Compartment Review Presentation

Shingleton Forest Management Unit

Compartment 112
Entry Year 2016
Acreage: 3,686
County Schoolcraft
Management Area: Fox River Complex

Revision Date: 07/29/2014

Stand Examiner: Bob Tylka

Legal Description:

T46N R13W Sections 9-16, 23, and 34.

Identified Planning Goals:

Timber production, wildlife habitat management, and protection of fisheries resources in the East Branch Fox River drainage are all identified as management objectives in this compartment. Management for recreational values is also featured as a heavily-used snowmobile trail crosses through the area as well.

Soil and topography:

South of Highway M-28 in sections 34, the terrain varies from abrupt, steep hills to flat wetlands. North of M-28 there is also some relatively steep ground up in sections 11 and 12, but the vast majority of this compartment is flat, low and wet. Only subtle changes in elevation separate the timber from the vast lowland complex that is commonly referred to as the spreads of the East Branch, and the much of the timber in the lowlands is inaccessible.

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

Highway M-28 runs through the southern part of this compartment, and M-77 is the western boundary of the northern portion. A groomed snowmobile trail runs parallel to M-77 through sections 9 and 16.
There are numerous hunting camps on the private lands along the fringes of this compartment in sections 11, 12 and 34.
The state lands in sections 10 & 34 and near Highway M-77 in section 9 have been managed for timber production.

Unique Natural Features:

The East Branch Fox River flows through from northwest to southeast. The river corridor through this compartment is comprised of numerous river channels and wet lowlands collectively known as 'The Spreads.'

Archeological, Historical, and Cultural Features:

No Archeological, Historical, or Cultural Features known.

Special Management Designations or Considerations:

The Fox River is designated as a natural river and an HCVA. The Fox River Plan gives specific guidance for limiting activities such as harvesting timber within the river corridor.

Watershed and Fisheries Considerations:

Fisheries values are excellent. The East and Main branch of the Fox offer some of the highest quality brook trout fishing in the Northern Lake Michigan Management Unit, and in fact, the East Branch contains the largest average size brook trout in the eastern Upper Peninsula.

Wildlife Habitat Considerations:

This compartment contains the spreads region of the East Branch of the Fox River. The majority of the compartment is wetland. The first surveyors recorded tamarack, cedar, black spruce, balsam fir, and tag alder as the primary woody species. Hemlock, white pine, red maple and beech were also recorded.

Although there has been an increase in the aspen component on the uplands, the forest species within this compartment appears quite similar to pre-settlement conditions.

Wildlife habitat objectives include promoting species and structural diversity in the northern hardwoods, maintaining age diversity between aspen stands, and protecting the integrity of the East Branch of the Fox River.

Mineral Resource and Development Concerns and/or Restrictions

Surface sediments consist of peat and muck and minor glacial outwash sand and gravel and postglacial alluvium. There is insufficient data to determine the glacial drift thickness. The Ordovician Stonington Formation and Utica Shale subcrop below the glacial drift. The Stonington could be used for stone/dolomite. Gravel pits at not found in the general area and

potential appears to be limited. There is no commercial oil and gas production in the UP.

Vehicle Access:

State lands in section 34 south of M-28 are easily accessible via forest roads directly off of the highway. North of M-28 in that section, virtually all of the state land is winter-only access due to the soft, wet ground. There is a poor winter road that almost reaches the 80-acre parcel in section 35, but it crosses private land and access is uncertain at this time.

There is a good two-track road that allows year-round access to the snowmobile trail and timber in the SW1/4 of Section 9 from M-77. The snowmobile trail itself may be drivable to a point just south of the line between sections 9 and 16, but probably not beyond that unless drought conditions prevail.

State lands in section 10 can be reached via the Cold Creek Road (Danaher Danaher Plains ORV Trailhead) but there is a locked gate on the private property line between sections 9 and 10. The land in the north half of section 11 is accessable from the Danaher Plains Road network.

There are no usable roads anywhere else in this compartment, leaving the majority of the acres inaccessible at this time.

Survey Needs:

Land survey is needed needed to facilitate proposed timber sale activities in sections 9, 10 and 11.

Recreational Facilities and Opportunities:

State land in this compartment receives heavy pressure wherever access is available. The snowmobile trail runs north-south through sections 9 and 16, and the Danaher Plains ORV Trailhead is just north of this compartment in section 4 off of Cold Creek Road.

Fire Protection:

Extremely difficult access would hamper fire management efforts in most of this compartment due to the marshy terrain. See the Vehicle Access notes.

Although the dry upland terrain associated with the Danaher Plains and the grasslands along M-28 pose the most significant threats in this compartment, a prolonged drought in any inaccessible area of this size could be catastrophic.

Additional Compartment Information:

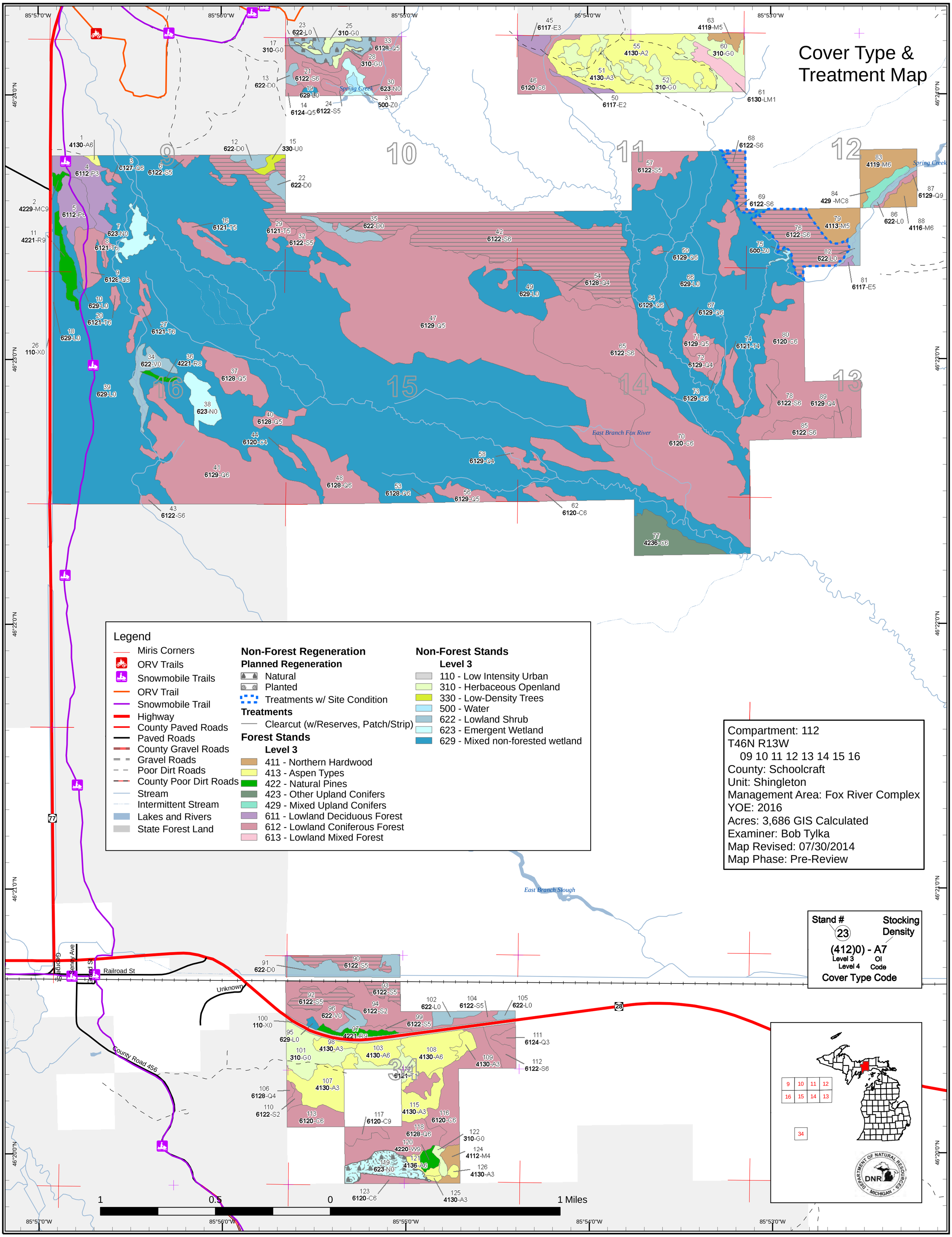
The following reports from the Inventory are attached:

- **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



Legend

- Miris Corners
- ORV Trails
- Snowmobile Trails
- ORV Trail
- Snowmobile Trail
- Highway
- County Paved Roads
- Paved Roads
- County Gravel Roads
- Gravel Roads
- Poor Dirt Roads
- County Poor Dirt Roads
- Stream
- Intermittent Stream
- Lakes and Rivers
- State Forest Land

Non-Forest Regeneration

Planned Regeneration

- Natural
- Planted
- Treatments w/ Site Condition

Treatments

- Clearcut (w/Reserves, Patch/Strip)

Forest Stands

Level 3

- 411 - Northern Hardwood
- 413 - Aspen Types
- 422 - Natural Pines
- 423 - Other Upland Conifers
- 429 - Mixed Upland Conifers
- 611 - Lowland Deciduous Forest
- 612 - Lowland Coniferous Forest
- 613 - Lowland Mixed Forest

Non-Forest Stands

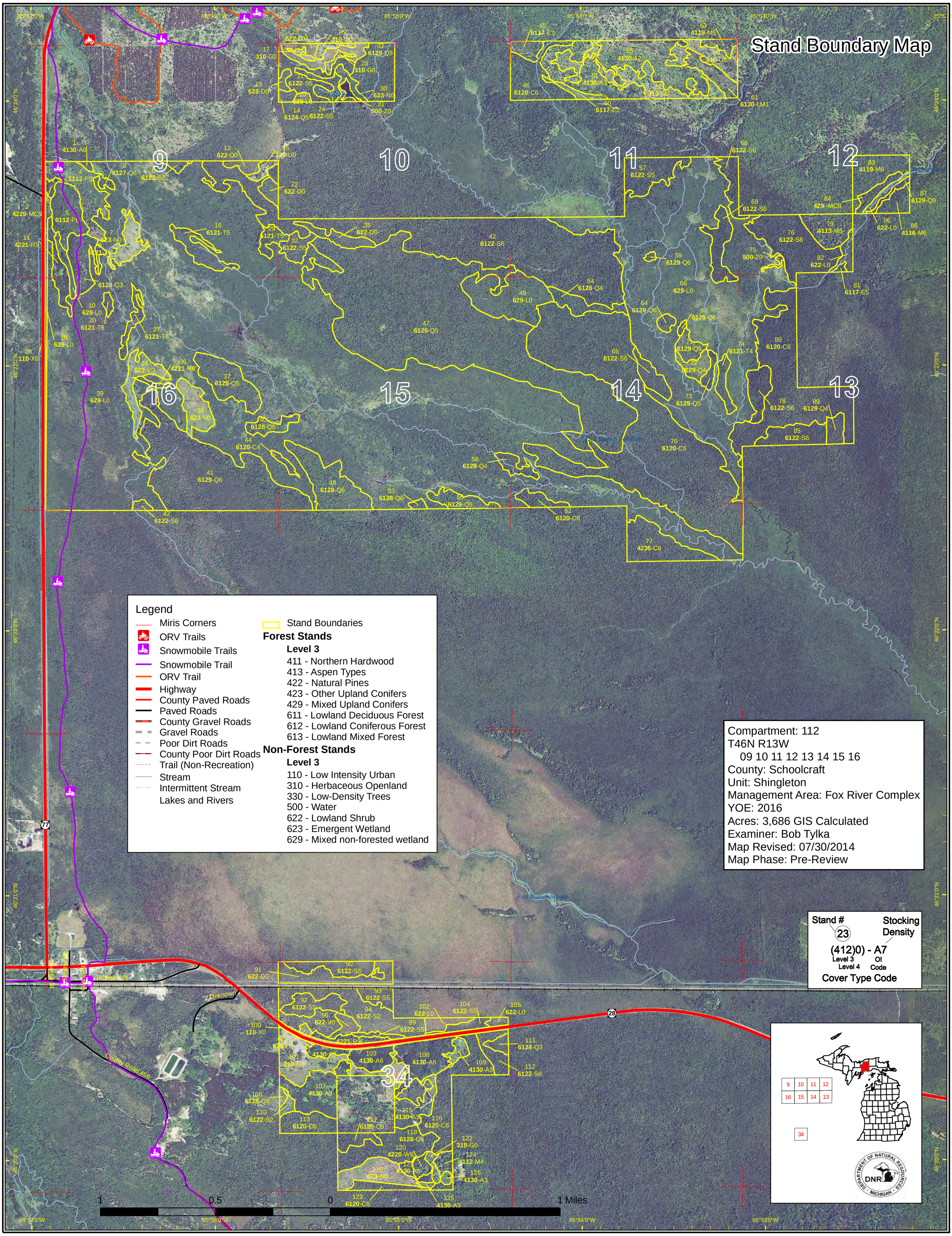
Level 3

- 110 - Low Intensity Urban
- 310 - Herbaceous Openland
- 330 - Low-Density Trees
- 500 - Water
- 622 - Lowland Shrub
- 623 - Emergent Wetland
- 629 - Mixed non-forested wetland

Compartment: 112
T46N R13W
09 10 11 12 13 14 15 16
County: Schoolcraft
Unit: Shingleton
Management Area: Fox River Complex
YOE: 2016
Acres: 3,686 GIS Calculated
Examiner: Bob Tylka
Map Revised: 07/30/2014
Map Phase: Pre-Review

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

Stand Boundary Map



Legend

- Miris Corners
- ORV Trails
- Snowmobile Trails
- Snowmobile Trail
- ORV Trail
- Highway
- County Paved Roads
- Paved Roads
- County Gravel Roads
- Gravel Roads
- Poor Dirt Roads
- County Poor Dirt Roads
- Trail (Non-Recreation)
- Stream
- Intermittent Stream
- Lakes and Rivers
- Stand Boundaries

Forest Stands

Level 3

411 - Northern Hardwood
413 - Aspen Types
422 - Natural Pines
423 - Other Upland Conifers
429 - Mixed Upland Conifers
611 - Lowland Deciduous Forest
612 - Lowland Coniferous Forest
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Non-Forest Stands

Level 3

110 - Low Intensity Urban
310 - Herbaceous Openland
330 - Low-Density Trees
500 - Water
622 - Lowland Shrub
623 - Emergent Wetland
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Compartment: 112
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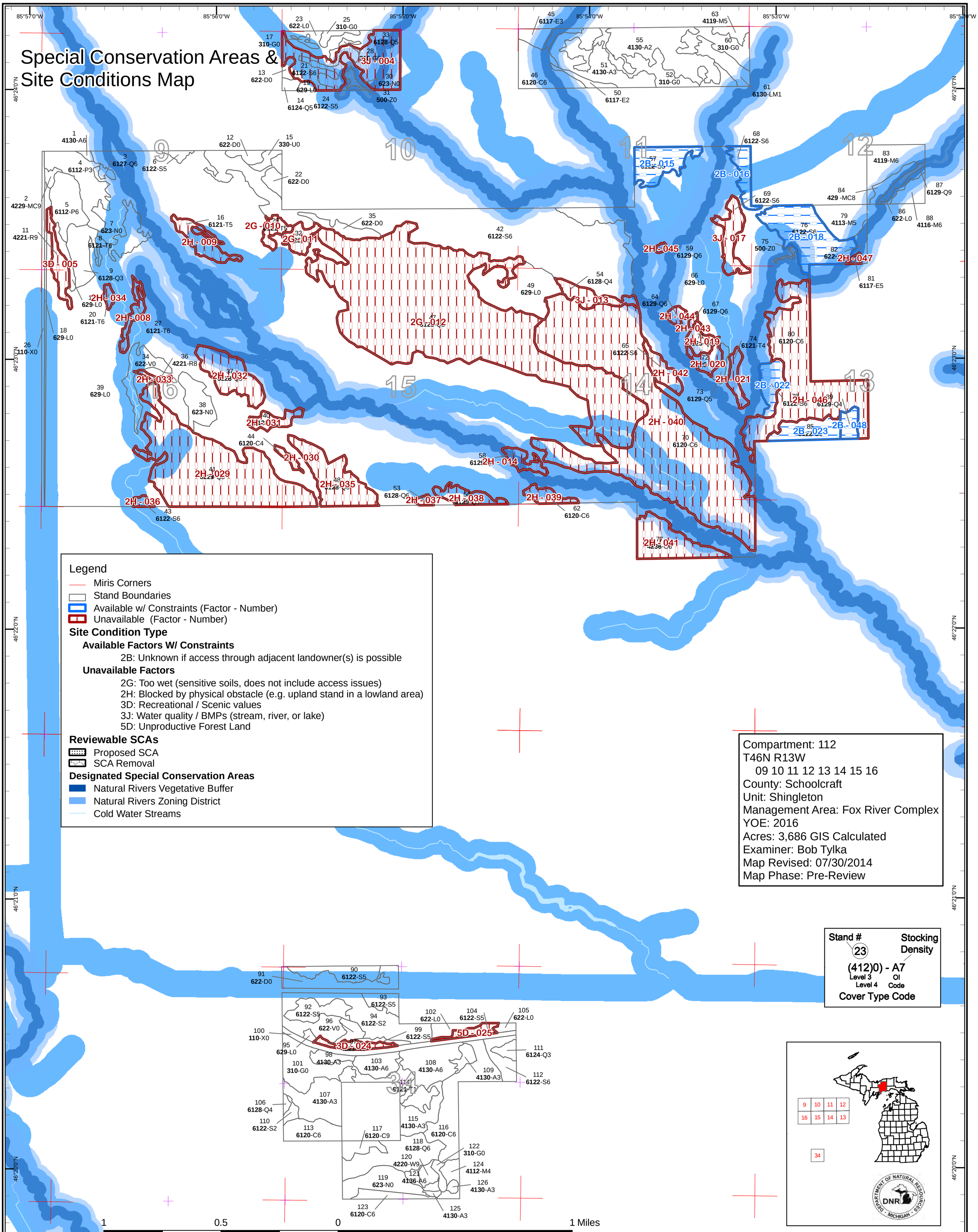
1 0.5 0 1 Miles

Special Conservation Areas & Site Conditions Map



Legend

- Miris Corners
- Stand Boundaries
- Available w/ Constraints (Factor - Number)
- Unavailable (Factor - Number)

Site Condition Type

Available Factors W/ Constraints

2B: Unknown if access through adjacent landowner(s) is possible

Unavailable Factors

2G: Too wet (sensitive soils, does not include access issues)
2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)
3D: Recreational / Scenic values
3J: Water quality / BMPs (stream, river, or lake)
5D: Unproductive Forest Land

Reviewable SCAs

- Proposed SCA
- SCA Removal

Designated Special Conservation Areas

- Natural Rivers Vegetative Buffer
- Natural Rivers Zoning District
- Cold Water Streams

Compartment: 112
T46N R13W
09 10 11 12 13 14 15 16
County: Schoolcraft
Unit: Shingleton
Management Area: Fox River Complex
YOE: 2016
Acres: 3,686 GIS Calculated
Examiner: Bob Tylka
Map Revised: 07/30/2014
Map Phase: Pre-Review

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

Report 1 – Total Acres by Cover Type and Age Class

Shingleton Mgt. Unit **Compartment 112 Year of Entry 2016**

Bob Tylka : Examiner

Age Class

	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	Total
Aspen	7	112	0	39	0	0	0	0	0	0	0	0	0	0	**157**
Bog	18	0	0	0	0	0	0	0	0	0	0	0	0	0	**18**
Cedar	0	0	0	0	0	0	0	0	13	90	25	8	33	273	**442**
Herbaceous Openland	82	0	0	0	0	0	0	0	0	0	0	0	0	0	**82**
Low-Density Trees	3	0	0	0	0	0	0	0	0	0	0	0	0	0	**3**
Lowland Aspen/Balsam Poplar	25	0	19	0	0	0	0	0	0	0	0	0	0	0	**44**
Lowland Conifers	0	0	19	28	0	0	6	2	334	27	6	0	0	189	**613**
Lowland Deciduous	0	10	0	0	0	0	0	0	1	0	0	0	0	0	**11**
Lowland Mixed Forest	0	11	0	0	0	0	0	0	0	0	0	0	0	0	**11**
Lowland Shrub	1632	0	0	0	0	0	0	0	0	0	0	0	0	0	**1632**
Lowland Spruce/Fir	0	3	0	0	0	0	18	0	343	24	0	0	0	49	**436**
Marsh	48	0	0	0	0	0	0	0	0	0	0	0	0	0	**48**
Natural Mixed Pines	0	0	0	0	0	0	0	0	0	0	0	0	0	2	**2**
Northern Hardwood	0	0	0	0	0	0	28	6	0	0	0	0	0	21	**55**
Red Pine	0	0	0	0	0	0	0	6	0	0	0	0	10	2	**17**
Tamarack	0	0	0	0	0	0	0	0	13	12	10	0	0	6	**41**
Treed Bog	37	0	0	0	0	0	0	0	0	0	0	0	0	0	**37**
Upland Conifers	0	0	0	0	0	0	0	0	0	0	0	0	0	6	**6**
Urban	25	0	0	0	0	0	0	0	0	0	0	0	0	0	**25**
Water	3	0	0	0	0	0	0	0	0	0	0	0	0	0	**3**
White Pine	0	0	0	0	0	0	0	0	0	0	0	0	0	4	**4**
Total	**1880**	**134**	**38**	**67**	**0**	**0**	**52**	**13**	**704**	**154**	**41**	**8**	**43**	**551**	**3686**

Report 2 – Proposed Treatment Summaries

Shingleton Mgt. Unit
Year of Entry 2016

Compartment 112
Total Compartment Acres: 3,686

Acres by Treatment Type

Commercial Harvest - 267	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
Lowland Coniferous Forest	267	0	0	0	0	0	**267**
Total	**267**	**0**	**0**	**0**	**0**	**0**	**267**

Stand	Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
42	41112042-Cut	185.7	6122 - Black Spruce	High Density Pole	88	51-80	Harvest	Clearcut with Reserves	6122 - Black Spruce	Cmpt. Review Proposal

Prescription Specs: CC w/reserves - establish retention areas during sale layout, and also reserve white, hemlock and cedar if any is encountered in the stand.

Other Comments: Both land survey and permission to access the sale area across private lands is required. Protect the snowmobile trail per standard operating procedures.

Next Steps: Natural regeneration - all conifers plus paper birch and aspen are acceptable species. Monitor regeneration in accordance with the work instructions.

Proposed Start Date: 10/01/2015

Stand	Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
90	41112090-Cut	13.1	6122 - Black Spruce	Medium Density Pole	83	51-80	Harvest	Clearcut with Reserves	6122 - Black Spruce	Cmpt. Review Proposal

Prescription Specs: CC w/reserves - retention areas will be determined during sale layout, and also reserve any white pine, hemlock and cedar if encountered in the stand.

Other Comments:

Next Steps: Natural regeneration - all conifers plus aspen & birch are acceptable species. Monitor regeneration in accordance with the work instructions.

Proposed Start Date: 10/01/2015

Stand	Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
92	41112092-Cut	11.8	6122 - Black Spruce	Medium Density Pole	83	51-80	Harvest	Clearcut with Reserves	6122 - Black Spruce	Cmpt. Review Proposal

Prescription Specs: CC w/reserves - retention areas will be determined during sale layout, and also reserve any white pine, hemlock and cedar if any are encountered in the stand.

Other Comments:

Next Steps: Natural regeneration - all conifers plus aspen & birch are acceptable species. Monitor regeneration in accordance with the work instructions.

Proposed Start Date: 10/01/2015

Stand	Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
93	41112093-Cut	6.7	6122 - Black Spruce	Medium Density Pole	83	51-80	Harvest	Clearcut	6122 - Black Spruce	Cmpt. Review Proposal

Prescription Specs: Clearcut - due to small acreage retention is not mandatory, but if encountered in the stand all white pine, hemlock and cedar will be reserved.

Other Comments:

Next Steps: Natural regeneration - all conifers plus aspen & birch are acceptable species. Monitor regeneration in accordance with the work instructions.

Proposed Start Date: 10/01/2015

Stand	Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
119	NF_41112119-Monitor	17.8	6239 - Mixed Emergent Wetland				Monitoring	See Comments	612 - Lowland Coniferous Forest	Cmpt. Review Proposal

Prescription Specs: Cut in 2011 - regen survey in 2014 indicates that the stand is not presently reforested. Continue to monitor the regen in accordance with the work instructions - re-survey in 2015.

Other Comments: Stand was a mix of cedar etc. before harvest, and these wet sites are often slow to regenerate.

Next Steps: If sufficient regen is not present at next survey, refer to the TMS for evaluation/further action.

Proposed Start Date: Unspecified

Total Treatment Acreage Proposed: 235.0

Report 4 -- Treatments Prescribed with a Site Condition

Stand	Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
68	41112068-Cut	10.0	6122 - Black Spruce	High Density Pole	85	81-110	Harvest	Clearcut with Reserves	6122 - Black Spruce	Cmpt. Review Proposal

Prescription Specs: CC w/reserves - If access is available, cut all merchantable trees except for reserving all white pine, hemlock and cedar encountered in this stand.

Other Comment: Currently factor limited due to access issues.

Next Steps: Natural regeneration - all conifers & birches are acceptable spp. Monitor regen in accordance with the work instructions.

Proposed Start Date: 10/01/2015

Limiting Factor: 2B: Unknown if access through adjacent landowner(s) is possible

Stand	Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
76	41112076-Cut	39.5	6122 - Black Spruce	High Density Pole	85	81-110	Harvest	Clearcut with Reserves	6122 - Black Spruce	Cmpt. Review Proposal

Prescription Specs: CC w/reserves - If access is available, cut all merchantable trees except for reserving all white pine, hemlock and cedar encountered in this stand.

Other Comment: Currently factor limited for access issues.

Next Steps: Natural regen - all conifers and birches are acceptable spp. Monitor the regen in accordance w/ the work instructions.

Proposed Start Date: 10/01/2015

Limiting Factor: 2B: Unknown if access through adjacent landowner(s) is possible

Total Treatment Acreage Proposed: 49.5

Report 5 – Site Conditions

Shingleton Mgt. Unit | **Compartment 112**

Bob Tylka : Examiner | **Year of Entry 2016**

Availability for Management

Total Acres	Acres Available	Acres Not Available	Dominant Site Conditions	No	5D	3J	3D	2H	2G	2B
157	157		**Aspen**	157						
442	442		**Cedar**	442						
44	44		**Lowland Aspen/Balsam Poplar**	44						
612	257	356	**Lowland Conifers**	257		36		20	300	
11	11		**Lowland Deciduous**	11						
11	11		**Lowland Mixed Forest**	11						
436	399	36	**Lowland Spruce/Fir**	289	5	23			8	110
2	2		**Natural Mixed Pines**	2						
55	55		**Northern Hardwood**	55						
17	2	16	**Red Pine**	2			16			
41	9	31	**Tamarack**	9				25	6	
6	6		**Upland Conifers**	6						
4	4		**White Pine**	4						
1,837	1,398	439	Total Forested Acres	1,287	5	59	16	45	314	110
	76%	24%	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
004	**Not Available**	**3J: Water quality / BMPs (stream, river, or lake)**	49				
	Comments:						
005	**Not Available**	**3D: Recreational / Scenic values**	10				
	Comments:						

008	**Not Available**	**2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)**	6	2G: Too wet (sensitive soils, does not include access issues)	
Comments:					
009	**Not Available**	**2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)**	12		
Comments:					
010	**Not Available**	**2G: Too wet (sensitive soils, does not include access issues)**	6		
Comments:					
011	**Not Available**	**2G: Too wet (sensitive soils, does not include access issues)**	8		
Comments:					
012	**Not Available**	**2G: Too wet (sensitive soils, does not include access issues)**	300	3J: Water quality / BMPs (stream, river, or lake)	
Comments:					
013	**Not Available**	**3J: Water quality / BMPs (stream, river, or lake)**	11		
Comments:					

014	**Not Available**	**2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)**	7	3J: Water quality / BMPs (stream, river, or lake)		
Comments:						
015	**Available**	**2B: Unknown if access through adjacent landowner(s) is possible**	20	2I: Survey needed	2E: Road needed	
Comments:						
016	**Available**	**2B: Unknown if access through adjacent landowner(s) is possible**	10	2D: Portable Bridge Needed (Dept. bridge will be adequate)	2E: Road needed	2I: Survey needed
Comments:						
017	**Not Available**	**3J: Water quality / BMPs (stream, river, or lake)**	14	2E: Road needed		
Comments:						
018	**Available**	**2B: Unknown if access through adjacent landowner(s) is possible**	40	2E: Road needed	3J: Water quality / BMPs (stream, river, or lake)	
Comments:						
019	**Not Available**	**2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)**	7			
Comments:						

020	**Not Available**	**2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)**	7		
Comments:					
021	**Not Available**	**2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)**	6		
Comments:					
022	**Available**	**2B: Unknown if access through adjacent landowner(s) is possible**	12	2E: Road needed	
Comments:					
023	**Available**	**2B: Unknown if access through adjacent landowner(s) is possible**	16	2I: Survey needed	
Comments:					
024	**Not Available**	**3D: Recreational / Scenic values**	6		
Comments:					
025	**Not Available**	**5D: Unproductive Forest Land**	5		
Comments:					

029	**Not Available**	**2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)**	114

Comments:

030	**Not Available**	**2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)**	2

Comments:

031	**Not Available**	**2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)**	7

Comments:

032	**Not Available**	**2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)**	24

Comments:

033	**Not Available**	**2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)**	2

Comments:

034	**Not Available**	**2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)**	2

Comments:

035	**Not Available**	**2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)**	31

Comments:

036	**Not Available**	**2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)**	2

Comments:

037	**Not Available**	**2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)**	2

Comments:

038	**Not Available**	**2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)**	10

Comments:

039	**Not Available**	**2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)**	6

Comments:

040	**Not Available**	**2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)**	234

Comments:

041	**Not Available**	**2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)**	27

Comments:

042	**Not Available**	**2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)**	9

Comments:

043	**Not Available**	**2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)**	1

Comments:

044	**Not Available**	**2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)**	3

Comments:

045	**Not Available**	**2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)**	1

Comments:

046	**Not Available**	**2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)**	90

Comments:

047	**Not Available**	**2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)**	1

Comments:

048	**Available**	**2B: Unknown if access through adjacent landowner(s) is possible**	6

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

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	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.
HCVA	Natural Rivers	There are two Natural Rivers datasets which are derived from spatial buffers set from an established and approved distance from the river centerlines. The Natural Rivers Zoning District is a 400 foot buffer for most Natural Rivers. The Vegetative Buffer ranges from 25 to 100 feet. To view specific Zoning Districts and Vegetative Buffers for each Natural River see the table located on the I:\Documentation\GDSE data folder.

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
1	4130 - Aspen	High Density Pole	1.1	38		Cut in 1976
2	42290 - Natural Mixed Pine	High Density Log	2.1	Uneven Age	51-80	Residual red & white pine - reserved trees left when the aspen regen stand to the east was cut in 2009. The understory is a mix of aspen, maple and pine regen. The age of the overstory is based on inventory from 1986.
3	6127 - Lowland Pine	High Density Pole	1.8	70	51-80	White pine mix on a transitional site. This pocket was left when the mixed conifers to the west were harvested last entry.
4	6112 - Lowland Aspen	High Density Sapling	24.7	5		This stand was cut in 2009 and is now fully stocked with aspen regeneration along with red maple saplings etc.
5	6112 - Lowland Aspen	High Density Pole	19.1	26	1-50	
6	6122 - Black Spruce	Medium Density Pole	2.3	88	51-80	Semi-open spruce - ready to cut.
8	6121 - Tamarack	High Density Pole	1.5	100	51-80	Tamarack on wet ground - operability is questionable.
9	6128 - Lowland Coniferous, Mixed Deciduous	High Density Sapling	15.6	26	1-50	Mixed regen, cut in 1988. Pockets of larger pine were left and are still standing.
11	42210 - Natural Red Pine	High Density Log	10.2	120	141-170	Natural stand of large red pine with a few white pine and scattered spruce. The understory is a mix of spruce, fir and white pine.
14	6124 - Lowland Spruce-Fir	Medium Density Pole	2.3	98	1-50	Partially cut in 2009, leaving the small stuff. Operability is an issue on the soft, wet terrain.
16	6121 - Tamarack	Medium Density Pole	12.3	94	81-110	Tamarack etc. out in an inaccessible area
20	6121 - Tamarack	High Density Pole	2.1	100	81-110	Pocket of tamarack poles out in the Non-forested lowland complex
21	6122 - Black Spruce	High Density Pole	17.1	98	81-110	Spruce stand on gently rolling ground - site indices and stand composition very accordingly. Much of the stand (eastern part) was left to buffer drainages leading into Cold Creek; some of it in the western part of the stand was left uncut when TS 41-012-06-01 was closed.
24	6122 - Black Spruce	Medium Density Pole	6.7	98	51-80	Spruce etc. in the buffers around drainages forming the headwaters of Cold Creek.
27	6121 - Tamarack	High Density Pole	6.4	100	51-80	Tamarack etc. on slightly elevated but still wet ground.

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
29	6121 - Tamarack	Medium Density Pole	6.1	87	1-50	Semi-open tamarack & black spruce - may be too wet for operability.
32	6122 - Black Spruce	Medium Density Pole	7.9	88	51-80	Semi-open black spruce & tamarack - may be too wet for operability.
33	6128 - Lowland Coniferous, Mixed Deciduous	Medium Density Pole	25.2	98	51-80	Mixed lowland timber featuring cedar and a variety of other spp. Composition and density vary quite a bit from place to place within the stand, and site indices appear to change with even slight elevation differences.
36	42210 - Natural Red Pine	Medium Density Log	1.7	Uneven Age	81-110	Small upland ridge of natural red pine. Age variation is present. Some white pine and spruce are also present.
37	6128 - Lowland Coniferous, Mixed Deciduous	Medium Density Pole	23.6	Uneven Age	51-80	Semi-open stand of slow-growing timber on wet ground - inaccessible across the non-timbered lowlands.
40	6128 - Lowland Coniferous, Mixed Deciduous	Medium Density Pole	7.2	Uneven Age	51-80	Semi-open stand of slow-growing timber on wet ground - inaccessible across the non-timbered lowlands.
41	6129 - Mixed Coniferous Lowland Forest	High Density Pole	113.8	Uneven Age	81-110	Slow-growing timber on wet ground - inaccessible across the non-timbered lowlands. Uneven-aged characteristics evident due to natural disturbances.
42	6122 - Black Spruce	High Density Pole	185.7	88	51-80	Black spruce ready to cut if access across private land can be obtained.
43	6122 - Black Spruce	High Density Pole	2.0	Uneven Age	51-80	Slow-growing timber on wet ground - inaccessible across the non-timbered lowlands. Uneven-aged characteristics evident due to natural disturbances.
44	6120 - Lowland Cedar	Low Density Pole	2.3	117	51-80	Open lowland mix on slightly elevated ground
45	6117 - Lowland Deciduous, Mixed Coniferous	High Density Sapling	5.8	15		Mix of aspen and conifer regen, generally 2-4" DBH.
46	6120 - Lowland Cedar	High Density Pole	24.7	100	111-140	This stand features cedar with a mix of other species scattered throughout, and is located on a slightly rolling, transitional site. It was previously classified as an unevenaged stand, and evidence of both the size-class and age diversity typical of cedar stands is present; an estimate of the average age of the cedar is given here.
47	6129 - Mixed Coniferous Lowland Forest	Medium Density Pole	299.8	88	51-80	Slow-growing lowland mix on rolling terrain. Site indices, stand density and overall timber quality vary tremendously with slight elevation changes. Some age class variability is due to natural disturbances is also present. The age given here matches the adjacent spruce to the north. In some areas the site index appears to be too low for commercial timber management.

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
48	6128 - Lowland Coniferous, Mixed Deciduous	High Density Pole	30.7	Uneven Age	51-80	Wet area supporting a mix of lowland timber. Although the stand composition and density vary considerably, cedar is the most prevalent species.
50	6117 - Lowland Deciduous, Mixed Coniferous	Medium Density	3.7	15		Cut in 1999.
51	4130 - Aspen	High Density Sapling	29.2	15		Cut in 1999.
53	6128 - Lowland Coniferous, Mixed Deciduous	High Density Pole	1.6	Uneven Age	51-80	Slow-growing conifer mix on wet ground.
54	6128 - Lowland Coniferous, Mixed Deciduous	Low Density Pole	10.7	88	1-50	Low wet area supporting a semi-open mix of trees and brush, and a drainage channel runs through the stand. Operability is highly questionable. Site indices for the various tree species appear to be low but extremely variable throughout.
55	4130 - Aspen	Medium Density	40.3	15		Cut in 1999.
56	6129 - Mixed Coniferous Lowland Forest	Medium Density Pole	9.5	Uneven Age	1-50	Semi-open mix of slow-growing lowland conifers - definite age-class diversity. Site indices are generally low but appear to vary quite a bit.
57	6122 - Black Spruce	Medium Density Pole	19.9	84	51-80	Lowland black spruce
58	6129 - Mixed Coniferous Lowland Forest	Low Density Pole	6.5	100	1-50	Semi-open lowland conifers on rolling terrain near the East Branch Fox River,
59	6129 - Mixed Coniferous Lowland Forest	High Density Pole	1.0	84		Slow-growing conifers. Completely inaccessible across non-forested lowlands and waterways; the timber value would not justify the efforts.
61	6130 - Fir, Aspen, Maple	Low Density Sapling	10.6	15	1-50	Semi-open mix of young conifers, red maple and aspen on a transitional site.
62	6120 - Lowland Cedar	High Density Pole	6.2	135	111-140	
63	4119 - Mixed Northern Hardwoods	Medium Density Pole	4.3	Uneven Age	51-80	Semi-open stand on dry ground - mostly red maple with some oak, pines and fir. The stand still appears to be slowly filling in. Site indices may be somewhat variable, and age-class diversity is present.
64	6129 - Mixed Coniferous Lowland Forest	High Density Pole	2.9	84		Slow-growing conifers. Completely inaccessible across non-forested lowlands and waterways; the timber value would not justify the efforts.

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
65	6122 - Black Spruce	High Density Pole	9.0	65	51-80	Slow-growing spruce mix.
67	6129 - Mixed Coniferous Lowland Forest	High Density Pole	1.0	84		Slow-growing conifers. Completely inaccessible across non-forested lowlands and waterways; the timber value would not justify the efforts.
68	6122 - Black Spruce	High Density Pole	10.0	85	81-110	Black spruce - ready to cut if access across the private land is available.
69	6122 - Black Spruce	High Density Pole	14.1	88	81-110	Ready to cut if access across the private land is available.
70	6120 - Lowland Cedar	High Density Pole	234.0	Uneven Age	81-110	Large cedar stand with numerous inclusions of mixed lowland conifers. The East Branch Fox River flows through the south end of the stand, and Cold creek is to the east of the stand; numerous drainages flow into both of these waterways. Unevenaged characteristics are evident.
71	6129 - Mixed Coniferous Lowland Forest	Medium Density Pole	6.9	84		Slow-growing conifers. Completely inaccessible across non-forested lowlands and waterways; the timber value would not justify the efforts.
72	6129 - Mixed Coniferous Lowland Forest	Low Density Pole	7.0	84		Slow-growing, semi-open conifers and lots of lowland brush. Completely inaccessible across non-forested lowlands and waterways; the timber value would not justify the efforts.
73	6129 - Mixed Coniferous Lowland Forest	Medium Density Pole	3.8	84		Slow-growing conifers. Completely inaccessible across non-forested lowlands and waterways; the timber value would not justify the efforts.
74	6121 - Tamarack	Low Density Pole	6.4	84		Slow-growing, semi-open tamarack with a few spruce etc. mixed in. Completely inaccessible across non-forested lowlands and waterways; the timber value would not justify the efforts.
76	6122 - Black Spruce	High Density Pole	39.5	85	81-110	Black spruce mix - ready to cut if access across the private land is available. Some age class variation is becoming evident due to natural disturbances.
77	42360 - Upland Cedar	High Density Pole	26.5	135	81-110	Lowland cedar - wet ground.
78	6122 - Black Spruce	High Density Pole	11.5	84	81-110	Lowland black spruce with tamarack & cedar throughout.
79	4113 - R.Maple, Conifer	Medium Density Pole	16.3	Uneven Age	51-80	Mixed stand (primarily red maple) on a rolling, transitional site.
80	6120 - Lowland Cedar	High Density Pole	90.0	96	81-110	

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
81	6117 - Lowland Deciduous, Mixed Coniferous	Medium Density Pole	1.0	85	51-80	Mixed stand on a transitional site.
83	4119 - Mixed Northern Hardwoods	High Density Pole	20.5	60	81-110	Mostly hardwood poles w/conifers scattered throughout.
84	429 - Mixed Upland Conifers	Medium Density Log	6.0	Uneven Age	51-80	Conifer mix on gently sloping ground above Spring Creek.
85	6122 - Black Spruce	High Density Pole	15.5	84	81-110	Spruce with tamarack & cedar mixed in.
87	6129 - Mixed Coniferous Lowland Forest	High Density Log	2.6	Uneven Age	51-80	Conifer mix on sloping ground above Spring Creek.
88	4116 - Mixed N. Hardwood - Aspen	High Density Pole	7.6	60	51-80	Hardwood/conifer mix on a transitional site. Unevenaged characteristics are becoming evident, but the age shown here represents the shade-intolerant spp. present in the stand.
89	6129 - Mixed Coniferous Lowland Forest	Low Density Pole	5.9	60	1-50	Mixed conifer stand still emerging from the lowland brush cover - now a mix of small 1-stick poles and saplings. This area was cut, but no records for that exist; the land was acquired in 1939. It appears to have reverted back to low brush, and the age shown is just a rough guess of when the small poles/saps began to get established. Age variability is present but too difficult to classify right now.
90	6122 - Black Spruce	Medium Density Pole	13.1	83	51-80	Lowland conifer mix - relatively slow-growing, but ready to cut. Pockets of submerchantible timber/lowland brush are present on the wettest areas.
92	6122 - Black Spruce	Medium Density Pole	11.8	83	51-80	Slow-growing black spruce. The stand is fully-stocked but numerous stems are still submerchantable due to the low, wet terrain.
93	6122 - Black Spruce	Medium Density Pole	6.7	83	51-80	Slow-growing black spruce. The stand is fully-stocked but numerous stems are still submerchantable due to the low, wet terrain.
94	6122 - Black Spruce	Medium Density	44.4	Uneven Age	1-50	Wet area. The timber is comprised of a mix of slow-growing conifer regeneration and a few poles. This stand is semi-open in places but is generally forested throughout.
97	42210 - Natural Red Pine	High Density Log	5.5	79	81-110	Red pine mix along the highway, on a narrow ridge above the lowlands.
98	4130 - Aspen	High Density Sapling	4.7	17		Young aspen - stand was cut in 1996.

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
99	6122 - Black Spruce	Medium Density Pole	2.6	Uneven Age	1-50	Very slow-growing black spruce mix. Several age classes are present, but overall site indices appear to be too low for commercial management. Most of the spruce are either barely merchantible or the diameter is still too small. The age was estimated from nearby stands with similar characteristics.
103	4130 - Aspen	High Density Pole	10.6	37	51-80	Aspen pole stand - mostly bigtooth.
104	6122 - Black Spruce	Medium Density Pole	5.0	83	1-50	Very slow-growing black spruce - Site index is too low for commercial management
106	6128 - Lowland Coniferous, Mixed Deciduous	Low Density Pole	1.2	84	1-50	Very slow-growing lowland mix. Site indices vary significantly and appear to be too low for commercial management in places.
107	4130 - Aspen	High Density Sapling	24.3	17		Young aspen on a transitional site - dryer on the north edge. Several open grassy areas too small to map are included.
108	4130 - Aspen	High Density Pole	23.6	37	51-80	Bigtooth aspen
109	4130 - Aspen	High Density Sapling	4.2	3		Aspen regen - cut in 2011. A few residual white pine from the previous stand are present.
110	6122 - Black Spruce	Medium Density	2.6	14		Cut in 2000.
111	6124 - Lowland Spruce-Fir	High Density Sapling	3.5	28		Lowland conifer regen.
112	6122 - Black Spruce	High Density Pole	9.0	66	81-110	Black spruce mix - cut next entry. Still a few spruce that are submerchantible and likely to stay that way.
113	6120 - Lowland Cedar	High Density Pole	13.4	84	81-110	Cedar/lowland conifer mix; semi-open in places.
114	6121 - Tamarack	Low Density Sapling	5.8	Uneven Age		Boggy kettle slowly filling in with slow-growing conifers. Site indices are extremely low - formerly classified as a bog, in reality a treed bog. Ground cover is low shrubs and marsh grass.
115	4130 - Aspen	High Density Sapling	13.1	18		Mix of quaking & bigtooth aspen over balsam fir/red maple.
116	6120 - Lowland Cedar	High Density Pole	32.9	Uneven Age	141-170	
117	6120 - Lowland Cedar	High Density Log	6.3	Uneven Age	111-140	Cedar displaying age class diversity.
118	6128 - Lowland Coniferous, Mixed Deciduous	High Density Pole	28.5	37	1-50	Lowland conifers cut in 1977.

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
120	42200 - Natural White Pine	High Density Log	3.8	Uneven Age	81-110	Partially cut back in 1977, resulting in a 2-storied stand featuring large white pine and a few hemlock over a mix of younger, deciduous spp. including bigtooth aspen clones.
121	4136 - Aspen, Mixed Conifer	High Density Pole	3.5	37	51-80	Bigtooth aspen with scattered large pine left from the previous stand.
123	6120 - Lowland Cedar	High Density Pole	6.1	112	141-170	Lowland cedar
124	4112 - Maple, Beech, Cherry Association	Low Density Pole	5.9	70	1-50	Thinned last entry
125	4130 - Aspen	High Density Sapling	1.0	3		Fully stocked with bigtooth aspen regeneration.
126	4130 - Aspen	High Density Sapling	1.4	3		Bigtooth aspen regen - cut in spring 2011.

Report 9 – Nonforested Stands

Stand	Cover Type	Acres	Managed Site	Management Priority (Objective)	General Comments:
7	6239 - Mixed Emergent Wetland	11.1	No	Low	
10	629 - Mixed non-forested wetland	4.6	No	Low	
12	6224 - Treed Bog	4.3	No	Low	
13	6224 - Treed Bog	2.2	No	Low	
15	3302 - Low Density Conifer Trees	3.3	No	Low	
17	3105 - Mixed Upland Herbaceous	1.6	No	Low	
18	629 - Mixed non-forested wetland	6.9	No	Low	
19	629 - Mixed non-forested wetland	1.7	Natural Regen	Lowland Spruce/Fir	Cut in spring of 2009 - regen survey indicates that when the residual saplings that were present before the harvest and the new regen that has taken hold since it was cut are combined, adequate stocking of acceptable species is present throughout most of this stand. There are also areas that remain unstocked. but evidence suggests that these areas were unstocked prior to harvest. It is unlikely that the current stand will do much better. Site indices are relatively low here. Lowland conifers on extremely wet sites are notoriously slow-growing in the early stages. While adequate numbers of acceptable seedlings and saplings appear to be present in some areas of the stand, it will take time for them to reach sufficient size to classify this stand as forested. Suggest that we continue to monitor the regen in accordance with the work instructions.
22	6224 - Treed Bog	4.4	No	Low	
23	6229 - Mixed lowland shrub	13.1	Natural Regen	Lowland Spruce/Fir	By next entry this stand should be considered a forested stand.
25	3105 - Mixed Upland Herbaceous	2.9	No	Low	
26	11 - Low Intensity Urban	10.6	No	Low	
28	3105 - Mixed Upland Herbaceous	2.0	No	Low	

Stand	Cover Type	Acres	Managed Site	Management Priority (Objective)	General Comments:
30	6239 - Mixed Emergent Wetland	5.2	No	Unspecified	Maintain as a buffer in accordance w/the Fox River Plan, as Cold Creek is a recognized tributary of the Fox River system.
31	50 - Water	2.0	No	Low	Pond near the headwaters of Cold Creek - recognized tributary to the Fox River system. Buffer per the Fox River Plan.
34	6225 - Bog	13.4	No	Low	
35	6224 - Treed Bog	8.3	No	Low	
38	6239 - Mixed Emergent Wetland	14.0	No	Low	
39	629 - Mixed non-forested wetland	1199.4	No	Low	
49	629 - Mixed non-forested wetland	37.6	No	Low	
52	3105 - Mixed Upland Herbaceous	27.3	No	Low	
60	3105 - Mixed Upland Herbaceous	15.1	No	Low	
66	629 - Mixed non-forested wetland	352.2	No	Low	
75	50 - Water	1.0	No	Low	
82	6220 - Alder/willow	5.0	No	Low	
86	6220 - Alder/willow	3.4	No	Low	
91	6224 - Treed Bog	17.5	No	Low	
95	629 - Mixed non-forested wetland	1.2	No	Low	
96	6225 - Bog	4.7	No	Low	
100	11 - Low Intensity Urban	14.5	No	Low	

Stand	Cover Type	Acres	Managed Site	Management Priority (Objective)	General Comments:
101	3105 - Mixed Upland Herbaceous	30.5	No	Low	
102	6220 - Alder/willow	5.3	No	Low	
105	6220 - Alder/willow	2.0	No	Low	
119	6239 - Mixed Emergent Wetland	17.8	Natural Regen	Lowland Conifers	Cut in 2011 - regen survey results indicate the following: approximately 1/3 of the area has no acceptable regeneration. The other 2/3 is presently stocked with an average of 300 seedlings per acre; about 75% of the this is tamarack 1-2' tall. The other 25% consists of balsam poplar, aspen and seed-source red maple, with an occasional cedar thrown in. Some stump-sprouted red maple was observed but these were not included as acceptable regen. Lowland conifers on extremely wet sites like this one are notoriously slow to regenerate. At this time emergent vegetation such as cattails, marsh grass and various low shrubs are dominating the site. Suggest that we continue to monitor the regeneration in accordance with the work instructions, as the amount of acceptable regen is likely to increase over time.
122	3105 - Mixed Upland Herbaceous	2.7	No	Low	