand at this time. It is adjacent to the cattle burial pit. May be harvested and converted to pine barrens at some point in the future, or held as a buffer.							

Report 4 – Site Conditions

Grayling Mgt. Unit
Kevin Ehlert : Examiner

Compartment: 29
Year of Entry: 2020

32	Unavailable	3K: Rare or unique landforms	16	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
33	Unavailable	3K: Rare or unique landforms	14	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
34	Unavailable	3K: Rare or unique landforms	20	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							

Mgt. Unit

Compartment: #Type!

Year of Entry:



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

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

SCA Name	SCA Category	Detail Type	Recommendation	Acres
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Comments



Report 6 – EXISTING SPECIAL CONSERVATION AREA DETAILS

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

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

Conservation Area	Type	Description
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.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
2	4130 - Aspen	Poletimber Well	20.6	45	141-170	Stand of bigtooth aspen. Appears to be healthy and has grown well since last YOE. Ground cover varied, including scotch harebell, grasses, blueberry, pennsylvania sedge, raspberry, sweetern, brackenfern, strawberry. This is part of Unit 5 of Frost Pocket Management area. Management objective of Unit 5 is to maintain a mosaic of shrubland and open forest conditions representing a variety of successional stages. This area also buffers edge of management area. Hold stand. Treat in future to maintain a patchwork of successional stages in Unit 5.
4	42290 - Natural Mixed Pine	Sawtimber Well	4.9	106	171-200	This stand is on a steep slope right along the county road- is not operable. Is contains patches of red pine and white pine saw log trees intermixed with some aspen, red maple, and scattered pin oak.
5	4131 - Aspen, Oak	Poletimber Medium	4.9	41	81-110	Variable stand, part of unit 5 of frost pocket mgt area whose mgt obj is to keep a mosaic of shrubland and open forest at a variety of successional stages and to serve as a buffer along the edge of the special mgt area. This stand is along private land and is fairly small. It is very diverse- has a mix of pockets of mature bigtooth aspen that looks healthy along with scattered mature jack pine and oak. By the gate there is a mix of aspen, red maple and oak. This stand can hold. Wait to treat it when adjacent stands are treated. Ground cover is varied but dominated by bracken fern. Has some old scattered oak in stand but rest of stand appears younger overall.
7	4191 - Mixed Upland Deciduous with Conifer	Poletimber Well	18.4	48	81-110	Old notes indicate stand was cut in 1971. Stand is a mixture of saw size residual from 1971 harvest and pole/sapling size stock which regenerated as a result of the harvest. Residual is mostly large red pine, red maple, and over mature jack pine. Is on edge of unit 5 of frost pocket mgt area whose mgt obj is to keep a msoaic of shrub and open forest land in a variety of successional stages and to serve a sa buffer.
8	42290 - Natural Mixed Pine	Sawtimber Medium	7.7	57	81-110	Hilly stand sloping down from road to flat grassy area of frost pocket mgt area. Is in unit 3 which is to be managed for a open grassy stand but due to terrain and cover, do not anticipate ever transforming this stand to G type. It is a good buffer between grassy type and road- hold it. It is a mixed stand. It has lots of red maple and brushy cherry in it and pockets of oak understory. It has pockets of jack pine, some pockets of mature larger red pine, and some pockets of mixed deciduous. Small section of Q type carries into this South end of this stand, similar to stand 25 in Compartment 72014 across the road.
9	42210 - Natural Red Pine	Sawtimber Medium	6.9	78	81-110	Mixed stand on edge of Frost Pocket Management Area Unit 3 which is to be managed for a open grassy stand. This stand acts as a buffer for the burn unit. Canopy is mostly red and jack pine logs with pockets of oak. It has lots of red maple, oak and cherry brush in the sub-canopy. Average red pine age was 77, some super canopy that aged in the 90s.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
13	4132 - Aspen, Jack Pine	Sapling Medium	8.2	18	Immature	This stand is within the Pine Barrens Frost Pocket. It is part of Mgt Unit 5, whose mgt obj is to maintain a mosaic of shrubland and open forest in a variety of successional stages. This stand also serves as a buffer along edge of frost pocket. To meet mgt objective, this was a 3 ac J5 stand that was final harvested in 2007 and converted to a G type. Stand was harvested under sale no 72-057-04-01 Mt Tom Road Jack Pine (see adj compt 16). Since harvest, stand has converted to a mix of grass, shrubs, including cherry and a little trembling aspen. 2018 inventory: Mixture of aspen, jack pine, and pin oak. Some more open areas. Some hawthorn.
14	4191 - Mixed Upland Deciduous with Conifer	Sapling Medium	30.1	55	51-80	West end of stand is a large kettle hole with steep slopes. Stunted growth jack pine present on slope. East end of stand is more a mixture of jack pine, pin oak, aspen, red maple and black cherry, mostly sub merchantable or small poles. Lots of grassy/brushy open areas. Another smaller kettle hole present in Northeast corner of stand. Is part of Unit 5 of Frost Pocket Mgt Area with a mgt objective of maintaining a mosaic of shrubland and open forest in a variety of successional stages throughout the unit and to serve as a buffer for interior units. Ground cover is diverse containing sedges, grasses, mullein, raspberry, and lots of knapweed along road.
15	4130 - Aspen	Poletimber Well	26.9	48	81-110	Part of Subunit 5 of the frost pocket special mgt area, whose mgt obj is to maintain a mosaic of shrubland and open forest conditions representing a variety of successional stages. Diverse stand. Contains several age classes of aspen, red maple and oak with scattered red and white pine. Majority of the stand is pole size, but does contain some super canopy pin oak, red maple, red pine and white pine which must have been left as residual in past harvest. Some steep slopes that head down away from road to grassy plains. Has good diversity.
17	42110 - Planted Red Pine	Poletimber Well	25.7	48	111-140	The stand was originally larger. Most of the stand to the west was part of a prescribed burn from several years ago. 07/09/2002 This is a red pine plantation of which parts have failed, leaving open grassy pockets or sparse areas of red pine in portions. East end of stand has basal area of 180-220 sqft/acre. Portions of west part of stand were killed by P burn. West end is more open, slightly larger diameter and limbier than the East end. This is part of the Frost Pocket Special Mgt Area, Unit 1. Mgt Obj of Unit 1 is to maintain the greatest percentage of open grassland of all the units in the area through burning. Treat in future to convert to more open grassy pine barrens area via harvest and then fire. In dense pine areas ground cover is nill, some bearberry. Open areas contain a variety of grasses. Note, kettle hole (stand 422) is located on southeast edge of stand that is open and grassy with steep slopes.
24	4131 - Aspen, Oak	Poletimber Medium	23.6	56	51-80	Stand is a hilly stand of mixed aspen mixed with cherry red maple and oak. It is part of subunit 2 of the frost pocket special mgt area. Mgt obj for this subunit is to maintain a patchy distribution of shrubs and trees across approx 60% of the subunit. This stand is closing in. The stand was prescribed burned to promote patchy distribution of shrubs/trees on 5/16/05 per frost pocket plan. There is lots of down woody debris in stand. It contains small openings and U2 areas- on is located on top of hill. Ground cover consists of rasp, blueberry, penn sedge, bracken fern. Understory is some cherry, allegheny pluum on edge of stand at base of slope, red maple more in interior. Aspen looks healthy and can hold. Oak is declining rapidly.



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
25	4130 - Aspen	Poletimber Medium	8.1	49	51-80	A brushy aspen stand that is part of Unit 2 of the Frost Pocket Mgt Area. Mgt Obj for Unit 2 is to maintain a patchy distribution of shrubs and trees covering approximately 60% of the total area of subunit. Use P burning as primary tool to achieve this. This stand was prescribed burned on May 15, 2005 to promote patchy dist of trees and shrubs per frost pocket plan. It now consists of clones of trembling aspen mixed with thornapple, cherry, some allegheny plum. Grnd cover is lg leaf aster, rasperry, penn sedge. Aspen ranges from 3 to 9 inches in diameter depending on clone. Can hold or cut right now. Recc hold it. Will need to burn stand again in near future to work toward mgt goal of a patchy distribution of shrubs, otherwise aspen will take over. Burn saubunit 2 in 2010 to meet mgt objective. Old SI data used. SJ Thiel
26	42260 - Natural Pine, Mixed Deciduous	Poletimber Medium	14.2	57	51-80	Stand is in unit 3 of the Frost Pocket management area, which is to be managed for a open grassy stand but due to terrain and cover, do not anticipate ever transforming this stand to G type. It is a good buffer between grassy type and road. It is a mixed stand. It has lots of red maple and brushy cherry in it and pockets of oak understory. It has pockets of jack pine, some pockets of mature larger red pine, and one pocket of oak sawlogs. A couple small pockets in this stand were cut in 2007 to convert to grassy open area, but they converted to an A3 type.
27	4130 - Aspen	Poletimber Well	17.8	45	81-110	polesize aspen, rm, P. Oak. Some scattered jp logs hold for now OPIC - FMD: A closed canopy young jack pine stand. Ground cover is moss and penn sedge, dark stand. Hold, is healthy and young. Barely merchantable. Appears to have been planted in past. Jack pine is 20-30 ft tall, A flat area located in frost pocket mgt area. Stand is in subunit 3 whose mgt obj is to manage for open barrens. Hold until pine becomes merchantable then final harvest and convert to open pine barrens. Right now it add structure and closed cover for some species. Am estimating site was planted in 1964 when many of the red pine plantations were planted in area, making yr of origin 1962 if they planted 2-0 pine. SI estimated from 40 foot tall tree and estimated yr of origin. SJ Thiel
30	42110 - Planted Red Pine	Poletimber Well	11.5	57	171-200	Red pine plantation adjacent to PBB cattle burial site. Small pocket of aspen poles in North end of stand. Growth rings show little diameter growth in the last 10-15 years. Ready for first thin. Stand is in subunit 3 of frost pocket mgt unit, in which the mgt objective is to manage for open pine barrens and grassland types. Let this pine mature and then harvest and convert to pine barrens over time. May want to leave part of stand to serve as a buffer between burial pit site and mgt area??? Groudn cover is penn sedge, pale agoseric, moss, blueberry, and a few oak seedlings in open area. Some areas of closed canopy have no ground cover. Monitor wells collected as ofs other
32	42290 - Natural Mixed Pine	Sawtimber Well	15.6	81	81-110	A brushy stand along Penn Road with scattered larger red and white pine mixed with T Aspen clones. Aspen and jack pine were harvested as part of sale #051-97-01 (Frost Pocket) in 1998. It is located in subunit 4 of the frost pocket mgt area in which the mgt obj is to short shrub and herbacious species dominate. It is a dense mix of red and white pine and clones of aspen with various cherry and maple reproduction. Let this stand serve as a buffer stand for frost pocket area along the road and possibly shift it to subunit 5 as a buffer stand. Lots of diversity in stand. Ground cover is lg leaf aster, grasses, bracken fern, a little sedge, some oak seedlings, strawberry.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
35	4191 - Mixed Upland Deciduous with Conifer	Poletimber Poor	53.0	31	1-50	A brushy aspen/jack pine stand. More jack pine in this stand as compared to adj stand 36. This is part of subunit 5 of frost pocket management area, whose management objective is to keep a mosaic in shrubland and open forest in a variety of successional stages. This stand was harvested in 1988. Has regenerated to a mixture of quaking aspen, cherry, and jack pine. Most of the stand is just transitioning to pole size now, with some pockets into the pole class. Lots of non forested brushy areas throughout. Different parts of stand are dominated by different species.
38	42260 - Natural Pine, Mixed Deciduous	Poletimber Medium	38.5	73	51-80	A brushy mixed stand located in subunit 5 of the Frost Pocket Mgt Area. Mgt Obj of unit is to maintain a mosaic of shrub and open forestland in a variety of successional stages and also to serve as a buffer for edge of frost pocket area. This stand is an open brushy stand of mature jack pine with scattered larger red pine, smaller trembling aspen and scattered white pine. Some aspen pockets are mature- could be cut or could hold. Remnants of pine barrens species found in open areas. Grnd cover is glazing star, grasses, blueberry, strawberry, aster, raspberry, moss under dense pine, bracken fern. Old Comments: A mixed stand dominated by jack pine. Jack pine is older than aspen, could be cut or could hold. Hold for now. Plan on cutting mature stuff out of stand or do a mechanical treatment in ten years when you finish removing red pine from stand 39. Then after mechanical treatments, burn stands 38, 39, and 415 at the same time to convert to a pine barrens area.
39	42110 - Planted Red Pine	Sawtimber Medium	23.4	57	51-80	Stand had some confusion as to treatment type when converted from IFMAP to Mifi. Stand was Thinned under Twenty Miles Red Pine 72-027-10-01 OPIC - FMD: A red pine plantation that was planted in 1964 with 2-0 red pine. Is part of Unit 5 of the frost pocket mgt area. The mgt obj for this subunit is to keep a mosaic of shrubland and open forest across the unit in a variety of successional stages and also serves as a buffer on the edge of the mgt area. The long term mgt objective of this stand is to eventually transform it to open pine barrens. This stand currently is fairly closed canopy and has some 1-2 feet tall oak seedlings underneath. Ground cover is some moss and grass, mostly barren with a heavy needle mat. Stand is merchantable, could hold or liquidate entire stand. Recommend thin stand now to open it up and allow oak to grow, and then eventually remove red pine except for some scattered remnants so you have more of a savannah condition. Will be a marked thinning down to 70-80 BA. May need to burn in the future to improve pine barrens diversity. SJ Thiel



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
40	4130 - Aspen	Poletimber Medium	25.6	47	1-50	<p>This stand is part of subunit 5 of Frost Pocket Mgt Area which the mgt obj is to maintain a mosaic of shrubland and open forest in a variety of successional stages across the unit as well as serve as a buffer for the frost pocket area. This stand is isolated and in the tip of the mgt area. It has potential for being converted to pine barrens, but is low priority as compared to interior units. Contains pockets of mature aspen and lots of pockets of aspen regeneration. Do not regenerate aspen through harvest. Holding will maintain current patchy distribution. Want to keep this an open stand. A windstorm in 2007 blew down lots of pine and cherry, effectively creating some more open space. Wait until adj red pine std 39 is converted and then can work with this stand to perform some additional manipulation via burning or mechanical treatment to open up shrubby stand more. Not a lot of volume here, a real mixed stand of jack pine, aspen clones, and scattered cherry in various maturity stages. Long term mgt objective is to work as making this a more open forest/shrub stand, don't allow aspen to take over. OLD COMMENTS: A mixture of small quaking aspen clones, pockets of jack pine and upland brush. This stand will be 60 years old when cut. This area is adjacent to a lowland conifer drainage. Some of the area will regenerate naturally to aspen. Some of the area may need to be planted to jack pine. 12/04/2002 mm Use hare specifications along swamp interface. This is an important winter deer and other wildlife area. This stand will regenerate naturally. Follow Pine Barrens Management Regime. 11/24/2003 mm</p>
127	42220 - Natural Jack Pine	Poletimber Well	2.2	59	81-110	<p>A pocket of jack pine. Stand is in subunit 3 whose mgt obj is to manage for open barrens. Right now it add structure and closed cover for some species. Small pockets this stand extend into stand 406.</p>
136	4130 - Aspen	Sapling Well	11.1	31	Immature	<p>Stand harvested in 1988, Some areas getting into pole class, but majority still sapling size. Mostly a pen with a few jp. Some pin oak, wp, and red maple in sub-canopy. U2 with ground cover of grass, sweet fern, monarda some raspberry, bracken fern, goldenrod. Is trembling aspen approx 15-20 feet tall around 2 inches in diameter. Growing well. Hold. Is part of subunit 5 of frost pocket mgt area whose mgt obj is to maintain a mosaic of shrubland and open forestland in a variety of successional stages. This stand is far from open but progressing to a closed stand but is considered a buffer stand on edge of frost pocket. Hold for now before any mgt activities occur to open up stand. Need to concentrate on improving quality on interior stands and other stands. Old SI date used. SJ Thiel</p>
402	42221 - Natural Jack Pine, Mixed Deciduous	Poletimber Poor	37.4	44	1-50	<p>Stand is a mosaic of forested pockets of jack pine and mixed deciduous with open grassy/shrub areas in between. The stocked areas are 80-110sqft/acre but open areas bring the average down below 50. This is part of subunit 5 of the frost pocket special mgt unit. The mgt obj for subunit 5 is to maintain a mosaic of open forestland and shrubland in a variety of successional stages throughout area as well as serve as a buffer for actively managed frost pocket area. This stand runs along Mt Tom road. Hold for now. GC= sweet fern, monarda, bluestem, liatris, poverty grass. Small rolling hills/knolls in center of stand. Yr of origin estimated. SJT</p>



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
417	4139 - Aspen, Mixed Deciduous	Poletimber Poor	40.0	47	1-50	<p>A huge windstorm in 2007 blew over much of the canopy trees (jack pine, aspen, maple). Some were salvaged under wood permits. Area is scattered with uprooted stumps and still lots of woody debris. Scattered pockets of quaking aspen have come up as a result of the 2007 storm. This stand is part of subunit 5 of the frost pocket management area. The mgt goal of this area is to maintain a mosaic of shrubland and open forest in a variety of successional stages. The recent windstorm essentially provided a needed disturbance to open area up. Ground cover is varied including poverty grass, sweetfern, aster, dewberry, knapweed along road/trails, some blazing star, rough fescue, pale agoseris, little bluestem. Still has some standing pockets of A5/J5. Aspen is mature and showing some deterioration- hold and let if fall down. Active cutting will increase density of aspen and we want to keep this an open stand. Also will provide good woody debris and habitat. Both stands 415 and 417 would respond well to burning but are in unit 5, which is the buffer zone and low priority for treatment as we should concentrate current efforts on mgt of interior subunits. If you do burn to increase diversity, divide into north and south units and burn 2 years apart- do not burn all at once. Expand into edges of adj stands if needed.</p>



Stand	Cover Type	Acres	Managed Site	General Comments:
3	3209 - Upland Shrub (OI)	1.5	No	Gas well. Grass and spotted knapweed. Delta Oil Co. State, Elmer, A4-251 Oscoda County, P/N 49318. (989) 732-7999, (630) 573-1717. Part of Unit 5 of Frost Pocket Mgt area in which mgt goal is to maintain a mosaic of shrubland and open forest in various successional stages. Hold this stand to meet mgt objective of unit.
6	310 - Herbaceous Openland	15.9	Yes	<p>Stand was cut under 720171001 cattle pit jack to add to frost pocket pine barren management area. Scattered small pockets of jack pine left for retention. Sale was closed in 10/2012. Harvest resulted in a mosaic of open/upland shrub areas with pockets of mixed deciduous.</p> <p>A mature jack pine stand that has lots of oak seedlings underneath along with good population of hills thistle and pale agoseris, showing it once was a pine barrens.</p> <p>This stand is part of mgt unit 5 of Frost Pocket Mgt area whose mgt obj is to maintain a mosaic of shrubland and open forest in a variety of successional stages. It abuts up to private so burning may not be a priority. This stand lies in the buffer zone of the frost pocket mgt area, so is of lower priority for conversion to a barrens than other subunits.</p>
12	122 - Road/Parking Lot	2.3	No	County Road ROW. Pennsylvania Crossing.
16	6225 - Bog	3.3	No	Bog with some steep side slopes- seasonally wet. Located in Unit 5 of Frost Pocket Managemet Area. Management Goal of unit is to maintain a mosaic of shrubland and open forest in a variety of successional stages.
18	320 - Upland Shrub	28.3	No	Scattered U2 and oak reproduction, some thornapple mixed with cherry. Stand is part of subunit 1 of the frost pocket special mgt area. The Mgt obj for this subunit is to maintain the greatest percentage of open grassland of any mgt subunit. This stand has a patchy distribuion of shrubs which is closing in. Needs to be burned to be opened up. Note, there is a kettle hole on the NW edge of stand, next to std 17. JP on the edge of this stand was killed when the adj grassy opening was burned in 2008.
19	310 - Herbaceous Openland	10.1	Yes	Stand was cut under 720171101 cattle pit jack. Leave larger super canopy red pine for visual and diversity- simulate an open barrens type. Also leave any mature oak for mast and allow stand to convert to grass and U type. Harvest resulted in a mosaic of open grass/upland shrub, scattered jack pine regen mixed with pockets of red maple and pin oak regen. Part of unit 1 of Frost Pocket Mgt Area. Goal of Unit 1 is to restore and maintain the greatest percentage of open grassland of any unit in the frost pocket area. Ground cover is blueberry and bracken fern and reindeer moss in spots.
21	320 - Upland Shrub	2.0	No	A U type on slope heading away from road down to frost pocket grassy area. Is mixed with cherry, some immature red maple and aspen. This is in unit 3 of frost pocket mgt area which obj is to manage most of area as open grassy area via p burning to allow herbacious and low shrub species to dominate. This is a good transition stand to buffer large flat grassy area in unit 3.
22	310 - Herbaceous Openland	93.8	Yes	Most of the stand was cut under 72-017-10-01 cattle pit jack to add to frost pocket pine barren management area. Scattered small pockets of jack pine left for retention. Sale was closed in 10/2012. Most of the stand was burned in May 2014 & 2016 (W72-644), Frost Pocket Pine Barrens Unit 3. Objective for unit 3 is to convert area to open grassy area dominated by herbaceous and short shrubs. West end of stand is adjacent to PBB burial site.



Stand	Cover Type	Acres	Managed Site	General Comments:
23	320 - Upland Shrub	70.0	No	Part of Subunit 2 of Frost Pocket Management Area. Management objective of subunit is to maintain a patchy distribution of trees and shrubs across 60% of subunit. This stand was prescribed burned on May 16, 2005 per frost pocket management plan. Stand burned under FTP C72-515 to promote patchy distribution of trees and shrubs. Was also burned under FTP C72-584 on May 04, 2009. Parts of the stand had brush removed with hydro-axe under FTP C72-590 in 2008. This is mostly cherry, amelanchier, and some scattered aspen. Shrubs are closing in, needs disturbance to keep opening present. Ground cover is grasses, sweetfern sedge, monarda, starflower, hawkweed, yarrow, wild bergamont, Allegheny plum, big bluestem, little bluestem. Pockets of pole size cherry ranging from 30 ba to 70 ba, 5-8 inches in diameter. very few sparse oak and red pine. O.R.V. Route/Snowmobile trail bisects stand.
29	122 - Road/Parking Lot	1.0	No	Part of Bailey Rd that lies within Frost Pocket Special Mgt area
150	122 - Road/Parking Lot	3.5	No	County Road ROW. Mt Tom Rd.
151	122 - Road/Parking Lot	5.7	No	Part Mt Tom Rd that lies within Frost Pocket Special Mgt area
403	3303 - Mixed Low Density Trees	4.5	Yes	OPIC - FMD: An opening along Mt Tom road. Has a maintained wildlife opening in it that is mowed regularly. Around maintained opening is natural grassy opening with scattered cherry, jack pine and grass. Wildlife will continue to maintain the opening as in the past. SJT. JC update: North end of stand was planted to rye in 2014 and mowed in 2015 & 2017 (C72-682).
404	31022 - Warm Season Grass	184.6	Yes	This is a large grassy stand in the center of the Frost Pocket Special Management Area. It comprises most of subunit 1, whose management objective is to restore and maintain the greatest percentage of open grassland of all the subunits in the area. This grassy prairie has been prescribed burned in 1998, 2001, and 2008 and 2015(W72-778). Ground cover is varied: big and little bluestem, hawkweed, hills thistle, monarda, yarrow, goldenrod, Northern blazing star, scotch harebell, starflower, queen annes lace, sweet fern, prairie dandelion, rough fescue, pale agoseris, June grass, knapweed, wild bergamont, etc. Stand has definitely increased in diversity since we began burning in 1998. Need to request a MNFI survey to relook at diversity and EO ranking. Have some trail roads in and edging stand which is causing a source for knapweed invasion along edges of trails. Have some illegal ORV use evident in area. Stand previously contained a long narrow red pine stand (R6/R4) bisecting it from North to South which was harvested following the Frost Pocket Management Plan guidance through sale #052-94-01 (Open Prairie Block)
405	3102 - Grass	2.7	No	Wellsite Delta Oil USA Elmer A2-25 antrim well. Located in unit 2 of Frost Pocket mgt area. GC is grass and snapweed. Knapweed is infringing on edge of unit 1 grassy area adj to wellsite. Need to herbicide wellsite to control knapweed invasion.
406	3205 - Mixed Upland Shrub	100.6	Yes	Open grassy area in Subunit 3 of Frost Pocket Special Mgt Area. Mgt Obj for Unit 3 is to manage like subunit 1 with open grassland and short shrubland dominating. Want to increase floristic quality of site. This stand had jack pine manually cut under a wildlife FTP no. C72-590 in 2008, opening up stand quite a bit. Ground cover is primarily penn sedge, golden rod, scattered cherry, little bluestem, hills thistle, pale agoseris, big bluestem, rough fescue, harebell, yarrow, sand cherry. Some spotted knapweed present. Most of the stand was burned in May 2014 & 2016 (W72-644), Frost Pocket Pine Barrens Unit 3.



Stand	Cover Type	Acres	Managed Site	General Comments:
407	3205 - Mixed Upland Shrub	10.8	Yes	A grassy opening with scattered mature cherry trees. Ground cover is grasses, scotch harebell, swt fern, sand cherry, goldnerod, poverty grass, liatril, aster, some kapweed along road. POSSIBLE PALE AGOSORIS, ALLEGHANY PLUM, HILLS THISTLE, ROUGH FESCUE. A diverse smaller opening located within subunit 3 of the frost pocket mgt unit. This stand meets mgt unit goal of keeping unit open with herbacious and short shrub species. Unit 3 was burned in May of 2014 and 2016 (W72-644). Some mechanical treatment occurred in 2008- WD hired someone to remove some cherry and jack pine scattered throughout unit 3 to open it up some more.
408	3301 - Low Density Deciduous Tree	45.1	Yes	This is part of the subunit 4 of the frost pocket special management area whose management objective is to maintain low shrub and herbaceous cover and to minimize tall shrub and tree cover to scattered trees and clumps less than 1 acre in size. Is a open grassy area with scattered cherry and shrubs. Mixture of open and shrubs. Is to be managed as a GO. Unit 4 was burned in 1999, 2003, 2008, 2012, 2015 and 2018. Part of stand had cherry and jack pine manually removed/cut via a wildlife FTP to keep stand open. Ground cover is varied, sweet fern, golden rod, aster, dewberry grasses, big bluestem, poverty grass, milkseed, liatris, monadra, possibly some hills thistle and pale agoseris.
410	3205 - Mixed Upland Shrub	35.1	Yes	Part of subunit 4 of frost pocket special management area whose management objective is to keep in low shrubs and herbaceous species, only allow scattered tall shrubs and trees and clumps less than 1 ac in size. Harvested as part of sale #051-97-01 (Frost Pocket) in 1998. Stand was burned in 1999, 2003, 2008, 2012, and 2018. 2008 burn was hot enough to knock back lots of aspen and cherry in opening. Lots of diversity in forbes and sedges on groundcover. Have goldenrod, bluestem, etc. Floristic quality has improved after 3 burns- need to do formal MNFI survey to document improvement.
411	320 - Upland Shrub	78.6	Yes	An open grassy stand with scattered aspen clones and cherry. This is part of the subunit 4 of the frost pocket special management area whose management objective is to maintain low shrub and herbaceous cover and to minimize tall shrub and tree cover to scattered trees and clumps less than 1 acre in size. Want an open diverse stand. This stand was harvested in 1997-98 as part of sale #051-97-01 (Frost Pocket). Stand was prescribe burned in 1999, 2003, 2008, 2012, 2015 and 2018 in an effort to reduce aspen stump sprouts that were taking over site. A hot p burn in 2008 appeared to have caused lots of aspen and cherry mortality, opening up stand and increasing diversity in ground cover. Since then, much of the stand is filling back in with aspen and cherry. Manage it as a G long term. Needs to burn hot in order to set back woody vegetation and maintain open structure.
415	3102 - Grass	64.5	No	A large grassy area with pockets of U type (cherry) and some scattered jack pine and aspen. This is much more open than stand to the south labeled stand 417. This stand is part of subunit 5 of the frost pocket management area. The mgt goal of this area is to maintain a mosaic of shrubland and open forest in a variety of successional stages. Ground cover is varied including poverty grass, sweetfern, aster, dewberry, knapweed along trails, some blazing star, rough fescue, pale agoseris, little bluestem. Excellent candidate for pine barrens mgt and burning. Will respond well to a burn. Being in unit 5, this is lower priority for mgt resources, need to concentrate efforts on interior mgt units of mgt area. If we do burn, both stands 415 and 417 would respond well to burning- burn these stands separately at least two years apart to allow for insect migration and various stages of succession. Expand burns into edges of adj stands if appropriate. Burn scheduled in 2018 but will push back. Harvest the scattered merchantable trees when adjacent sale which includes Stand 38 is cut.



Stand	Cover Type	Acres	Managed Site	General Comments:
416	3205 - Mixed Upland Shrub	56.2	Yes	A mixed brushy stand. Mixture of U2, scattered clones of quaking aspen saplings and poles, some JP pockets and scattered cherry. This is part of Unit 3 of the Frost Pocket Mgt Area whose mgt obj is to allow herbacious and short shrub species to dominate the unit. Let pockets of mature aspen fall down, if you manually harvest you will increase aspen sprouts which will increase density of the stand which is counter productive for the mgt goal. Ground cover is varied including poverty grass, sweetfern, aster, dewberry, knapweed along road/trails, some blazing star, rough fescue, pale agoseris, little bluestem. Was burned in May 2014 & 2016 (W72-644), Frost Pocket Pine Barrens Unit 3.
418	3102 - Grass	1.6	Yes	OPIC - FMD: A grassy opening that was planted and is maintained by wildlife division on a regular basis- they mow periodically. No SI data available. Is part of Unit 5 of the frost pocket mgt area. JC update: Was mowed in 2015, rye planted in 2016, buckwheat/clover planted in 2017 (C72-681).
419	3102 - Grass	3.0	Yes	OPIC - FMD: A grassy opening that was planted and is maintained by wildlife division on a regular basis- they mow periodically. No SI data available. Is part of Unit 5 of the frost pocket mgt area. JC update: Was planted to buckwheat & clover in 2015, rye in 2016, buckwheat/clover in 2017 (C72-682).
420	320 - Upland Shrub	1.5	No	A small open area made up of grasses and low density black cherry. This stand is part of subunit 5 of the frost pocket management area. The mgt goal of this area is to maintain a mosaic of shrubland and open forest in a variety of successional stages. Ground cover is varied with same species found in nearby grassy opening stand 415. SJ Thiel
421	320 - Upland Shrub	1.7	No	A mixed brushy stand. Contains scattered pole/log jack pine and sap/pole cherry. Mostly open and grassy. This is part of Unit 3 of the Frost Pocket Mgt Area whose mgt obj is to allow herbacious and short shrub species to dominate the unit. This unit is scheduled for a p burn in 2009 to open stand up more and increase diversity. Let pockets of mature aspen fall down, if you manually harvest you will increase aspen sprouts which will increase density of the stand which is counter productive for the mgt goal. Ground cover is varied including poverty grass, sweetfern, aster, dewberry, knapweed along road/trails, some blazing star, rough fescue, pale agoseris, little bluestem.
422	3102 - Grass	1.0	No	In Unit 5 of Frost Pocket Mgt Area. Mgt Obj for this unit is to maintain a mosaic of shrubland and open forest at a variety of successional stages to serve as a buffer along the edge of the mgt area. This si a small kettlehole on edge of a red pine plantation and interfaces with more open brushy type.