



Report 1 – Compartment Review Presentation

Traverse City Forest Management Unit

Compartment 1

Entry Year 2015

Acreage: 1,569

County Leelanau

Management Area: Manistee Plains

Revision Date: 04/25/2013

Stand Examiner: Tim Webb

Legal Description:

T28N R12W Sections 8, 9, 10, 15, 16, 17, 20

Identified Planning Goals:

This compartment falls within the Manistee Plains management area, for which a plan is being developed. The current draft plan projects some harvesting opportunities in lowland forest based on overall acreage and age class distribution of various lowland types present here. Nevertheless, there are many factors which disfavor timber harvesting in this compartment:

- There are no roads within the compartment; county roads abut state land at only 2 short stretches. Management access is mostly limited to private lands with few feasible approaches to state land.
- The compartment is almost entirely covered with muck soils which are highly prone to rutting and disruption of local hydrology.
- Most of the compartment coincides with two MNFI element occurrences for Northern Fen and Rich Conifer Swamp communities.
- Existing conifer forests here serve as important deer winter cover for the surrounding area as well as habitat for many other species.
- The ability to regenerate cedar post-harvest is almost impossible given deer browsing pressure. Past harvests or other disturbances have resulted in regeneration of black ash, balsam fir, tamarack and paper birch, but virtually no cedar.
- The timber is of generally poor quality, with a high amount of blowdown and hummocky terrain.
- Numerous streams pass through the compartment.
- This compartment has a pending nomination as a Biodiversity Stewardship Area.

Given these factors, it is recommended that the majority of the compartment be designated as a Special Conservation Area wherein active management would be limited to fish and wildlife habitat improvement (e.g. small habitat cuts) or exotic species control. A few stands on the compartment margin might remain available for harvest of cedar poles for DNR use, habitat work, or for commercial thinning of upland hardwoods if private land access is feasible and attainable. Otherwise, the most important values to consider in management of this state forest compartment include recreational access for boating, deer hunting, waterfowl hunting, trapping, and fishing.

Soil and topography:

Soils within the compartment are predominantly Lupton-Markey muck and Adrian-Houghton muck. Other than a relatively few acres along the north edge and at the southwest corner, the compartment is entirely flat lowland.

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

This is an isolated compartment of state land, surrounded by private lands, with South Lake Leelanau to the northeast. Private uplands are mainly agricultural and rural residential properties. The village of Cedar is just northwest of the compartment, including a township park property that abuts an isolated 40-acre state parcel. Privately owned lowlands are intermingled with state lands and are primarily used for deer hunting. The Leelanau Conservancy's Cedar River Preserve abuts the compartment on the north.

Unique, Natural Features:

The Solon Swamp, much of which is state owned, is the largest and most important deer yard in Leelanau County. Several creeks converge within the compartment to form the Cedar River just before it flows into South Lake Leelanau.

Archeological, Historical, and Cultural Features:

An abandoned railroad grade traverses parts of the compartment.

Special Management Designations or Considerations:

The Michigan Natural Features Inventory has listed two element occurrences which cover most of the compartment. These are a Northern Fen and a Rich Conifer Swamp. As discussed above under "Management Goals", most of the compartment is being proposed as a Special Conservation Area to protect wildlife habitat and other ecological values, and also has a

pending nomination as a Biodiversity Stewardship Area.

Watershed and Fisheries Considerations:

This compartment contains the Solon Swamp, which is a large wetland complex adjacent to South Lake Leelanau that provides extensive amphibian habitat as well as ecosystem benefits for the fisheries in the lake. It also contains portions of Cedar Run Creek, Clearbrook Creek, Cedar Creek, and their associated tributaries. All of these streams are naturally reproducing brown trout streams that contribute heavily to the Lake Leelanau fisheries. Though the proposed treatments do not appear as though they will have a significant impact on any of these features, the appropriate BMP's and buffers should be followed.

Wildlife Habitat Considerations:

This compartment is almost entirely within a flat lake plain landscape. The habitat, both historically and currently, is dominated by swamp conifer forest. Natural processes include primarily windthrow, beaver impoundment, and succession. Numerous streams and flowages run throughout. Large open bogs with stunted cedars parallel Victoria and Cedar Run Creeks, with diverse bog vegetation including abundant pitcher plant.

This is the most important deer yarding area in Leelanau County, but very little browse is currently available. Much of the compartment has various sizes and ages of blowdown patches, often downwind of more recent blowdown and older cut patches. These blowdowns and cuts are mostly regenerating to balsam fir and black ash, with varying amounts of black spruce, tamarack, white birch, white pine, and red maple seedlings and saplings. Cedar regeneration is scarce. Some blocks have been cut in the last 3 decades to harvest cedar posts or to improve habitat. These are regenerating fairly well, but not to cedar. Further timber harvest to improve habitat and regenerate forest cover would be of low value and high environmental risk because of wet soils and loss of important existing cover. Some small non-commercial habitat cuts might be desirable to maintain deer food and would likely regenerate, at least to fir, ash, or aspen, though natural blowdown is creating some of this condition anyway. Very little of the cutting prescribed in the 1981 wildlife plan was ever completed.

Lowland conifer cover provides habitat for not only deer, but is also important for bobcat, snowshoe hare, winter wren, red-breasted nuthatch, and brown snake. Red-shouldered hawks are likely nesting on the fringes of the swamp in hardwood stands and using bottomland cover for feeding. Victoria Creek and two unnamed ponds provide important habitat for

Mineral Resource and Development Concerns and/or Restrictions

Surface sediments consist of lacustrine (lake) sand and gravel and minor end moraine of coarse-textured glacial till. The glacial drift thickness varies between 200 and 400 feet. Beneath the glacial drift is the Devonian Antrim Shale. The Antrim is used for cement products. The nearest gravel pit is several miles away but there should be gravel potential along the west border. This area is located northwest of the current Antrim Shale gas play, but there could be some potential. There are currently no oil and gas leases in the Compartment.

Vehicle Access:

Access is extremely limited, with county roads touching state lands only at the southeast and southwest corners of the compartment. There is potential access to the isolated 40 acre parcel in the northwest corner via adjacent township property. An old railroad grade passing through the swamp is used by locals for hunting access. Adjacent private lands have some poor roads and trails which approach state land in a few spots.

Survey Needs:

Private land survey corners mark a few of the property boundaries. No additional surveying is needed at this time.

Recreational Facilities and Opportunities:

There are no developed recreation facilities within this compartment; however, the Solon Swamp is popular for deer hunting and some trapping. Waterfowl hunters and kayakers access an unnamed pond and the mouth of the Cedar River from the boat launch just north of Cedar. Waterfowl hunting is also popular along the South Lake Leelanau shoreline. Streams running through the compartment provide some walk-in fishing opportunities.

Fire Protection:

Fire protection for this area is provided by the local township fire department and from the Traverse City DNR office. The area is mainly lowland with limited road access for heavy fire equipment but there has been relatively low fire history in the unit. Travel time for DNR suppression equipment from Traverse City is a concern.

Additional Compartment Information:

Some initial discussion has taken place with the Leelanau Conservancy concerning potential land exchanges to consolidate holdings for both parties.

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:

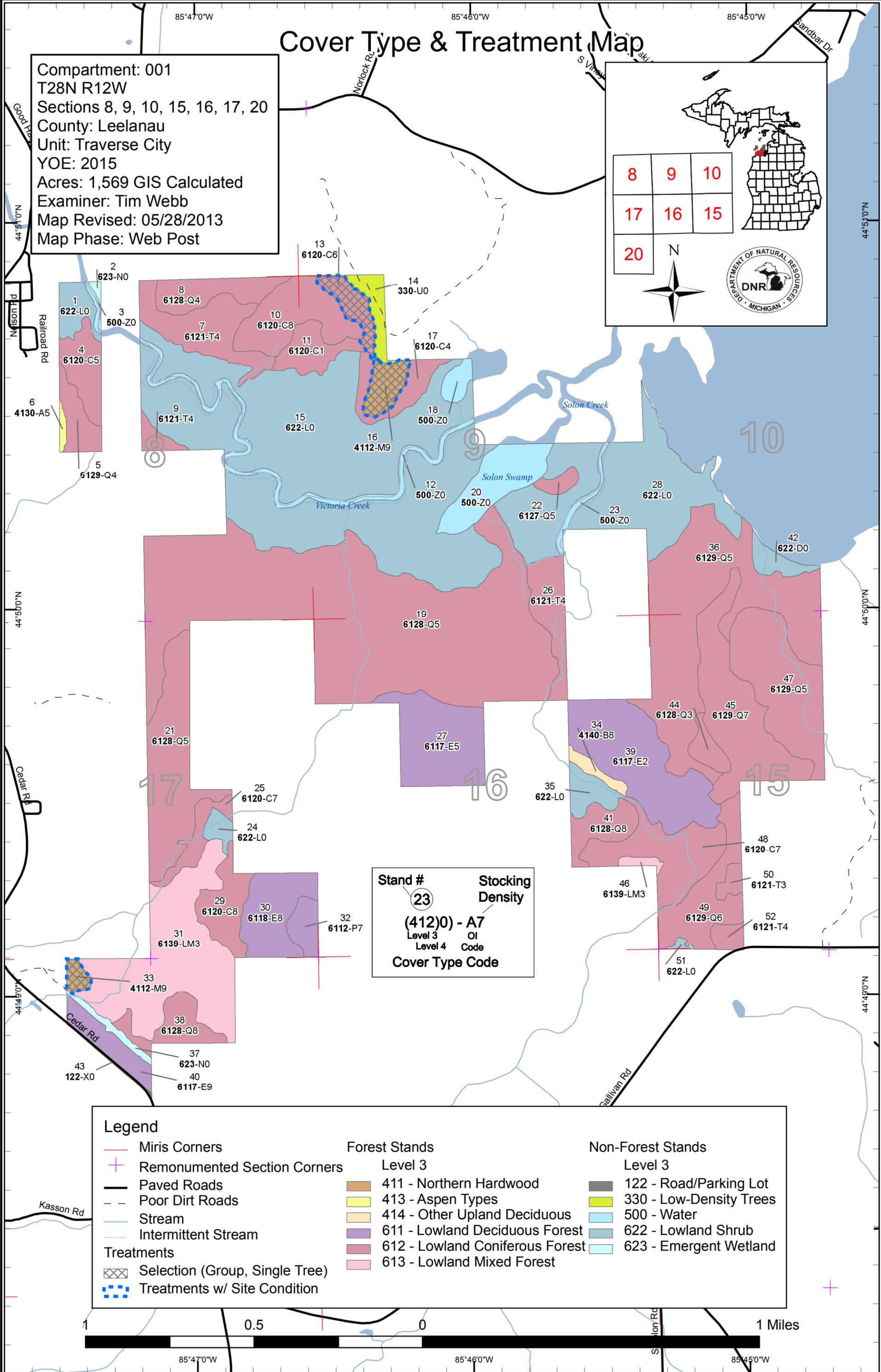
- Base feature information, stand boundaries, cover types, and numbers**
- Proposed treatments**
- Site condition boundaries**
- Details on the road access system**

Cover Type & Treatment Map

Compartment: 001
 T28N R12W
 Sections 8, 9, 10, 15, 16, 17, 20
 County: Leelanau
 Unit: Traverse City
 YOE: 2015
 Acres: 1,569 GIS Calculated
 Examiner: Tim Webb
 Map Revised: 05/28/2013
 Map Phase: Web Post

8 9 10
 17 16 15
 20

N



Stand #
 23
Stocking Density
 (4120) - A7
 Level 3
 Level 4
Cover Type Code
 OI Code

Legend

— Miris Corners	Forest Stands	Non-Forest Stands
+ Remonumented Section Corners	Level 3	Level 3
— Paved Roads	411 - Northern Hardwood	122 - Road/Parking Lot
- - - Poor Dirt Roads	413 - Aspen Types	330 - Low-Density Trees
— Stream	414 - Other Upland Deciduous	500 - Water
- - - Intermittent Stream	611 - Lowland Deciduous Forest	622 - Lowland Shrub
Selection (Group, Single Tree)	612 - Lowland Coniferous Forest	623 - Emergent Wetland
Treatments w/ Site Condition	613 - Lowland Mixed Forest	

Stand Boundary Map

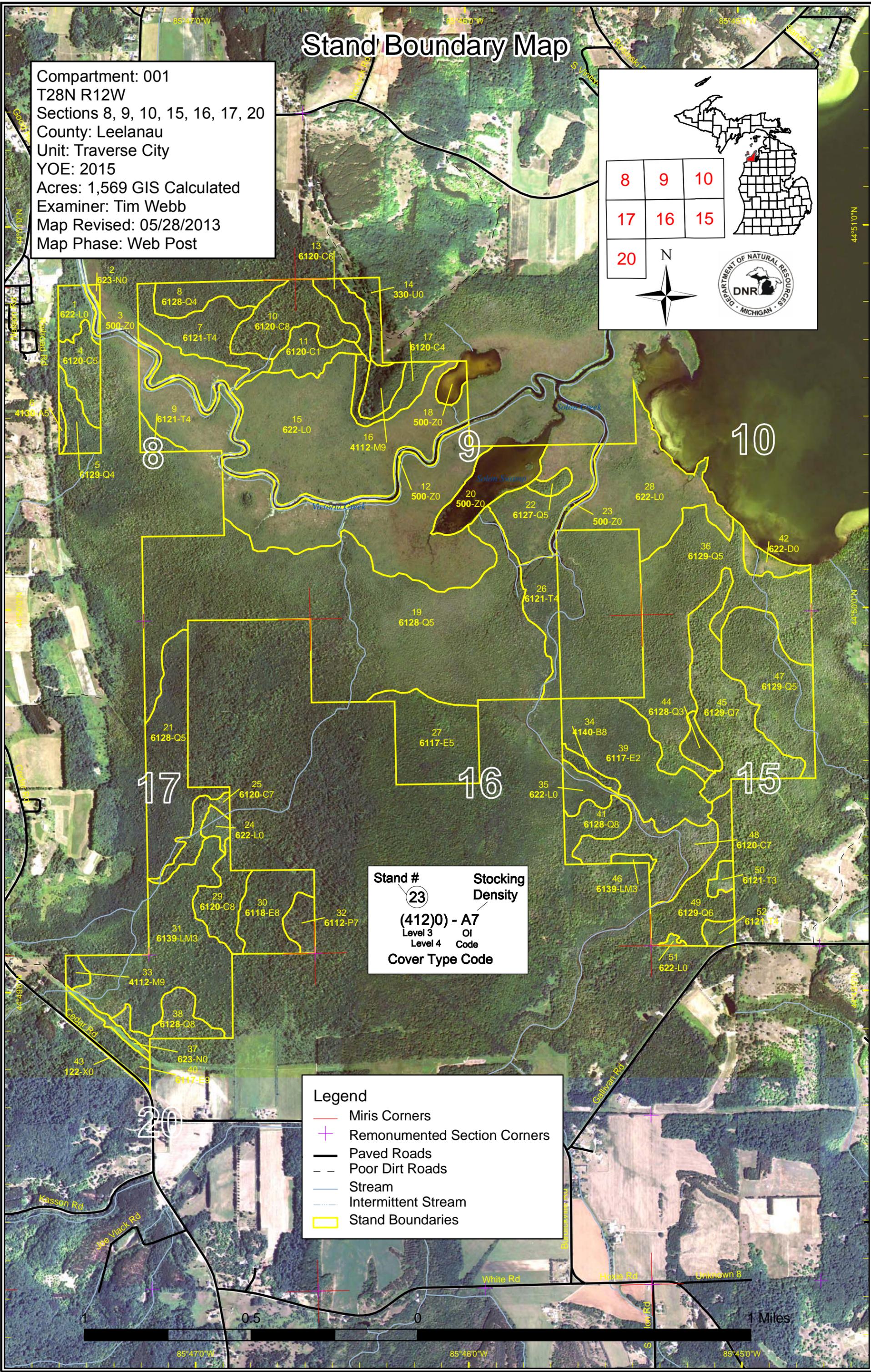
Compartment: 001
 T28N R12W
 Sections 8, 9, 10, 15, 16, 17, 20
 County: Leelanau
 Unit: Traverse City
 YOE: 2015
 Acres: 1,569 GIS Calculated
 Examiner: Tim Webb
 Map Revised: 05/28/2013
 Map Phase: Web Post



8	9	10
17	16	15
20		

N

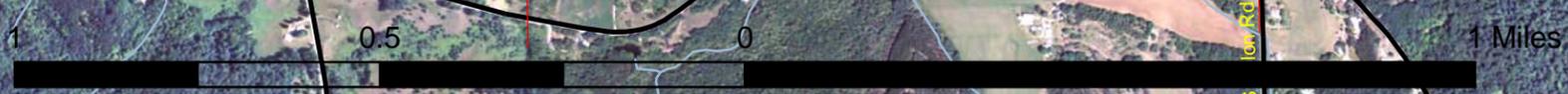




Stand # 23
Stocking Density
(412)0 - A7
 Level 3 OI
 Level 4 Code
Cover Type Code

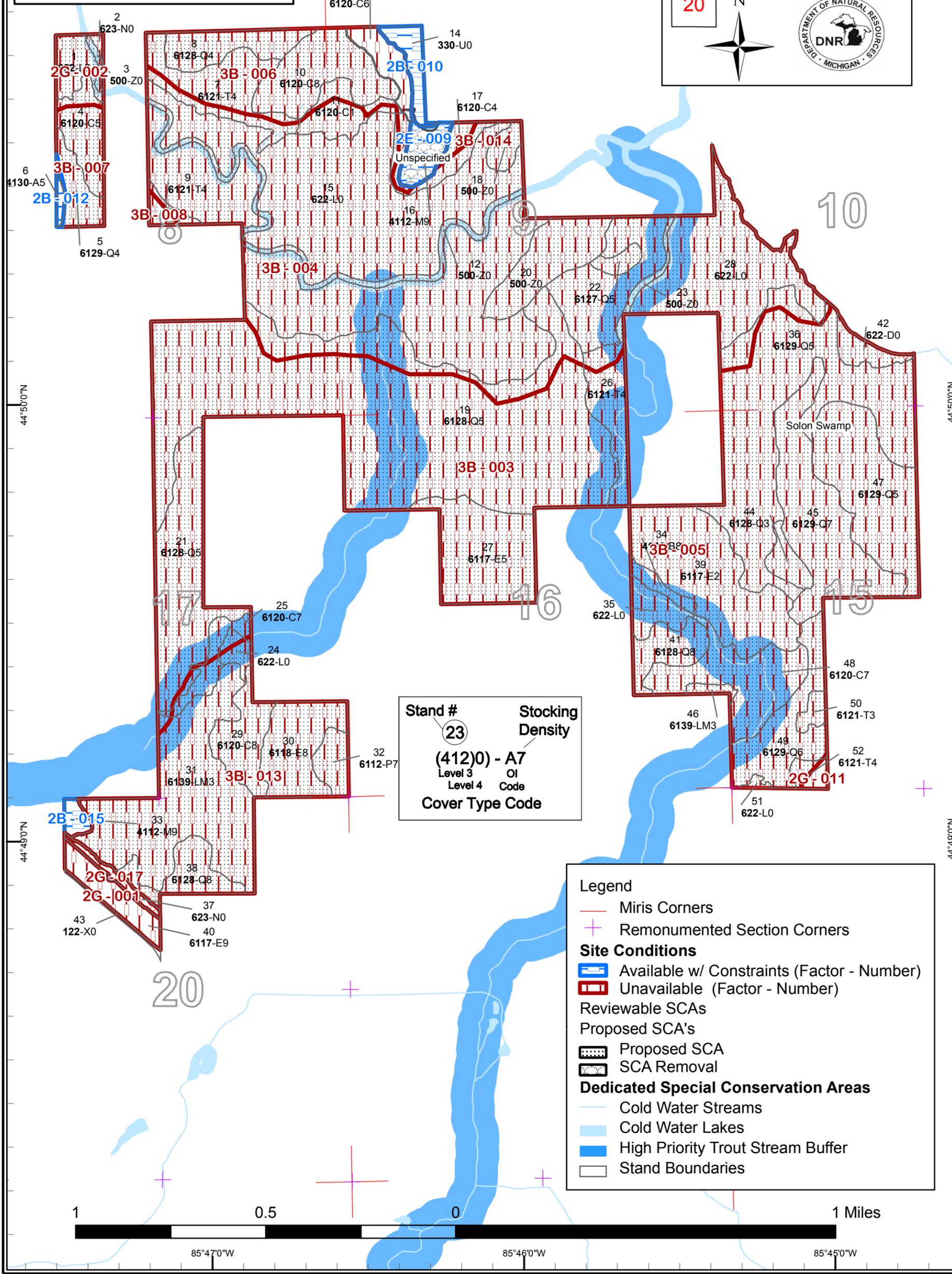
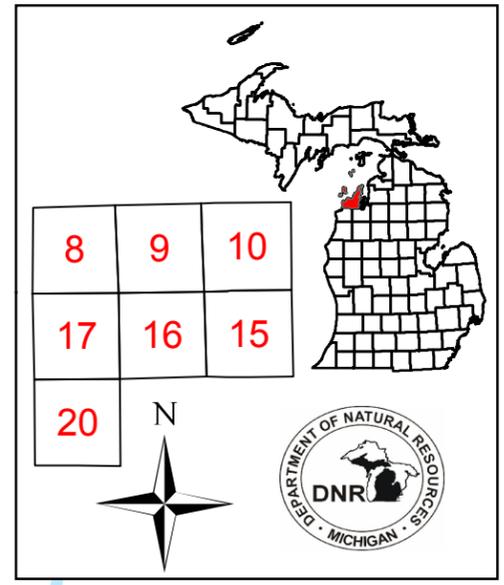
Legend

- Miris Corners
- + Remonumented Section Corners
- Paved Roads
- - Poor Dirt Roads
- Stream
- - Intermittent Stream
- Stand Boundaries



Special Conservation Areas & Site Conditions Map

Compartment: 001
 T28N R12W
 Sections 8, 9, 10, 15, 16, 17, 20
 County: Leelanau
 Unit: Traverse City
 YOE: 2015
 Acres: 1,569 GIS Calculated
 Examiner: Tim Webb
 Map Revised: 05/28/2013
 Map Phase: Web Post



Stand #
 23
Stocking Density
 (4120) - A7
 Level 3 OI
 Level 4 Code
Cover Type Code

- Legend**
- Miris Corners
 - + Remonumented Section Corners
 - Site Conditions**
 - Available w/ Constraints (Factor - Number)
 - Unavailable (Factor - Number)
 - Reviewable SCAs**
 - Proposed SCAs**
 - Proposed SCA
 - SCA Removal
 - Dedicated Special Conservation Areas**
 - Cold Water Streams
 - Cold Water Lakes
 - High Priority Trout Stream Buffer
 - Stand Boundaries



Report 2 – 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
Aspen	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
Cedar	0	0	0	0	0	0	0	0	45	0	26	18	47	10	147
Low-Density Trees	9	0	0	0	0	0	0	0	0	0	0	0	0	0	9
Lowland Aspen/Balsam Poplar	0	0	0	0	0	8	0	0	0	0	0	0	0	0	8
Lowland Conifers	0	0	0	0	58	0	0	0	152	69	0	0	0	357	636
Lowland Deciduous	0	0	0	58	0	0	13	0	26	0	0	0	0	42	140
Lowland Mixed Forest	0	0	2	0	0	0	0	0	0	0	0	0	0	83	86
Lowland Shrub	396	0	0	0	0	0	0	0	0	0	0	0	0	0	396
Marsh	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Northern Hardwood	0	0	0	0	0	0	0	0	0	4	0	0	0	10	13
Paper Birch	0	0	0	0	0	0	0	0	4	0	0	0	0	0	4
Tamarack	0	0	4	0	0	0	0	0	0	19	0	35	0	5	62
Treed Bog	7	0	0	0	0	0	0	0	0	0	0	0	0	0	7
Urban	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Water	53	0	0	0	0	0	0	0	0	0	0	0	0	0	53
Total	471	0	6	60	58	8	13	0	228	92	26	53	47	506	1569



Report 3 – Proposed Treatment Summaries

Traverse City Mgt. Unit
Year of Entry 2015

Compartment 001
Total Compartment Acres: 1569

Acres by Treatment Type

Commercial Harvest - 13 Tree Planting - 0 Other - 0
Habitat Cut - 10 Opening Maintenance - 0

Cover Type by Harvest Method

	Clearcut	Selection	Seed Tree	Shelterwood	Thinning	Other - Specify	Total Acres
(Habitat Cut)Lowland Coniferous Forest	0	10	0	0	0	0	10
Northern Hardwood	0	13	0	0	0	0	13
Total	0	23	0	0	0	0	23



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

Prescription
Specs:

Other
Comments:

Next
Steps:

Proposed
Start Date: #Type!

**Total Treatment
Acreage Proposed: 0**



S
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Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
13 61001013-Cut	10.0	6120 - Lowland Cedar	High Density Pole	81		Harvest	Single Tree Selection	6120 - Lowland Cedar	Cmpt. Review Proposal

Prescription Use site as a potential source of cedar posts/poles for internal DNR use.

Specs:

Other Comment: Harvesting here would require private land access. Early winter cutting would have the added benefit of providing cut tops for deer browse.

Next Steps: None.

Proposed Start Date: 10/01/2014

Limiting Factor 3B: Threatened, endangered, and special concern species/communities

16 61001016-Cut	9.8	4112 - Maple, Beech, Cherry Association	High Density Log	103	141-170	Harvest	Single Tree Selection	4112 - Maple, Beech, Cherry Association	Cmpt. Review Proposal
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Prescription Select individual hardwoods for cutting, focussing on poor quality red maple. Consider winter harvest to provide deer browse from tops. Reduce Specs: to about 100-110 BA, creating some 30-60 foot regeneration gaps. Leave some coarse woody debris for habitat and for nurse logs for hemlock regeneration.

Other Comment: Harvesting here depends on private land access and a useable road.

Next Steps: Conduct a regeneration check at an appropriate interval post-harvest. Desirable regeneration includes cherry, red maple, and hemlock, although beech will likely dominate initially.

Proposed Start Date: 10/01/2014

Limiting Factor 2E: Road needed

33 61001033-Cut	3.6	4112 - Maple, Beech, Cherry Association	High Density Log	95	141-170	Harvest	Single Tree Selection	4112 - Maple, Beech, Cherry Association	Cmpt. Review Proposal
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Prescription Select individual hardwoods for cutting, focussing on poor quality red maple. Consider winter harvest to provide deer browse from tops. Reduce Specs: to about 110 BA, creating some 30-60 foot regeneration gaps. Leave some coarse woody debris for habitat and for nurse logs for hemlock regeneration.

Other Comment: Harvesting here relies on private land access.

Next Steps: Conduct a regeneration check at an appropriate interval post-harvest. Desirable regeneration includes cherry, red maple, and hemlock, although beech will likely dominate initially.

Proposed Start Date: 10/01/2014

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

Total Treatment Acreage Proposed: 23.4

Report 6 – Out of YOE – Treatments
 Prescribed with No Limiting Factor

Year of Entry: 2015



Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
28218	5.9	Unspecified				Harvest	Other - Specify in Comments	Unspecified	Cmpt. Review Proposal

Prescription Specs:

Other Comments:

Next Steps:

Proposed Start Date:

28219	7.2	Unspecified				Harvest	Other - Specify in Comments	Unspecified	Cmpt. Review Proposal - Incomplete
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Prescription Specs:

Other Comments:

Next Steps:

Proposed Start Date:

61043_OutOfY OE-Cut	2.1					Harvest	Clearcut with Reserves	4131 - Aspen, Oak	Cmpt. Review Proposal - Incomplete
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Prescription Specs: retain some pine and oak for mast and seed production, Follow WLD guidance for CWD creation. Harvest all stems that are not retained.

Other Comments: New stand should have mix of oak, pine, aspen and maple.

Next Steps:

Proposed Start Date: 09/01/2009

Total Treatment Acreage Proposed: 15.3

Report 7 – Site Conditions

Traverse City Mgt. Unit

Tim Webb : Examiner

Compartment 001

Year of Entry 2015

Availability for Management

Total Acres	Acres		Dominant Site Conditions	3B	2G	2E	2B
	Available	Not Available					
2	2		Aspen				2
147		147	Cedar	144	3		
8		8	Lowland Aspen/Balsam Poplar	8			
636	0	636	Lowland Conifers	636			0
140		140	Lowland Deciduous	127	13		
86		86	Lowland Mixed Forest	86			
13	13		Northern Hardwood			10	4
4		4	Paper Birch	4			
62		62	Tamarack	60	2		
1,098	15	1,082	Total Forested Acres	1,064	18	10	5
	1%	99%	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
001	Not Available	2G: Too wet (sensitive soils, does not include access issues)	13	3H: Deer Wintering Areas	3J: Water quality / BMPs (stream, river, or lake)	3L: Other wildlife concerns	
Comments: Harvesting close to the busy county road may create browse attractive to wintering deer, which would elevate the risk of car-deer collisions.							
002	Not Available	2G: Too wet (sensitive soils, does not include access issues)	15	3J: Water quality / BMPs (stream, river, or lake)	5D: Unproductive Forest Land	2B: Unknown if access through adjacent landowner(s) is possible	
Comments:							

Report 7 – Site Conditions

Traverse City Mgt. Unit

Tim Webb : Examiner

Compartment 001

Year of Entry 2015

003	Not Available	3B: Threatened, endangered, and special concern species/communities	345	2G: Too wet (sensitive soils, does not include access issues)	2B: Unknown if access through adjacent landowner(s) is possible	3H: Deer Wintering Areas	5A: Not able to obtain desirable regeneration
Comments: This area is listed in the element occurrence database as a Rich Conifer Swamp community.							
004	Not Available	3B: Threatened, endangered, and special concern species/communities	504	2G: Too wet (sensitive soils, does not include access issues)	3J: Water quality / BMPs (stream, river, or lake)	4A: No merchantable products (see product standards)	
Comments: This area is listed in the element occurrence database as a Northern Fen community.							
005	Not Available	3B: Threatened, endangered, and special concern species/communities	383	2B: Unknown if access through adjacent landowner(s) is possible	2G: Too wet (sensitive soils, does not include access issues)	3H: Deer Wintering Areas	3J: Water quality / BMPs (stream, river, or lake)
Comments: This area is listed in the element occurrence database as a Rich Conifer Swamp community.							
006	Not Available	3B: Threatened, endangered, and special concern species/communities	90	2B: Unknown if access through adjacent landowner(s) is possible	2G: Too wet (sensitive soils, does not include access issues)	3H: Deer Wintering Areas	5A: Not able to obtain desirable regeneration
Comments: This area is listed in the element occurrence database as a Rich Conifer Swamp community.							
007	Not Available	3B: Threatened, endangered, and special concern species/communities	23	2B: Unknown if access through adjacent landowner(s) is possible	3H: Deer Wintering Areas		
Comments: This area is listed in the element occurrence database as a Rich Conifer Swamp community.							

Report 7 – Site Conditions

Traverse City Mgt. Unit

Tim Webb : Examiner

Compartment 001

Year of Entry 2015

008	Not Available	3B: Threatened, endangered, and special concern species/communities	2	2G: Too wet (sensitive soils, does not include access issues)	2B: Unknown if access through adjacent landowner(s) is possible
Comments: This area is listed in the element occurrence database as a Rich Conifer Swamp community.					
009	Available	2E: Road needed	10	3H: Deer Wintering Areas	2B: Unknown if access through adjacent landowner(s) is possible
Comments:					
010	Available	2B: Unknown if access through adjacent landowner(s) is possible	9		
Comments:					
011	Not Available	2G: Too wet (sensitive soils, does not include access issues)	2	2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)	
Comments: Steep drop from county road to stand prohibits vehicle access.					
012	Available	2B: Unknown if access through adjacent landowner(s) is possible	2		
Comments:					

Report 7 – Site Conditions

Traverse City Mgt. Unit

Tim Webb : Examiner

Compartment 001

Year of Entry 2015

013	Not Available	3B: Threatened, endangered, and special concern species/communities	160	2G: Too wet (sensitive soils, does not include access issues)	3J: Water quality / BMPs (stream, river, or lake)	3H: Deer Wintering Areas	5A: Not able to obtain desirable regeneration
Comments: This area is listed in the element occurrence database as a Rich Conifer Swamp community.							
014	Not Available	3B: Threatened, endangered, and special concern species/communities	3	2B: Unknown if access through adjacent landowner(s) is possible	2G: Too wet (sensitive soils, does not include access issues)	3H: Deer Wintering Areas	5A: Not able to obtain desirable regeneration
Comments: This area is listed in the element occurrence database as a Rich Conifer Swamp community.							
015	Available	2B: Unknown if access through adjacent landowner(s) is possible	4				
Comments:							
017	Not Available	2G: Too wet (sensitive soils, does not include access issues)	4	4A: No merchantable products (see product standards)	3E: Easement / lease, non-military (e.g.- Consumers Power red pine, etc)		
Comments: maintained utility corridor							



Report 8 – 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
Solon Swamp	Habitat Areas or Corridors	Other Habitat Area	SCA	1514.8
Comments				
2 MNFI special communities; ruttable muck soils; very limited access; deer yarding. Cedar regen. dubious. Limit mgmt. to fish/wld improvement or exotic spp. control; otherwise leave unmanaged.				
Unspecified	Potential Old Growth		SCA Removal	10.0
Comments				



Report 9 – 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.



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
4	6120 - Lowland Cedar	Medium Density Pole	15.9	121		
5	6129 - Mixed Coniferous Lowland Forest	Low Density Pole	11.0	84		Stand is more or less 2-storied, with sparse remnant canopy overtopping dense fir and ash saplings.
6	4130 - Aspen	Medium Density Pole	1.5	30		Stand is a narrow strip of upland at the edge of state land, abutting swamp. Mostly aspen cover, with west edge being a grassy opening which was formerly a township dump site.
7	6121 - Tamarack	Low Density Pole	30.4	113		Lots of blowdown; bent over alder. There is surface water throughout.
8	6128 - Lowland Coniferous, Mixed Deciduous	Low Density Pole	18.0	Uneven Age		Very high amount of blowdown. Remnant, sparse canopy of older trees with dense pole/sapling regeneration of mostly fir and ash, some birch.
9	6121 - Tamarack	Low Density Pole	4.4	113		Data was copied from similar stand across creek to north, which looks the same on imagery.
10	6120 - Lowland Cedar	Medium Density Log	31.6	123		Stand has a fair amount of standing dead/dying cedar. Lots of blowdown. Super-canopy white pine.
11	6120 - Lowland Cedar	Low Density Sapling	13.8	105		Stagnant; stunted trees.
13	6120 - Lowland Cedar	High Density Pole	10.0	81		There is relatively little blowdown in this stand. Good deer cover, but no browse. Many of the cedars are multi-stemmed. White pines are in the super-canopy. Stand has scattered red maple, black ash and balsam fir.
16	4112 - Maple, Beech, Cherry Association	High Density Log	9.8	Uneven Age	141-170	Hemlock is providing good deer winter cover; lots of tracks/beds. No browse. Stand has a few paper birch, yellow birch, cedar, black cherry, white pine.
17	6120 - Lowland Cedar	Low Density Pole	12.6	105		The edges of the stand where it abuts upland hardwoods, plus a small area in the NE part of the stand are more mature and denser, but most of the stand is stagnant with stunted trees.
19	6128 - Lowland Coniferous, Mixed Deciduous	Medium Density Pole	267.5	Uneven Age		Shallow standing water, plus sphagnum moss. Dense cover. Much of the cedar has dead tops and is in poor condition.
21	6128 - Lowland Coniferous, Mixed Deciduous	Medium Density Pole	51.4	45		Lots of blowdown. Several streams within the stand.
22	6127 - Lowland Pine	Medium Density Pole	3.9	Uneven Age		
25	6120 - Lowland Cedar	Low Density Log	9.5	Uneven Age		Fair amount of mortality and dieback in cedar. Lots of blowdown.



S t a n d	Traverse City Mgt. Unit		Report 10 – Forested Stands			Compartment: 001 Year of Entry: 2015	
	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:	
26	6121 - Tamarack	Low Density Pole	19.1	90		Red-osier dogwood and rose in understory.	
27	6117 - Lowland Deciduous, Mixed Coniferous	Medium Density Pole	42.2	Uneven Age	51-80	Hemlock is concentrated on a slightly elevated area in the north-central part of the stand; a few large diameter white pine are also there. Mostly a pole-sized stand, but some areas are heavier to saplings in the canopy.	
29	6120 - Lowland Cedar	Medium Density Log	18.3	114		Some good quality cedar. Scattered super-canopy white pine.	
30	6118 - Lowland Deciduous with Cedar	Medium Density Log	26.5	86		Lots of blowdown. Scattered quaking aspen.	
31	6139 - Mixed Lowland Forest	High Density Sapling	83.3	Uneven Age		Some older cedar and pine, but predominantly a dense sapling/small pole stand.	
32	6112 - Lowland Aspen	Low Density Log	8.3	56		Scattered elm. Lots of blowdown.	
33	4112 - Maple, Beech, Cherry Association	High Density Log	3.6	95	141-170	There are a few scattered sugar maple, beech, bigtooth aspen, basswood.	
34	4140 - Other Upland Deciduous	Medium Density Log	4.1	85	81-110	Slightly elevated patch of ground parallel to Cedar Creek. Birch age is based on an iffy ring count.	
36	6129 - Mixed Coniferous Lowland Forest	Medium Density Pole	111.4	86		Poor cedar with mixed understory. Some mortality and dieback in the cedar. Patches of the stand with little overstory are especially dense with saplings and shrubs.	
38	6128 - Lowland Coniferous, Mixed Deciduous	Medium Density Log	15.3	Uneven Age		Scattered yellow birch, tamarack, paper birch, and red maple. Lots of blowdown and standing dead/dying cedar in places.	
39	6117 - Lowland Deciduous, Mixed Coniferous	Medium Density	58.4	35		Scattered patches of older conifers. Much of the alder is in the canopy. Cedar regeneration is sparse, but viable. More ash to southeast, more birch to northwest.	
40	6117 - Lowland Deciduous, Mixed Coniferous	High Density Log	12.9	65		Stand is borderline upland/lowland, drier to the NW.	
41	6128 - Lowland Coniferous, Mixed Deciduous	Medium Density Log	13.8	96		Some blowdown.	
44	6128 - Lowland Coniferous, Mixed Deciduous	High Density Sapling	6.8	45		Well stocked sapling stand; not as much blowdown here.	
45	6129 - Mixed Coniferous Lowland Forest	Low Density Log	55.1	95		Sparse, but well distributed super-canopy white pines. Dense, diverse understory of conifer seedlings and saplings; predominantly fir, with fair amounts of hemlock, white pine, black spruce, and cedar. Sphagnum, some Labrador tea.	

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Traverse City Mgt. Unit

Report 10 – Forested Stands

Compartment: 001
Year of Entry: 2015

	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
46	6139 - Mixed Lowland Forest	High Density Sapling	2.2	22		
47	6129 - Mixed Coniferous Lowland Forest	Medium Density Pole	52.2	Uneven Age		
48	6120 - Lowland Cedar	Low Density Log	35.0	84		Lots of standing dead and dying cedar. This is a somewhat heterogenous stand, with some saturated mucky spots with cattail cover, other slightly elevated patches with healthier timber. Scattered tamarack, cedar, birch and white pine saplings. Fair amount of blowdown.
49	6129 - Mixed Coniferous Lowland Forest	High Density Pole	29.7	84		Stand has an open understory and relatively low amount of blow down. Small amount of black ash, hemlock, yellow birch, white pine. Occasional regeneration patches.
50	6121 - Tamarack	High Density Sapling	3.7	27		This stand is the resulting regeneration from 2 small clearcut blocks, plus some blowdown along the edges resulting from wind exposure on adjacent timber after the overstory removal. There is only a small amount of cedar regeneration, mostly under dense blowdown.
52	6121 - Tamarack	Low Density Pole	4.6	Uneven Age		Old RR grade traverses the stand.



Stand	Cover Type	Acres	Managed Site	Management Priority (Objective)	General Comments:
1	6220 - Alder/willow	9.5	No	Low (NonForested)	
2	6233 - Wet Meadow	1.0	No	Low (NonForested)	
3	50 - Water	1.5	No	Unspecified	Victoria Creek
12	50 - Water	16.6	No	Unspecified	Victoria Creek
14	3303 - Mixed Low Density Trees	8.7	No	Medium (NonForested)	Deciduous trees are mostly black cherry and sugar maple; white pines are open grown and bushy.
15	6221 - Fen	275.0	No	Low (NonForested)	
18	50 - Water	5.3	No	Low (NonForested)	unnamed pond
20	50 - Water	26.2	No	Unspecified	unnamed pond with a small island
23	50 - Water	3.3	No	Unspecified	Cedar Run Creek
24	6220 - Alder/willow	4.4	No	Low (NonForested)	Lots of standing, flood-killed ash and cedar.
28	6221 - Fen	97.3	No	Low (NonForested)	scattered duck blinds along Lake Leelanau shoreline
35	6220 - Alder/willow	9.3	No	Low (NonForested)	Stand straddles Cedar Run Creek.
37	6233 - Wet Meadow	3.8	Yes	Low (NonForested)	Maintained powerline R.O.W. Northwest end is upland.
42	6224 - Treed Bog	7.0	No	Low (NonForested)	
43	122 - Road/Parking Lot	1.5	No	Unspecified	County Rd. 616/651
51	6221 - Fen	1.0	No	Low (NonForested)	Heavily browsed patch of dogwood.