



Compartment Review Presentation

Shingleton Forest Management Unit

Compartment 168

Entry Year 2015

Acreage: 836

County Alger

Management Area: Pictured Rocks Buffer

Revision Date: 04/09/2013

Stand Examiner: Josh Wall

Legal Description:

T48N R17W Sections 24-26

Identified Planning Goals:

Provide for the protection, integrated management, and responsible use of a healthy, productive, forest and mineral resource base for the social, recreational, environmental, and economic benefit of the people of the State of Michigan.

Soil and topography:

The main soil types found in this compartment are Saugatuck Sand, Emmet Loamy Sands, Munising Sandy Loam and Kalkaska loamy Sand. The sands are listed as being naturally low in fertility while the loams are moderately good in fertility. The terrain is mainly rolling to hilly the steeper hills keeping run off confined or the flow from natural springs.

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

The entire compartment is within the Pictured Rocks National Lake Shore Boundary. Pictured Rocks National Lake Shore Boundary is to the North and East with broken ownerships of private and Forest Land Group lands to the South and West.

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:

This compartment falls entirely within the Outwash Transition LTA and the Pictured Rocks Buffer Management Area.

Watershed and Fisheries Considerations:

Fisheries Values: Excellent

Fisheries Concerns: This compartment is located in the Pictured Rocks National Lakeshore and contains Spray Creek, a coldwater designated trout stream. This stream currently contains native brook trout and was at one time stocked with artic grayling as part of a re-introduction program in the early 1990's. All treatments along Spray Creek need to maintain a setback of 200 feet. No aspen regeneration is being proposed in the treatment areas, but upholding the integrity of the stream is important for the native brook trout population. Also present in the eastern section of the compartment is Little Beaver Creek. Little Beaver Creek is a coldwater designated trout stream with groundwater influence that supports native brook trout. The last fisheries survey in 1983 found native brook trout and we need to assume that they are still intact. The area being prescribed for treatment is factor limited. If any activities occur in the prescribed treatment areas, a buffer of 200 feet should be adhered to.

Wildlife Habitat Considerations:

This compartment is located in the Grand Marais Sandy End Moraine and Outwash Sub-subsection. Early surveyors recorded sugar maple and beech as the most prevalent tree species in this area. Hemlock, yellow birch, balsam fir, and mountain maple were slightly less important. Red maple was recorded in minor amounts. Lowlands at that time contained cedar, balsam fir, and spruce.

Current vegetation appears similar in species composition in the lowlands, but has a lower amount of hemlock in the northern hardwoods as compared to pre-settlement times.

Wildlife habitat objectives include protecting the spray creek corridor, promoting structural and species diversity within the northern hardwoods, and maintaining small forest openings.

Wildlife species of special interest potentially utilizing this compartment include goshawks and scarlet tanagers.

Mineral Resource and Development Concerns and/or Restrictions

Surface sediments consist of an end moraine of medium-textured till and glacial outwash sand and gravel and postglacial alluvium. There is insufficient data to determine the glacial drift thickness. The Cambrian Trempealeau and Munising Formations subcrop below the glacial drift. The Trempealeau could be used for stone. The nearest gravel pit is several miles to the south, but there may be some potential. There is no commercial oil and gas production in the UP.

Vehicle Access:

Access is gained from H-58 a ½ mile from the SE corner of the compartment. There are many two-tracks and skid trails from previous logging operations in the area.

Survey Needs:

None

Recreational Facilities and Opportunities:

There are no developed recreation facilities within this compartment.

Fire Protection:

The timber types are mainly hardwood and lowland conifers reducing the chances of any large wildland fire occurrences.

Additional Compartment Information:

The following reports from the Inventory are attached:

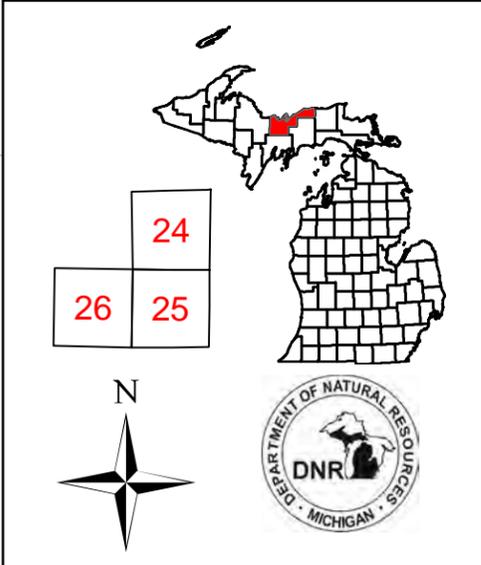
- Total Acres by Cover Type and Age Class**
- Cover Type by Harvest Method**
- Proposed Treatments – No Limiting Factors**
- Proposed Treatments – With Limiting Factors**
- Stand Details (Forested and Nonforested)**
- Dedicated and Proposed Special Conservation Areas**
- Site Condition Details**

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 & Treatment Map

Compartment: 168
 T48N R17W
 24 25 26
 County: Alger
 Unit: Shingleton
 YOE: 2015
 Acres: 836 GIS Calculated
 Examiner: Josh Wall
 Map Revised: 09/12/2013
 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
- Highway
- County Paved Roads
- Paved Roads
- County Gravel Roads
- Gravel Roads
- Poor Dirt Roads
- County Poor Dirt Roads
- Trail (Non-Recreation)
- Closed Roads
- Stream
- Intermittent Stream
- Lakes and Rivers
- State Forest Land

Treatments

- ▨ Clearcut (w/Reserves, Patch/Strip)
- ▩ Selection (Group, Single Tree)
- ▤ Mowing

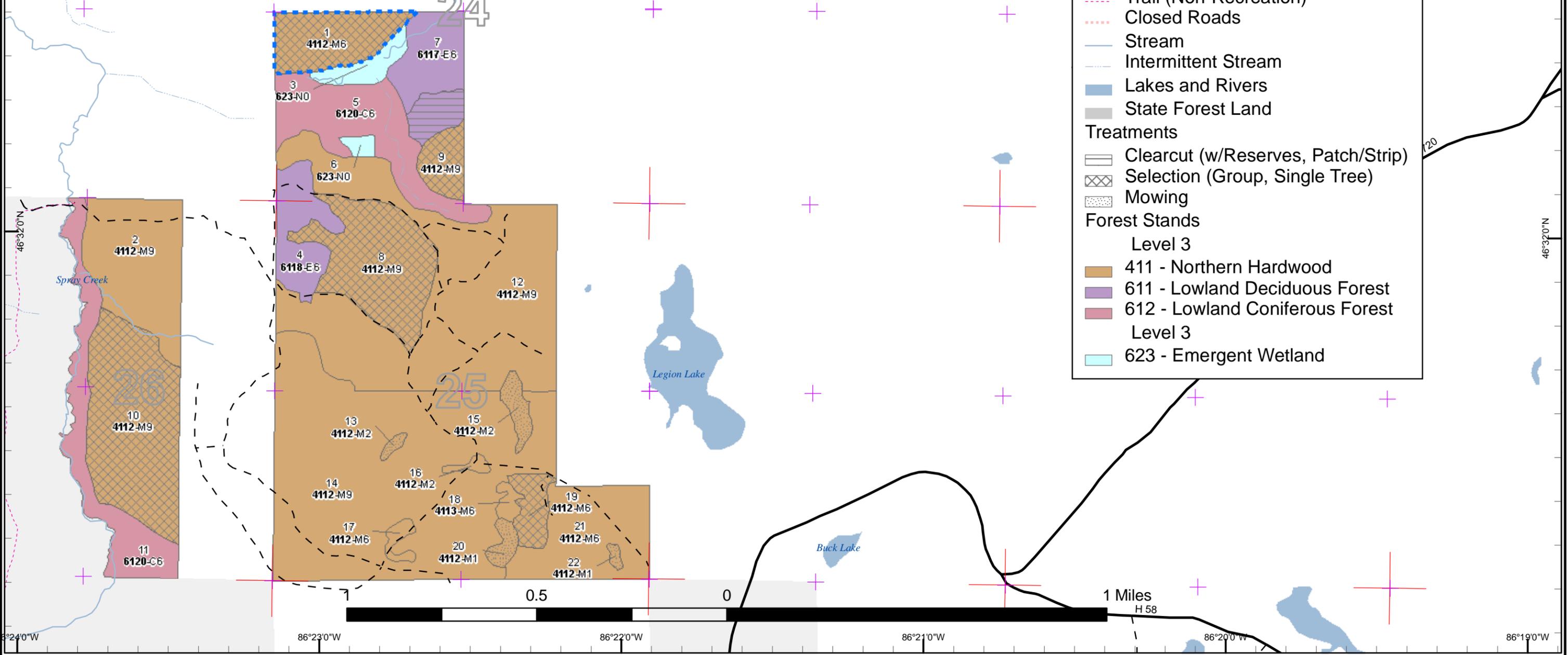
Forest Stands

Level 3

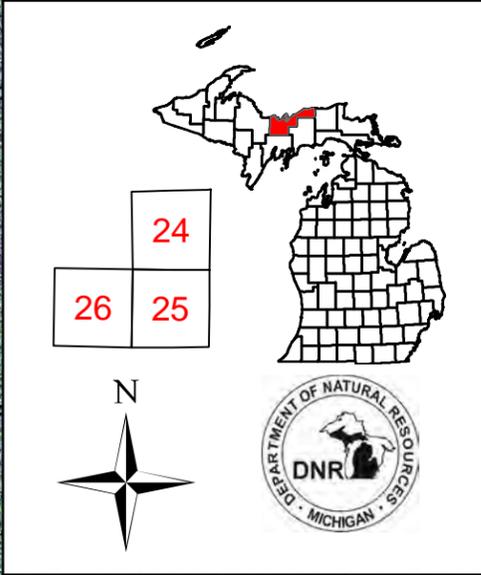
- 411 - Northern Hardwood
- 611 - Lowland Deciduous Forest
- 612 - Lowland Coniferous Forest

Level 3

- 623 - Emergent Wetland



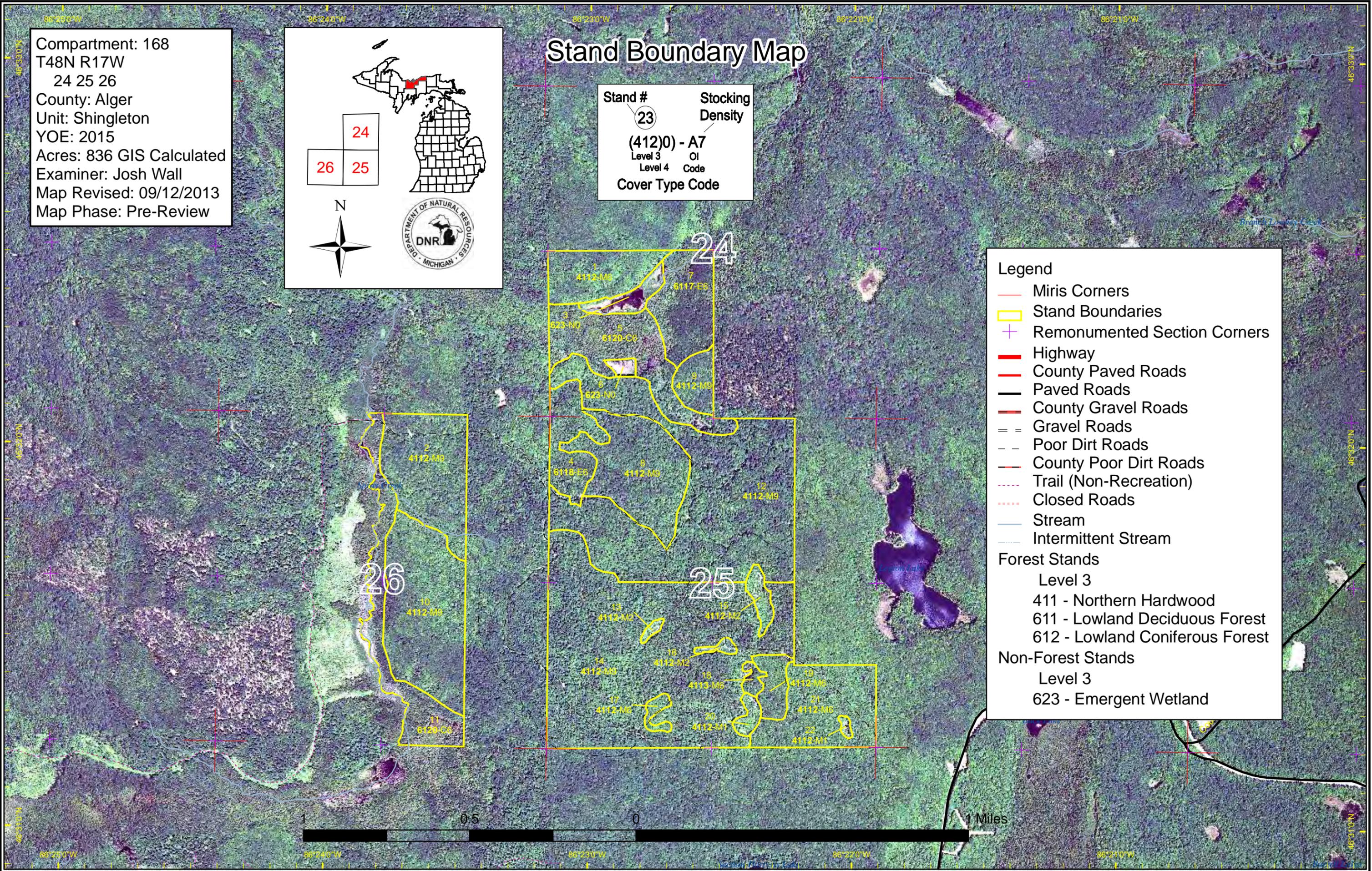
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 Map Revised: 09/12/2013
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Stand Boundary Map

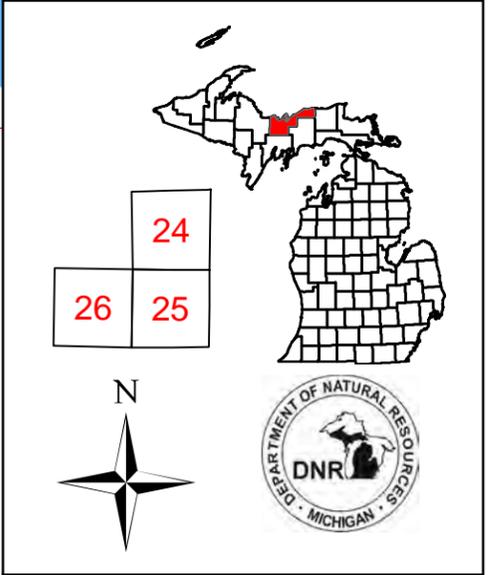
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 23
Stocking Density
 (412)0 - A7
 Level 3 OI
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Cover Type Code

- Legend**
- Miris Corners
 - Stand Boundaries
 - + Remonumented Section Corners
 - Highway
 - County Paved Roads
 - Paved Roads
 - County Gravel Roads
 - Gravel Roads
 - Poor Dirt Roads
 - County Poor Dirt Roads
 - Trail (Non-Recreation)
 - Closed Roads
 - Stream
 - Intermittent Stream
- Forest Stands**
- Level 3
 - 411 - Northern Hardwood
 - 611 - Lowland Deciduous Forest
 - 612 - Lowland Coniferous Forest
- Non-Forest Stands**
- Level 3
 - 623 - Emergent Wetland



Special Conservation Areas & Site Conditions Map

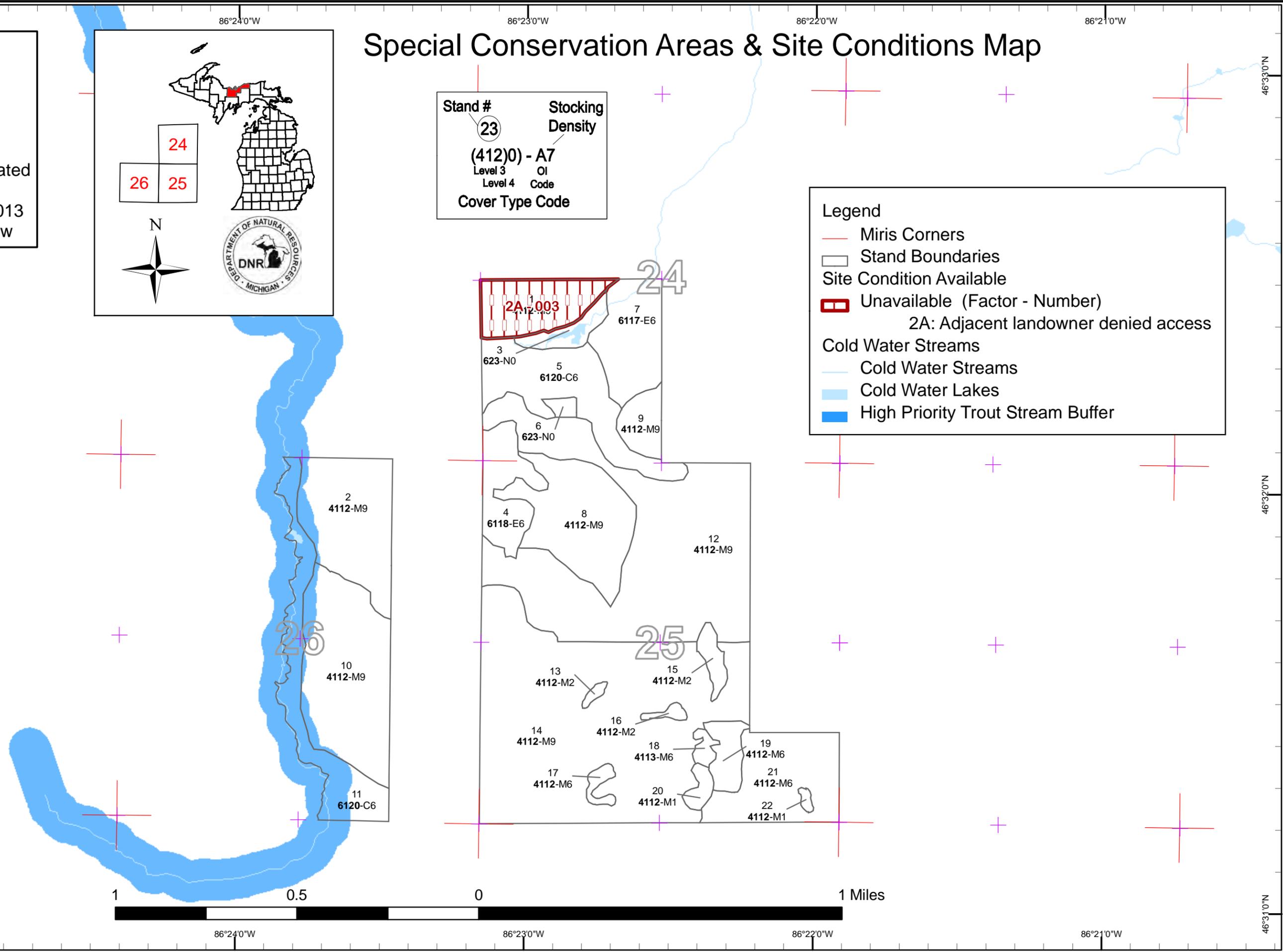
Compartment: 168
 T48N R17W
 24 25 26
 County: Alger
 Unit: Shingleton
 YOE: 2015
 Acres: 836 GIS Calculated
 Examiner: Josh Wall
 Map Revised: 09/12/2013
 Map Phase: Pre-Review



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

Legend

- Miris Corners
- Stand Boundaries
- Site Condition Available
- Unavailable (Factor - Number)
2A: Adjacent landowner denied access
- Cold Water Streams
- Cold Water Lakes
- High Priority Trout Stream Buffer



86°25'0"W 86°24'0"W 86°23'0"W 86°22'0"W 86°21'0"W

86°25'0"W 86°24'0"W 86°23'0"W 86°22'0"W 86°21'0"W

46°33'0"N
46°32'0"N
46°31'0"N

46°33'0"N
46°32'0"N
46°31'0"N

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	
Cedar	0	0	0	0	41	0	0	0	49	0	0	0	0	0	90
Lowland Deciduous	0	0	0	25	33	0	0	0	0	0	0	0	0	0	58
Marsh	12	0	0	0	0	0	0	0	0	0	0	0	0	0	12
Northern Hardwood	15	0	3	0	0	10	648	0	0	0	0	0	0	0	676
Total	26	0	3	25	75	10	648	0	49	0	0	0	0	0	836



Report 2 – Proposed Treatment Summaries

Shingleton Mgt. Unit
Year of Entry 2015

Compartment 168
Total Compartment Acres: 836

Acres by Treatment Type

Commercial Harvest - 190 Tree Planting - 0 Other - 0
 Habitat Cut - 0 Opening Maintenance - 13

Cover Type by Harvest Method

	<i>Clearcut</i>	<i>Selection</i>	<i>Seed Tree</i>	<i>Shelterwood</i>	<i>Thinning</i>	<i>Other - Specify</i>	<i>Total Acres</i>
Lowland Deciduous Forest	10	0	0	0	0	0	10
Northern Hardwood	0	180	0	0	0	0	180
Total	10	180	0	0	0	0	190

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Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
7 41168007-Cut	9.6	6117 - Lowland Deciduous, Mixed Coniferous	High Density Pole	46	81-110	Harvest	Clearcut with Reserves	6117 - Lowland Deciduous, Mixed Coniferous	Cmpt. Review Proposal

Prescription Treatment=Clear-cut leaving a few green treed White Spruce and Paper Birch in clumps to provide a seed source and more wind resistance.
Specs: Only access is through Forest Land Group to the East. They recently harvested their land and have a road system in place that is bermed. Private blue line looks to be accurate but should be checked.
 Longterm MO=Mixed lowland hardwoods with mixed lowland conifers
 Retention=Clumps of green treed White Spruce and Paper Birch, no other retention required due to small acreage and the promoting of shade intolerant species.
 MNFI database checked 4/2/13

Other Comments:

Next Steps: Monitor success of regen during the next inventory cycle. Acceptable regeneration will be a mix of the current species on site.

Proposed Start Date: 10/01/2014

8 41168008-Cut	54.2	4112 - Maple, Beech, Cherry Association	High Density Log	68	81-110	Harvest	Group Selection	4110 - Sugar Maple Association	Cmpt. Review Proposal
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Prescription Treatment=Thin stand to 60 BA on average, creating small regen gaps and maintaining species diversity. Goal is to release the advanced regen that is present so some areas can thinned heavier if desired while avoiding damage to regen.
Specs: Longterm MO=Hardwood sawlog and uneven aged stand
 Retention=Residual
 MNFI database checked 4/2/13

Other Comments:

Next Steps: Monitor stand regen during the next inventory cycle.

Proposed Start Date: 10/01/2014

9 41168009-Cut	11.9	4112 - Maple, Beech, Cherry Association	High Density Log	68	111-140	Harvest	Single Tree Selection	4110 - Sugar Maple Association	Cmpt. Review Proposal
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Prescription Treatment=Thin stand to 80 BA on average, creating small regen gaps while maintaining species diversity. Only access is through Forest Land Group to the East. They recently harvested their land and have a road system in place that is bermed. Private blue line looks to be accurate but should be checked.
Specs: Longterm MO=Hardwood sawlog and uneven aged stand
 Retention=Residual
 MNFI database checked 4/2/13

Other Comments:

Next Steps: Monitor the success of regen during the next inventory cycle

Proposed Start Date: 10/01/2014



S t a n d	Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
10	41168010-Cut	74.8	4112 - Maple, Beech, Cherry Association	High Density Log	68	111-140	Harvest	Single Tree Selection	4110 - Sugar Maple Association	Cmpt. Review Proposal
<u>Prescription</u> Treatment=Thin stand to 80 BA on average, creating small regen gaps while maintaining species diversity. Best access is through private land <u>Specs:</u> from the east via old skid trail. Possible but would require new road/ bridge/ culvert if coming from the north through state land. Private blueline looks to be accurate but should be checked. Longterm MO=Hardwood sawlog and uneven aged stand Retention=Residual MNFI database checked 4/2/13 <u>Other</u> <u>Comments:</u> <u>Next</u> Monitor stand regen during the next inventory cycle <u>Steps:</u> <u>Proposed</u> <u>Start Date:</u> 10/01/2014										
19	41168019-Cut	10.4	4112 - Maple, Beech, Cherry Association	High Density Pole	58	111-140	Harvest	Single Tree Selection	4110 - Sugar Maple Association	Cmpt. Review Proposal
<u>Prescription</u> Treatment=Thin stand to 80 BA on average, creating small regen gaps while maintaining species diversity. Avoid promoting Beech brush while <u>Specs:</u> trying to promote Black Cherry for mast production. BA's can be lower in areas with a heavier Black Cherry component. Longterm MO=Hardwood sawlog and uneven aged stand Retention=Residual MNFI database checked 4/2/13 <u>Other</u> <u>Comments:</u> <u>Next</u> Monitor success of regen during the next inventory cycle. <u>Steps:</u> <u>Proposed</u> <u>Start Date:</u> 10/01/2014										
13	41168013- NonFor	1.4	4112 - Maple, Beech, Cherry Association	Medium Density Sapling	7		Non-Forest Management	Mowing	3102 - Grass	Cmpt. Review Proposal
<u>Prescription</u> Maintain opening since it is sprouting back to hardwood. <u>Specs:</u> MNFI database checked 4/2/13 <u>Other</u> <u>Comments:</u> <u>Next</u> <u>Steps:</u> <u>Proposed</u> <u>Start Date:</u> 10/01/2014										
15	41168015- NonFor	5.8	4112 - Maple, Beech, Cherry Association	Medium Density Sapling	7		Non-Forest Management	Mowing	3102 - Grass	Cmpt. Review Proposal
<u>Prescription</u> Maintain opening for wildlife since it is sprouting back. <u>Specs:</u> MNFI database checked 4/2/13 <u>Other</u> <u>Comments:</u> <u>Next</u> <u>Steps:</u> <u>Proposed</u> <u>Start Date:</u> 10/01/2014										



S t a n d	Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
20	41168020- NonFor	4.2	4112 - Maple, Beech, Cherry Association	Low Density Sapling	7		Non-Forest Management	Mowing	3102 - Grass	Cmpt. Review Proposal

Prescription Maintain opening since it is sprouting back to hardwood.

Specs: MNFI database checked 4/2/13

Other

Comments:

Next

Steps:

Proposed

Start Date: 10/01/2014

22	41168022- NonFor	1.2	4112 - Maple, Beech, Cherry Association	Low Density Sapling	7		Non-Forest Management	Mowing	3102 - Grass	Cmpt. Review Proposal
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Prescription Maintain opening that is sprouting back to hardwood.

Specs: MNFI database checked 4/2/13

Other

Comments:

Next

Steps:

Proposed

Start Date: 10/01/2014

**Total Treatment
Acreage Proposed: 173.5**



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Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
1 41168001-Cut	28.8	4112 - Maple, Beech, Cherry Association	High Density Pole	68	111-140	Harvest	Single Tree Selection	4110 - Sugar Maple Association	Cmpt. Review Proposal

Prescription Treatment=Thin stand to 80 BA on average, creating small regen gaps while maintaining species diversity. Factor Limit stand due to access through park probably won't happen.
Specs: Longterm MO=Hardwood sawlog and uneven aged stand
 Retention=Residual
 MNFI database checked 4/2/13

Other Comment:

Next Steps: Monitor success of regen during the next inventory cycle.

Proposed Start Date: 10/01/2014

Limiting Factor 2A: Adjacent landowner denied access

Total Treatment Acreage Proposed: 28.8

Report 5 – Site Conditions

Shingleton Mgt. Unit

Josh Wall : Examiner

Compartment 168

Year of Entry 2015

Availability for Management

Total Acres	Acres		Dominant Site Conditions	Dominant Site Conditions	
	Available	Not Available		No	2A
90	90		Cedar	90	
58	58		Lowland Deciduous	58	
676	647	29	Northern Hardwood	647	29
824	795	29	Total Forested Acres	795	29
	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
003	Not Available	2A: Adjacent landowner denied access	29	2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)			
Comments:							



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
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Comments



Report 7 – DEDICATED CONSERVATION AREA DETAILS

* This is a list of Dedicated Biodiversity Areas for this compartment along with a 1/4 mile buffer surrounding the compartment. Refer to Dedicated Conservation Area Map for areas that the below listed Conservation Areas are located.

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

Conservation Area	Type	Description
SCA	Archaeological Site	An aquatic or terrestrial area of the State that contains physical remains of human occupation. These are sites of cultural and historical significance that may occur upon terrestrial areas and Great Lakes bottomlands. They include thousands of Native American settlements and burial sites, as well as French and British outposts, nineteenth century logging camps, mines and homesteads. Beneath the waters of the Great Lakes, there are shipwrecks and other remains documenting the maritime trade. Such sites may be identified by Natural heritage data from the State Historic Preservation Office. Proposed treatments in this compartment will be implemented in such a manner as to maintain the integrity of these sites. Due to the sensitive nature of this information, no further detail about location is available.
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	4112 - Maple, Beech, Cherry Association	High Density Pole	28.8	68	111-140	No access, surrounded by park service and to wet coming from the south on state. Factor Limit stand.
2	4112 - Maple, Beech, Cherry Association	High Density Log	53.6	68	81-110	Let the Beech fall out of the stand on it's own acting as a natural thinning. MO Sugar Maple, look at thinning next inventory cycle.
4	6118 - Lowland Deciduous with Cedar	High Density Pole	24.6	30	1-50	MO long lived conifers, stand cut 30 years ago
5	6120 - Lowland Cedar	High Density Pole	48.8	86	1-50	Seeps and perennial streams present, MO riparian buffer
7	6117 - Lowland Deciduous, Mixed Coniferous	High Density Pole	33.3	46	81-110	Clear-cut the south half of the stand since the adjacent hardwood is going to be thinned. The north half of the stand gets wet and would be very difficult to cut at best.
8	4112 - Maple, Beech, Cherry Association	High Density Log	54.2	68	81-110	Thin stand down to 70-80 BA creating gaps and releasing advanced regen present with out damaging it.
9	4112 - Maple, Beech, Cherry Association	High Density Log	11.9	68	111-140	Thin stand to 70-80 BA while creating regen gaps, the best access is from the east through FLG. FLG has thinned their hardwood and the property line is in but should be checked.
10	4112 - Maple, Beech, Cherry Association	High Density Log	74.8	68	111-140	Thin stand down to 70-80 BA creating regen gaps. Best access is through FLG lands to the East, nice summer marking/little understory. MO Sugar Maple
11	6120 - Lowland Cedar	High Density Pole	41.3	40	1-50	Wet Cedar with flowing water from the surrounding hillsides that makes its way to Spray Creek.
12	4112 - Maple, Beech, Cherry Association	High Density Log	163.3	68	81-110	Let the Beech fall out of the stand on it's own which will act a thinning in itself. Don't want to promote Beech brush on these soils/higher quality Maple stands. MO Sugar Maple
13	4112 - Maple, Beech, Cherry Association	Medium Density	1.4	7		Wildlife opening that they might want to maintain.
14	4112 - Maple, Beech, Cherry Association	High Density Log	211.1	68	81-110	Thinned last inventory cycle, pockets of nice Sugar Maple regen. Beech will fall apart and act as an additional thinning. Don't want to salvage the Beech and promote more Beech brush. MO Sugar Maple
15	4112 - Maple, Beech, Cherry Association	Medium Density	5.8	7		Wildlife Opening that they might want to maintain.
16	4112 - Maple, Beech, Cherry Association	Medium Density	2.0	7		Wildlife opening that they might want to maintain, would rather let it go back to Sugar Maple since it is on a good site and has nice Maple regenerating.
17	4112 - Maple, Beech, Cherry Association	High Density Pole	3.3	68	111-140	Beech study stand that has permanant plots established. Permit 41-2009-0010 Stand has less Beech brush in the understory compared the stand that was just thinned.

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Shingleton Mgt. Unit

Report 8 – Forested Stands

Compartment: 168
Year of Entry: 2015

	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
18	4113 - R.Maple, Conifer	High Density Pole	3.1	22	1-50	Part of the stand is an White Spruce plantation, heavy conifer understory. MO White Pine and Balsam Fir understory
19	4112 - Maple, Beech, Cherry Association	High Density Pole	10.4	58	111-140	Thin stand down to 70-80 BA while making regen gaps. Leave Beech standing and manage for Sugar Maple. More conifers as you move South in the stand, try to protect/promote White Pine regen to increase diversity. Also promote Cherry sprouting by placing them in the gaps created to promote future mast production.
20	4112 - Maple, Beech, Cherry Association	Low Density Sapling	4.2	7		Wildlife opening that was created last inventory cycle that has sprouted back. Wildlife might want to maintain it?
21	4112 - Maple, Beech, Cherry Association	High Density Pole	46.8	68	81-110	Let Beech fall apart and manage for White Pine to increase the conifer components in this marginal quality hardwood stand. Nice pockets of White Pine regen that will be released naturally with the Beech falling out.
22	4112 - Maple, Beech, Cherry Association	Low Density Sapling	1.2	7		Wildlife opening that might need brushed out again. Good White Pine regen filling in from adjacent seed trees. MO White Pine if approved by wildlife.



Stand	Cover Type	Acres	Managed Site	Management Priority (Objective)	General Comments:
3	6239 - Mixed Emergent Wetland	9.2	No	Unspecified	
6	6230 - Cattail	2.5	No	Unspecified	