



**TRAVERSE CITY FOREST MANAGEMENT UNIT
COMPARTMENT REVIEW PRESENTATION**

COMPARTMENT # 233 ENTRY YEAR: 2014

Compartment Acreage: 1414 County: Manistee

Stand Examiner: Scott Lint

Legal Description: T24N, R14W, section 1, 2, 5, 8, 9, 12, 15, 17

Management Goals: The Betsie River is a state designated Natural River. There are three parcels of state ownership with river frontage where maintaining vegetative cover and visual management along the river will be a priority. The compartment has historically been classified as mixed use in the Pere Marquette Management Plan. For other parcels within the compartment not effected by the Betsie River or its tributaries; provide for intensive timber management; maintain or enhance wildlife habitat; protect areas of unique threatened, endangered and special concern species; and provide for dispersed forest-based recreational uses.

Soil and Topography: Dominant soil type is Rubicon loamy, excessively drained. Topography is level. The compartment lies within land type association 6-1-1-1 (broad flat lake plain: excessively drained sand and loamy sand.)

Ownership Patterns, Development, and Land Use in and Around the Compartment: The majority of land within the compartment is private. State ownership is fragmented with only one large contiguous block of 480 acres. The remainder of state ownership consists of smaller, scattered parcels. There is one newly acquired parcel; the SESE of section 15 and the railroad grade running through the section was purchased in 2009. The acquisition of this parcel helps to fill a major gap in the Interlochen to Kaleva Trail as well as provide legal access to approximately 600 acres of state owned land in adjacent compartment 61033. There was one small disposal of state owned land in section 15, SWSE. Approximately 1.5 acres was sold to resolve an historic building found to be in trespass on state land

Unique, Natural Features: potential for red shouldered hawk, goshawk, and wood turtle occurrences within the compartment.

Archeological, Historical, and Cultural Features: none known

Special Management Designations or Considerations: The Betsie River is a state designated Natural River.

Watershed and Fisheries Considerations: The Betsie River and a small, unnamed tributary flow through Compartment 233. Both are Designated Trout Streams. The Betsie River is a State Designated Natural River. A native vegetation buffer of 100 feet on each side of the river must be maintained. The Betsie River

has populations of rainbow trout (steelhead), brown trout, coho salmon, and chinook salmon. The tributary in Section 9 has a naturally reproducing population of resident brook trout. The tributary is also vital to the Betsie River in that it provides cold groundwater to the Betsie, helping to keep it cool enough for trout survival.

Wildlife Habitat Considerations: This compartment falls within a flat lake plain landscape (LTA 6111), characterized by loamy sands and relatively flat terrain. The presettlement forest cover in this landscape was dominated by beech-maple and white pine-beech-red maple. The compartment today is dominated by pine plantations, aspen-hardwood mixes on moist to wet soils, and some wetlands and remnant fields. This landscape is less fire-prone than the outwash plains to the north. GLO surveyors reported large windthrow areas which were perhaps the dominant natural change factor, along with natural succession.

Portions of sections 5, 8, and 9, adjacent to the Betsie River, might serve as old growth areas, depending on the future direction of this program. In any case, the well-advanced forest stands adjacent to the river should be maintained as late-successional forest for riparian habitat and as a remnant of historic forest cover. Mink, barred owls, pileated woodpeckers, wood frogs, deer, and numerous other species will benefit from such cover. These areas are also important for the state-threatened red-shouldered hawk.

Low lying aspen and shrub wetlands dominate section 17. Maintaining a variety of aspen age classes here through periodic cutting will benefit numerous species such as ruffed grouse, woodcock, golden-winged warbler, and black bear. Harvests should incorporate leave trees, snags, and creation of some down logs. Wild raisin, chokeberry, and blueberry are particularly abundant in this area and provide an extremely important soft mast resource. Patches of old white pine offer important diversity and should be maintained. Red-shouldered hawks are also known to use this area. Any nesting sites discovered should be protected following department guidelines.

Most of the rest of the state lands in the compartment are fragmented parcels with pine plantations, remnant fields, and small stands of hardwoods. Any thinnings can only benefit wildlife by allowing some sunlight into these stands which will in turn diversify ground flora and habitat. Wetlands should be buffered when thinning adjacent stands. Openings should be maintained where they exist to enhance local diversity for deer, turkey, cedar waxwing, red fox, American goldfinch, and other species using open habitats.

Mineral Resource and Development Concerns and/or Restrictions: Surface sediments consist of lacustrine (lake) sand and gravel and minor coarse-textured glacial till and glacial outwash sand and gravel and postglacial alluvium. Glacial drift thickness varies between 400 and 800 feet. Beneath the glacial drift is the Devonian Ellsworth Shale. The Ellsworth is used for cement. Gravel pits are located in Sections 3 and 10. Gravel potential in the compartment is considered good. This area is located north of the Niagaran reef trend. The Antrim Shale gas play is in this area and most of the Compartment is in the Springdale 10 Unit. Most of the State land is leased for oil and gas development.

Vehicle Access: Due to the fragmented nature of this compartment, vehicle access is not a problem. Most parcels have access via county roads. The only exception is the NESW of section 12 which is land locked and has no legal access.

Survey Needs: The compartment is well surveyed. Survey needs that were identified in 2004 have all been completed. There are no known survey needs at this time.

Recreational Facilities and Opportunities: The Betsie River Snowmobile Trail runs through the compartment. The trail was recently moved off of a series of forest roads and on to the former Ann Arbor Railroad grade that runs from Thompsonville to Kaleva. The Betsie River is used for canoeing, kayaking, and fishing. Access to the river is currently limited to the Psutka Rd. crossing in section 8. The small parcel in section 2 (stand 66) could possibly be developed into an access site along Kurick Rd. Dispersed camping activities associated with fall hunting appear to be generally light throughout the compartment.

Fire Protection: Local volunteer response for initial attack is from the Copemish-Cleon Volunteer Fire Department. DNR initial attack response is from the Platte River Field Office and the Traverse City Field Office.

Additional Compartment Information:

Recommended land disposals:

The NE1/4SW1/4 section 12. This parcel has no legal access; therefore it is unavailable to the public for any type of recreation and is inaccessible for forest management activities. Cover consists of low quality hardwood and white pine.

Recommended land acquisitions:

Any large parcels that have frontage on the Betsie River that could improve access opportunities.

****** Cover type details, proposed treatments and stands designated as FDF are listed in the attached reports:**

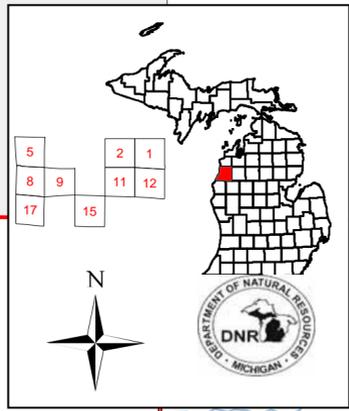
- Cover Type by Age Class**
- Cover Type by Management Objective**
- Compartment Volume Summary**
- Proposed Treatments – No Limiting Factors**
- Proposed Treatments – With Limiting Factors**

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

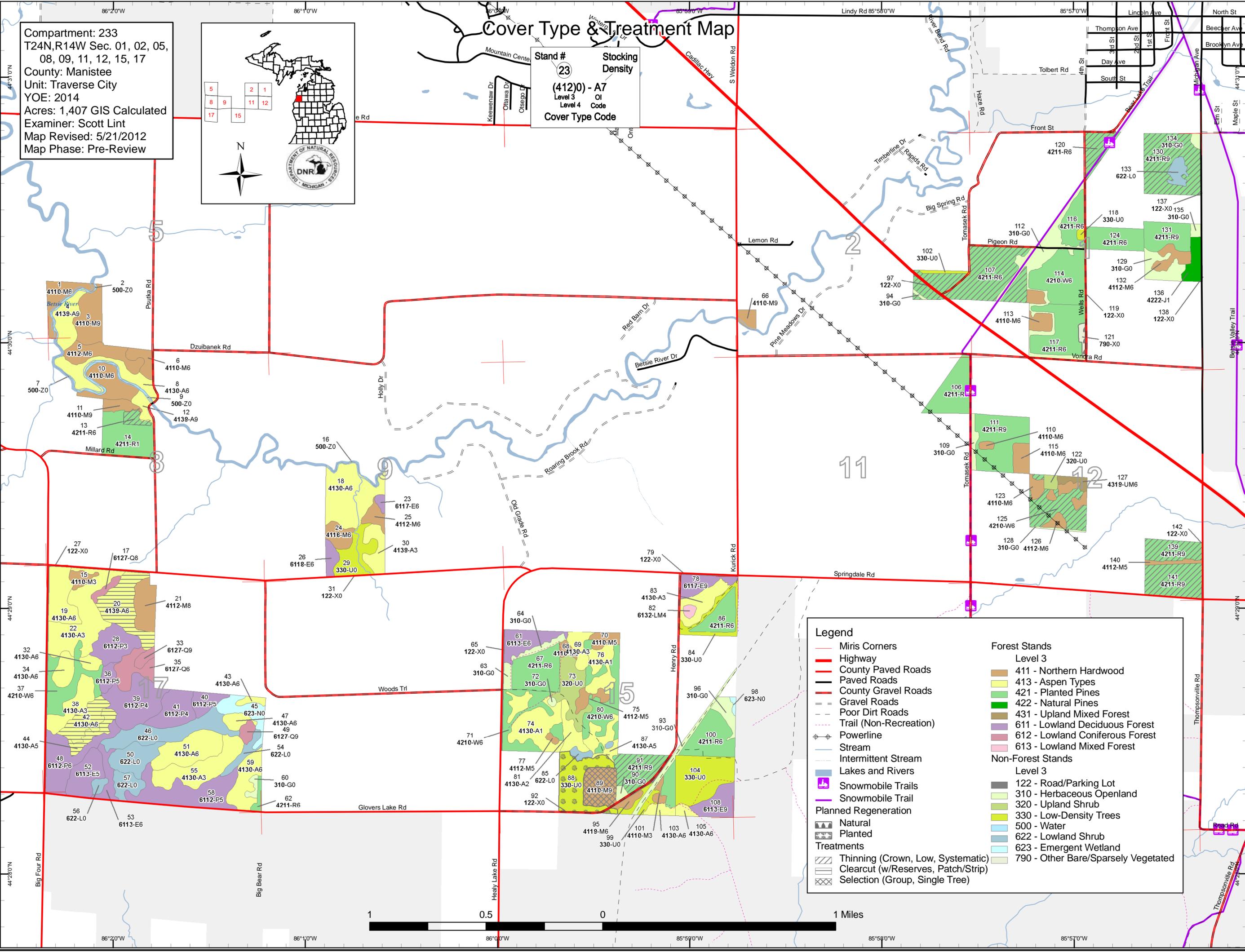
- Base feature information, stand numbers, cover types**
- Proposed treatments**
- Proposed road access system**
- Suggested potential old growth**

Cover Type & Treatment Map

Compartment: 233
 T24N,R14W Sec. 01, 02, 05,
 08, 09, 11, 12, 15, 17
 County: Manistee
 Unit: Traverse City
 YOE: 2014
 Acres: 1,407 GIS Calculated
 Examiner: Scott Lint
 Map Revised: 5/21/2012
 Map Phase: Pre-Review



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



Legend

- Miris Corners
- Highway
- County Paved Roads
- Paved Roads
- County Gravel Roads
- Gravel Roads
- Poor Dirt Roads
- Trail (Non-Recreation)
- Powerline
- Stream
- Intermittent Stream
- Lakes and Rivers
- Snowmobile Trails
- Snowmobile Trail
- Planned Regeneration
 - Natural
 - Planted
- Treatments
 - Thinning (Crown, Low, Systematic)
 - Clearcut (w/Reserves, Patch/Strip)
 - Selection (Group, Single Tree)

Forest Stands

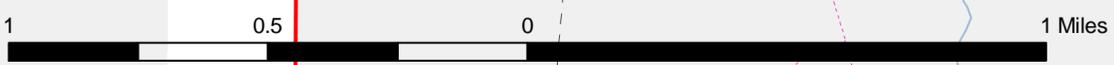
Level 3

- 411 - Northern Hardwood
- 413 - Aspen Types
- 421 - Planted Pines
- 422 - Natural Pines
- 431 - Upland Mixed Forest
- 611 - Lowland Deciduous Forest
- 612 - Lowland Coniferous Forest
- 613 - Lowland Mixed Forest

Non-Forest Stands

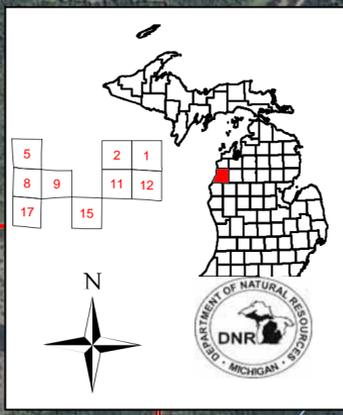
Level 3

- 122 - Road/Parking Lot
- 310 - Herbaceous Openland
- 320 - Upland Shrub
- 330 - Low-Density Trees
- 500 - Water
- 622 - Lowland Shrub
- 623 - Emergent Wetland
- 790 - Other Bare/Sparsely Vegetated

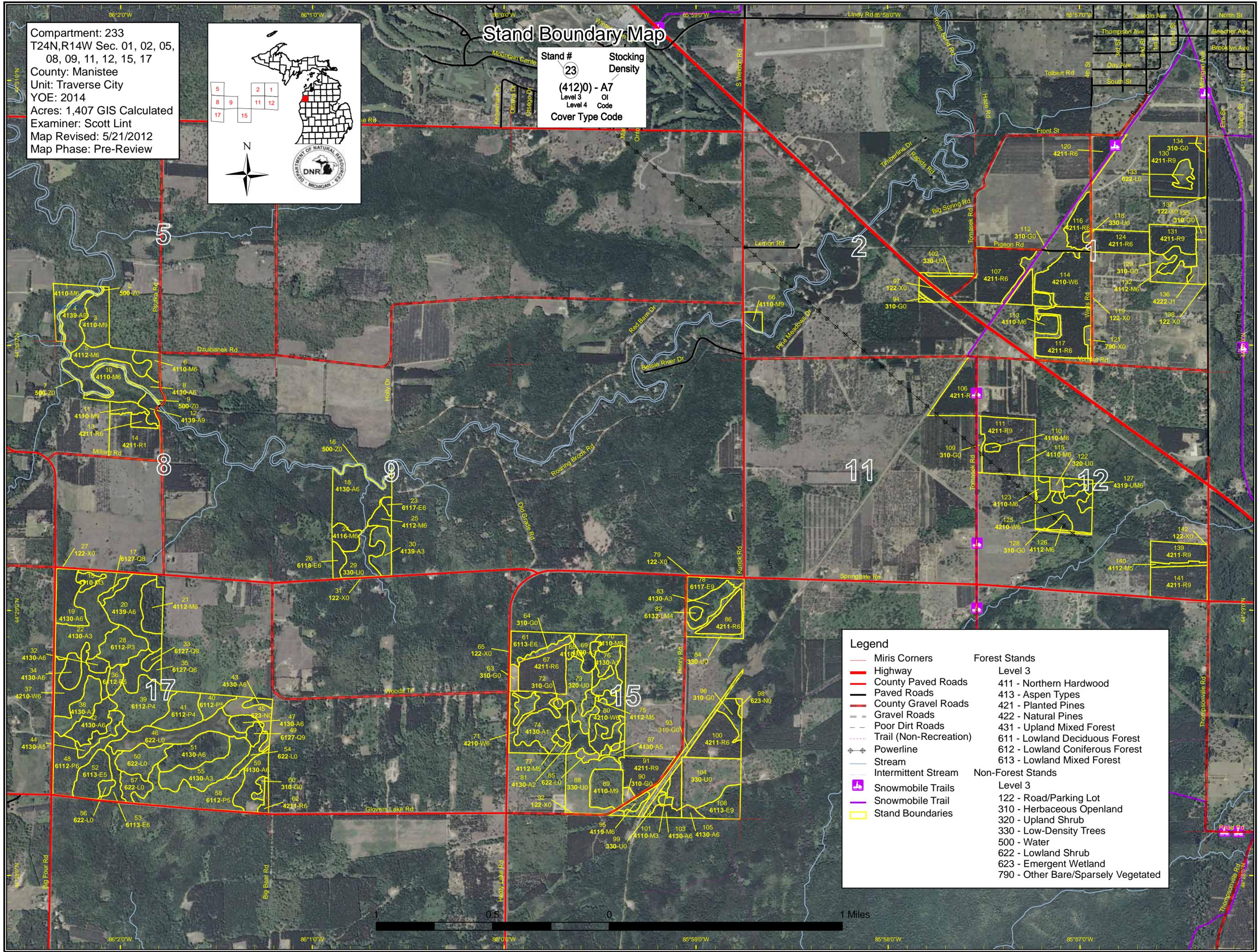


Stand Boundary Map

Compartment: 233
 T24N,R14W Sec. 01, 02, 05,
 08, 09, 11, 12, 15, 17
 County: Manistee
 Unit: Traverse City
 YOE: 2014
 Acres: 1,407 GIS Calculated
 Examiner: Scott Lint
 Map Revised: 5/21/2012
 Map Phase: Pre-Review

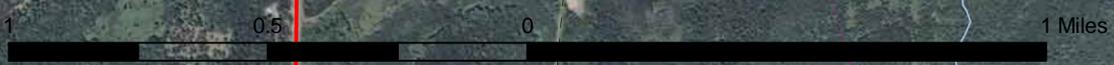


Stand #
 23
Stocking Density
 (412)0 - A7
 Level 3 OI
 Level 4 Code
Cover Type Code



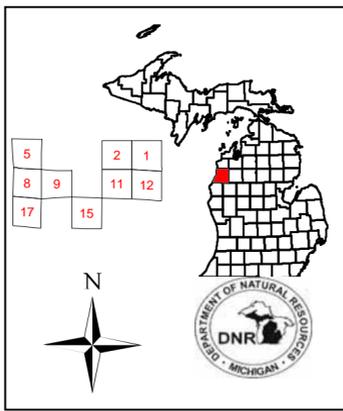
Legend

	Miris Corners	Forest Stands
	Highway	Level 3
	County Paved Roads	411 - Northern Hardwood
	Paved Roads	413 - Aspen Types
	County Gravel Roads	421 - Planted Pines
	Gravel Roads	422 - Natural Pines
	Poor Dirt Roads	431 - Upland Mixed Forest
	Trail (Non-Recreation)	611 - Lowland Deciduous Forest
	Powerline	612 - Lowland Coniferous Forest
	Stream	613 - Lowland Mixed Forest
	Intermittent Stream	Non-Forest Stands
	Snowmobile Trails	Level 3
	Snowmobile Trail	122 - Road/Parking Lot
	Stand Boundaries	310 - Herbaceous Openland
		320 - Upland Shrub
		330 - Low-Density Trees
		500 - Water
		622 - Lowland Shrub
		623 - Emergent Wetland
		790 - Other Bare/Sparsely Vegetated

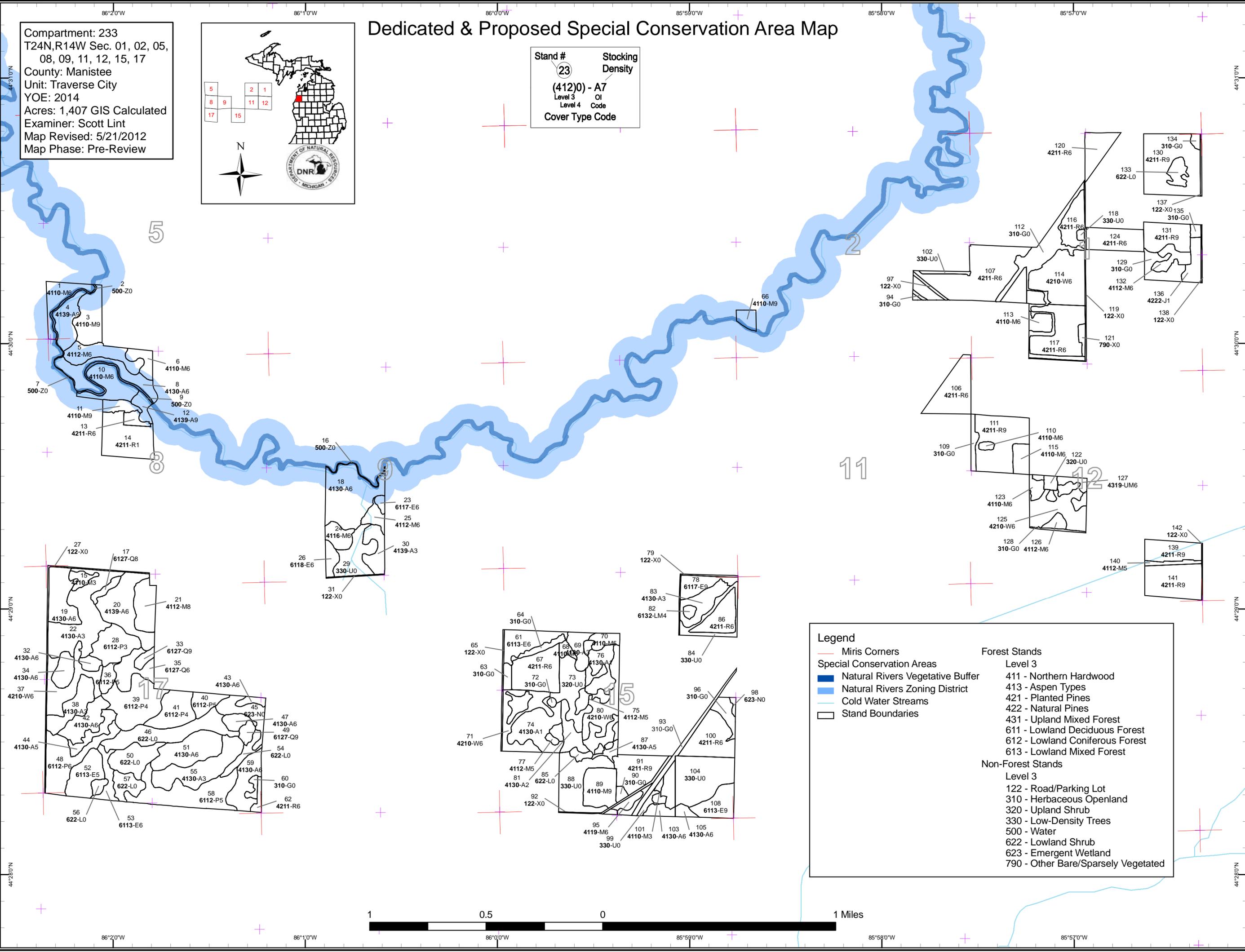


Dedicated & Proposed Special Conservation Area Map

Compartment: 233
 T24N,R14W Sec. 01, 02, 05,
 08, 09, 11, 12, 15, 17
 County: Manistee
 Unit: Traverse City
 YOY: 2014
 Acres: 1,407 GIS Calculated
 Examiner: Scott Lint
 Map Revised: 5/21/2012
 Map Phase: Pre-Review

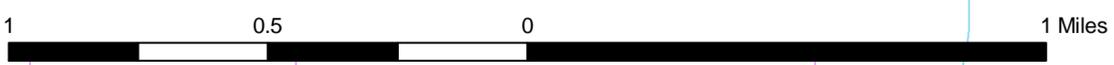


Stand #
 23
 (412)0 - A7
 Level 3 OI
 Level 4 Code
 Cover Type Code



Legend

- Miris Corners
- Special Conservation Areas
 - Natural Rivers Vegetative Buffer
 - Natural Rivers Zoning District
 - Cold Water Streams
 - Stand Boundaries
- Forest Stands
 - Level 3
 - 411 - Northern Hardwood
 - 413 - Aspen Types
 - 421 - Planted Pines
 - 422 - Natural Pines
 - 431 - Upland Mixed Forest
 - 611 - Lowland Deciduous Forest
 - 612 - Lowland Coniferous Forest
 - 613 - Lowland Mixed Forest
 - Non-Forest Stands
 - Level 3
 - 122 - Road/Parking Lot
 - 310 - Herbaceous Openland
 - 320 - Upland Shrub
 - 330 - Low-Density Trees
 - 500 - Water
 - 622 - Lowland Shrub
 - 623 - Emergent Wetland
 - 790 - Other Bare/Sparsely Vegetated



86°20'W 86°10'W 86°00'W 85°50'W 85°40'W 85°30'W 85°20'W

Table 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
Aspen	87	26	34	0	13	81	74	12	0	0	0	0	0	4	330
Bare/Sparsely Vegetated	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Herbaceous Openland	65	0	0	0	0	0	0	0	0	0	0	0	0	0	65
Jack Pine	7	0	0	0	0	0	0	0	0	0	0	0	0	0	7
Low-Density Trees	80	0	0	0	0	0	0	0	0	0	0	0	0	0	80
Lowland Aspen/Balsam Poplar	0	0	15	0	0	51	25	0	26	0	0	0	0	0	118
Lowland Conifers	0	0	0	0	0	0	0	0	11	0	0	0	0	9	20
Lowland Deciduous	0	0	0	0	0	0	0	0	7	26	0	0	0	28	60
Lowland Mixed Forest	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
Lowland Shrub	61	0	0	0	0	0	0	0	0	0	0	0	0	0	61
Marsh	11	0	0	0	0	0	0	0	0	0	0	0	0	0	11
Northern Hardwood	0	0	4	0	2	6	14	6	31	25	38	0	0	36	162
Red Pine	0	23	0	0	183	51	58	35	0	0	0	0	0	0	350
Upland Mixed Forest	0	0	0	0	0	3	0	0	0	0	0	0	0	0	3
Upland Shrub	18	0	0	0	0	0	0	0	0	0	0	0	0	0	18
Urban	17	0	0	0	0	0	0	0	0	0	0	0	0	0	17
Water	6	0	0	0	0	0	0	0	0	0	0	0	0	0	6
White Pine	0	0	0	0	83	19	0	0	0	0	0	0	0	0	102
Total	355	49	52	0	281	212	173	52	75	51	38	0	0	77	1414



Table 2 – Proposed Treatment Summaries

Traverse City Mgt. Unit
Year of Entry 2014

Compartment 233
Total Compartment Acres: 1414

Acres by Treatment Type

Commercial Harvest - 229	Site Prep - 0	Tree Planting - 0	Prescribed Burn - 0	Other - 0
Habitat Cut - 0	Opening Maintenance - 0	Tree Seeding - 0	Pesticide - 0	

Cover Type by Harvest Method

	Clearcut	Selection	Seed Tree	Shelterwood	Thinning	Other - Specify	Total Acres
Aspen	43	0	0	0	0	0	43
Northern Hardwood	0	15	0	0	0	0	15
Red Pine	0	0	0	0	152	0	152
White Pine	0	0	0	0	19	0	19
Total	43	15	0	0	171	0	229



Stand	Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
20	61233020-Cut	23.0	4139 - Aspen, Mixed Deciduous	High Density Pole	65	111-140	Harvest	Clearcut with Reserves	4130 - Aspen	Cmpt. Review Proposal

Prescription Clearcut with reserves to regenerate aspen, seasonally wet, use winter cutting restriction, require chipping to insure red maple subcanopy is removed to help insure good aspen regeneration, will need temporary culvert and driveway permit for access off of Springdale Road. No stand specific retention recommendations, follow standard guidance.

Other Comments:

Next Steps:

Proposed Start Date: 10/01/2013

42	61233042-Cut	12.7	4130 - Aspen	High Density Pole	55		Harvest	Clearcut with Reserves	4130 - Aspen	Cmpt. Review Proposal
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Prescription Clearcut with reserves, retain black cherry, junberry, and conifers. Locate retention island in area of white spruce along border with stand 38 as indicated by treatment shape.

Other Comments:

Next Steps:

Proposed Start Date: 10/01/2013

59	61233059-Cut2	14.0	4130 - Aspen	High Density Pole	55	51-80	Harvest	Clearcut with Reserves	4130 - Aspen	Fld. Tr. Bdy. - Incomplete
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Prescription
Specs:

Other Comments: 2010 POW Addition; not from the preferred YOE, but available

Next Steps:

Proposed Start Date: 05/26/2010

89	61233089-Cut	14.8	4110 - Sugar Maple Association	High Density Log	95	111-140	Harvest	Single Tree Selection	4110 - Sugar Maple Association	Cmpt. Review Proposal
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Prescription Using quantitative data to target appropriate diameters, create numerous large canopy gaps for regeneration, focused specifically around areas of more dense sugar maple regeneration-pockets of regen are heaviest west of stand 310 heading in a northerly direction. Focus majority of removal on the following; red maple in the small log/large pole size class, black cherry in the large log size class and defect removal over all species in all size classes. Remove larger, higher quality sugar maple while leaving some in the 20-24" size class for habitat value and future legacy trees. BA is lower in northwest corner of stand.

Other Comments:

Next Steps: Monitor for recruitment of sugar maple regeneration into sapling size class.

Proposed Start Date: 10/01/2013



S t a n d	Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
91	61233091-Cut	16.9	42110 - Planted Red Pine	High Density Log	62	171-200	Harvest	Crown Thinning	42110 - Planted Red Pine	Cmpt. Review Proposal
<p><u>Prescription</u> Thin to reduce basal area to approximately 100-120 square feet. <u>Specs:</u> <u>Other Comments:</u> <u>Next Steps:</u> <u>Proposed Start Date:</u> 10/01/2013</p>										
107	61233107-Cut1	50.4	42110 - Planted Red Pine	High Density Pole	49	171-200	Harvest	Crown Thinning	42110 - Planted Red Pine	Cmpt. Review Proposal
<p><u>Prescription</u> Mark to remove poor quality and suppressed trees, residual basal area should be approximately 100-120 square feet. <u>Specs:</u> <u>Other Comments:</u> Be mindful of MDOT right-of-way along M-115 when setting up sale. <u>Next Steps:</u> <u>Proposed Start Date:</u> 10/01/2013</p>										
120	61233120-Cut	10.7	42110 - Planted Red Pine	High Density Pole	49	171-200	Harvest	Crown Thinning	42110 - Planted Red Pine	Cmpt. Review Proposal
<p><u>Prescription</u> Thin to remove poor quality and suppressed trees, residual basal area should be approximately 100-120, remove declining trees in and around bark beetle pockets. <u>Specs:</u> <u>Other Comments:</u> <u>Next Steps:</u> <u>Proposed Start Date:</u> 10/01/2013</p>										
130	61233130-Cut	34.6	42110 - Planted Red Pine	High Density Log	71	141-170	Harvest	Crown Thinning	42110 - Planted Red Pine	Cmpt. Review Proposal
<p><u>Prescription</u> Thin to reduce basal area to approximately 100-120 square feet. <u>Specs:</u> <u>Other Comments:</u> <u>Next Steps:</u> <u>Proposed Start Date:</u> 10/01/2013</p>										
139	61233139-Cut	13.4	42110 - Planted Red Pine	High Density Log	63	141-170	Harvest	Crown Thinning	42110 - Planted Red Pine	Cmpt. Review Proposal
<p><u>Prescription</u> Thin to reduce basal area to approximately 100-120 square feet. <u>Specs:</u> <u>Other Comments:</u> There is a small vernal pond located in this stand, protect pond with redline to keep equipment away from sensitive soils. <u>Next Steps:</u> <u>Proposed Start Date:</u> 10/01/2013</p>										

**Table 3 -- Treatments Prescribed
with No Limiting Factor**



S t a n d	Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
141	61233141-Cut	22.3	42110 - Planted Red Pine	High Density Log	63	141-170	Harvest	Crown Thinning	42110 - Planted Red Pine	Cmpt. Review Proposal

Prescription Thin to reduce basal area to approximately 100-120 square feet. Remove declining trees around the edges of bark beetle pockets within this
Specs: stand when applying treatment.

Other
Comments:

Next
Steps:

Proposed
Start Date: 10/01/2013

**Total Treatment
Acreage Proposed: 212.9**

Table 4 -- Treatments Prescribed with a Limiting Factor



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Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
13 61233013-salvage	3.5	42110 - Planted Red Pine	High Density Pole	49	171-200	Harvest	Low Thinning	42110 - Planted Red Pine	Cmpt. Review Proposal

Prescription Harvest all red pine damaged during 3/2/2012 snowstorm, plus mark remainder of stand to thin to a residual BA of about 120.
Specs:

Other Comment: Treatment is primarily a salvage operation to take care of storm damage. Treatment will be done ASAP and will precede treatments in the rest of the compartment. "Chapter 7" review will be employed to facilitate ahead-of-schedule work.

Next Steps: None needed. Stand should be monitored for bark beetle damage in coming years.

Proposed Start Date: 05/12/2012

Limiting Factor and No Treatment Reason 1A: Federal/State/Local Law

44 61233044-Cut	6.8	4130 - Aspen	Medium Density Pole	55		Harvest	Clearcut	4130 - Aspen	Cmpt. Review Proposal
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Prescription Retain black cherry throughout, but oncentrate most of the retention in adjacent stand 42. This stand is less well stocked then stand 42 and meeting retention guidance requirements would be more difficult in this part of the treatment. These two stands will regenerate as one.
Specs:

Other Comment:

Next Steps:

Proposed Start Date: 10/01/2013

Limiting Factor and No Treatment Reason 2G: Too wet (sensitive soils, does not include access issues)

44 61233044-Cut	6.8	4130 - Aspen	Medium Density Pole	55		Harvest	Clearcut	4130 - Aspen	Cmpt. Review Proposal
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Prescription Retain black cherry throughout, but oncentrate most of the retention in adjacent stand 42. This stand is less well stocked then stand 42 and meeting retention guidance requirements would be more difficult in this part of the treatment. These two stands will regenerate as one.
Specs:

Other Comment:

Next Steps:

Proposed Start Date: 10/01/2013

Limiting Factor and No Treatment Reason 2G: Too wet (sensitive soils, does not include access issues)

Table 4 -- Treatments Prescribed with a Limiting Factor



Stand	Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
44	61233044-Cut	6.8	4130 - Aspen	Medium Density Pole	55		Harvest	Clearcut	4130 - Aspen	Cmpt. Review Proposal

Prescription Retain black cherry throughout, but oncentrate most of the retention in adjacent stand 42. This stand is less well stocked then stand 42 and meeting retention guidance requirements would be more difficult in this part of the treatment. These two stands will regenerate as one.

Other Comment:

Next Steps:

Proposed Start Date: 10/01/2013

Limiting Factor and No Treatment Reason 2G: Too wet (sensitive soils, does not include access issues)

125	61233125-Cut	19.3	42100 - Planted White Pine	High Density Pole	51	171-200	Harvest	Systematic Thinning	42100 - Planted White Pine	Cmpt. Review Proposal
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Prescription Row thin, remove every third row if spacing allows. May have to mark some additional rows or trees to facilitate equipment access.

Other Comment: There is no legal access to this stand.

Next Steps:

Proposed Start Date: 10/01/2013

Limiting Factor and No Treatment Reason 2B: Unknown if access through adjacent landowner(s) is possible

125	61233125-Cut	19.3	42100 - Planted White Pine	High Density Pole	51	171-200	Harvest	Systematic Thinning	42100 - Planted White Pine	Cmpt. Review Proposal
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Prescription Row thin, remove every third row if spacing allows. May have to mark some additional rows or trees to facilitate equipment access.

Other Comment: There is no legal access to this stand.

Next Steps:

Proposed Start Date: 10/01/2013

Limiting Factor and No Treatment Reason 2B: Unknown if access through adjacent landowner(s) is possible

Total Treatment Acreage Proposed: 62.5

**Out of YOE -- Treatments
Prescribed with No Limiting Factor**

Year of Entry: 2014



Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
61043_OutOfY OE-Cut	2.1					Harvest	Clearcut with Reserves	4131 - Aspen, Oak	Cmpt. Review Proposal - Incomplete

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

Comments:

Next

Steps:

Proposed

Start Date: 09/01/2009

61231_OutOfY OE-Thin	4.6			0		Harvest	Low Thinning	4122 - Oak, Pine	Cmpt. Review Proposal - Incomplete
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Prescription Within harvest area, remove all aspen. Heavily thin oak and maple to a residual BA of about 50 sf. Leave retention by acreage sufficient to meet minimum retention goals.

Other Topography is rather hilly. Combine with treatment in Compartment 133.

Comments:

Next

Steps:

Proposed

Start Date: 10/01/2013

**Total Treatment
Acreage Proposed: 6.7**

S
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Traverse City Mgt. Unit

5 – Forested Stands

Compartment: 233
Year of Entry: 2014

	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
1	4110 - Sugar Maple Association	High Density Pole	10.2	95		
3	4110 - Sugar Maple Association	High Density Log	15.4	100	81-110	Stand treated with a selection cut last entry period. South 1/3 of stand is a "carpet" of maple seedlings that has been heavily browsed at 2-3' high. Small area of large aspen at north end with high coarse woody count and many larger soft snags, most of this is within the Natural Rivers setback.
4	4139 - Aspen, Mixed Deciduous	High Density Log	12.2	75		Betsie River riparian influence, multi-aged stand, aspen diameters range from 6" to 20". Red maple sapling through log size. There are a few large older sugar maple also. Springs and seeps at foot of slope, lots of coarse woody debris. small trail road leads through stand to the rivers edge and a lightly used dispersed camping site
5	4112 - Maple, Beech, Cherry Association	High Density Pole	13.8	100	111-140	several large red oaks within the stand, these are somewhat uncommon in this general area.
6	4110 - Sugar Maple Association	High Density Pole	5.7	77	81-110	a few large red oaks present in stand
8	4130 - Aspen	High Density Pole	16.4	68		
10	4110 - Sugar Maple Association	High Density Pole	14.3	Uneven Age	81-110	A few large red oaks along river.
11	4110 - Sugar Maple Association	High Density Log	4.6	105	81-110	stand was uneven aged at time of inventory
12	4139 - Aspen, Mixed Deciduous	High Density Log	4.3	Uneven Age		
13	42110 - Planted Red Pine	High Density Pole	3.2	49	171-200	there is a small 1/4 acre patch of planted cedar in the ne part of this stand that is fully stocked, same age as red pine
14	42110 - Planted Red Pine	Low Density Sapling	23.0	17		
15	4110 - Sugar Maple Association	High Density Sapling	3.5	24		black cherry regen. resulting from same cut that created stand 10, split from stand 10.
17	6127 - Lowland Pine	Medium Density Log	2.8	Uneven Age		
18	4130 - Aspen	High Density Pole	31.7	65		
19	4130 - Aspen	High Density Pole	16.2	52		
20	4139 - Aspen, Mixed Deciduous	High Density Pole	23.0	65	111-140	

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Traverse City Mgt. Unit

5 – Forested Stands

Compartment: 233

Year of Entry: 2014



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
21	4112 - Maple, Beech, Cherry Association	Medium Density Log	12.2	Uneven Age	81-110	
22	4130 - Aspen	High Density Sapling	33.7	24		
23	6117 - Lowland Deciduous, Mixed Coniferous	High Density Pole	1.6	Uneven Age		wetland grass, ferns, marsh marigolds, lots of snags and cwd, flowing water through stand in early spring
24	4116 - Mixed N. Hardwood - Aspen	High Density Pole	6.8	68		
25	4112 - Maple, Beech, Cherry Association	High Density Pole	4.5	68		
26	6118 - Lowland Deciduous with Cedar	High Density Pole	4.2	Uneven Age		stand contains lowland elements, damp areas with seeps and springs, small flows from springs toward unnamed tributaries,
28	6112 - Lowland Aspen	High Density Sapling	15.2	24		
30	4139 - Aspen, Mixed Deciduous	High Density Sapling	9.1	7		
32	4130 - Aspen	High Density Pole	3.2	45		
33	6127 - Lowland Pine	High Density Log	2.8	Uneven Age		at time of data collection, uneven age was a valid choice, since then, multi-storied has been added and uneven age removed, therefore age of 100 was estimated to allow validation and data entry. Many areas of water, hummocky
34	4130 - Aspen	High Density Pole	6.9	45		
35	6127 - Lowland Pine	High Density Pole	10.8	85		age estimated, low confidence in accuracy
36	6112 - Lowland Aspen	Medium Density Pole	4.3	80		
37	42101 - Planted White Pine, Mixed Deciduous	High Density Pole	17.1	42	141-170	
38	4130 - Aspen	High Density Sapling	13.4	7		
39	6112 - Lowland Aspen	Low Density Pole	25.0	60		age estimated, low confidence in accuracy
40	6112 - Lowland Aspen	Medium Density Pole	6.7	80		

S t a n d	Traverse City Mgt. Unit		5 – Forested Stands			Compartment: 233	General Comments:
	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Year of Entry: 2014	
41	6112 - Lowland Aspen	Low Density Pole	15.0	80			
42	4130 - Aspen	High Density Pole	12.7	55			
43	4130 - Aspen	High Density Pole	2.4	65			
44	4130 - Aspen	Medium Density Pole	6.8	55			
47	4130 - Aspen	High Density Pole	4.3	55			
48	6112 - Lowland Aspen	High Density Pole	22.3	55			
49	6127 - Lowland Pine	High Density Log	3.2	Uneven Age			
51	4130 - Aspen	High Density Pole	20.8	55			
52	6113 - Lowland Maple	Medium Density Pole	14.3	92			
53	6113 - Lowland Maple	High Density Pole	6.5	84			standing water throughout stand
55	4130 - Aspen	High Density Sapling	23.4	7			
58	6112 - Lowland Aspen	Medium Density Pole	29.1	55			
59	4130 - Aspen	High Density Pole	14.0	55	51-80		Big tooth is located mostly along east edge of stand, fair amount of downed aspen, but less than 7" so not captured in CWD sample, not a stand of interest unless needed for age class distribution,
61	6113 - Lowland Maple	High Density Pole	13.0	Uneven Age	81-110		witch hazel and quaking aspen along south edge of stand where it begins to rise from lowland towards adjacent non-forested stand. Traces of white pine and paper birch.
62	42110 - Planted Red Pine	High Density Pole	2.2	50	141-170		Needs first thinning, but only 2.2 acres, combine with red pine in compartment 35 when that is treated if possible
66	4110 - Sugar Maple Association	High Density Log	3.9	105			Stand was done remotely after original data was lost during an early IFMAP server upgrade, original field data sheet must have been misplaced....Stand is along Betsie River, apparently acquired by Fisheries sometime ago for possible access site.



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Traverse City Mgt. Unit

5 – Forested Stands

Compartment: 233

Year of Entry: 2014



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
67	42110 - Planted Red Pine	High Density Pole	21.6	49	111-140	There is an area of heavy white pine seedlings along the south edge of stand. Seedlings are approximately 1 foot tall.
68	4110 - Sugar Maple Association	High Density Pole	2.3	Uneven Age		remnant patch of hardwood along the old railroad grade
69	4130 - Aspen	High Density Sapling	6.7	17		canopy is patchy, there are a few small grassy openings within stand.
70	4110 - Sugar Maple Association	Medium Density Pole	4.5	82	51-80	A few x size sugar maple den trees, west end of stand small opening traces of elm, aspen , and white ash.
71	42101 - Planted White Pine, Mixed Deciduous	High Density Pole	16.4	49	111-140	
74	4130 - Aspen	Low Density Sapling	23.8	8		
75	4112 - Maple, Beech, Cherry Association	Medium Density Pole	4.5	82	51-80	multi-stemmed poor quality
76	4130 - Aspen	Low Density Sapling	17.6	8		
77	4112 - Maple, Beech, Cherry Association	Medium Density Pole	1.1	82	51-80	multi-stemmed poor quality
78	6117 - Lowland Deciduous, Mixed Coniferous	High Density Log	8.9	Uneven Age	171-200	age was estimated because at time of inventory we were still allowing uneven aged as an option, inactive stick nest, lots of coarse woody, larger hemlock sub-canopy provide good vertical structure, some very nice quality larger hemlock.
80	42100 - Planted White Pine	High Density Pole	20.9	48	111-140	
81	4130 - Aspen	Medium Density	8.1	12		aspen regen. spotty in some places
82	6132 - Mixed Lowland Forest with Cedar	Low Density Pole	1.6	65		stand almost non-forested, lowland shrub, but enough trees around perimeter to make it forested. Pocket of heavy shrubs in center.
83	4130 - Aspen	High Density Sapling	11.1	15		aspen regen. with a few residual white pine
86	42110 - Planted Red Pine	High Density Pole	12.2	48	111-140	small pocket of aspen near south edge, few black cherry scattered throughout plantation,
87	4130 - Aspen	Medium Density Pole	2.4	58	1-50	old grade runs through stand, samll area of aspen regen. (1/4 acre) small opening with bracken fern, mixture of left overs that did not fit well with adjacent stands



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
89	4110 - Sugar Maple Association	High Density Log	14.8	95	111-140	stand contains a uniform layer of regen from treatment last period. canopy contains traces of beech, ash, basswood and hemlock
91	42110 - Planted Red Pine	High Density Log	22.5	62	171-200	
95	4119 - Mixed Northern Hardwoods	High Density Pole	2.8	85	51-80	
100	42110 - Planted Red Pine	High Density Pole	20.1	51	111-140	
101	4110 - Sugar Maple Association	High Density Sapling	2.2	41		trace of junberry, may want to block road running east from private rr grade at some time, morchella angusticeps present,
103	4130 - Aspen	High Density Pole	3.7	50	81-110	stand under prescription with adjacent compartment
105	4130 - Aspen	High Density Pole	2.4	45		stand is under contract with adjacent stand in compartment 36
106	42110 - Planted Red Pine	High Density Pole	20.2	47	111-140	
107	42110 - Planted Red Pine	High Density Pole	50.4	49	171-200	
108	6113 - Lowland Maple	High Density Log	11.6	90		lowland stand, but it does have a narrow upland aspen sapling component along the edge
110	4110 - Sugar Maple Association	High Density Pole	1.3	Uneven Age	51-80	stand was called uneven aged at time of inventory so age is an estimate,
111	42110 - Planted Red Pine	High Density Log	28.7	59	141-170	strip of jack pine sap regen along east edge where jack pine was previously removed, medium density, patchy, 1-2 foot tall red pine regeneration resulting from last thinning
113	4110 - Sugar Maple Association	High Density Pole	7.6	85	111-140	
114	42100 - Planted White Pine	High Density Pole	28.3	49	141-170	a few scattered black cherry trees present
115	4110 - Sugar Maple Association	High Density Pole	5.9	Uneven Age	81-110	
116	42110 - Planted Red Pine	High Density Pole	11.3	49	141-170	honeysuckle subcanopy is patchy, but patches are high density, there is also a medium density red/white pine seedling layer, 1 foot tall present in stand as a result of the last thinning
117	42110 - Planted Red Pine	High Density Pole	23.8	49	141-170	

S t a n d	Traverse City Mgt. Unit		5 – Forested Stands			Compartment: 233	General Comments:
	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Year of Entry: 2014	
120	42110 - Planted Red Pine	High Density Pole	10.7	49	171-200		
123	4110 - Sugar Maple Association	High Density Pole	8.4	85	111-140		
124	42110 - Planted Red Pine	High Density Pole	15.2	49	141-170	very light, approximately one dozen trees, snapped off from snow storm on 3/3/12	
125	42100 - Planted White Pine	High Density Pole	19.3	51	171-200		
126	4112 - Maple, Beech, Cherry Association	High Density Pole	2.8	64	51-80	areas of suppressed overtopped white pine that was planted, but not very successful, constitutes the source of the second age. plantation was marked no because not the dominant cover type	
127	4319 - Mixed Upland Forest	High Density Pole	2.9	51	141-170	area planted to white pine, but with significant amount of hardwood competition	
130	42110 - Planted Red Pine	High Density Log	34.6	71	141-170		
131	42110 - Planted Red Pine	High Density Log	14.8	49	141-170	hardwood subcanopy concentrated along west half of stand, there is medium density 1 foot tall, rp/wp seedlings present, somewhat patchy in distribution, resulting from last treatment	
132	4112 - Maple, Beech, Cherry Association	High Density Pole	6.4	59	81-110	traces of elm, some good quality sugar maple stems	
136	42220 - Natural Jack Pine	Low Density Sapling	7.1	6			
139	42110 - Planted Red Pine	High Density Log	13.4	63	141-170	several pockets of mortality; suspect bark beetle	
140	4112 - Maple, Beech, Cherry Association	Medium Density Pole	2.6	85	51-80	was uneven aged at time of inventory, trees along old rr grade	
141	42110 - Planted Red Pine	High Density Log	22.3	63	141-170	vernal pond in stand	





Stand	Cover Type	Acres	Managed Site	Management Priority (Objective)	General Comments:
2	50 - Water	2.0	No	Low (NonForested)	Betsie River
7	50 - Water	0.3	N/A	Unspecified	
9	50 - Water	3.2	N/A	Unspecified	
16	50 - Water	0.8	N/A	Unspecified	
27	122 - Road/Parking Lot	4.0	N/A	Unspecified	
29	330 - Low-Density Trees	14.7	N/A	Unspecified	
31	122 - Road/Parking Lot	0.5	N/A	Unspecified	
45	623 - Emergent Wetland	10.3	N/A	Unspecified	
46	622 - Lowland Shrub	24.2	N/A	Unspecified	
50	622 - Lowland Shrub	14.0	N/A	Unspecified	
54	622 - Lowland Shrub	5.0	N/A	Unspecified	
56	622 - Lowland Shrub	2.3	N/A	Unspecified	
57	622 - Lowland Shrub	7.6	N/A	Unspecified	
60	310 - Herbaceous Openland	1.9	N/A	Unspecified	
63	310 - Herbaceous Openland	2.6	N/A	Unspecified	
64	310 - Herbaceous Openland	3.7	N/A	Unspecified	
65	122 - Road/Parking Lot	1.7	N/A	Unspecified	
72	310 - Herbaceous Openland	0.8	N/A	Unspecified	



Stand	Cover Type	Acres	Managed Site	Management Priority (Objective)	General Comments:
73	320 - Upland Shrub	16.2	N/A	Unspecified	
79	122 - Road/Parking Lot	1.5	N/A	Unspecified	
84	330 - Low-Density Trees	7.1	N/A	Unspecified	
85	622 - Lowland Shrub	2.7	N/A	Unspecified	
88	3302 - Low Density Conifer Trees	22.5	Planted	Red Pine	
90	310 - Herbaceous Openland	1.6	No	Unspecified	active gas well site
92	122 - Road/Parking Lot	2.7	N/A	Unspecified	
93	310 - Herbaceous Openland	7.4	N/A	Unspecified	
94	310 - Herbaceous Openland	0.5	N/A	Unspecified	
96	310 - Herbaceous Openland	5.6	N/A	Unspecified	
97	122 - Road/Parking Lot	1.3	N/A	Unspecified	
98	623 - Emergent Wetland	0.9	N/A	Unspecified	
99	330 - Low-Density Trees	4.2	N/A	Unspecified	
102	330 - Low-Density Trees	1.8	N/A	Unspecified	
104	330 - Low-Density Trees	28.5	N/A	Unspecified	spotty pole size black cherry and a few small areas of aspen regeneration, this area was clearcut before state acquired the property several years ago
109	310 - Herbaceous Openland	3.4	N/A	Unspecified	
112	310 - Herbaceous Openland	24.5	N/A	Unspecified	
118	330 - Low-Density Trees	1.0	N/A	Unspecified	



Stand	Cover Type	Acres	Managed Site	Management Priority (Objective)	General Comments:
119	122 - Road/Parking Lot	2.7	N/A	Unspecified	
121	790 - Other Bare/Sparsely Vegetate	2.0	Natural Regen	Natural Mixed Pines	
122	320 - Upland Shrub	2.2	N/A	Unspecified	
128	310 - Herbaceous Openland	1.1	N/A	Unspecified	
129	310 - Herbaceous Openland	9.2	N/A	Unspecified	
133	622 - Lowland Shrub	5.0	N/A	Unspecified	
134	310 - Herbaceous Openland	1.5	N/A	Unspecified	
135	310 - Herbaceous Openland	1.6	N/A	Unspecified	
137	122 - Road/Parking Lot	1.0	N/A	Unspecified	
138	122 - Road/Parking Lot	0.7	N/A	Unspecified	
142	122 - Road/Parking Lot	0.6	N/A	Unspecified	



7 – 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.

Stand	SCA Type	SCA Name	Acres	Comments



8 – 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	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.
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.