



# Compartment Review Presentation

Newberry Forest Management Unit

Compartment 42061

Entry Year 2020

Acreage: 1,769

County Chippewa

Management Area: Whitefish Vermillion Point

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**Revision Date:** 2018-07-30

**Stand Examiner:** Amy Douglass

**Legal Description:**

T50N R06W Section(s) 20, 21, 29 - 32

**Identified Planning Goals:**

To maintain and improve forest health and diversity, while managing for wildlife, fisheries, recreational and environmental concerns and needs.

**Soil and topography:**

Level to rolling uplands are on Deer Park fine sand. Upland/lowland mixed ground is comprised of Deer Park-Kinross complex, Kinross-Wainola complex and Kinross-Dawson complex. The lowland conifer below the bluff is Markey and Carbondale mucks.

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

Private lands to the east and northwest, with very little development (seasonal camps mostly, with some timber harvesting).

**Unique Natural Features:**

The potential exists for several threatened and endangered species of flora and fauna within the compartment.

**Archeological, Historical, and Cultural Features:**

None noted.

**Special Management Designations or Considerations:**

Northeastern portion is adjacent to Shelldrake flooding.

**Watershed and Fisheries Considerations:**

Fisheries Values: Moderate

The Shelldrake Flooding and the Betsy River border the northern portion of this compartment. The Betsy River is not a designated trout stream below the Shelldrake Flooding, however this does get a small run of steelhead in most years. Prescribed treatments in this compartment do not appear to be in close proximity to any waterbodies. Fisheries Division does not have any concerns at this time.

**Wildlife Habitat Considerations:**

Compartment 61 lies in northwestern Chippewa county in the Grand Marais Sandy End Moraine and Outwash ecological sub-subsection and in the Whitefish-Vermillion Management Area. Featured species of the management area include moose, spruce grouse, red crossbill and piping plover. The Shelldrake flooding lies along the northeastern edge of the compartment and Dry creek borders much of the northern portions making for excellent wildlife travel corridors. The compartment is largely dominated by pine stands with some scattered marshes occurring in low areas.

In a predominantly pine forested ecosystem, maintaining a variety of age and size classes and maintaining as much structural diversity as possible in managed stands will be important to achieving wildlife objectives. Thus, the retention of hard and soft mast producing trees, wildlife den and nest trees and snags in harvested stands will be important. Structural diversity of stands will be retained by preserving species in harvested jack pine stands. Marshes will be buffered and low ground leatherleaf areas will be avoided during harvest to preserve wetland wildlife values and habitats. Wildlife species potentially using this compartment include white-tailed deer, moose, black bear, gray wolves, coyote, marten, fisher, waterfowl, and spruce grouse.

**Mineral Resource and Development Concerns and/or Restrictions**

Sand/ gravel pits are not located in the area, and there appears to only be minor sand potential within the compartment. There is no known metallic mineral potential in this area, and there is no potential for economical production oil and gas in the UP.

**Vehicle Access:**

From Paradise, travel west on M-123 ~ 5 miles to the Maple Block/Widewaters Road. Continue north on the Widewaters Road (which is a County maintained sand road) ~ 4.5 miles to south end of compartment. Interior access is limited to poor sand roads/trails, mainly accessible during the non-winter months. Betsy Tower Road, a County maintained sand Road, runs east-west through the middle of the compartment. The Widewaters Road and Betsy Tower Road serve as a snowmobile trail during the winter months.

**Survey Needs:**

The southern line of Section 21 (S1/2SW) would need to be run for timber sale purposes.

**Recreational Facilities and Opportunities:**

Designated snowmobile trail 452 runs along Widewaters Road and Betsy Tower Road. The compartment is adjacent to the southern portion of Shell Drake Flooding.

**Fire Protection:**

The compartment is within the Whitefish Zone Dispatch Plan area. Large fire runs are possible because of the mixture of continuous Pine types and long response times by suppression forces. Some areas consist of swamp types which could limit access with heavy equipment. Private property could be at risk because of the hazardous fuel types.

**Additional Compartment Information:****The following reports from the Inventory are attached:**

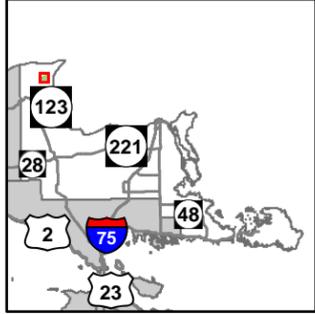
- Total Acres by Cover Type and Age Class**
- Cover Type by Harvest Method**
- Proposed Treatments – No Limiting Factors**
- Proposed Treatments – With Limiting Factors**
- Stand Details (Forested and Nonforested)**
- Dedicated and Proposed Special Conservation Areas**
- Site Condition Details**

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

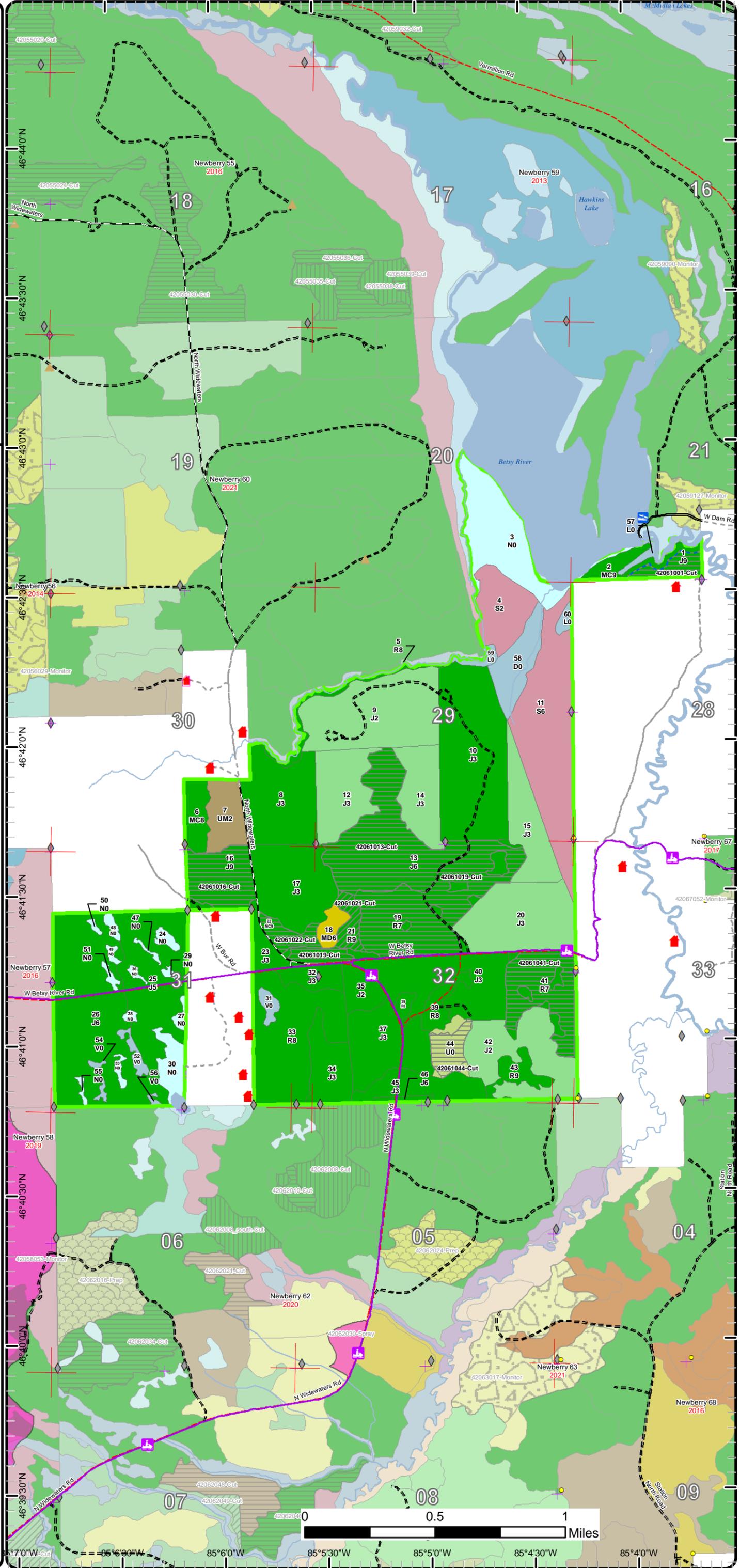
- Base feature information, stand boundaries, cover types, and numbers**
- Proposed treatments**
- Site condition boundaries**
- Details on the road access system**

# Cover Type & Treatments Map

Compartment: 61  
 T50N, R06W, Sec. 20, 21, 29-32  
 County: Chippewa  
 Unit: Newberry  
 Mgmt Area: Whitefish Vermillion Point  
 Point  
 YOE: 2020  
 Acres: 1,769 GIS Calculated  
 Examiner: Amy Douglass  
 Map Revised: 4/23/2019  
 Map Phase: Post-Review

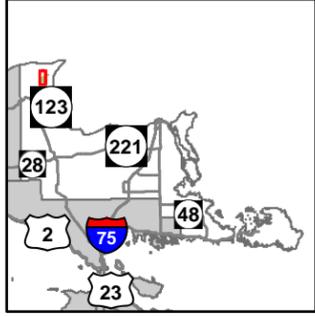


- Miris Corners
- Remonumented Section Corners
- Survey Grade Corners
- Field Grade Corners
- Counties
- DNR - Primary Forest Road
- DNR - Secondary Forest Road
- DNR - Forest Access Route
- County - Dirt Road (Seasonal)
- Private - Dirt / Gravel Road
- Snowmobile Trails
- Designated Snowmobile Trails
- Island in Lake or River
- Lake/Pond
- Perennial River
- Lakes and Rivers All
- Unspecified Structure
- Cabin
- Berms
- Boating Access Site
- Structures
- Compartment Boundary
- Treatments with Site Conditions
- Clearcut (w/Reserves)
- Thinning (Crown, Low, Systematic)
- 419 - Mixed Upland Deciduous
- 421 - Planted Pines
- 422 - Natural Pines
- 430 - Upland Mixed Forest
- 612 - Lowland Coniferous Forest
- 320 - Upland Shrub
- 622 - Lowland Shrub
- 623 - Emergent Wetland
- Lakes

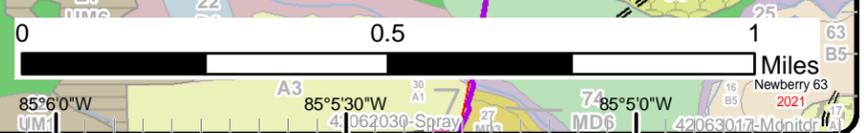
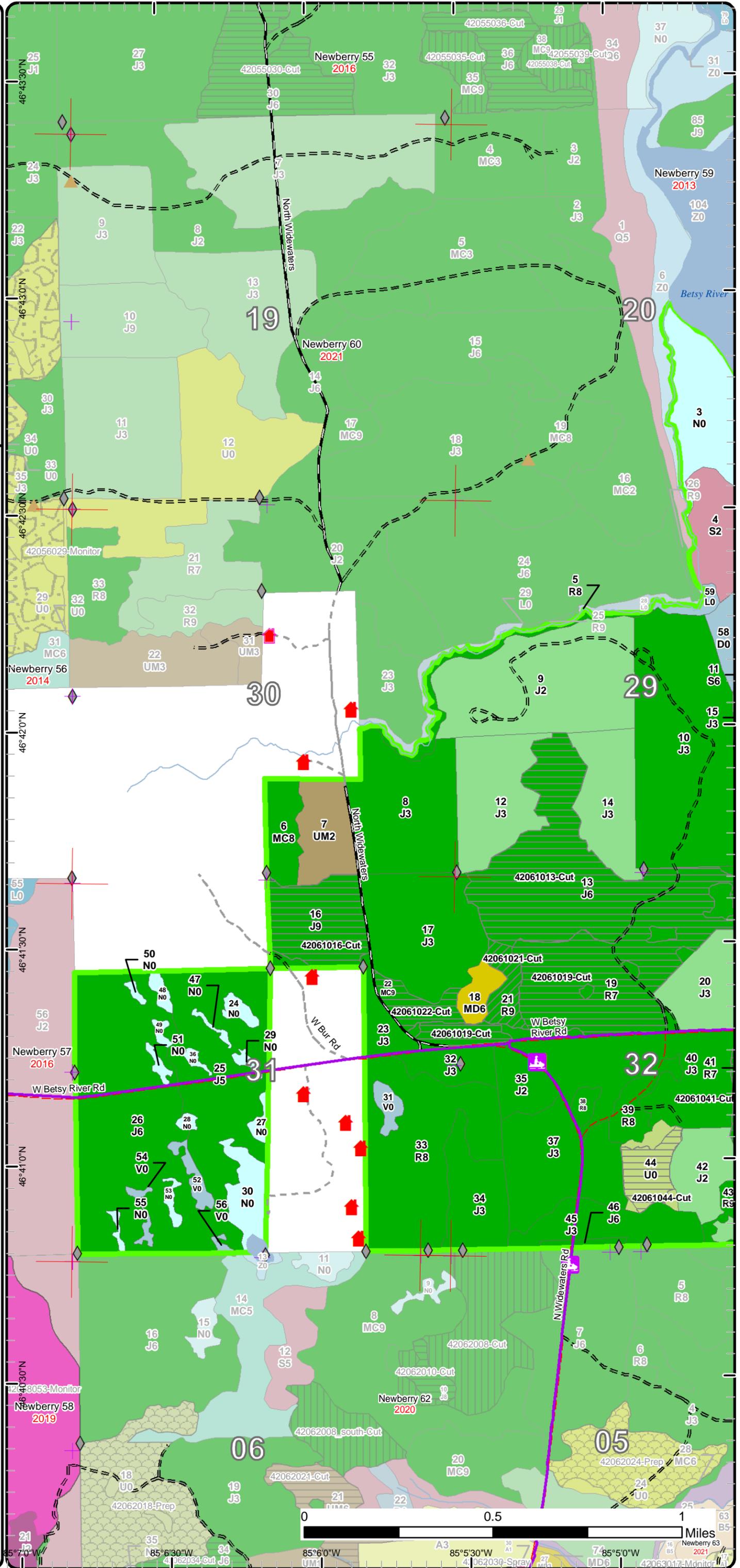


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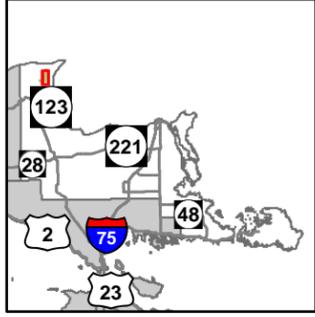


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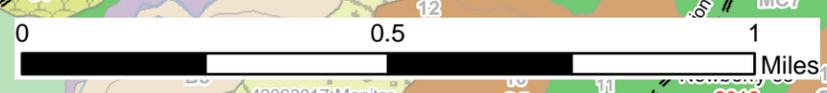
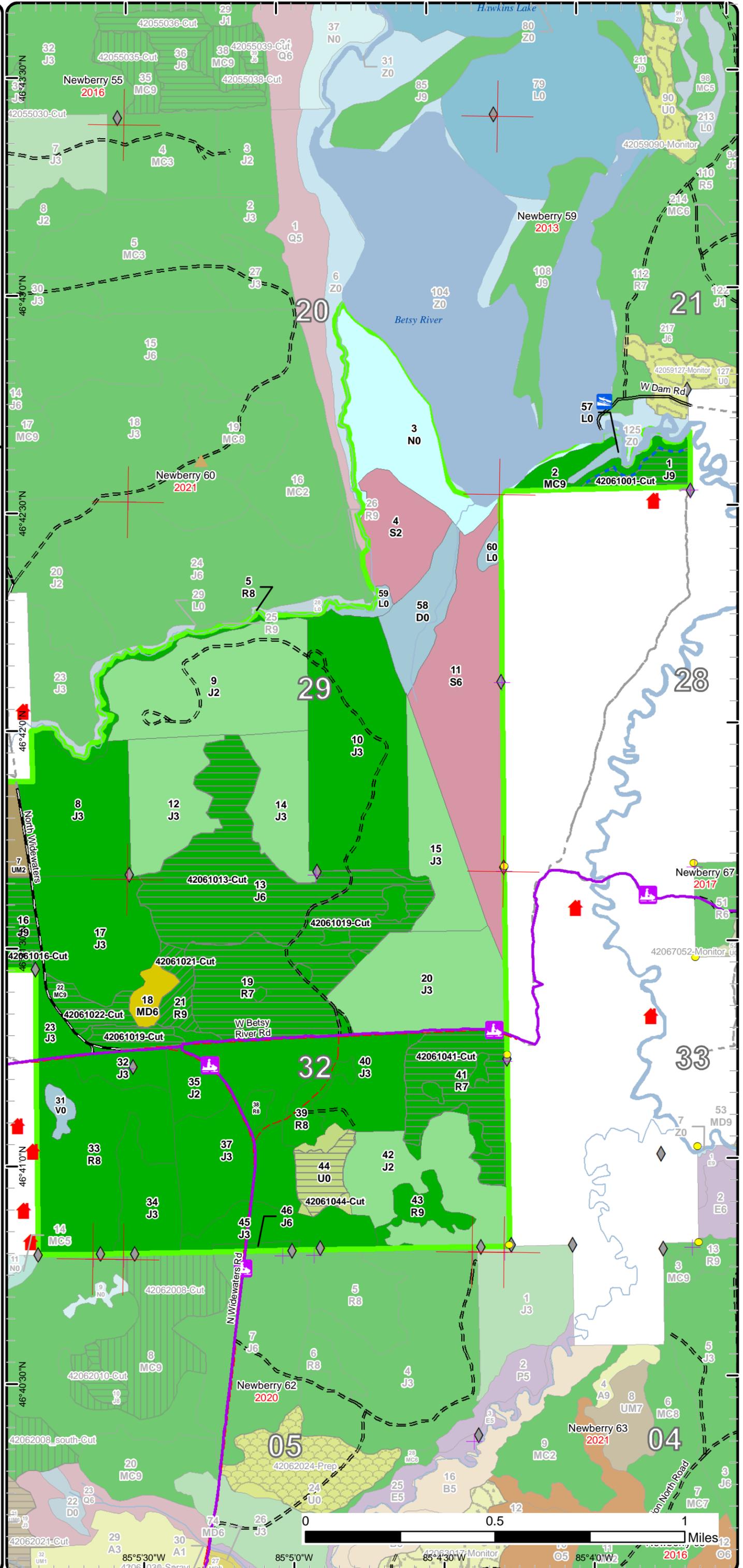


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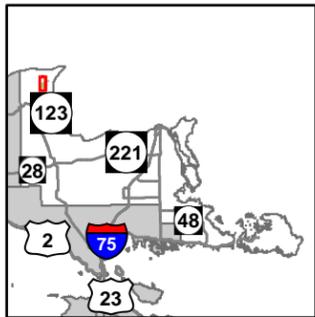
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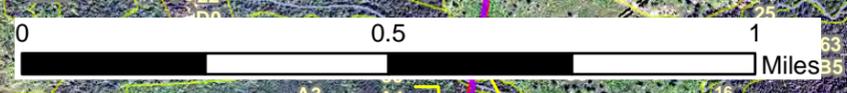
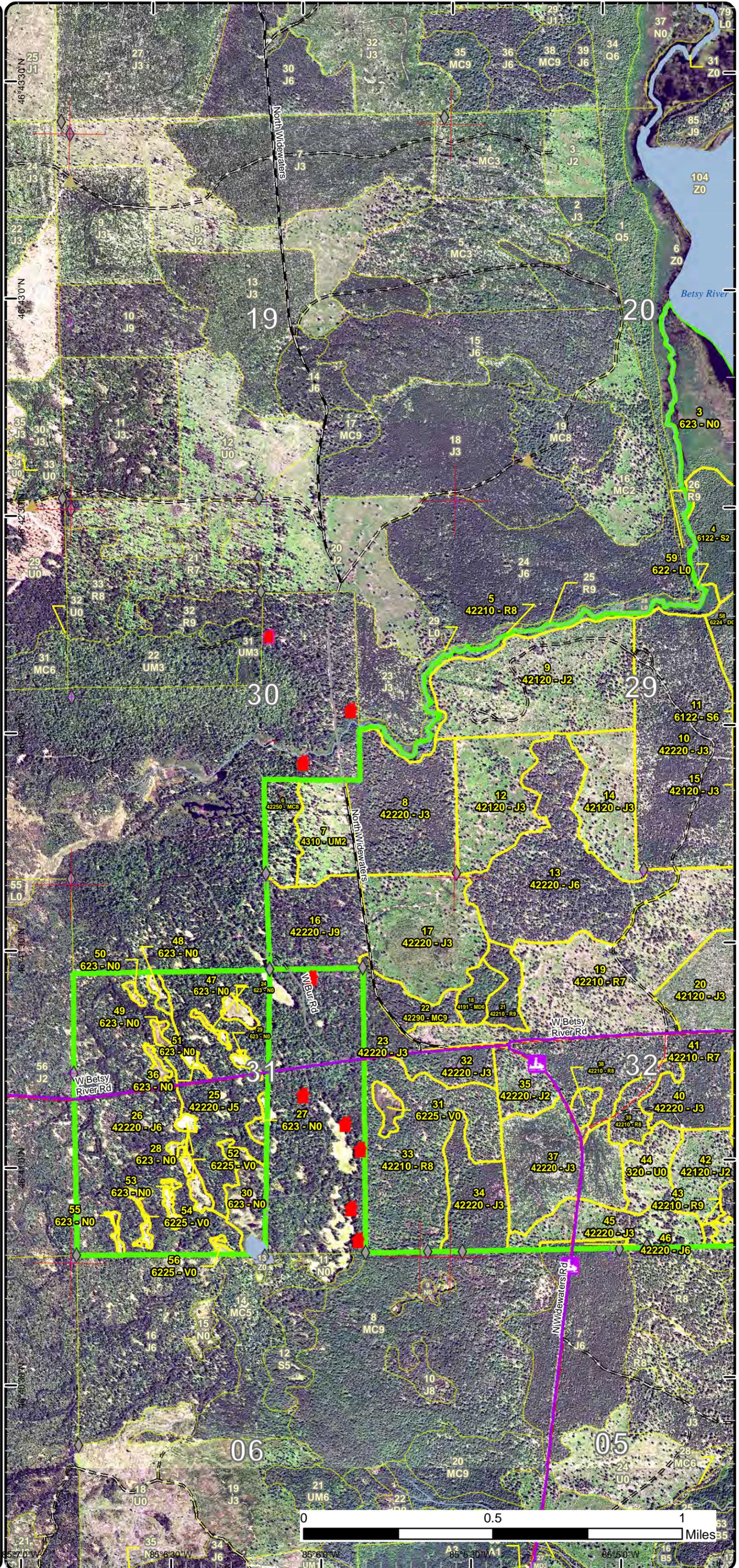
85°5'30"W 85°5'0"W 85°4'30"W 85°4'0"W

# Stand Boundary Map

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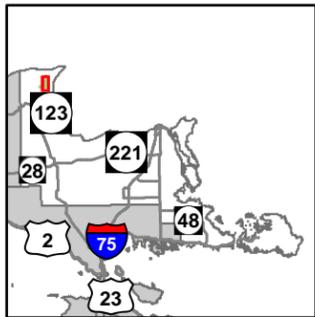


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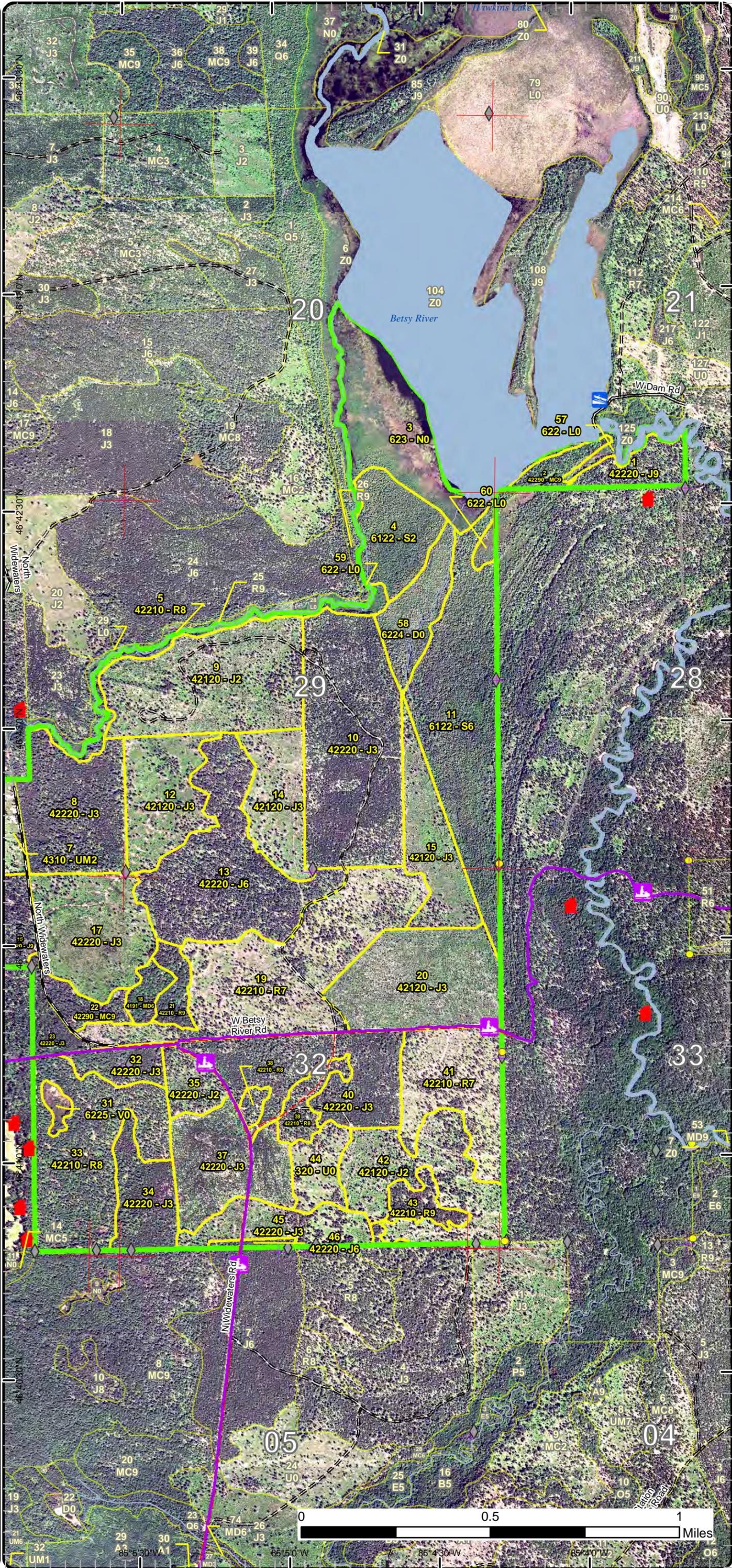


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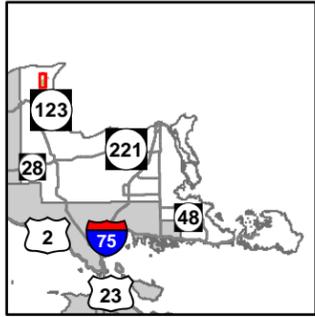


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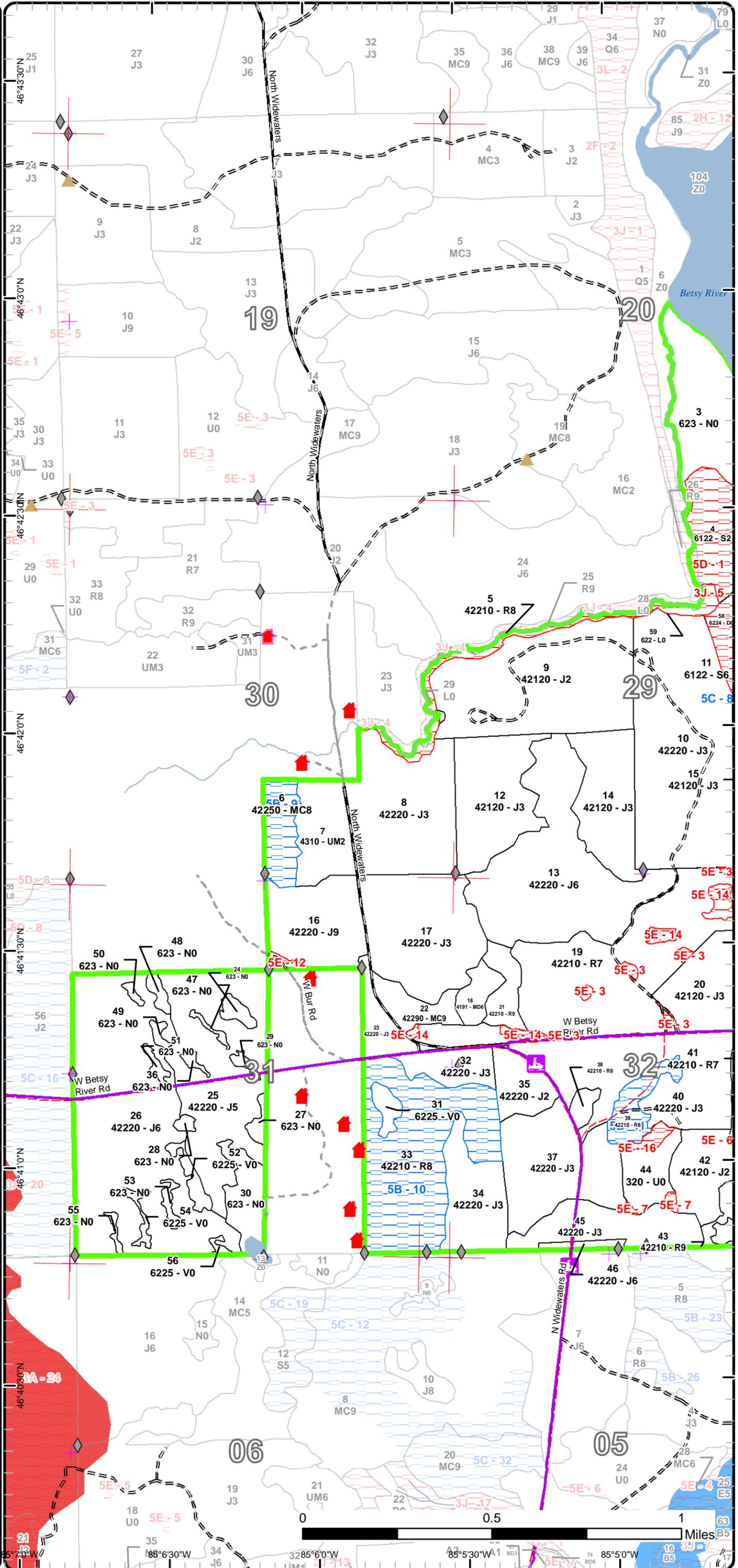


# Special Conservation Areas & Site Conditions Map

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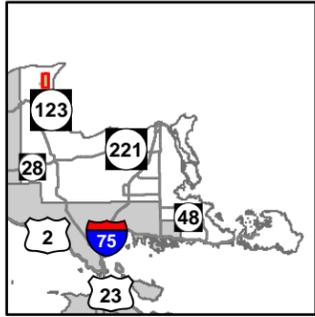


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- Available w/ Constraints
- Unavailable
- 5B: Maintain for regeneration purposes
- 3J: Water quality / BMPs (stream, river, or lake)
- 5D: Unproductive Forest Land
- 5E: Long-Term Retention
- Stand Boundaries
- Ecological Reference Areas
- Cold Water Streams
- High Priority Trout Stream Buffer

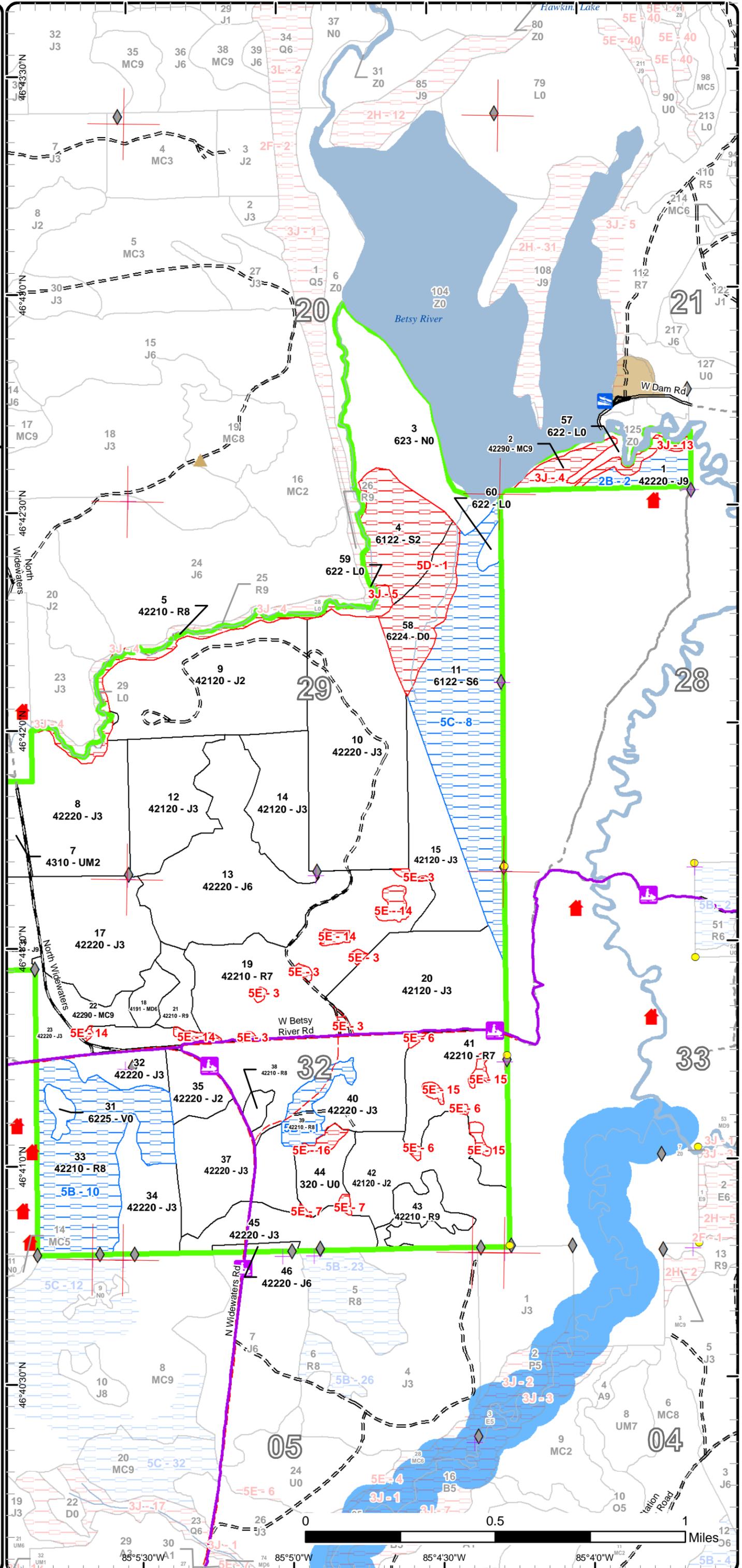


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- Available w/ Constraints
- Unavailable
- 5B: Maintain for regeneration purposes
- 5C: Delay treatment for age/size class diversity or exceptional site quality
- 3J: Water quality / BMPs (stream, river, or lake)
- 5D: Unproductive Forest Land
- 5E: Long-Term Retention
- ▭ Stand Boundaries
- ▭ SCA
- Cold Water Streams
- High Priority Trout Stream Buffer
- State Forest Campground



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
Bog	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
Jack Pine	0	0	430	49	287	128	73	0	104	38	0	0	0	0	0	0	0	0	1108
Lowland Shrub	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
Lowland Spruce/Fir	0	0	0	0	0	0	0	0	0	34	0	102	0	0	0	0	0	0	136
Marsh	101	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	101
Mixed Upland Deciduous	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
Natural Mixed Pines	0	0	0	0	0	0	0	0	28	9	0	0	0	0	0	0	0	0	37
Red Pine	0	0	0	0	0	0	0	13	0	264	11	0	0	0	0	0	0	0	288
Treed Bog	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26
Upland Mixed Forest	0	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
Upland Shrub	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18
<b>Total</b>	<b>170</b>	<b>24</b>	<b>430</b>	<b>49</b>	<b>287</b>	<b>128</b>	<b>73</b>	<b>0</b>	<b>117</b>	<b>66</b>	<b>307</b>	<b>11</b>	<b>102</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>1770</b>



## Report 2 – Treatment Summary

Newberry Mgt. Unit

Year of Entry: 2020

Acres of Harvest

Compartment 61

Total Compartment Acres: 1,769

Commercial Harvest - 297  
 Harvests with Site Condition - 12  
 Next Step Harvest - 0  
 Habitat Cut - 0

### Cover Type by Harvest Method

	Clearcut	Selection	Patch Clearcut	Seed Tree	Shelterwood	Thinning	Overstory Removal	Salvage	Other	Total Acres
Jack Pine	135	0	0	0	0	0	0	0	0	135
Natural Mixed Pines	12	0	0	0	0	0	0	0	0	12
Red Pine	138	0	0	0	10	0	0	0	0	149
Upland Shrub	13	0	0	0	0	0	0	0	0	13
<b>Total</b>	<b>299</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>309</b>

### Proposed and Next Step Treatments by Method

	Harvest	Site Prep	Planting	Seeding	Burning	Pesticide	Monitoring	Other	Non-Forest Mgt.	Total Acres
Current	309	0	0	0	0	0	0	0	0	309
Next Step	0	445	299	0	0	0	744	0	0	1488
<b>Total</b>	<b>309</b>	<b>445</b>	<b>299</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>744</b>	<b>0</b>	<b>0</b>	<b>1797</b>



Stand Name	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
1	42061001-Cut	11.5	42220 - Natural Jack Pine	Sawtimber Well	78	51-80	Harvest	Clearcut with Retention	4222 - Natural Jack Pine	Even-Aged	Draft Field Boundary

**Habitat Cut: No**      **Site Condition: Unknown Access**

Prescription Clearcut all trees, leaving a component of red pine and all white pine. Leave oak if present. Retention would be in the buffer along Betsy River.  
Specs: White pine to be left for bear refuge trees and future nest trees. Oak will be retained for mast production.

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

Acceptable Jack pine with associated red pine, white pine, aspen and oak.  
Regen:

Other Scarify after harvest. Trench and plant to jack pine if scarification fails.

Comment:

Proposed Start Date: 10/1 /2019

13	42061013-Cut	87.8	42220 - Natural Jack Pine	Poletimber Well	79	81-110	Harvest	Clearcut with Retention	4222 - Natural Jack Pine	Even-Aged	Draft Field Boundary
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**Habitat Cut: No**      **Site Condition:**

Prescription Clearcut all trees, leaving a component of red pine. Leave white pine and oak if present. Patch retention of at least 5%. Pockets should be within the stand, not on the edge, and include diverse understory. Harvesting of the stand will benefit potential KW habitat; white pine will be left for bear refuge trees; and protection of understory for structural diversity to benefit nesting birds.

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

Acceptable Jack pine with associated red pine, white pine, oak and aspen.  
Regen:

Other Scarify after harvest (try to protect some understory when scarifying). Trench and plant to jack pine if scarification fails.

Comment:

Proposed Start Date: 10/1 /2019

16	42061016-Cut	35.8	42220 - Natural Jack Pine	Sawtimber Well	80	Unspecified	Harvest	Clearcut with Retention	4222 - Natural Jack Pine	Even-Aged	Draft Field Boundary
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**Habitat Cut: No**      **Site Condition:**

Prescription Clearcut all trees, leaving a component of scattered, mature, large diameter red and white pine. These trees will serve as red crossbill habitat and bear refuge trees. Leave oak if present. Patch retention to include SW corner, as well as interior patch.

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

Acceptable Jack pine with associated red pine, white pine, aspen and oak.  
Regen:

Other Scarify after harvest (try to protect patches of residual understory). Trench and plant to jack pine if scarification fails.

Comment:

Proposed Start Date: 10/1 /2019

19	42061019-Cut	95.5	42210 - Natural Red Pine	Sawtimber Poor	91	1-50	Harvest	Clearcut with Retention	4212 - Planted Jack Pine	Even-Aged	Draft Field Boundary
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**Habitat Cut: No**      **Site Condition:**

Prescription Cut all trees leaving 1 tree/acre favoring white pine and red pine. Leave additional retention pockets where higher BA exists to increase structural diversity in the stand (potential areas are identified on the map). Standing trees are left for species diversity and bear escape trees.

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

Acceptable Jack pine with a component of red pine and other species currently on site.  
Regen:

Other C42-770 - Wayward Rat - failed scarification.

Comment:

Proposed Start Date: 10/1 /2019



Stand Name	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
21	42061021-Cut	10.4	42210 - Natural Red Pine	Sawtimber Well	91	111-140	Harvest	Low Thinning	42210 - Natural Red Pine	Even-Aged	Draft Field Boundary

**Habitat Cut: No****Site Condition:**

**Prescription** Remove any jack pine. Thin red and white pine down to approximately 80 - 100 BA. Retain at least half of the existing white pine. Leave oak and birch. Manage this stand as a diverse red pine stand, retain birch after harvest for soft snags for cavity nesters, and oak for mast production.

**Next Step**  
**Treatments:**

**Acceptable**  
**Regen:**

**Other**  
**Comment:**

**Proposed Start Date:** 10/1 /2019

22	42061022-Cut	11.8	42290 - Natural Mixed Pine	Sawtimber Well	82	81-110	Harvest	Clearcut with Retention	42290 - Natural Mixed Pine	Even-Aged	Draft Field Boundary
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**Habitat Cut: No****Site Condition:**

**Prescription** Clearcut all trees, leaving a component of red and white pine. Leave oak if present. Patch retention to include highest diversity (on east half) as well as understory species to benefit nesting bird species.

**Next Step** SitePrep, Scarification; Monitoring, Natural Regen (Intermediate); SitePrep, Trenching; Planting, Initial Plant; Monitoring, Artificial Regen(1yr); Monitoring, Artificial Regen(3yr)

**Acceptable** Jack pine with associated red pine, white pine, aspen and oak.  
**Regen:**

**Other** Scarify after harvest (try to protect patches of residual understory). Trench and plant to jack pine if scarification fails.  
**Comment:**

**Proposed Start Date:** 10/1 /2019

41	42061041-Cut	42.8	42210 - Natural Red Pine	Sawtimber Poor	91	1-50	Harvest	Clearcut with Retention	4212 - Planted Jack Pine	Even-Aged	Draft Field Boundary
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**Habitat Cut: No****Site Condition:**

**Prescription** Cut all trees leaving 1 tree/acre favoring white pine and red pine. Leave additional retention pockets where higher BA exists to increase structural diversity in the stand (potential areas are identified on the map). Standing trees are left for species diversity and bear escape trees.

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

**Acceptable** Jack pine with a component of red pine and other species present on site  
**Regen:**

**Other** C42-770 - Wayward Rat - failed scarification.  
**Comment:**

**Proposed Start Date:** 10/1 /2019

44	42061044-Cut	13.3	320 - Upland Shrub	Nonstocked	0	Unspecified	Harvest	Clearcut with Retention	4222 - Natural Jack Pine	Even-Aged	Draft Field Boundary
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**Habitat Cut: No****Site Condition:**

**Prescription** Cut all trees leaving 1 tree/acre favoring white pine and red pine. Leave additional retention pockets where higher BA exists to increase structural diversity in the stand (potential areas are identified on the map). Standing trees are left for species diversity and bear escape trees.

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

**Acceptable** jack pine with red pine  
**Regen:**

**Other** C42-770 - Wayward Rat - failed scarification.  
**Comment:**

**Proposed Start Date:** 10/1 /2019

**Total Treatment Acreage Proposed: 308.9**

## Report 4 – Site Conditions

Newberry Mgt. Unit  
Amy Douglass : Examiner

Compartment: 61  
Year of Entry: 2020

### Availability for Management

Total Acres	Acres Available	Acres Avail		Dominant Site Conditions	Dominant Site Conditions						
		With Condition	Not Available		2B	5B	5C	3J	5D	5E	
12	12	0	0	Bog		0					
1108	1090	11	7	Jack Pine	11	0	0	5	0	2	
13	9	0	4	Lowland Shrub				4			
136	0	102	34	Lowland Spruce/Fir			102	0	34		
101	101	0	0	Marsh				0			
8	8	0	0	Mixed Upland Deciduous							
37	12	16	9	Natural Mixed Pines		16		9		0	
287	168	89	29	Red Pine		89		10		19	
26	0	0	26	Treed Bog				0	26		
24	24	0	0	Upland Mixed Forest							
18	14	0	4	Upland Shrub						4	
1,769	1,437	218	114	Total Forested Acres	11	105	102	29	60	25	
	81%	12%	6%	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	5D: Unproductive Forest Land	60	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b> Treed bog.							
2	Available	2B: Unknown if access through adjacent landowner(s) is possible	12	2I: Survey needed	Unspecified	Unspecified	Unspecified
<b>Comments:</b> Access is through multiple landowners. Must also consider road condition.							
3	Unavailable	5E: Long-Term Retention	5	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b> Original retention for stand 19 (Wayward Rat #29-10).							

## Report 4 – Site Conditions

Newberry Mgt. Unit  
Amy Douglass : Examiner

Compartment: 61  
Year of Entry: 2020

4	<b>Unavailable</b>	<b>3J: Water quality / BMPs (stream, river, or lake)</b>	9	3D: Recreational / Scenic values	Unspecified	Unspecified	Unspecified
<b>Comments:</b> Borders Shelldrake flooding and dam.							
5	<b>Unavailable</b>	<b>3J: Water quality / BMPs (stream, river, or lake)</b>	16	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b> Dry Creek buffer							
6	<b>Unavailable</b>	<b>5E: Long-Term Retention</b>	2	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b> Original retention for stand 41 (Wayward Rat #29-10).							
7	<b>Unavailable</b>	<b>5E: Long-Term Retention</b>	1	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b> Original retention areas for stand 44 (Wayward Rat #29-10).							
8	<b>Available</b>	<b>5C: Delay treatment for age/size class diversity or exceptional site quality</b>	102	2B: Unknown if access through adjacent landowner(s) is possible	Unspecified	Unspecified	Unspecified
<b>Comments:</b> Best access is across private land, through several landowners, crossing several ridges and swales. No road is currently in place. Access through state land is non-existent over a steep bluff.							
9	<b>Available</b>	<b>5B: Maintain for regeneration purposes</b>	16	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							

## Report 4 – Site Conditions

Newberry Mgt. Unit  
Amy Douglass : Examiner

Compartment: 61  
Year of Entry: 2020

10	<b>Available</b>	<b>5B: Maintain for regeneration purposes</b>	77	5C: Delay treatment for age/size class diversity or exceptional site quality	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
11	<b>Available</b>	<b>5B: Maintain for regeneration purposes</b>	12	5C: Delay treatment for age/size class diversity or exceptional site quality	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
12	<b>Unavailable</b>	<b>5E: Long-Term Retention</b>	2	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b> Proposed retention area for stand 16.							
13	<b>Unavailable</b>	<b>3J: Water quality / BMPs (stream, river, or lake)</b>	5	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b> 100' buffer along Betsy River and associated drainage.							
14	<b>Unavailable</b>	<b>5E: Long-Term Retention</b>	8	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b> Potential areas for additional retention for stand 19. Subject to change when putting up new timber sale.							
15	<b>Unavailable</b>	<b>5E: Long-Term Retention</b>	5	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b> Potential areas for additional retention for stand 41. Subject to change when putting up new timber sale.							

## Report 4 – Site Conditions

Newberry Mgt. Unit  
Amy Douglass : Examiner

Compartment: 61  
Year of Entry: 2020

16	Unavailable	5E: Long-Term Retention	3	Unspecified	Unspecified	Unspecified	Unspecified
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**Comments:**

Potential areas for additional retention for stand 44. Subject to change when putting up new timber sale.

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

<b>Conservation Area</b>	<b>Type</b>	<b>Description</b>
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.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
1	42220 - Natural Jack Pine	Sawtimber Well	16.5	78	51-80	Pick up more ridge/swale effect to the west.
2	42290 - Natural Mixed Pine	Sawtimber Well	9.3	91	51-80	OPIC - FMD: Access by Shelldrake dam; no logging access, though. Good component of paper birch within, but long term management should be for pine. Both paper birch and jack pine are slowly dying out of stand. Heavy fir understory. Mixed softwood includes: BF, S, JP. Would be a nice spot for a short hiking trail (somewhat established already).
4	6122 - Black Spruce	Sapling Medium	34.3	91	Unspecified	Treed bog; non-commercial spruce along flooding.
5	42210 - Natural Red Pine	Sawtimber Medium	11.3	105	51-80	OPIC - FMD: Buffer stand left along Dry Creek after multiple timber sale harvests.
6	42250 - Pine, Oak	Sawtimber Medium	15.8	80	1-50	Mixture of high and low ground. Stand harvested via final harvest as sale #035-10-01, Pima Jack Pine. Completed 04/30/2012. Scarification completed 7/5/2012 under FTP 42-773. Regeneration check needed in 4 years.
7	4310 - Pine, Oak Mix	Sapling Medium	24.4	7	Immature	Stand harvested via final harvest as sale #035-10-01, Pima Jack Pine. Completed 04/30/2012. Scarification completed 7/5/2012 under FTP 42-773. Residual RP and WP. Visible JP sticking up in the snow with RM sprouts and oak visible above snow. WP and S saps (residual understory) scattered. Fair amount of oak seedlings and small saps. Some open areas with little to no regen. JP regen is scattered.
8	42220 - Natural Jack Pine	Sapling Well	58.8	35	1-50	T. sale #10-80 cut fall, 1982. Scarified 10/83 (FTP42-075) and seeded 3/84 (MI seed #1009). Regen check completed in 1987. Stand contains R7/R8 patches, oak, and mixed-age JP. Regeneration includes BF, PB, RM, and Oak.
9	42120 - Planted Jack Pine	Sapling Medium	85.9	11	1-50	Sale #23-90. FTP#42-404: scarification completed 5/98. Stocking survey completed 5/21/2003 - 204 trees per acre. Trench and seed completed 8/20/2004 - low success. 81.5 acres replanted 5/19/2007 w/ 2-0 JP (seedlot MI 0239) - 70,000 seedlings. Planting check in 2008 = 672 t/ac (258 nat'l, 385 planted, 29 t/ac R).
10	42220 - Natural Jack Pine	Sapling Well	107.2	34	Immature	T. sale #006-80A - cut Fall, 1983. FTP42-083: scarified in two different years (7/84 and 6/85). S. 40 acres of stand scarified in 1985. Coming into pole size.
11	6122 - Black Spruce	Poletimber Well	101.7	114	Unspecified	OPIC - FMD: Steep escarpment along west edge - difficult to access stand. Future access across private possibly. Mistletoe is present in stand. Transitions into smaller timber to the north; wetter grounds.
12	42120 - Planted Jack Pine	Sapling Well	42.2	11	Immature	Dry Creek Pine #09-00 (Units 1 and 2); sale was cut 12/2001 - 01/2002. FTP #42-518 completed on 9/2002. Regeneration survey 5/2006 = 82 t/ac. Trenching completed 10/24/2006. Planted 5/21/2007 with 2-0 JP (MI seedlot 0239); 63,000 seedlings total. Regeneration checked in 2008 = 706 t/ac (93nat'l, 613 planted J).



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
13	42220 - Natural Jack Pine	Poletimber Well	87.9	79	81-110	1998: Stand varies in age; some flagging branches and tips on JP. 2008: Larger diameter JP is dead, more flagging on JP. 2018: JP dying out.
14	42120 - Planted Jack Pine	Sapling Well	34.8	11	Immature	Dry Creek Pine #09-00 (Units 3 and 4); FTP #42-518. Scarification was completed in adjacent sale units 9/2002, but never finished within this stand. Stand was then trenched and seeded 8/20/2004. Regeneration survey completed 5/2006 = 82 t/ac. Planted 5/21/2007 with 2-0 JP (MI seedlot 0239) - 63,000 seedlings total. Regeneration check in 2008 = 512 t/ac (106 nat'l, 406 planted J). On edge of 75% canopy closure.
15	42120 - Planted Jack Pine	Sapling Well	38.4	11	Immature	Escarpment Jack Pine, sale #42-010-00-1. Sale closed on 08/15/02. FTP 42-519: scarification never completed. Regeneration survey done 5/2006 = 211 t/ac. Trenching completed 10/20/2006 and hand planted in spring, 2007. Planted 5/18/2007 with 2-0 JP (MI seedlot 0239) - 31,000 seedlings. Regeneration check in 2008 = 755 t/ac (80 nat'l, 675 planted J).
16	42220 - Natural Jack Pine	Sawtimber Well	37.7	80	Unspecified	OPIC - FMD: Mixture of high (bracken fern) and low (leatherleaf/lab tea) ground within - stand composition changes with ground type; smaller JP w/ rises of larger J, W, R, and Oak. Old RR grade within contains primarily R, W, Oak. Fir/spruce understory.
17	42220 - Natural Jack Pine	Sapling Well	56.6	15	Immature	"Widewaters II Jack Pine" sale # 011-00. Sale was cut Fall, 2001 - Jan., 2002. FTP #42-520 completed 9/2002. Regeneration survey completed 5/06 = 697 t/ac. JP ~ 2 foot tall. Old haul road through stand was hand planted with 2-0 JP on 5/21/2007. Residual R, W and a few PB, Oak also. Some RM sprouts.
18	4191 - Mixed Upland Deciduous with Conifer	Poletimber Well	8.0	81	51-80	Oak/Pine mix. Nice diverse stand.
19	42210 - Natural Red Pine	Sawtimber Poor	108.0	91	1-50	Most red pine, white pine, oak, and paper birch left for aesthetics/diversity, including scattered retention areas. Rolling terrain. 42-029-10-01, Wayward Rat Jack Pine. TCR 10/30/2014. Scarification completed summer of 2014 - FTP 42-770. Little to no JP regen.
20	42120 - Planted Jack Pine	Sapling Well	68.0	15	Immature	S. boundary of stand is snowmobile trail route. "Betsy River Jack Pine" sale # 22-90, harvested summer, 1996. Scarified in 1998 (FTP42-396). Stocking survey completed 5/18/2003 - 395 trees per acre. Plant spring 2004 w/seedlot mi0206 - follow-up on success of regeneration within 5 years. Check in May, 2005 = 830 t/ac. Secondary regeneration count completed 5/22/07 = 861 t/ac. Planted JP = 510 t/ac with JP volunteers = 255 (also 32 t/ac R, W, RM each).
21	42210 - Natural Red Pine	Sawtimber Well	10.6	91	111-140	OPIC - FMD: Stand of RP, PB, and some JP, Oak.
22	42290 - Natural Mixed Pine	Sawtimber Well	11.8	82	81-110	Mixed pine w/ A, B, O. More JP towards west end. East portion is ridge/swale area with more RP/WP mix.



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
23	42220 - Natural Jack Pine	Sapling Well	12.0	33	Immature	T. sale #004-80 (Unit 1); cut in 1983 and scarified 7/1984. Residual RP,WP within. Jack pine with mix of aspen, PB, S, Oak also present.
25	42220 - Natural Jack Pine	Poletimber Medium	73.2	51	Unspecified	Low ridges with lots of marshes within stand. Variable species and densities. Mixed species - most JP, spruce were harvested in 1966/67 (T. sale #15-66A - FTP#16:scarification), though not completely. Along NE edge of Stand 24, fire occurred in 1998 (Chippewa #18). Small diameter PB clumps within and residual WP. Ground cover of leatherleaf, lab tea and blueberry, lichen noted.
26	42220 - Natural Jack Pine	Poletimber Well	128.0	44	Unspecified	Sale #002-73A (no cutting after 1975); never completely cut. Some inclusions of larger diameter timber. Low ridges with marsh in between. Marsh type mixed throughout - leatherleaf, lab tea ground cover; spruce/jack pine. Slightly higher ground with lichen/moss/blueberry and predominately jack pine regeneration.
32	42220 - Natural Jack Pine	Sapling Well	14.1	33	Immature	Part of T. sale #004-80 (unit 1, 2), which was cut in 1983 and scarified 7/1984. Residual W,R,Oak within.
33	42210 - Natural Red Pine	Sawtimber Medium	77.2	98	81-110	Part of T. sale in 1980's (harvested with stands 23,32,34). Mixed spp include: PB, A, S, J. Soils are Deer Park/Kinross (wet). Some sub-merchantable PB,A, and oak. No RP or WP was thinned previously. Stand harvested via shelterwood as sale #030-10-01. Completed 12/04/2013. Misc regen present, but may not be in abundance. Variable BA throughout stand. OK to leave and regenerate at a later date.
34	42220 - Natural Jack Pine	Sapling Well	28.1	33	Immature	OPIC - FMD: T. sale #004-80 - cut in 1983; scarified 7/1984 (42-080). Residual RP within (14-16" dbh). Jack pine with other regen present include S/F, PB, RM, A.
35	42220 - Natural Jack Pine	Sapling Medium	14.5	15	1-50	Township Line Jack Pine sale # 012-00; sale was cut in July, 2002. FTP #42-521 scarification completed on 9/2002. Regeneration survey completed 5/2006 = 271 t/ac. Secondary regeneration survey completed 5/22/08 = 1,027 t/ac (571J, 114W, 114BF, 228RM).
37	42220 - Natural Jack Pine	Sapling Well	49.0	24	Immature	"Blueberry Hill JP" sale # 001-91 - cut summer, 1994. FTP42-358: scarification completed 11/94. Regeneration check done in 1998 - - 50% stocking (1,344jp/ac based on 1/1000 plot sample); scheduled for planting 5/00 (44k JP). Jack pine with some oak, aspen clones, PB sprouts and RM present.
38	42210 - Natural Red Pine	Sawtimber Medium	3.6	91	51-80	Small stand; some PB clumps within, which can be left. Lower quality red pine. Stand harvested via shelterwood as sale #030-10-01. Completed 12/04/2013. Not much in the way of regeneration following harvest. OK to leave and regenerate at a later date. Occasional birch and white pine.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
39	42210 - Natural Red Pine	Sawtimber Medium	12.0	91	51-80	Stand harvested via shelterwood as sale #030-10-01. Completed 12/04/2013. Little in the way of RP regeneration. Can wait and regenerate at a later time. BA is variable within stand. Occasional birch and white pine present.
40	42220 - Natural Jack Pine	Sapling Well	63.7	33	Immature	Snowmobile trail along the north side of stand. T. sale #005-80 - cut summer, 1984. Scarified 7/1985 (FTP42-082). Visual regeneration check done 10/89 - regen "obvious".
41	42210 - Natural Red Pine	Sawtimber Poor	51.7	91	1-50	42-029-10-01, Wayward Rat Jack Pine. TCR 10/30/2014. Scarification completed summer 2014, FTP 42-770. Little to no JP regen present. Slightly rolling terrain.
42	42120 - Planted Jack Pine	Sapling Medium	60.0	13	Immature	JP saps with RP residual. Sale #31-91 "Correction Line Jack Pine" cut summer, 1996; FTP 42-397: scarification completed 6/98. Stocking survey complete 5/15/2003 - 99 trees per acre. Machine planting completed 5/25/2005, filling in and around natural regeneration (about 500 t/ac). 2-0 JP MI seedlot #0207, 16k planted. Planting regen survey completed 5/2006 - areas with low survival. ~10 acres trenched 10/18/2006 to be replanted spring, 2007. 19 acres replanted 5/18/2007 w/ 2-0 JP (seed lot MI 0239) - 7,500 seedlings. Recheck 1st planting 5/22/2008 + 690 t/ac (280 Nat'l, 410 planted). Natural regeneration of R, J now 1-2' hts; 6" planted hts. Check 3rd yr of planting again in 2010.
43	42210 - Natural Red Pine	Sawtimber Well	12.6	77	111-140	Nice looking red pine. Stand was thinned with sale #31-91.
45	42220 - Natural Jack Pine	Sapling Well	28.6	15	Immature	Township Line Jack Pine sale # 012-00; sale was cut in July, 2002. FTP #42-521 completed 9/2002. Regeneration survey completed 5/2006 = 271 t/ac. Recount 5/22/2008 = 1,027 t/ac (770J, 86W, 171RM). Residual R,W,PB; plenty of heavy woody debris on ground and snags. Pockets of thicker RP residual.
46	42220 - Natural Jack Pine	Poletimber Well	3.1	37	1-50	Just coming into pole size. Stand contains occasional RM, PB and oak. Was harvested with stand in C-62. Direct seeded 3/1981, FTP 42-107.



Stand	Cover Type	Acres	Managed Site	General Comments:
3	623 - Emergent Wetland	65.7	No	OPIC - FMD: Stand size will fluctuate due to flooding.
24	623 - Emergent Wetland	3.0	No	OPIC - FMD: Fire site in 1998 (Chippewa #18); dozer plow line ran through center of stand (now under water with seasonal moisture) and along north and east sides. Seasonally ponded.
27	623 - Emergent Wetland	2.5	No	Seasonally ponded.
28	623 - Emergent Wetland	1.2	No	Seasonally ponded.
29	623 - Emergent Wetland	1.5	No	Seasonally ponded.
30	623 - Emergent Wetland	15.0	No	Seasonally ponded.
31	6225 - Bog	4.3	No	OPIC - FMD: Some small JP within; leatherleaf/lab tea.
36	623 - Emergent Wetland	1.2	No	Seasonally ponded.
44	320 - Upland Shrub	17.5		RP left from clearcut. Occasional oak and birch. Old RR grade within. 42-029-10-01, Wayward Rat Jack Pine. TCR 10/30/2014. Scarification completed in 2014. A few JP seedlings present. Failed regen count.
47	623 - Emergent Wetland	1.2	No	Seasonally ponded.
48	623 - Emergent Wetland	2.4	No	Seasonally ponded.
49	623 - Emergent Wetland	1.4	No	Seasonally ponded.
50	623 - Emergent Wetland	0.9	No	Seasonally ponded.
51	623 - Emergent Wetland	1.7	No	Seasonally ponded.
52	6225 - Bog	4.2	No	
53	623 - Emergent Wetland	2.0	No	Seasonally ponded.
54	6225 - Bog	2.1	No	



Stand	Cover Type	Acres	Managed Site	General Comments:
55	623 - Emergent Wetland	1.2	No	Seasonally ponded.
56	6225 - Bog	1.0	No	
57	622 - Lowland Shrub	5.3	No	More of a low type with scattered RM, C, and S.
58	6224 - Treed Bog	26.0	No	Somewhat flooded timber; unproductive site.
59	622 - Lowland Shrub	4.0	No	Along Dry Creek.
60	622 - Lowland Shrub	3.2	No	