



Compartment Review Presentation

Newberry Forest Management Unit

Compartment 55

Entry Year 2016

Acreage: 2,682

County Chippewa

Management Area: Whitefish Vermillion Point

Revision Date: 07/29/2014

Stand Examiner: Jason Tokar

Legal Description:

T50N R6W Sections 7, 8, 17 & 18

T50N R7W Sections 11, 12, 13, 14 & 15

Identified Planning Goals:

Timber management, wildlife habitat, and recreation such as hunting and fishing are the main uses of the compartment. The goal is to improve the forest health, and productivity of the area through proper management to promote these uses. Some stands have suffered damage from Jack Pine Budworm outbreaks. Management of these stands should be a high priority before additional decline and mortality occurs.

Soil and topography:

The compartment is almost entirely Deer Park sand and the forest cover type associated with the soil is predominantly jack pine. Along the Betsy River is Markey and Carbondale muck with lowland mixed conifer as the forest cover type. The topography throughout the compartment is level to rolling. There is a substantial slope along the Betsy River corridor.

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

The compartment is almost entirely all state owned except for a few private parcels along the Betsy River. The land adjacent to the compartment is all under state ownership. Land use in and around the compartment is primarily for recreational opportunities. Hunting, fishing, ORV'ing, hiking and berry picking all occur throughout the area. Development in the area is minimal with the private parcels consisting of small camps and seasonal usage. Some of the parcels are being sub-divided up into smaller parcels, resulting in a slight increase in recreational use of the area. Timber production is a major use of the compartment.

Unique Natural Features:

No Unique Natural Features known.

Archeological, Historical, and Cultural Features:

No Archeological, Historical, or Cultural Features known.

Special Management Designations or Considerations:

Management activities near the Betsy River will follow all BMP guidelines and any special considerations developed concerning the waterway. Some stands have suffered damage from Jack Pine Budworm outbreaks. Management of these stands should be a high priority before additional decline and mortality occurs. With the extent of the budworm infestation in the area, the possibility of additional healthy stands becoming affected by an outbreak is good.

Watershed and Fisheries Considerations:

Fisheries Values: Good

Fisheries Concerns: The Betsy River which skirts the northern edge of the compartment is a designated trout stream downstream to the Widewaters. Brook trout are present in this portion of the river and does provide some fishing opportunities although limited due to access. Any treatments in stands near the river upstream of the Widewaters need to adhere to a minimum buffer of 100 feet. No treatments for 2016 are prescribed near the river, so Fisheries has no concerns at this time.

Wildlife Habitat Considerations:

Compartment 55 lies in northern Chippewa county in the Grand Marais Sandy End Moraine and Outwash ecological sub-subsection. The compartment lies within the Whitefish Vermillion Point Management Area and moose, piping plover, red crossbill and spruce grouse are featured species in the compartment. The compartment is almost entirely jack pine with a few scattered stands of red pine, oak, hardwood and spruce. The Betsy River borders most of the northern and the eastern edge of the compartment. Pre-settlement data are consistent with current vegetation patterns.

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. Retaining soft and hard mast producing species and red and white pine in jack pine final harvests will provide food sources, nest and den trees, and improve stand diversity. Forested corridors should be maintained to facilitate ease of movement between upland and lowland areas. Wildlife species potentially using this compartment include white-tailed deer, snowshoe hare, spruce grouse, black bear, gray wolves, and moose.

Mineral Resource and Development Concerns and/or Restrictions

Surface sediments consist of lacustrine (lake) sand and gravel. There is insufficient data to determine the glacial drift thickness. The Precambrian Jacobsville Sandstone subcrops below the glacial drift. The Jacobsville was used as a building stone in the past. Gravel pits are not located in the area and potential may be limited. There is no economic oil and gas production in the UP.

Vehicle Access:

Access to the compartment can be gained by the Widewaters Road. This is a good dirt/sand road. There are several two track/sand roads branching off of the Widewaters Road which provide ample access to all portions of the compartment. The roads in this area can become difficult to pass during long dry stretches.

Survey Needs:

There are no survey needs for management activities in the compartment.

Recreational Facilities and Opportunities:

There are no established recreational facilities within the compartment. Recreational opportunities within the area would include hunting, fishing, hiking, ORV use, berry picking, wildlife viewing.

Fire Protection:

Compartment is in the Whitefish Zone Dispatch Area. Response time and Jack Pine cover type lends itself for potentially large fires. Access is good because of the drier sandy ground. Risk to private property would be high.

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**

Compartment: 055
 T50N R06W Sections 7, 8, 17, 18
 T50N R07W Sections 11-15
 County: Chippewa
 Unit: Newberry
 Management Area: Whitefish Vermillion Point
 YOE: 2016
 Acres: 2,682 GIS Calculated
 Examiner: Jason Tokar
 Map Revised: 08/26/2014
 Map Phase: Pre-Review

Stand #
23
 Stacking Density
(412)0 - A7
 Level 3 OI
 Level 4 Code
Cover Type Code

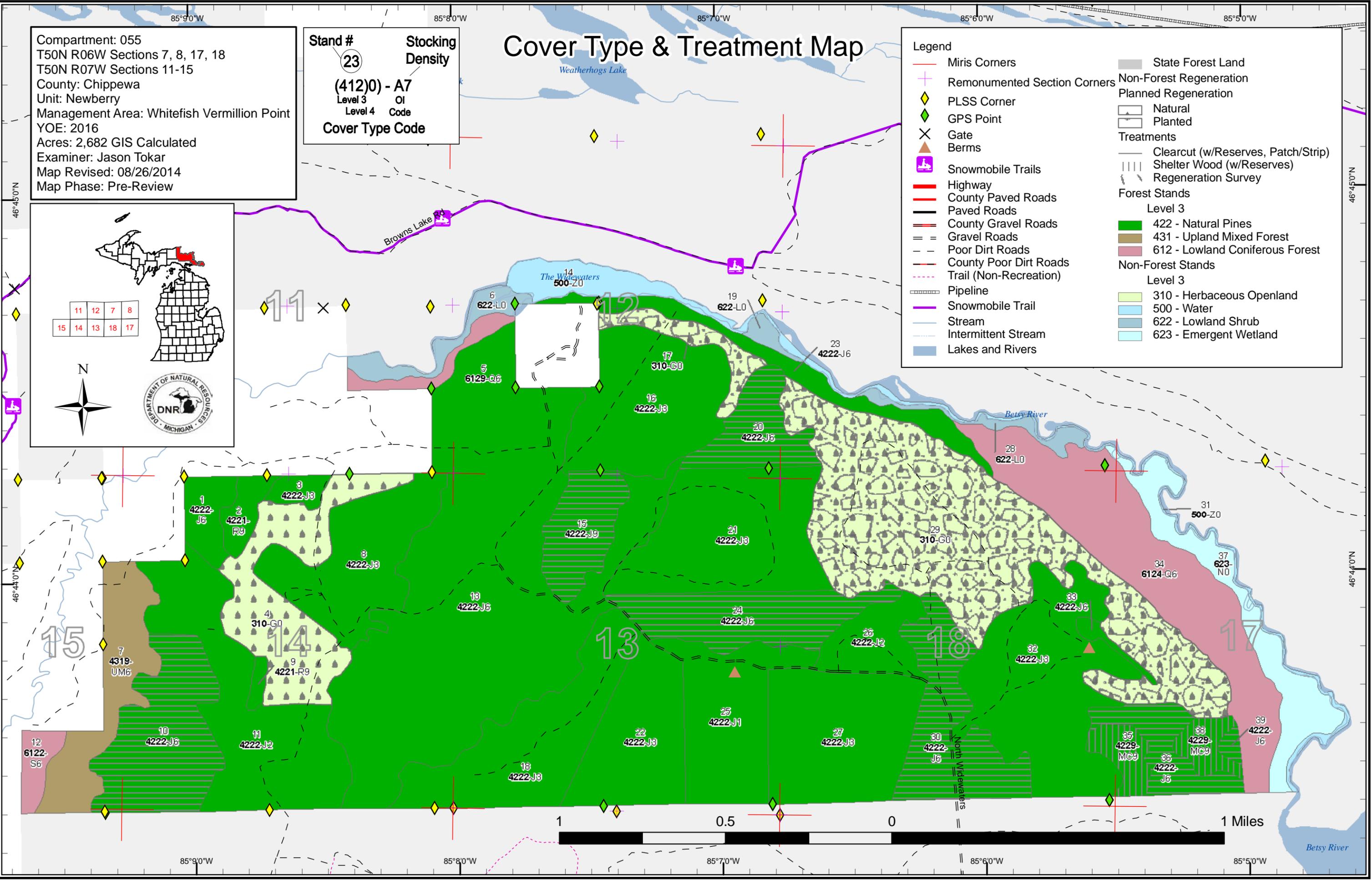
Cover Type & Treatment Map

Legend

- Miris Corners
- Remonumented Section Corners
- PLSS Corner
- GPS Point
- Gate
- Berms
- Snowmobile Trails
- Highway
- County Paved Roads
- Paved Roads
- County Gravel Roads
- Gravel Roads
- Poor Dirt Roads
- County Poor Dirt Roads
- Trail (Non-Recreation)
- Pipeline
- Snowmobile Trail
- Stream
- Intermittent Stream
- Lakes and Rivers
- State Forest Land
- Non-Forest Regeneration
- Planned Regeneration
 - Natural
 - Planted
- Treatments
 - Clearcut (w/Reserves, Patch/Strip)
 - Shelter Wood (w/Reserves)
 - Regeneration Survey
- Forest Stands
 - Level 3
 - 422 - Natural Pines
 - 431 - Upland Mixed Forest
 - 612 - Lowland Coniferous Forest
 - Non-Forest Stands
 - Level 3
 - 310 - Herbaceous Openland
 - 500 - Water
 - 622 - Lowland Shrub
 - 623 - Emergent Wetland

11 12 7 8
 15 14 13 18 17

N



Compartment: 055
 T50N R06W Sections 7, 8, 17, 18
 T50N R07W Sections 11-15
 County: Chippewa
 Unit: Newberry
 Management Area: Whitefish Vermillion Point
 YOE: 2016
 Acres: 2,682 GIS Calculated
 Examiner: Jason Tokar
 Map Revised: 08/26/2014
 Map Phase: Pre-Review

Stand #
 23
Stocking Density
 (412)0 - A7
 Level 3 OI
 Level 4 Code
Cover Type Code

Stand Boundary Map

Legend

- Miris Corners
- + Remonumented Section Corners
- ◆ PLSS Corner
- ◆ GPS Point
- × Gate
- ▲ Berms
- 🚙 Snowmobile Trails
- Highway
- County Paved Roads
- Paved Roads
- County Gravel Roads
- == Gravel Roads
- - Poor Dirt Roads
- County Poor Dirt Roads
- ⋯ Trail (Non-Recreation)
- ▭ Pipeline
- Snowmobile Trail
- Stream
- Intermittent Stream
- ▭ Stand Boundaries

Forest Stands

Level 3

- 422 - Natural Pines
- 431 - Upland Mixed Forest
- 612 - Lowland Coniferous Forest

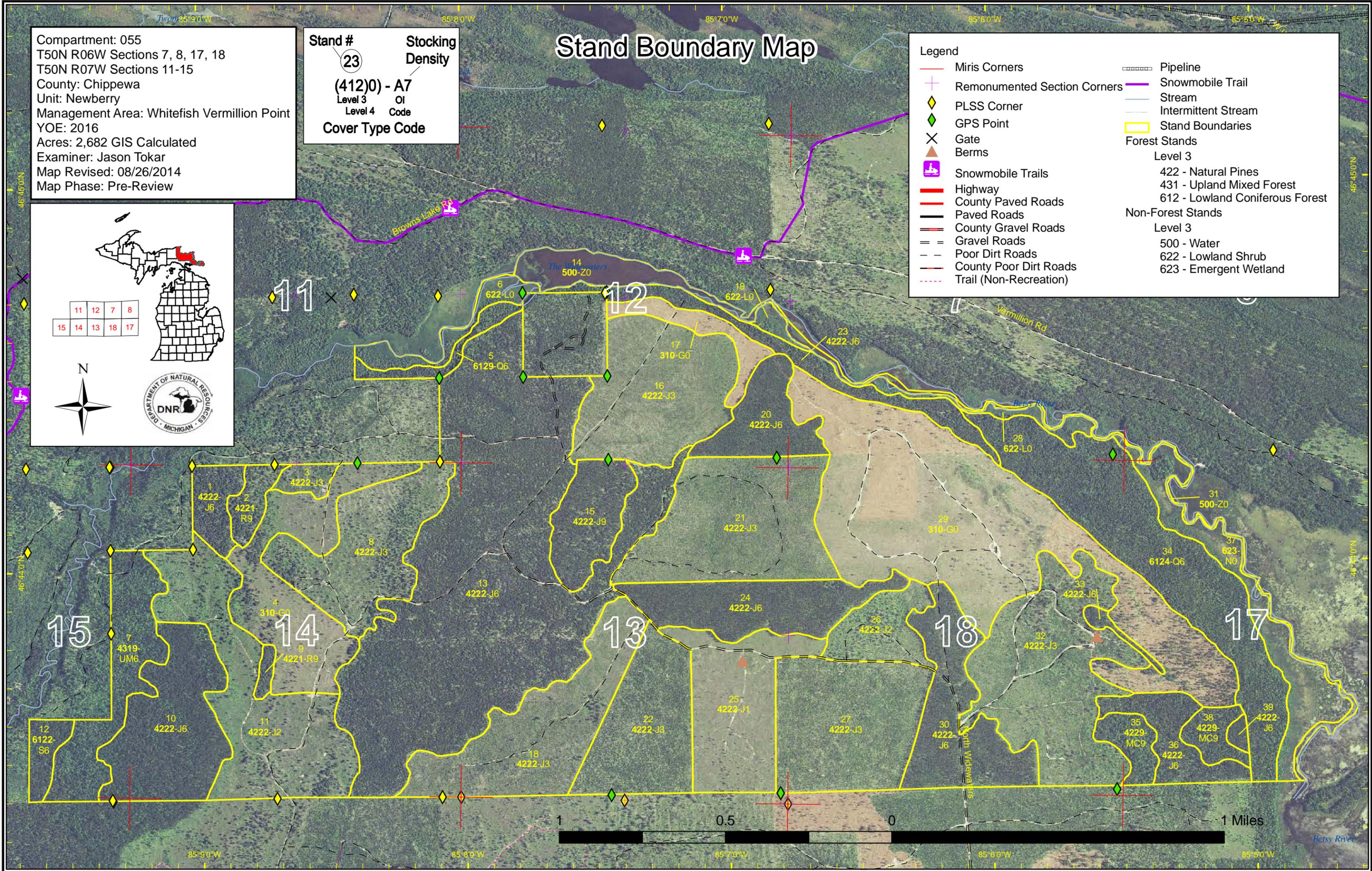
Non-Forest Stands

Level 3

- 500 - Water
- 622 - Lowland Shrub
- 623 - Emergent Wetland

11	12	7	8	
15	14	13	18	17

N



Special Conservation Areas & Site Conditions Map

Compartment: 055
 T50N R06W Sections 7, 8, 17, 18
 T50N R07W Sections 11-15
 County: Chippewa
 Unit: Newberry
 Management Area: Whitefish Vermillion Point
 YOE: 2016
 Acres: 2,682 GIS Calculated
 Examiner: Jason Tokar
 Map Revised: 08/20/2014
 Map Phase: Pre-Review

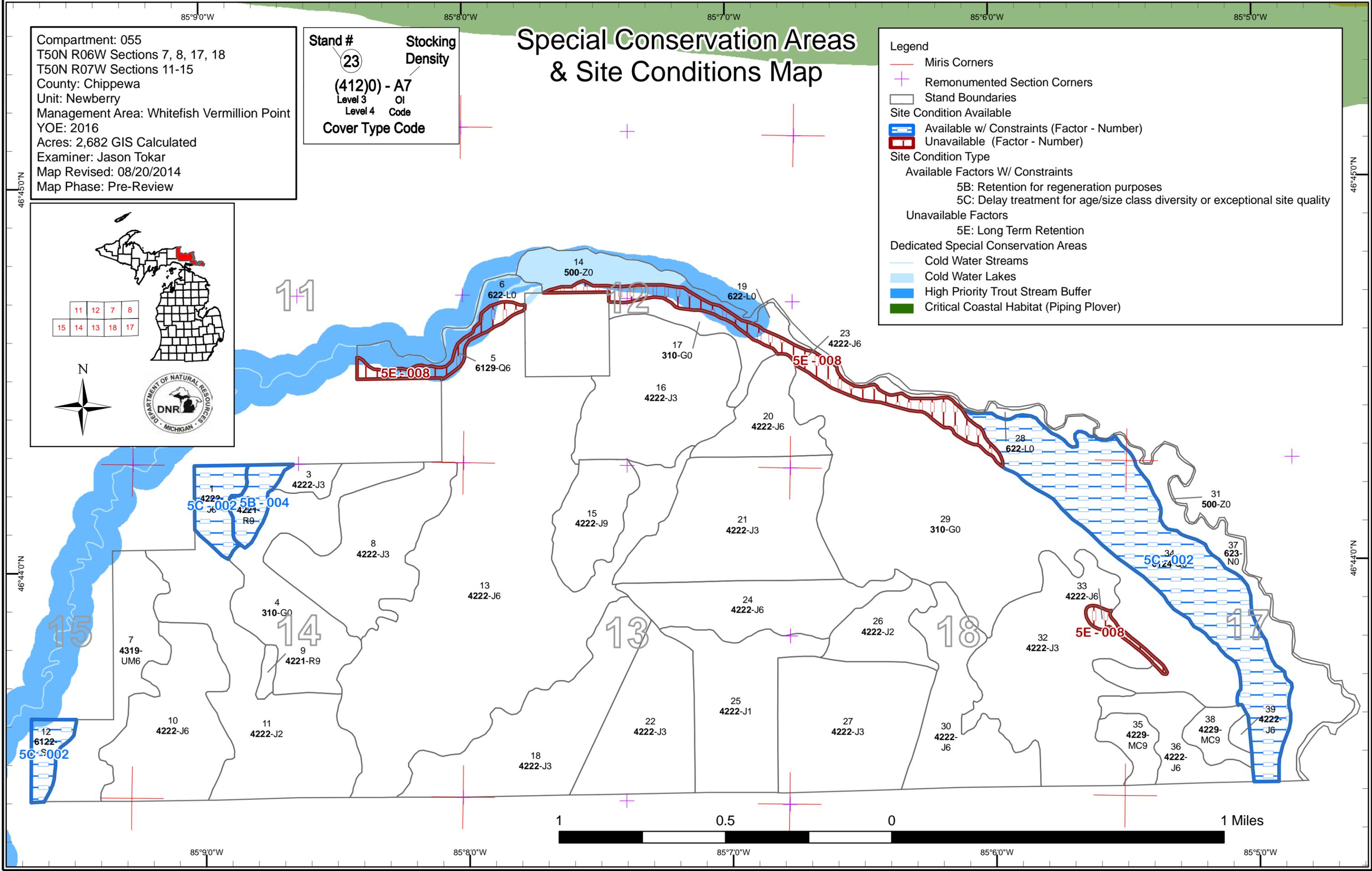
Stand # **23**
 Stocking Density
(412)0 - A7
 Level 3 OI
 Level 4 Code
 Cover Type Code

Legend

- Miris Corners
- Remonumented Section Corners
- Stand Boundaries
- Site Condition Available
- Available w/ Constraints (Factor - Number)
- Unavailable (Factor - Number)
- Site Condition Type
- Available Factors W/ Constraints
 - 5B: Retention for regeneration purposes
 - 5C: Delay treatment for age/size class diversity or exceptional site quality
- Unavailable Factors
 - 5E: Long Term Retention
- Dedicated Special Conservation Areas
 - Cold Water Streams
 - Cold Water Lakes
 - High Priority Trout Stream Buffer
 - Critical Coastal Habitat (Piping Plover)

11 12 7 8
15 14 13 18 17

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Report 1 – Total Acres by Cover Type and Age Class



	Age Class														Total
	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 +	Uneven Age	
Herbaceous Openland	401	0	0	0	0	0	0	0	0	0	0	0	0	0	401
Jack Pine	85	847	79	407	0	0	0	25	132	265	0	0	0	0	1840
Lowland Conifers	0	0	0	0	0	0	0	0	0	170	0	0	0	0	170
Lowland Shrub	36	0	0	0	0	0	0	0	0	0	0	0	0	0	36
Lowland Spruce/Fir	0	0	0	0	0	0	0	0	0	0	13	0	0	0	13
Marsh	60	0	0	0	0	0	0	0	0	0	0	0	0	0	60
Natural Mixed Pines	0	0	0	0	0	0	0	0	0	0	17	15	0	0	31
Red Pine	0	0	0	0	0	0	0	0	0	14	4	0	0	0	19
Upland Mixed Forest	0	0	0	0	0	0	0	0	63	0	0	0	0	0	63
Water	49	0	0	0	0	0	0	0	0	0	0	0	0	0	49
Total	631	847	79	407	0	0	0	25	195	449	34	15	0	0	2682



Report 2 – Proposed Treatment Summaries

Newberry Mgt. Unit
Year of Entry 2016

Compartment 055
Total Compartment Acres: 2,682

Acres by Treatment Type

Commercial Harvest - 388 Tree Planting - 0 Other - 0
 Habitat Cut - 0 Opening Maintenance - 0

Cover Type by Harvest Method

	Clearcut	Selection	Seed Tree	Shelterwood	Thinning	Other - Specify	Total Acres
Natural Pines	357	0	0	31	0	0	388
Total	357	0	0	31	0	0	388

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Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
10 42055010-Cut	90.8	42220 - Natural Jack Pine	High Density Pole	84	111-140	Harvest	Clearcut with Reserves	4222 - Natural Jack Pine	Cmpt. Review Proposal

Prescription Clearcut with reserves. Concentrate retention in more diverse areas for wildlife considerations. Leave some individual red pine, white pine and other non jack pine retention to maximize diversity for wildlife. No more than 20 BA of individual tree retention. No patch retention. No jack pine retention. Retention not to exceed 3% of total area to promote better jack pine regeneration (silvicultural reason).

Other Comments: Proposed start date of October 27, 2014. Stand to be harvested with Stand 1, Compartment 56 (one stand across compartment boundaries).

Next Steps: Scarification of site for natural jack pine regeneration. If scarification is unsuccessful, plant stand to jack pine. Acceptable regeneration of jack pine with minor components of red pine.

Proposed Start Date: 10/27/2014

15 42055015-Cut	42.7	42220 - Natural Jack Pine	High Density Log	92	111-140	Harvest	Clearcut with Reserves	4222 - Natural Jack Pine	Cmpt. Review Proposal
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Prescription Clearcut with reserves. Retention to be in patches, not to exceed 5% of total stand acreage. Retain any "non jack pine" species that may occur for wildlife benefits.

Other Comments:

Next Steps: Scarification of site for natural jack pine regeneration. If scarification is unsuccessful, plant stand to jack pine. Acceptable regeneration of jack pine with minor components of red pine.

Proposed Start Date: 10/01/2015

20 42055020-Cut	41.0	42220 - Natural Jack Pine	High Density Pole	86	81-110	Harvest	Clearcut with Reserves	4222 - Natural Jack Pine	Cmpt. Review Proposal
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Prescription Clearcut with reserves. Retention patches to be concentrated along the eastern stand edge bordering adjacent young jack pine stand. Retain any "non jack pine" species that may occur for wildlife benefits.

Other Comments:

Next Steps: Scarification of site for natural jack pine regeneration. If scarification is unsuccessful, plant stand to jack pine. Acceptable regeneration of jack pine with minor components of red pine.

Proposed Start Date: 10/01/2015

24 42055024-Cut	68.8	42220 - Natural Jack Pine	High Density Pole	91	81-110	Harvest	Clearcut with Reserves	4222 - Natural Jack Pine	Cmpt. Review Proposal
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Prescription Clearcut with reserves. Retention in patches to be located along or near the northern stand boundary. Retention patches to be linear (up to a tree length in width), laid out in an East/West pattern to provide for a wildlife travel corridor.

Other Comments:

Next Steps: Scarification of site for natural jack pine regeneration. If scarification is unsuccessful, plant stand to jack pine. Acceptable regeneration of jack pine with minor components of red pine.

Proposed Start Date: 10/01/2015



S t a n d	Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
30	42055030-Cut	77.4	42220 - Natural Jack Pine	High Density Pole	92	111-140	Harvest	Clearcut	4222 - Natural Jack Pine	Cmpt. Review Proposal

Prescription Clearcut. No reserves. Substantial mortality and blowdown throughout. Old age stand of jack pine starting to fall apart. Retain any "non jack pine" species that may occur for wildlife benefits.

Other
Comments:

Next
Steps: Scarification of site for natural jack pine regeneration. If scarification is unsuccessful, plant stand to jack pine. Acceptable regeneration of jack pine.

Proposed
Start Date: 10/01/2015

35	42055035-Cut	16.6	42290 - Natural Mixed Pine	High Density Log	105	111-140	Harvest	Shelter Wood with Reserves	42260 - Natural Pine, Mixed Deciduous	Cmpt. Review Proposal
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Prescription Shelterwood harvest. Remove mature jack pine and spruce. Retain all oak and a component of white birch for species diversity for wildlife. Thin red pine and white pine. Residual BA of 40.

Other
Comments:

Next
Steps: Scarification of the site for regeneration purposes. Acceptable regeneration of mixed pine with oak and white birch.

Proposed
Start Date: 10/01/2015

36	42055036-Cut	33.1	42220 - Natural Jack Pine	High Density Pole	90	111-140	Harvest	Clearcut with Reserves	4222 - Natural Jack Pine	Cmpt. Review Proposal
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Prescription Clearcut with reserves. Retention to be individual trees (red pine and white pine) throughout the stand, not to exceed 20 BA of residual. Retain all oak and a component of birch for species diversity for wildlife. Jack pine to be retained in the boundary line (red line). Narrow stand with lots of edge effect.

Other
Comments:

Next
Steps: Scarification of site for natural jack pine regeneration. If scarification is unsuccessful, plant stand to jack pine. Acceptable regeneration of jack pine with red pine, white pine and black spruce.

Proposed
Start Date: 10/01/2015

38	42055038-Cut	14.7	42290 - Natural Mixed Pine	High Density Log	110	111-140	Harvest	Shelter Wood with Reserves	42290 - Natural Mixed Pine	Cmpt. Review Proposal
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Prescription Shelterwood with reserves. Remove all jack pine, black spruce. Mark red pine and white pine for removal. Retain all oak and a component of birch for species diversity for wildlife. Residual BA of 40 sq ft.

Other
Comments:

Next
Steps: Scarification of site for natural regeneration. Acceptable regeneration of red pine, white pine, jack pine, and black spruce.

Proposed
Start Date: 10/01/2015



S t a n d	Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
39	42055039-Cut	3.4	42220 - Natural Jack Pine	High Density Pole	93	111-140	Harvest	Clearcut	4222 - Natural Jack Pine	Cmpt. Review Proposal

Prescription Clearcut. No retention due to small stand size.

Specs:

Other

Comments:

Next Steps: Scarification of site for natural jack pine regeneration. If scarification is unsuccessful, plant stand to jack pine. Acceptable regeneration of jack pine.

Proposed

Start Date: 10/01/2015

17	NF_42055017- Survey	21.0	3103 - Rubus-Fern				Regeneration Survey	Intermediate Survey (natural regen)	4222 - Natural Jack Pine	Cmpt. Review Proposal
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Prescription Regeneration survey in summer of 2016 to evaluate the success of scarification.

Specs:

Other

Comments:

Next

Steps:

Proposed

Start Date: 06/01/2016

29	NF_42055029- Survey	287.1	3103 - Rubus-Fern				Regeneration Survey	Intermediate Survey (natural regen)	4222 - Natural Jack Pine	Cmpt. Review Proposal
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Prescription Regeneration survey in summer of 2016 to evaluate the success of scarification.

Specs:

Other

Comments:

Next

Steps:

Proposed

Start Date: 06/01/2016

**Total Treatment
Acreage Proposed: 696.4**

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Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
	#Type!	#Type!							

Prescription
Specs:

Other
Comment:

Next
Steps:

Proposed
Start Date: #Type!

Limiting Factor

Total Treatment
Acreage Proposed: 0.0

Report 5 – Site Conditions

Newberry Mgt. Unit
Jason Tokar : Examiner

Compartment 055
Year of Entry 2016

Availability for Management

Total Acres	Acres		Dominant Site Conditions	No	5E	5C	5B
	Available	Not Available					
1840	1795	45	Jack Pine	1,775	45	20	
170	156	13	Lowland Conifers		13	156	
13	13		Lowland Spruce/Fir			13	
31	31		Natural Mixed Pines	31			
19	19		Red Pine	4			14
63	63		Upland Mixed Forest	63			
2,136	2,078	58	Total Forested Acres	1,874	58	190	14
	97%	3%	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
002	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	190				
Comments:							
004	Available	5B: Maintain for regeneration purposes	14				
Comments:							
008	Not Available	5E: Long Term Retention	58				
Comments: Steep slope down to the water's edge.							



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

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

SCA Name	SCA Category	Detail Type	Recommendation	Acres
Comments				



Report 7 – EXISTING SPECIAL CONSERVATION AREA DETAILS

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

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

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



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
1	42220 - Natural Jack Pine	High Density Pole	20.2	74	81-110	Jack pine with a good component of red pine. Pockets of larger diameter red pine throughout. Areas with lots of limby jack pine. Good amount of variability in the stand.
2	42210 - Natural Red Pine	High Density Log	14.4	95	51-80	Stand was harvested as sale #005-96-01. Completed in fall of 1997. This portion of the harvest had significant red pine residual so separated it out as a new stand.
3	42220 - Natural Jack Pine	High Density Sapling	9.2	15		Stand harvested as sale #005-96-01. Completed in 1997. Scarification completed 6/1998. Stocking survey 5/15/2003 - 959 trees/acre. Good regeneration of jack pine. Scattered red pine residual.
5	6129 - Mixed Coniferous Lowland Forest	High Density Pole	13.2	97	51-80	
7	4319 - Mixed Upland Forest	High Density Pole	63.2	85	81-110	Mixed stand with thick understory in most areas. Fairly low quality stand. Small diameter red maple. Larger spruce and white pine. White birch in wetter areas, showing substantial mortality. Jack pine mixed in mainly along eastern stand edge. Good component of balsam. A few areas of blowdown.
8	42220 - Natural Jack Pine	High Density Sapling	90.3	14		Harvested as sale #006-96-01. Completed in 1999. No records of scarification, regenerating naturally. Thicker regeneration in pockets. Good component of residual mature red pine throughout the stand. Jack pine regeneration averaging 10 ft tall.
9	42210 - Natural Red Pine	High Density Log	4.3	100	111-140	Small acreage stand of mature red pine, with jack pine, white pine and spruce. Surrounded by young jack pine. Some jack pine removed as part of sale #039-96-01.
10	42220 - Natural Jack Pine	High Density Pole	90.8	84	111-140	Nice, tall, mature jack pine. Showing some signs of mortality. Black spruce component. Component of red pine and white pine as well. More of a pure jack pine stand in eastern part of the stand. Understory is thick in areas, balsam, spruce and red maple 10-20 ft tall. Scattered aspen and white birch in western portion.
11	42220 - Natural Jack Pine	Medium Density	127.0	10		Harvested in 1999 and 2000 as sale #039-96-01. Northern 2/3 of stand cut in 1999. Stand was scarified in 2004 (FTP#42-473). Good component of residual mature red pine throughout the stand. Northern 2/3 of the stand was planted through (jack pine). Road running north through the stand is growing closed.
12	6122 - Black Spruce	High Density Pole	13.5	102		
13	42220 - Natural Jack Pine	High Density Pole	406.5	36	1-50	Young jack pine stand, harvested in 1977-1978. Stand is transitioning from a sapling stand to a pole stand. Larger diameter red pine mainly in western portion of the stand. Dense stand. Minimal amount of budworm damage.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
15	42220 - Natural Jack Pine	High Density Log	42.7	92	111-140	Stand was held for diversity last entry year with intentions to be harvested this entry year. Mature jack pine, good diameters. Merchantable height of 4-5 sticks, some taller. Shorter heights and smaller diameters in the southern part of the stand. Healthy full crowns. Fair amount of mortality in smaller jack pine in the understory. Some budworm evidence on north edge of the stand.
16	42220 - Natural Jack Pine	High Density Sapling	106.8	13		Harvested as sale #023-96-01. Completed 1999 (cut 1998 & 1999). Scarified in 5/99 and 7/2000. Regeneration survey in 2003 (1065 t/a). Good regeneration. Average height of 5-10 ft, thick regeneration throughout most of stand.
18	42220 - Natural Jack Pine	High Density Sapling	107.0	14		Harvested as sale #008-96-01, completed 1999. Cut in 1998 and 1999. Scarified in 1999 and 2000. All fully stocked at time of regen check in May 2003. Better regeneration in the southern portion of the stand. Survey 5/20/2003 - 751 t/a and 685 t/a. FTP#42-453. 2014 - jack pine regeneration is 5-10 ft tall on average. Northeastern corner of the stand has slightly more sparse regeneration.
20	42220 - Natural Jack Pine	High Density Pole	41.0	86	81-110	Stand has budworm damage in the northern portion of the stand. Stand was held for 10 years during the last entry year for diversity. Stand should be harvested this entry year. Many smaller diameter trees are showing signs of mortality. Thick stand with a high BA. Lots of blowdown within the stand.
21	42220 - Natural Jack Pine	High Density Sapling	122.3	18		Stand harvested as sale #37-88-01. Completed in 1994. Scarified spring of 1995. Pretty uniform regeneration throughout the stand. Regeneration is slightly thicker and taller along the road through the stand. Machine planted in May 2000 (FTP#42-378)
22	42220 - Natural Jack Pine	High Density Sapling	79.2	22		Stand was scarified in July 1991. Regeneration check done in fall 1994. Good regeneration, 15-20 ft tall.
23	42220 - Natural Jack Pine	High Density Pole	39.7	92	111-140	Portion of the natural jack pine stand(s) that is located on the "steps" and slope down to the river. Some mortality due to budworm. Scattered limby jack pine with larger diameters. White birch in areas.
24	42220 - Natural Jack Pine	High Density Pole	68.8	91	81-110	Smaller diameter jack pine. Some mortality. High BA stand. Majority of crowns are full, healthy. Lots of trees right at or just below the merchantability size. Stand was held for 10 years last entry year for diversity. Harvest this entry year. Average heights of 4 and 5 sticks of merchantability.
25	42220 - Natural Jack Pine	Low Density Sapling	84.9	6		Stand harvested as sale #012-06-01. Completed 1/31/2008. Scarification completed 10/15/08 (FTP42-672). Regeneration check needed by 2012. Summer 2012: JP=696, RP = 11, TPA = 707. Young jack pine stand. 3 ft tall on average. Red maple stump sprouts 5 ft tall. Road through stand has closed in with jack pine regeneration.



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
26	42221 - Natural Jack Pine, Mixed Deciduous	Medium Density	34.6	14		Stand harvested as sale #010-96-01. Completed 4/21/1999. Scarification completed June 1999 (FTP#42-468). Residual red oak retained. Jack pine regeneration with some red maple stump sprouting. Long term management objective is jack pine.
27	42220 - Natural Jack Pine	High Density Sapling	107.6	19		Harvested as sale #035-88-01, completed in fall 1993. Scarified in August of 1994. Stocking Survey in July 1998. Pretty nice regeneration. Some oak and maple regeneration as well. Best regeneration is along the abandoned road. Thicker regeneration further south in the stand.
30	42220 - Natural Jack Pine	High Density Pole	77.4	92	111-140	Stand was held last entry year for 10 years for diversity. Harvest this entry year. Pure jack pine stand. Mature jack pine, 5-6 sticks in merchantable height. Substantial mortality, dead jack pine on each plot. Old age. Thick BA. Many jack pine just at or below merchantability. Southern portion of the stand has slightly smaller diameters on average.
32	42220 - Natural Jack Pine	High Density Sapling	142.7	14		Harvested in 1998, sale #016-96-01. Scarified in June 1999. Good regeneration, especially north and western portions of the stand. Scattered residual pole and log size red pine, one patch as well. Old roads are beginning to fill in with jack pine.
33	42220 - Natural Jack Pine	High Density Pole	5.0	78	81-110	Ridge of jack pine and some red pine, retained when adjacent stand to the east was cut. Good long term retention.
34	6124 - Lowland Spruce-Fir	High Density Pole	156.4	95	111-140	Lowland stand of mixed conifers. Areas thicker to black spruce, mostly in the western portion of the stand. Real mix of species. Some open areas with more tag alder. Areas of a "Q5" with tag alder. Small slight ridges with some low quality jack and red pine. Southern end is mostly black spruce with cedar. Fairly wet stand throughout.
35	42290 - Natural Mixed Pine	High Density Log	16.6	105	111-140	Stand has a high variability of species in the northern portions of the stand. Southern portion of the stand has higher BA of red pine and white pine. Large mature red pine and white pine.
36	42220 - Natural Jack Pine	High Density Pole	33.1	90	111-140	Nice tall jack pine. Red pine, white pine and occasional black spruce. Blowdown patches, evidence of budworm damage. Small spruce in the understory.
38	42290 - Natural Mixed Pine	High Density Log	14.7	110	111-140	Large diameter red pine and white pine with smaller diameter jack pine and a component of black spruce. Scattered white birch (dying out). Open areas with a lower BA. Some large white pine have dead tops.
39	42220 - Natural Jack Pine	High Density Pole	3.4	93	111-140	Mature jack pine. Overall stand health is good. Some budworm damage. White pine and black spruce component. High BA with lots of small diameter jack pine.



Stand	Cover Type	Acres	Managed Site	Management Priority (Objective)	General Comments:
4	3103 - Rubus-Fern	92.6	Natural Regen	Jack Pine	Stand final harvested as sale #013-06-01, Compartment 55 Jack Pine. Completed 05/13/10. Regeneration work yet to be done as of 12/03/10. Regeneration check needed in 2014. FTP #42-671 completed 8/29/2011. Regeneration check in 2014 showed stand to be fully stocked, 660-700 trees per acre.
6	6229 - Mixed lowland shrub	19.6	No	Unspecified	Lowland shrub with Betsy River flowing through
14	50 - Water	31.0	No	Unspecified	The Widewaters
17	3103 - Rubus-Fern	21.0	Natural Regen	Jack Pine	Sale #: 42-008-06-01. Partially completed 7/20/2011. Sale completed 01/20/12. Scarification yet to be completed as of 01/27/12. Regeneration check needed in 2016.
19	6229 - Mixed lowland shrub	5.3	No	Unspecified	
28	6229 - Mixed lowland shrub	11.2	No	Unspecified	
29	3103 - Rubus-Fern	287.1	Natural Regen	Jack Pine	Sale #: 42-008-06-01. Partially completed 7/20/2011. Sale completed 01/20/12. Scarification yet to be completed as of 01/27/12. Regeneration check needed in 2016.
31	50 - Water	18.3	No	Unspecified	The Betsy River
37	6239 - Mixed Emergent Wetland	59.8	No	Unspecified	