



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

COMPARTMENT # 163 ENTRY YEAR: 2014

Compartment Acreage: 1824 County: Kalkaska

Stand Examiner: Patrick Cotant

Legal Description: T27N-R7W, Sections 7, 8, 9, 10, 11, 14, 15 & 18 of Kalkaska East Township.

Management Goals: Visual management is important along the M-72, 131 and CR 612 travel corridors. In addition, aesthetics along the snowmobile, ORV and other non-motorized trails should be maintained or improved following any management operations that occur within the compartment.

Soil and Topography: Compartment consists mainly of Rubicon and Kalkaska sands with Augres and Crosswell sands present in small pockets. In addition pockets of Leafriver and AuSable/Bowstring mucks are present in many of the lowland areas of the compartment including stream corridors.

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

This compartment is somewhat fragmented with a mixture of state and private lands throughout. The town of Kalkaska is adjacent to the compartment. Hunting, fishing and snowmobiling are the major recreational uses.

Unique, Natural Features (include only non-site specific and non-sensitive information):

Rich conifer Swamp to S. Wet-mesic sand prairie to SE. Great blue heron rookery just south of section 22. Bald eagle to S. Loon to N. Osprey to NW. Red-shouldered hawk, Blanding's turtle, dusted skipper, and American bittern to S. Hill's thistle to E. Hill's pondweed to NW. Prairie dropseed, Vasey's rush, Houghton's goldenrod, Clinton's bulrush, and New England violet all to SE. Potential for red-shouldered hawk and goshawk. Potential for loon, bald eagle, osprey, and great blue heron rookery. Potential for box turtle. Potential for Blanding's turtle. Potential for ebony boghaunter in bogs. Potential for Hill's pondweed. Limited potential for Hill's thistle and Alleghany plum. Limited potential for ginseng, goblin moonwort, and showy orchis in mature mesic hardwoods.

This compartment falls within landtype associations (LTAs) 3211, 5149, and 5211 of sub-subsection VII.2.2. LTA 3211, which occurs in the eastern two-thirds of section 24, is characterized by large, irregular ice-contact ridges, many kettle lakes and excessively drained sandy soil. Mixed forests of red and white pine covered almost one half of the LTA circa 1800. White pine also occurred as co-dominant with eastern hemlock in forests that covered another 7% of the area. Forests of eastern hemlock mixed with American beech were comparatively extensive, covering about 32% of the LTA. Lastly, northern hardwood forests of American beech and sugar maple occurred in localized areas, while mixed conifer and cedar swamps dominated wetlands areas. Fragmentation into numerous cover types has occurred, with 21% of the land area supporting numerous types of limited areal extent. The conifer-dominated forests of precolonial times have been virtually eliminated, while aspen/white birch forests, which did not occur in mappable sized areas in precolonial times, now occur on 48% of the LTA. Northern and central hardwoods (both dominated by American beech and sugar maple with the latter type containing more oak) collectively cover most of the remaining area (32%).

LTA 5149, a broad flat outwash plain with very poorly drained peat or muck, occurs on the western edge of section 24, the eastern edge of section 23 and the southwestern half of section 22. Circa 1800, almost 70% of the LTA supported conifer-dominated wetlands (7% of this area was bog and muskeg). Forests of white pine with red pine or hemlock collectively covered another 11% of the LTA and occurred on better-drained, sandy inclusions often within the extensive peatlands. In addition, both white pine and hemlock were probably also important components of the American beech/sugar maple forests that covered another 6% of the LTA. The remainder of the LTA supported small amounts of pure hemlock forests, alder/willow thickets, marshes, and aspen/white birch forests. Lowland-conifer forests, which once covered almost 70% of the LTA, now occur on only 22% of the landtype. Conversely, lowland hardwood swamps and shrub/scrub wetlands, which did not occur here in precolonial times, now cover about 16% and 15% of the LTA, respectively. Further, aspen/white birch forests have increased from about 1% precolonial to 21% cover today. Pine-dominated forests persist on only about 6% of the LTA and northern hardwoods on another 5%. The remainder of the area supports a variety of cover types of minor areal extent.

LTA 5211, a pitted outwash plain with excessively drained sand, occurs in the remainder of the compartment. Northern hardwood forests, which were concentrated in the northwestern portion of the sub-subsection where fire-protection is greatest, occupied 34% of the LTA prior to settlement. The entire spectrum of conifer-dominated forests occurred elsewhere, and collectively covered 53% of the LTA. Forty-seven percent of this area supported forests of red pine mixed with either white pine, jack pine, or (less commonly) oak. Another 23% of the conifer-dominated area supported hemlock mixed with American beech, white pine, or (rarely) in pure stands. Jack pine, occurring in pure stands or in open, savanna-like pine and oak/ pine barrens covered another 25% of this area. The remainder of the upland conifer-dominated portion of the LTA supported localized forests of white pine, American beech, and red maple. Finally, wetland portions of the LTA supported mixed conifer and northern white cedar swamps. The LTA has become quite fragmented and 19% of its area supports cover types with less than 5% individual cover. Upland-conifer forests, which once covered more than one half of the LTA, now occur on about 19% of its area. Further, much of these remaining forests are red or jack pine plantations, while oak and pine barrens and forests co-dominated by hemlock have been virtually eliminated. In contrast, aspen/white birch forests, which covered about 3% of the LTA in precolonial times, have increased to about 20% cover today. Another 28% of the LTA supports northern and central hardwood forests (the latter type containing a high component of oak). Lowland hardwood forests, which covered no mappable areas in precolonial times, now cover about the same area as lowland conifers. Finally, about 5% of the LTA has been converted to agriculture, while another 7% is in unmanaged shrublands. GLO surveyors commonly reported evidence of large wildfires and, less frequently, windfalls within LTA 5211.

Archeological, Historical, and Cultural Features (include only non-site specific and non-sensitive information): There was a HAL hit tagged as an archeological concern in sections 10 and 15. Aside from this, no other archeological, historical or cultural features are identified.

Special Management Designations or Considerations: N/A

Watershed and Fisheries Considerations: The upper North Branch of the Boardman River traverses the eastern portion of the compartment and is a designated trout stream. The North Branch of the Boardman River has naturally reproducing populations of brook and brown trout. In addition, the Little Rapid River traverses the northwestern corner of the compartment. BMPS should be followed when working in wet areas near the streams.

Wildlife Habitat Considerations: This compartment is adjacent to the city of Kalkaska and has been managed for mixed use with an emphasis on maintaining a variety of cover types and age classes for game and non-game wildlife. This emphasis coincides well with the fire driven dynamics of the dominant local Land Type Associations. Two large tracts of pitted outwash plain enter this compartment from the north and west. These outwash plains show a history of wildfires and less frequently, windfalls. Consequently, in the

past a variety of forest types and age classes were found, including: the entire spectrum of conifer dominated forests, jack pine and oak/pine savannas, to northern hardwoods in “fire shadow” areas. This area should continue to be managed to perpetuate a variety of forest types and successional stages related to a fire prone community. Timber prescriptions should be designed to incorporate live leave trees, leave islands, and snags to mimic a wildfire. This type of habitat mosaic supports wildlife species such as black bear, white-tailed deer, wild turkeys, pine warblers, northern goshawks, and box turtles. Several upland brush types and grassy openings have been prescribed for burning to promote existing native warm season grasses.

The south central and northeast portions of the compartment are situated on a flat, excessively drained outwash plain. This LTA is also a fire driven landscape supporting a similar mosaic of forest types and wildlife species as described above. Some stands that fall in the “fire shadow” of streams and wetlands could be allowed to succeed to later successional species to add diversity of the area. Cuts in this community type should be designed to leave standing dead timber and scattered leave trees/islands for a component of structural diversity in regenerating stands of timber. Several upland brush communities will be treated with prescribed burns and/or selective felling to set back woody encroachment and maintain the “open” grassy component of the outwash plains.

A poorly drained flat outwash plain occurs in the southeastern portion of the compartment. In presettlement times this LTA was dominated by coniferous wetlands with small occurrences of upland coniferous and northern hardwood forests. Evidence of occasional wildfires and windfalls has been found in this community. Cuts in this area should be designed to leave snags and conifers to add structural diversity to regenerating stands of aspen. Tops should be left on site and preferably in piles for hares and other wildlife. Cuts that abut wetlands and/or drainages should incorporate a tree length buffer. The buffer will provide cavity trees, downed logs, an influx of nutrients, as well as shade for maintaining microhabitat conditions along these riparian habitats. Existing coniferous wetlands and lowland hardwoods should be managed toward later successional communities. Declining alder and willow stands should be cut during winter to stimulate regeneration of these lowland shrubs. Conifer dominated wetlands and lowland shrub swamps, in association with dry upland inclusions, provide habitat for white-tailed deer, snowshoe hare, bobcat, woodcock, evening grosbeaks, and massasauga rattlesnakes.

One final landtype exists within this compartment on state land, a narrow outwash channel. This glacial land form consists of channels of poorly drained peats and mucks with steep valley walls and often incorporates a stream or river, in this case a branch of the Rapid River. Pre-settlement vegetation was a mix of coniferous and hardwood swamps with inclusions of upland conifers. No cuts have been proposed this entry period and consideration should be given to letting stands on this LTA naturally succeed. However, small patch cuts could be conducted that would mimic the occasional fire or wind throw that occurred in this community type. Wildlife species that may potentially be found here include bobcats, deer, northern saw-whet owls, and wood turtles near larger streams.

Mineral Resource and Development Concerns and/or Restrictions:

Surface sediments consist of glacial outwash sand and gravel and postglacial alluvium. The glacial drift thickness varies between 400 and 800 feet. Beneath the glacial drift is the Mississippian Coldwater Shale that does not have a current economic use. This area appears to be mostly sand and gravel potential appears to be limited. The Compartment lies within the prolific Guelph (Niagaran) reef trend. Several reef wells still produce in the Compartment. The entire Compartment is currently leased.

Vehicle Access: Access is adequate throughout compartment via county maintained roads and forest trails and 2-tracks.

Survey Needs: A survey is needed in the SE1/4 of section 15 in order to conduct the prescribed treatment on stand 57.

Recreational Facilities and Opportunities: The combined Blue Bear & Cranberry Lake Snowmobile Trail and Kalkaska ORV Trail parking lot is located in section 19, just north of M-72. Approximately 1 mile of both trails run through sections 19 & 24 of this compartment.

Fire Protection: Fire protection for this area of state land is carried out by the Fire Management division of the MDNR, specifically the Traverse City Unit, Kalkaska Field Office. Assistance from the Grayling DNR Office and local Volunteer Fire Departments is also available and would be utilized for any major fire event. Water access is nearby for fire suppression use and road access is acceptable but limited. (Comments by Rod Rader DNR Fire Supervisor, Traverse City Field Office.)

Additional Compartment Information:

****** 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**

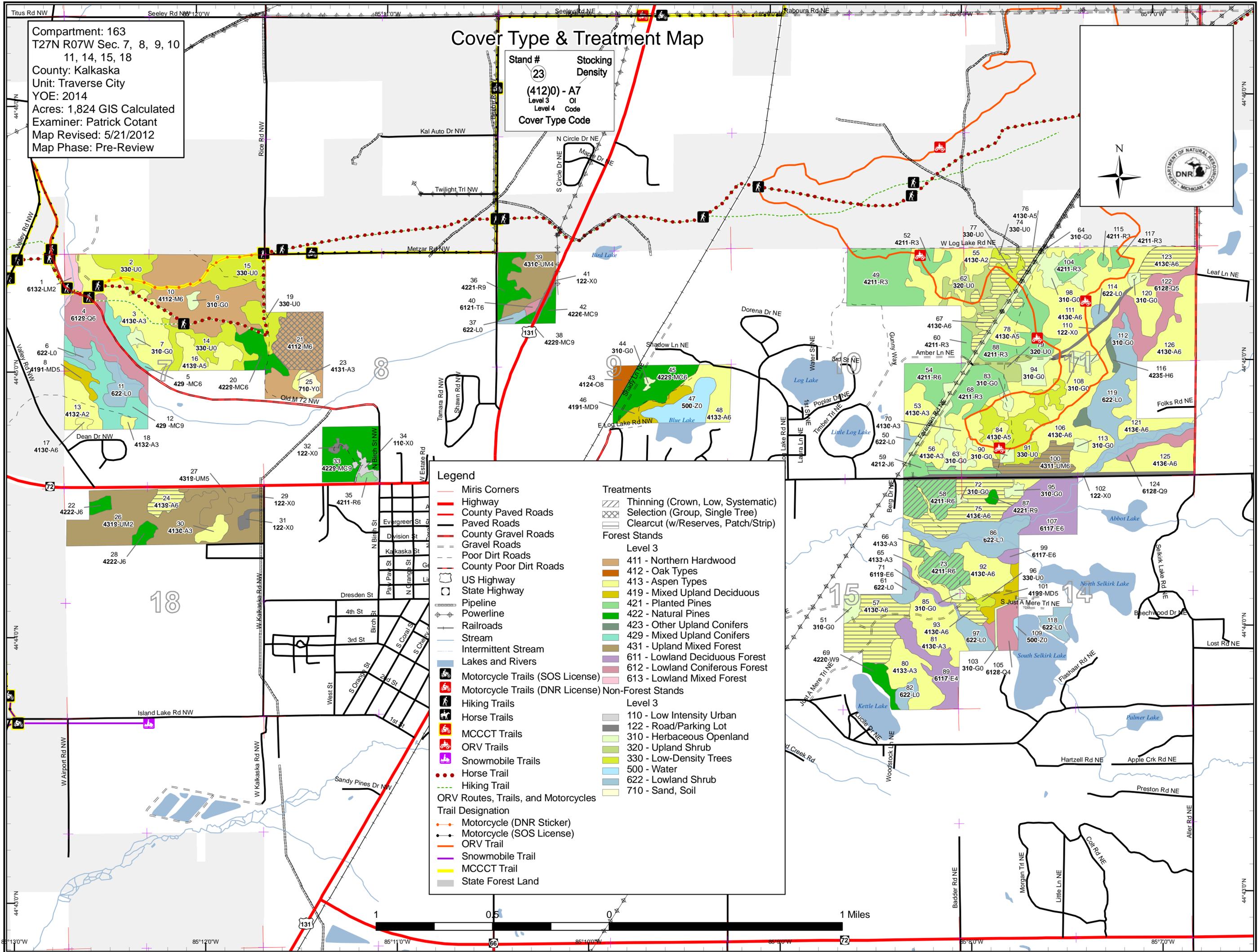
****** The following information is displayed on the attached compartment maps:**

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

Compartment: 163
 T27N R07W Sec. 7, 8, 9, 10
 11, 14, 15, 18
 County: Kalkaska
 Unit: Traverse City
 YOE: 2014
 Acres: 1,824 GIS Calculated
 Examiner: Patrick Cotant
 Map Revised: 5/21/2012
 Map Phase: Pre-Review

Cover Type & Treatment Map

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



Legend

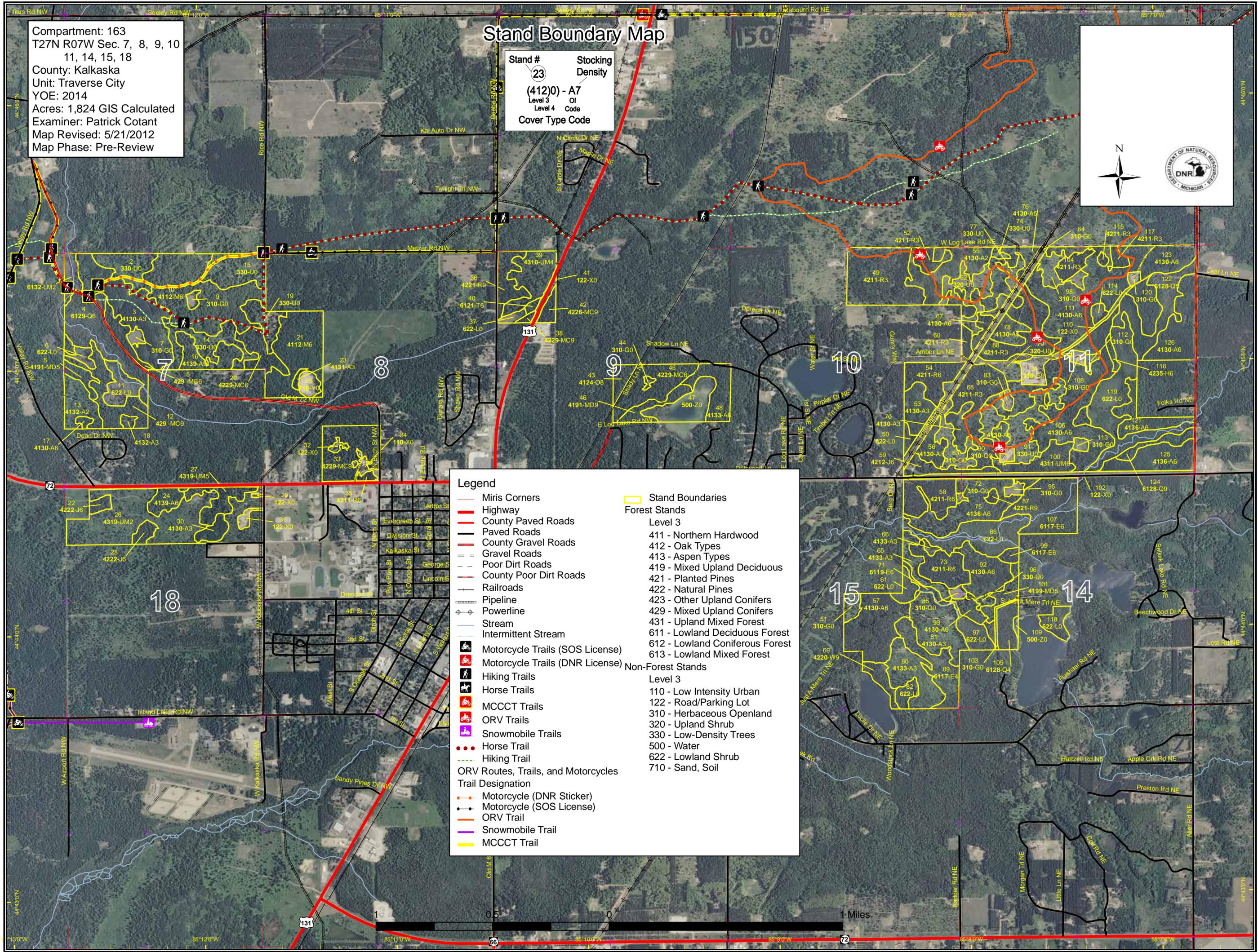
<ul style="list-style-type: none"> Miris Corners Highway County Paved Roads Paved Roads County Gravel Roads Gravel Roads Poor Dirt Roads County Poor Dirt Roads US Highway State Highway Pipeline Railroad Stream Intermittent Stream Lakes and Rivers Motorcycle Trails (SOS License) Motorcycle Trails (DNR License) Hiking Trails Horse Trails MCCCT Trails ORV Trails Snowmobile Trails Horse Trail Hiking Trail ORV Routes, Trails, and Motorcycles Trail Designation Motorcycle (DNR Sticker) Motorcycle (SOS License) ORV Trail Snowmobile Trail MCCCT Trail State Forest Land 	<h4>Treatments</h4> <ul style="list-style-type: none"> Thinning (Crown, Low, Systematic) Selection (Group, Single Tree) Clearcut (w/Reserves, Patch/Strip) <h4>Forest Stands</h4> <p>Level 3</p> <ul style="list-style-type: none"> 411 - Northern Hardwood 412 - Oak Types 413 - Aspen Types 419 - Mixed Upland Deciduous 421 - Planted Pines 422 - Natural Pines 423 - Other Upland Conifers 429 - Mixed Upland Conifers 431 - Upland Mixed Forest 611 - Lowland Deciduous Forest 612 - Lowland Coniferous Forest 613 - Lowland Mixed Forest <p>Level 3</p> <ul style="list-style-type: none"> 110 - Low Intensity Urban 122 - Road/Parking Lot 310 - Herbaceous Openland 320 - Upland Shrub 330 - Low-Density Trees 500 - Water 622 - Lowland Shrub 710 - Sand, Soil
---	---



Stand Boundary Map

Compartment: 163
 T27N R07W Sec. 7, 8, 9, 10
 11, 14, 15, 18
 County: Kalkaska
 Unit: Traverse City
 YOE: 2014
 Acres: 1,824 GIS Calculated
 Examiner: Patrick Cotant
 Map Revised: 5/21/2012
 Map Phase: Pre-Review

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



Legend

- Miris Corners
- Highway
- County Paved Roads
- Paved Roads
- County Gravel Roads
- Gravel Roads
- Poor Dirt Roads
- County Poor Dirt Roads
- Railroads
- Pipeline
- Powerline
- Stream
- Intermittent Stream
- Motorcycle Trails (SOS License)
- Motorcycle Trails (DNR License)
- Hiking Trails
- Horse Trails
- MCCCT Trails
- ORV Trails
- Snowmobile Trails
- Horse Trail
- Hiking Trail
- ORV Routes, Trails, and Motorcycles
- Trail Designation
- Motorcycle (DNR Sticker)
- Motorcycle (SOS License)
- ORV Trail
- Snowmobile Trail
- MCCCT Trail

Stand Boundaries

Forest Stands

- Level 3
- 411 - Northern Hardwood
- 412 - Oak Types
- 413 - Aspen Types
- 419 - Mixed Upland Deciduous
- 421 - Planted Pines
- 422 - Natural Pines
- 423 - Other Upland Conifers
- 429 - Mixed Upland Conifers
- 431 - Upland Mixed Forest
- 611 - Lowland Deciduous Forest
- 612 - Lowland Coniferous Forest
- 613 - Lowland Mixed Forest

Non-Forest Stands

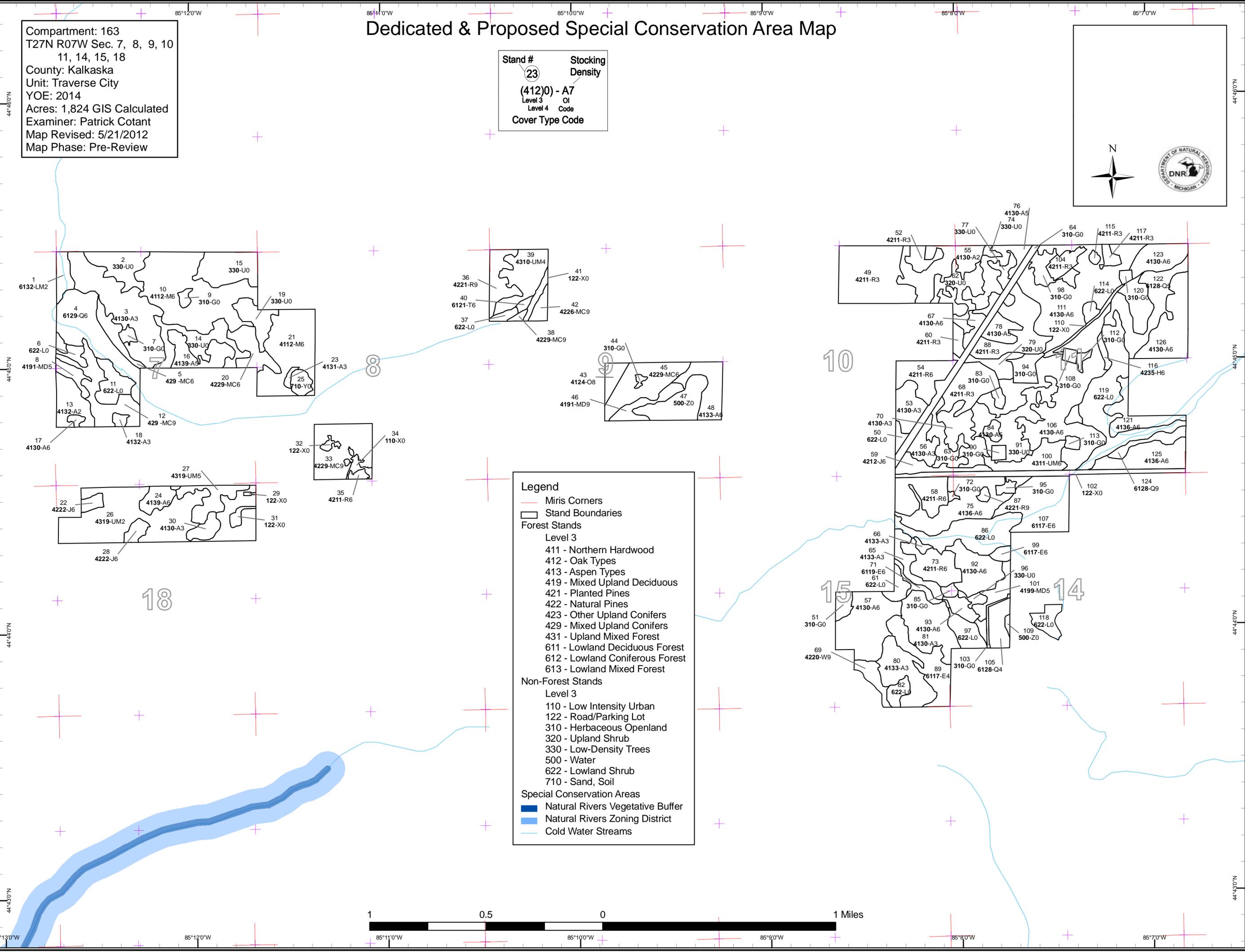
- Level 3
- 110 - Low Intensity Urban
- 122 - Road/Parking Lot
- 310 - Herbaceous Openland
- 320 - Upland Shrub
- 330 - Low-Density Trees
- 500 - Water
- 622 - Lowland Shrub
- 710 - Sand, Soil

1 Miles

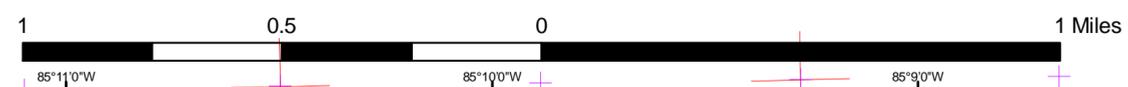
Dedicated & Proposed Special Conservation Area Map

Compartment: 163
 T27N R07W Sec. 7, 8, 9, 10
 11, 14, 15, 18
 County: Kalkaska
 Unit: Traverse City
 YOE: 2014
 Acres: 1,824 GIS Calculated
 Examiner: Patrick Cotant
 Map Revised: 5/21/2012
 Map Phase: Pre-Review

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



- Legend**
- Miris Corners
 - Stand Boundaries
 - Forest Stands**
 - Level 3
 - 411 - Northern Hardwood
 - 412 - Oak Types
 - 413 - Aspen Types
 - 419 - Mixed Upland Deciduous
 - 421 - Planted Pines
 - 422 - Natural Pines
 - 423 - Other Upland Conifers
 - 429 - Mixed Upland Conifers
 - 431 - Upland Mixed Forest
 - 611 - Lowland Deciduous Forest
 - 612 - Lowland Coniferous Forest
 - 613 - Lowland Mixed Forest
 - Non-Forest Stands**
 - Level 3
 - 110 - Low Intensity Urban
 - 122 - Road/Parking Lot
 - 310 - Herbaceous Openland
 - 320 - Upland Shrub
 - 330 - Low-Density Trees
 - 500 - Water
 - 622 - Lowland Shrub
 - 710 - Sand, Soil
 - Special Conservation Areas**
 - Natural Rivers Vegetative Buffer
 - Natural Rivers Zoning District
 - Cold Water Streams



85°13'0"W 85°12'0"W 85°11'0"W 85°10'0"W 85°9'0"W 85°8'0"W 85°7'0"W

44°43'0"N 44°42'0"N 44°41'0"N 44°40'0"N 44°39'0"N

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	85	81	73	131	172	66	35	0	0	0	0	0	0	0	641
Hemlock	0	0	0	0	0	0	0	0	5	0	0	0	0	0	5
Herbaceous Openland	81	0	0	0	0	0	0	0	0	0	0	0	0	0	81
Jack Pine	0	0	0	0	18	0	0	0	0	0	0	0	0	0	18
Low-Density Trees	112	0	0	0	0	0	0	0	0	0	0	0	0	0	112
Lowland Conifers	0	0	0	0	12	29	0	38	8	0	0	0	0	0	87
Lowland Deciduous	0	0	0	0	60	7	0	0	0	0	0	0	0	0	67
Lowland Mixed Forest	0	8	0	0	0	0	0	0	0	0	0	0	0	0	8
Lowland Shrub	131	0	0	0	0	0	0	0	0	0	0	0	0	0	131
Mixed Upland Deciduous	0	0	0	6	0	9	0	9	0	0	0	0	0	0	24
Natural Mixed Pines	0	0	0	0	27	31	14	6	0	0	0	0	0	0	78
Northern Hardwood	0	0	0	0	0	110	0	0	0	0	0	0	0	0	110
Oak	0	0	0	0	0	0	0	6	0	0	0	0	0	0	6
Red Pine	0	136	0	0	21	20	13	2	0	0	0	0	0	0	192
Sand, Soil	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Tamarack	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2
Upland Conifers	0	0	0	0	34	0	0	0	0	0	0	0	0	0	34
Upland Mixed Forest	84	0	0	0	0	30	22	0	0	0	0	0	0	0	136
Upland Shrub	27	0	0	0	0	0	0	0	0	0	0	0	0	0	27
Urban	32	0	0	0	0	0	0	0	0	0	0	0	0	0	32
Water	21	0	0	0	0	0	0	0	0	0	0	0	0	0	21
White Pine	0	0	0	0	0	0	0	0	0	7	0	0	0	0	7
Total	578	225	73	137	345	302	84	61	13	7	0	0	0	0	1824



Table 2 – Proposed Treatment Summaries

Traverse City Mgt. Unit
Year of Entry 2014

Compartment 163
Total Compartment Acres: 1824

Acres by Treatment Type

Commercial Harvest - 214	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	122	0	0	0	0	0	122
Jack Pine	5	0	0	0	0	0	5
Northern Hardwood	0	30	0	0	0	0	30
Red Pine	0	0	0	0	40	0	40
Upland Mixed Forest	16	0	0	0	0	0	16
Total	144	30	0	0	40	0	214



S t a n d	Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
21	61163021-Cut	30.4	4112 - Maple, Beech, Cherry Association	High Density Pole	56	81-110	Harvest	Single Tree Selection	4112 - Maple, Beech, Cherry Association	Cmpt. Review Proposal
<p><u>Prescription:</u> Thin stand, removing aspen and majority of beech. Open canopy gaps around oak to encourage natural regeneration and thin remaining hardwoods focusing on removing suppressed trees and majority of defect.</p> <p><u>Specs:</u></p> <p><u>Other Comments:</u> Stand is of mediocre quality, access may be slightly difficult. Will most likely want to haul products to the north-Rice Rd to Metzger Rd.</p> <p><u>Next Steps:</u></p> <p><u>Proposed Start Date:</u> 10/01/2013</p>										
24	61163024-Cut	8.1	4139 - Aspen, Mixed Deciduous	High Density Pole	53		Harvest	Clearcut with Reserves	4130 - Aspen	Cmpt. Review Proposal
<p><u>Prescription:</u> Final harvest stand, because of small size of stand, remove all aspen and jack pine with no retention of early successional species. Mark to leave 30 BA of red maple in western portion of stand as shelterwood. In addition, leave all red pine. Red maple and red pine should provide ample retention within stand while also addressing visual concerns along M-72 corridor.</p> <p><u>Specs:</u></p> <p><u>Other Comments:</u></p> <p><u>Next Steps:</u></p> <p><u>Proposed Start Date:</u> 10/01/2013</p>										
57	61163057-Cut	36.2	4130 - Aspen	High Density Pole	53		Harvest	Clearcut with Reserves	4130 - Aspen	Cmpt. Review Proposal
<p><u>Prescription:</u> Final harvest all aspen and red maple, marking scattered trees to leave to account for early successional species retention. Leave white pine, balsam fir and oak species as residual. These trees, along with some small portions of stand along boundary should be considered retention. Consider winter harvest to avoid issues with road which accesses stand.</p> <p><u>Specs:</u></p> <p><u>Other Comments:</u> Survey request likely needed.</p> <p><u>Next Steps:</u></p> <p><u>Proposed Start Date:</u> 10/01/2013</p>										
58	61163058-Cut	21.1	42110 - Planted Red Pine	High Density Pole	49	141-170	Harvest	Low Thinning	42110 - Planted Red Pine	Cmpt. Review Proposal
<p><u>Prescription:</u> Thin by removing slightly less than 1/3 of overall volume. Focus removal on suppressed and otherwise defected individuals. Some areas are a bit more open but other areas are definitely ready to treat. Use caution to not remove too much volume in order to avoid windthrow and increased damage from snowload.</p> <p><u>Specs:</u></p> <p><u>Other Comments:</u> Good access through central portion of stand. Used when stand was row thinned.</p> <p><u>Next Steps:</u></p> <p><u>Proposed Start Date:</u> 10/01/2013</p>										



S t a n d	Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
59	61163059-Cut	5.0	42120 - Planted Jack Pine	High Density Pole	43		Harvest	Clearcut with Reserves	4132 - Aspen, Jack Pine	Cmpt. Review Proposal
<p><u>Prescription</u> Final harvest jack pine and aspen, leave all other species as retention. Stay to the east of smaller powerline R.O.W. near western edge of stand</p> <p><u>Specs:</u> for harvest. Two wet pockets are present in western part of stand and should be avoided if a harvest is prescribed.</p> <p><u>Other</u></p> <p><u>Comments:</u></p> <p><u>Next</u></p> <p><u>Steps:</u></p> <p><u>Proposed</u></p> <p><u>Start Date:</u> 10/01/2013</p>										
67	61163067-Cut	4.4	4130 - Aspen	High Density Pole	44	51-80	Harvest	Clearcut	4132 - Aspen, Jack Pine	Cmpt. Review Proposal
<p><u>Prescription</u> Final harvest aspen and jack pine, leave all white pine. Small stand, mediocre quality, harvest in an attempt to break up age classes of aspen in area. Recommend minimal retention aside from white pine in order to maximize aspen regeneration throughout stand.</p> <p><u>Other</u> Access stand from powerline/pipeline ROW.</p> <p><u>Comments:</u></p> <p><u>Next</u></p> <p><u>Steps:</u></p> <p><u>Proposed</u></p> <p><u>Start Date:</u> 10/01/2013</p>										
73	61163073-Cut	18.7	42110 - Planted Red Pine	High Density Pole	56	171-200	Harvest	Systematic Thinning	42110 - Planted Red Pine	Cmpt. Review Proposal
<p><u>Prescription</u> 1/3 row thin stand. Cut all aspen including trees in open areas. Hopefully these small pockets will regenerate well and add diversity within the plantation boundary.</p> <p><u>Specs:</u></p> <p><u>Other</u> Wider spacing within plantation rows. Trees are growing fairly well, should respond well to thinning.</p> <p><u>Comments:</u></p> <p><u>Next</u></p> <p><u>Steps:</u></p> <p><u>Proposed</u></p> <p><u>Start Date:</u> 10/01/2013</p>										
75	61163075-Cut	33.5	4136 - Aspen, Mixed Conifer	High Density Pole	44	51-80	Harvest	Clearcut with Reserves	4133 - Aspen, Mixed Pine	Cmpt. Review Proposal
<p><u>Prescription</u> Some small pockets of stand are ready to be harvested, most notably around stand 90. Other portions are more scattered as far as density and merchantability are concerned. Recommend treating in an attempt to break up more aspen areas throughout the compartment, try to focus on larger dbh clones but also treat areas in between, removing all merchantable aspen. Leave white pine, red pine and oak. Remove all aspen, red maple along with the few jack pine that are present. Leave tree species along with small pockets in eastern and western portion of stand should account for retention.</p> <p><u>Specs:</u></p> <p><u>Other</u> Small portions of stand were removed from the treatment area to account for retention. Access stand off 612, using stand 95 as a landing area.</p> <p><u>Comments:</u></p> <p><u>Next</u></p> <p><u>Steps:</u></p> <p><u>Proposed</u></p> <p><u>Start Date:</u> 10/01/2013</p>										



S t a n d	Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
76	61163076-Cut	18.5	4130 - Aspen	Medium Density Pole	44		Harvest	Clearcut with Reserves	4130 - Aspen	Cmpt. Review Proposal
<p><u>Prescription:</u> Final harvest all merchantable aspen in an attempt to further break up age class in area and maximize regeneration of smaller acreage stand.</p> <p><u>Specs:</u> Cut all jack pine as well. Leave oak throughout stand as a mast source and to encourage natural regeneration to further diversity stand. Stand is small in size, recommend minimal retention aside from leaving oak.</p> <p><u>Other</u> <u>Comments:</u> *Note that there is a separate small pocket of this stand on east side of the powerline/pipeline ROW. Leetsville trail should be protected throughout sale operations using appropriate VMS sale spec.</p> <p><u>Next</u> <u>Steps:</u></p> <p><u>Proposed</u> <u>Start Date:</u> 10/01/2013</p>										

93	61163093-Cut	5.8	4130 - Aspen	High Density Pole	54		Harvest	Clearcut with Reserves	4130 - Aspen	Cmpt. Review Proposal
<p><u>Prescription:</u> Final harvest aspen and red maple, leave all conifers and paper birch. Cedar and fir are concentrated near western/southern edge of stand.</p> <p><u>Specs:</u> Conifers, along with paper birch will account for retention within stand. Minimal retention is recommended in order to maximize aspen regeneration. Western edge of stand has higher water table. May want to consider winter harvest to take advantage of frozen ground conditions and to lessen impact on roads in the area.</p> <p><u>Other</u> <u>Comments:</u> Access to stand off 'Just A Mere Trail'.</p> <p><u>Next</u> <u>Steps:</u></p> <p><u>Proposed</u> <u>Start Date:</u> 10/01/2013</p>										

100	61163100-Cut	16.3	4311 - Pine, Aspen Mix	High Density Pole	54	111-140	Harvest	Clearcut with Reserves	4133 - Aspen, Mixed Pine	Cmpt. Review Proposal
<p><u>Prescription:</u> Final harvest all aspen and red maple, marking a few to leave for retention and future snag/CWD development. Leave all white pine and balsam fir. In addition, leave all red pine greater than 10" DBH. Pine species residual will address visual concern along CR612 while also accounting for retention. Could mark to leave a few aspen closer to the river corridor to the east in order to serve as snag creation and increased future CWD. Could extend sale boundary around stand 105 to the east. During sale setup, be mindful of natural rivers buffer ~150', and avoid excessively wet areas. May want to consider a winter harvest for regeneration purposes as well as a means to avoid rutting issues within wet locations of stand.</p> <p><u>Other</u> <u>Comments:</u> There is an old grade that travels northeasterly through stand that should be used for access. Trucks can turn around in stand 113.</p> <p><u>Next</u> <u>Steps:</u></p> <p><u>Proposed</u> <u>Start Date:</u> 10/01/2013</p>										

123	61163123-Cut	15.8	4130 - Aspen	High Density Pole	51		Harvest	Clearcut with Reserves	4130 - Aspen	Cmpt. Review Proposal
<p><u>Prescription:</u> Final harvest all aspen. In addition, harvest all red maple, except mark a few to leave along north stand boundary. Also, leave all white pine and balsam fir to help address visual concerns in the area. White pine and balsam fir along with red maple that are marked to leave should suffice as retention within stand. A few aspen should be marked to leave scattered throughout the stand to provide for early successional species retention while also providing for snag creation and future CWD. Southern edge of stand has higher water table.</p> <p><u>Other</u> <u>Comments:</u> Avoid excessively wet areas within stand during sale set up, most notably in southern portion.</p> <p><u>Next</u> <u>Steps:</u></p> <p><u>Proposed</u> <u>Start Date:</u> 10/01/2013</p>										

**Total Treatment
Acreage Proposed: 213.9**

**Table 4 -- Treatments Prescribed with
a 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
----------------	-------	-----------	--------------	-----------	----------	----------------	------------------	----------------------	-----------------

#Error

Prescription
Specs:

Other
Comment:

Next
Steps:

Proposed
Start Date: #Error

Limiting Factor and No
Treatment Reason

**Total Treatment
Acreage Proposed: 0**

**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
-------------------------	-----	--	--	---	--	---------	--------------	------------------	------------------------------------

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**



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
1	6132 - Mixed Lowland Forest with Cedar	Medium Density	7.6	15		Flooding area, wet soils. Some blow down, areas of stand were salvaged. Red maple, cedar and balsam fir are most common throughout.
3	4130 - Aspen	High Density Sapling	50.2	21		A3 stand, some variability throughout in terms of size and stocking. Some oak and red maple. Balsam fir is distributed throughout the stand, sometimes more concentrated along edge.
4	6129 - Mixed Coniferous Lowland Forest	High Density Pole	38.2	79		Mixed lowland conifer stand consisting mainly of cedar, balsam fir and occasional spruce. Some red maple, white pine, paper birch and scattered pockets of black ash are present.
5	429 - Mixed Upland Conifers	High Density Pole	8.8	48	51-80	Mixed stand on slope leading down to Valley rd. narrow stand, probably left as buffer for stand 3 harvest. Jack pine, balsam fir and aspen dominant w/ white pine, oak and red pine present. New stand added, 2b is on the north side of valley rd, separated from orig stand 2.
8	4191 - Mixed Upland Deciduous with Conifer	Medium Density Pole	6.0	35	1-50	Red maple, aspen and jack pine dominant with some balsam fir and scattered white and red pine. Open grown stand, low density, variable quality and composition, especially near adjacent stand to the north. New stand added.
10	4112 - Maple, Beech, Cherry Association	High Density Pole	67.8	58	81-110	Too low/variable ba to warrant thinning at this time. Some pockets more dense and of higher quality, however overall stand is hovering around 90ish. Dominated by red maple, low quality overall. Scattered small openings with white pine and cherry.
12	429 - Mixed Upland Conifers	High Density Log	25.2	40		Mixed stand w/ variable composition. Overall found stand to be dominated by balsam fir but pockets of higher density red pine, jack pine, white pine and red maple can be found. Some wet areas throughout stand resulting from seeps leading to adjacent stand to the east.
13	4132 - Aspen, Jack Pine	Medium Density	16.2	7		A3 stand. Red pine, white pine and oak were left following harvest so there is an R-W-O 7 overstory. Stand was final harvested in 2005ish.
16	4139 - Aspen, Mixed Deciduous	Medium Density Pole	15.7	38	1-50	Low quality, relatively open aspen stand with clumpy hdwds present along with scattered white pine. Witch hazel prevalent in understory. Lots of wildlife use throughout stand.
17	4130 - Aspen	High Density Pole	1.6	61		Aspen stand that was left the previous YOE to address visual concern from surrounding stand that was harvested. It was recommended at that time to wait 10-20 years to harvest this small pocket along with the other small areas of aspen/jack pine and I would recommend waiting til next YOE to harvest. Stand that was cut is growing fairly well but to give it another round will further help to address visual concerns that will arise.
18	4132 - Aspen, Jack Pine	High Density Sapling	2.0	6		A3 stand, red pine, white pine and oak were left during harvest so there is thin overstory of these species present. Stand was final harvested in 2005ish.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
20	42290 - Natural Mixed Pine	High Density Pole	13.7	60	81-110	Mixed stand, pockets of aspen and hardwood. Some areas of smaller diameter regen and overstory. Pine dominant overall.
21	4112 - Maple, Beech, Cherry Association	High Density Pole	42.4	56	81-110	Mixed stand of hardwoods, lower quality overall. Red maple is dominant species, red oak is of fair quality and is distributed evenly throughout stand. scattered hemlock in intermediate layer
22	42220 - Natural Jack Pine	High Density Pole	3.5	46		small jp stand w/ rp, oak and asp scattered throughout. bordered on northern edge by dogsled tr. old rr grade runs n/s through stand.
23	4131 - Aspen, Oak	High Density Sapling	1.4	20		Small A3/O3 stand with some cherry, scattered white pine along with occasional northern hardwood species. Small stand, not sure of the origin. Maybe a portion of the area clearcut to develop gravel pit and this portion was not utilized and regenerated to current stand.
24	4139 - Aspen, Mixed Deciduous	High Density Pole	8.1	53		asp, rm stand. aspen concentrated in east, rm in west. a few large rp along northern edge, scattered jp along west edge. asp/rm is fair quality.
26	4319 - Mixed Upland Forest	Medium Density	83.6	8		Stand was harvested in 2005. All red pine, white pine and oak were left as residual. Regeneration is fair, some browse throughout. Red maple is the most dominant species as far as regeneration goes. White pine and jack pine also make up a significant portion of the species coming back. Oak regen is minimal, often times heavily browsed. North country trail and winterfest/dogsled event trail are within stand boundary.
27	4319 - Mixed Upland Forest	Medium Density Pole	13.5	51	81-110	wp, rm stand, variable density. wp seems to be 2 aged. some red pine and red oak throughout, scattered pole asp. Stand was left as retention/buffer during harvest of stand 23.
28	42220 - Natural Jack Pine	High Density Pole	4.5	43		
30	4130 - Aspen	High Density Sapling	6.4	16		Nicely stocked A3 stand, growing well. Harvested last year of entry and is fully stocked, moving towards an A5 stand by next YOY.
33	42290 - Natural Mixed Pine	High Density Log	31.4	56		mixdd pine stand, growing well. thinned in mid 90s, residual responding well. regen is thick in places, areas where pine overstory is heavier, oaks seem to be doing better. density is variable in places.
35	42110 - Planted Red Pine	High Density Pole	1.8	56	141-170	Small red pine stand separated from stand surrounding office because it seems to have not been treated or treated differently than the remainder of the original stand. Red pine growing fairly well, some defect and dieback around perimeter, possibly the effect of salt spray from roadway?



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
36	42210 - Natural Red Pine	High Density Log	13.3	64	111-140	Stand was treated in 2005. All red and white pine >2" DBH were left as residual. removing aspen, jp and rm left residual variable throughout. some areas could be thinned to improve stocking levels and release some advanced regen. red pine is of good quality.
38	42290 - Natural Mixed Pine	High Density Log	1.4	73		small stand of large rp/wp. some rm and oak along w/ scattered jp.
39	4310 - Pine, Oak Mix	Low Density Pole	22.4	64		Open/seed tree stand with white pine and oak left following most recent harvest. Hemlock were also included in the retention however not many hemlock were present when the stand was harvested, mainly concentrated along stand to the south. Stand was final harvested in 2005, all white pine, hemlock and oak were left.
40	6121 - Tamarack	High Density Pole	1.6	49	51-80	wp, tamarack stand with rm throughout. high water table, quite a bit of fir, some cedar along edges.
42	42260 - Natural Pine, Mixed Deciduous	High Density Log	4.6	70		mixed pine stand with oak and aspen throughout. stand contains heavy pine regen.
43	4124 - Red with White Oak	Medium Density Log	6.2	75		Oak stand with red and white pine present throughout. Oak is large diameter with some smaller poles present. Some regen is present, pretty heavy browse throughout all of stand. Red and white pine are of descent quality. Stand is somewhat open, typed it as 50-75% canopy coverage. Oak crowns are large. Because of railroad, stand is landlocked and therefore a harvest is not feasible at this time.
45	42290 - Natural Mixed Pine	High Density Pole	26.8	48		White pine stand mixed with some red pine and oak. Aspen, jack pine and red maple were removed from stand in 1993. Growing well, overall pole sized with a descent amount of sapling size trees in understory as regen from harvest and some log sized individuals throughout. Next YOE could remove some overstory to release understory regen that is present.
46	4191 - Mixed Upland Deciduous with Conifer	High Density Log	9.4	75	81-110	Stand is a mix of oak, pine and aspen. Overall oak is dominant and is growing well. Stand is small in size and was not treated when adjacent stand to the north/west was. Topography leads to lake and stand is essentially a narrow corridor between lake and adjacent stand. May want to consider leaving stand-not treating.
48	4133 - Aspen, Mixed Pine	High Density Pole	17.4	60	81-110	Stand is mixed upland deciduous with pine throughout. Aspen dominant overall with oak common. All species are of fairly good quality. Scattered hemlock and birch throughout. Similar to stand on other aspect of lake, the topography within this stand boundary all leads to the lake. May want to consider leaving stand in tact as is for environmental reasons.
49	42110 - Planted Red Pine	High Density Sapling	45.6	17		Red pine plantation, overall growing well. Some mortality throughout, occasional aspen pockets.
52	42110 - Planted Red Pine	High Density Sapling	6.5	17		Red pine plantation, growing well. Some thinner areas, possibly mortality, in the eastern portions of the stand.

S t a n d	Traverse City Mgt. Unit		5 – Forested Stands			Compartment: 163
	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Year of Entry: 2014
						General Comments:
53	4130 - Aspen	High Density Sapling	13.0	16		A3 stand growing well. Scattered conifer and hardwood species present.
54	42110 - Planted Red Pine	High Density Pole	18.2	17		Red pine plantation, growing well.
55	4130 - Aspen	Medium Density	32.5	13		a3 stand, moderate quality. some areas of patchy stocking. occasional conifers throughout.
56	4130 - Aspen	High Density Sapling	9.4	16		A3 stand growing well. Scattered conifer and hardwood species present.
57	4130 - Aspen	High Density Pole	36.2	53		Nice aspen stand, growing well and ready to be harvested.
58	42110 - Planted Red Pine	High Density Pole	21.1	49	141-170	Red pine stand, responding well to thinning. Some variability in ba and size but overall relatively uniform. Stand was thinned last YOY, harvested in 2005ish.
59	42120 - Planted Jack Pine	High Density Pole	9.5	43		Jack pine plantation, growing well however starting to break up. Some aspen and red maple present as well throughout stand. More aspen and white pine at western edge. Stand was left to provide a visual buffer for aspen harvests done in recent entry years. These stands have developed into advanced A3 stands.
60	42110 - Planted Red Pine	High Density Sapling	3.7	17		
65	4133 - Aspen, Mixed Pine	High Density Sapling	10.0	6		Similar in composition to stands 76 and 77. Harvested in 2005, aspen removal, white pine and oak were left.
66	4133 - Aspen, Mixed Pine	High Density Sapling	1.6	6		Similar in composition to stands to the south. Small portion of sale that was cut in 2005. All aspen were removed, white pine and oak were left.
67	4130 - Aspen	High Density Pole	4.4	44	51-80	aspen stand, lower quality. jp in northern end of stand. asp variable size/quality.
68	42110 - Planted Red Pine	High Density Sapling	21.1	17		Red pine plantation, growing well.
69	42200 - Natural White Pine	High Density Log	7.3	90	81-110	White pine stand next to lake with red maple and aspen present throughout along with occasional cedar and hemlock along lake. Northern portion of stand is more open lowland, Imped together with this stand because of stand size and function of stands buffering lake.
70	4130 - Aspen	High Density Sapling	19.8	16		A3 stand growing well. Scattered conifer and hardwood species present.





	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
71	6119 - Mixed Lowland Deciduous Forest	High Density Pole	4.4	55	81-110	Lowland stand, drainage heading in a northerly direction towards Boardman River, connecting stands 87 and 60 before reaching the river. Red maple and aspen dominant with conifers and other scattered e-type species. Some pockets of stand are quite heavy to aspen, most notably along the border between this stand and stand 77. New stand added.
73	42110 - Planted Red Pine	High Density Pole	18.7	56	171-200	Red pine plantation, wider spacing, has not been thinned. Some areas of irregular rows, some open pockets most likely a result of failed portions of plantation or planting around existing aspen clones. Some open spots have aspen clones within them, large diameter, ready to be harvested.
75	4136 - Aspen, Mixed Conifer	High Density Pole	38.1	44	51-80	Aspen stand with red maple, white pine and balsam fir present throughout. Some scattered red oak. Stand is a series of big tooth/trembling aspen clones which is leading to quite a bit of variability in terms of density and size. Some open areas between clones. Eastern portions of stand seem to have more balsam fir in understory most likely as a result of higher water table near stand 99.
76	4130 - Aspen	Medium Density Pole	18.5	44		Variable quality aspen stand, overall low quality. Areas of openings, variable size/stocking. Scattered oak and jack pine. Stand is a series of clones separated by lower stocked/open areas. New stand added.
78	4130 - Aspen	Medium Density Pole	8.6	39	51-80	aspen stand, lower qual with variable density and size throughout. some open areas.
80	4133 - Aspen, Mixed Pine	High Density Sapling	25.0	6		A3 stand with white pine and oak throughou. White pine more prevalent along western edge. Stand was final harvested in 2005ish, conifers and oak were left as residual.
81	4130 - Aspen	High Density Sapling	29.8	6		A3 stand with white pine and oak scattered throughout. Some areas more dense than others. Stand was final harvested in 2005ish, all conifer species and oak were left as residual. A strip along the western edge of the stand was left adjacent to stand 81, most likely as retention and a type of buffer between harvest and wetter areas to the west.
84	4130 - Aspen	Medium Density Pole	3.2	34		Small aspen stand with variable density throughout. Typical of surrounding aspen stands. Scattered white pine and red maple/cherry in understory.
87	42210 - Natural Red Pine	High Density Log	1.6	76	171-200	small rp stand, variable dbh. growing well, nice break/retention w/in large aspen stand-73. New stand added.
88	42110 - Planted Red Pine	High Density Sapling	28.7	17		Red pine plantation, growing well.
89	6117 - Lowland Deciduous, Mixed Coniferous	Low Density Pole	22.8	45		Lowland stand, could be considered non-forested but looks to have approximately 25-30% canopy coverage. Balsam fir and aspen around perimeter with e-type species dominant in interior along with dense thickets of alder throughout.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
92	4130 - Aspen	High Density Pole	21.2	26		Aspen stand (A3) growing well. Balsam fir is dense in spots in both the over and understory. Aspen blends into adjacent stands to the north as well, more balsam fir present in this area as well, along with occasional tag alder and an increase in red maple sprouts. IFMAP tagged stand as an A6, however stand is more of an A3/A4 with some pockets of higher density of merchantable timber.
93	4130 - Aspen	High Density Pole	5.8	54		Descent aspen stand, some red maple throughout. Balsam fir, cedar and white pine concentrated around edges. New stand added.
99	6117 - Lowland Deciduous, Mixed Coniferous	High Density Pole	3.0	50	51-80	Lowland stand-etype and conifers throughout with aspen present. Some wet areas. Heavy to black ash which is experiencing some mortality throughout stand.
100	4311 - Pine, Aspen Mix	High Density Pole	16.3	54	111-140	Mixed stand with aspen dominant. Separated this stand from existing stand 97 because of the increased amount of red pine throughout. In addition, there is quite a bit of balsam fir and white pine throughout. Some wet areas exist within stand boundary, most notably in eastern portions as you get closer to the boardman river corridor. High water table in portions of stand. Consider harvesting additional areas of stand 97 next YOE.
101	4199 - Other Mixed Upland Deciduous	Medium Density Pole	8.7	50	51-80	Red maple, birch and aspen with balsam fir and other scattered lowland conifers. More aspen in southern part of stand and near road that traverses stand.
104	42110 - Planted Red Pine	High Density Sapling	7.4	17		Red pine plantation growing fairly well. Some open areas but overall good survival rate-should develop into a descent stand.
105	6128 - Lowland Coniferous, Mixed Deciduous	Low Density Pole	12.5	45		Lowland stand, low density in places-overall about 40% canopy coverage. Heavy alder throughout, especially in more open areas. Quite a bit of mortality in black ash. Pockets of stand dominated by cedar and balsam fir.
106	4130 - Aspen	High Density Pole	81.3	42		Aspen stand (mixture of quaking and big-tooth clones) with balsam fir and white pine scattered throughout along with red maple and cherry. Conifer species most numerous in south and western positions of stand as well as areas adjacent to stand 111. Higher water table throughout stand. Aspen is moderate quality with some clones merchantable in size and stocking, however stand is too inconsistent to warrant harvest at this time. Trees are holding up fairly well, minimal mortality, some broken up tops but in general overall stand health is good.
107	6117 - Lowland Deciduous, Mixed Coniferous	High Density Pole	36.9	40		mixed stand of lowland hdwds, aspen, bf, cedar. dense stand in places, high h2o table. scattered wp and tamarack.
111	4130 - Aspen	High Density Pole	80.2	38	51-80	aspen stand, mix of quaking and big tooth. variable in terms of density, dbh and overall quality. some open pockets throughout stand.
115	42110 - Planted Red Pine	High Density Sapling	1.3	17		Small red pine plantation, growing well.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
116	42350 - Upland Hemlock	High Density Pole	5.1	83	111-140	Small transition stand at western edge of 111. Hemlock dominated with red maple, paper birch, white pine and aspen present. New stand added.
117	42110 - Planted Red Pine	High Density Sapling	3.4	17		Small red pine plantation, growing well.
121	4136 - Aspen, Mixed Conifer	High Density Pole	15.9	61		Aspen stand with mixed conifer throughout including white pine, balsam fir, cedar and some hemlock. Wet in places, difficult access because of boardman river, swamp land and private property.
122	6128 - Lowland Coniferous, Mixed Deciduous	Medium Density Pole	28.6	51		Mixed lowland stand, some variability along edges. Areas where more aspen are present, difficult type line to map. Quite a few pockets of lowland brush throughout stand as well. Density of these pockets along with areas of wet ground made access to internal areas of stand tricky... Some areas of very dense balsam fir understory. drain running through senter of stand towards 11, in a sw direction. Cedar more prevalent along western edge and north. Aspen more common in eastern portions of stand near wheeler lake rd. Old pipeline rd runs through stand, very wet.
123	4130 - Aspen	High Density Pole	15.8	51		Aspen stand with red maple and white pine throughout at a pretty consistent density. Aspen is of fair quality with some variability in terms of size and stocking however this particular pocket is overall of merchantable size and should regenerate well following harvest. Some wet areas, may want to make sale a winter harvest to avoid any rutting issues during sale operations.
124	6128 - Lowland Coniferous, Mixed Deciduous	High Density Log	7.6	82	81-110	Mixed stand of hemlock, white pine, paper birch and scattered cedar (pockets) adjacent to boardman river. Mix of lowland/upland. Occasional pockets of e-type hardwoods. Some wet areas where stand blends into river corridor stand to the north.
125	4136 - Aspen, Mixed Conifer	High Density Pole	23.0	33		aspen stand, mixed conifers throughout. small hdwd pocket in se corner included w/ stand. stand is good quality, dbh to small for harvest at this time. check next yoe for harvest options. Small portion in SE corner of stand was firewood harvested/negotiated sale in 2005.
126	4130 - Aspen	High Density Pole	29.2	40		Variable aspen stand, some larger diameter clones and some smaller diameter pockets that are not quite merchantable yet. Stand seems to be the same age throughout but for whatever reason this is not reflected in the consistency of diameter. Some areas are wet but seem to freeze well during the winter. Red maple is also a component, some pockets it is more dense, most notably along the southern boundary of the stand. Balsam fir is most prominent in the northern and western portions of the stand as both an understory and overstory component.



Stand	Cover Type	Acres	Managed Site	Management Priority (Objective)	General Comments:
2	330 - Low-Density Trees	17.2	No	Unspecified	U-type with cherry and pine throughout. Aspen present in clumps, concentrated along north and west stand line. One notable patch of A3 within stand boundary. Stand swapped from Forested to Non-Forested.
6	622 - Lowland Shrub	3.9	N/A	Unspecified	Stand is a wet area, most likely resulting from beaver activity on a small feeder creek. Dead standing cedar and spruce can be found throughout.
7	310 - Herbaceous Openland	2.6	N/A	Unspecified	Old gas well/landing site. full coverage grass.
9	310 - Herbaceous Openland	2.1	No	Unspecified	abandoned well site, vegetated w/ grasses/knapweed.
11	622 - Lowland Shrub	12.1	N/A	Unspecified	Stand looks to be an old flooding where several small tributaries flow into the Rapid River. Dead standing cedar, white pine and spruce can be found along edges of the stand.
14	330 - Low-Density Trees	21.3	N/A	Unspecified	Low density trees throughout. Portions of stand are pockets of M3 consisting of hardwood species, most notably ironwood. There is also aspen present with heavy pockets of cherry as well.
15	330 - Low-Density Trees	21.9	No	Unspecified	Low density cherry, jack pine and oak along with occasional aspen. Some pockets of slightly more dense aspen/cherry/ironwood. Stand swapped from Forested to Non-Forested.
19	330 - Low-Density Trees	11.6	Yes	Low (NonForested)	stand includes rapid river trail camp.
25	710 - Sand, Soil	5.4	No	Unspecified	county gravel pit.
29	122 - Road/Parking Lot	0.4	No	Unspecified	
31	122 - Road/Parking Lot	2.5	No	Unspecified	well site-schmude oil inc. state kalkaska townsite 1-17HD pn39888
32	122 - Road/Parking Lot	1.6	No	Unspecified	Site of old MSP radio tower. Currently used as storage area for DNR supplies including temporary bridge, barricades, etc.
34	11 - Low Intensity Urban	3.4	No	Unspecified	Site of Kalkaska DNR field office/Kalkaska MSP office and associated parking areas.
37	622 - Lowland Shrub	2.6	No	Unspecified	lowland wetland, seep. cattails throughout along with two distinct areas of invasive phragmites, approx 50 ft across.



Stand	Cover Type	Acres	Managed Site	Management Priority (Objective)	General Comments:
41	122 - Road/Parking Lot	3.5	No	Unspecified	131 corridor, wide r.o.w.
44	310 - Herbaceous Openland	1.0	N/A	Unspecified	Small opening with aspen and pine beginning to encroach. Possibly an old landing site?
47	50 - Water	19.8	N/A	Unspecified	Northern portion of Blue Lake.
50	622 - Lowland Shrub	2.5	No	Unspecified	Lowland shrub area, tag alder dominant with scattered small aspen and jack pine along edge.
51	310 - Herbaceous Openland	4.9	N/A	Unspecified	Grass stand with cherry, red maple and scattered conifers present throughout.
61	622 - Lowland Shrub	5.5	N/A	Unspecified	lowland stand with scattered e and p-type species around perimeter.
62	320 - Upland Shrub	19.4	N/A	Unspecified	U-type, scattered aspen, cherry and conifer species throughout.
63	310 - Herbaceous Openland	12.6	N/A	Unspecified	
64	310 - Herbaceous Openland	20.7	N/A	Unspecified	Powerline R.O.W. with road.
72	310 - Herbaceous Openland	0.9	N/A	Unspecified	Small open stand, possible old landing or area where aspen did not regenerate well.
74	330 - Low-Density Trees	1.6	N/A	Unspecified	Small u-type stand with cherry and some aspen sprouts.
77	330 - Low-Density Trees	4.5	N/A	Unspecified	Small u-type stand with scattered cherry and aspen sprouts.
79	320 - Upland Shrub	7.9	N/A	Unspecified	Open area adjacent to compression station, includes access road/intersection for oil well roads.
82	622 - Lowland Shrub	5.3	N/A	Unspecified	L-type stand with conifers at northern edge, mainly consisting of white pine and scattered balsam fir.
83	310 - Herbaceous Openland	2.4	No	Unspecified	Old well site, monitoring wells at edges pf stand.
85	310 - Herbaceous Openland	2.1	N/A	Unspecified	Looks to be an old well site. Open with some bare ground.



Stand	Cover Type	Acres	Managed Site	Management Priority (Objective)	General Comments:
86	6229 - Mixed lowland shrub	31.7	No	Unspecified	Lowland alder stand, very dense. Scattered swamp conifers. Stand swapped from Forested to Non-Forested.
90	310 - Herbaceous Openland	2.5	No	Unspecified	Parking lot for Leetsville tr.
91	330 - Low-Density Trees	30.9	NVA	Unspecified	Open stand, equate to a low density u-type. Lots of wildlife use throughout stand. Seedling/saplings consist mainly of aspen, cherry and red maple.
94	310 - Herbaceous Openland	8.2	NVA	Unspecified	Compression station, fenced/gated.
95	310 - Herbaceous Openland	2.5	No	Unspecified	Old well site.
96	330 - Low-Density Trees	2.7	NVA	Unspecified	Small opening with white pine, red maple, cherry and aspen present in low numbers throughout.
97	622 - Lowland Shrub	9.8	NVA	Unspecified	lowland stand w/ some e-type species around edges and scattered in interior along w/ bf and cedar. heavy alder
98	310 - Herbaceous Openland	9.4	NVA	Unspecified	Opening, aspen clones scattered. Some cherry and red maple as well, mainly in the sapling size class.
102	122 - Road/Parking Lot	16.5	NVA	Unspecified	Stand consists of CR 612 corridor.
103	310 - Herbaceous Openland	1.6	NVA	Unspecified	powerline right-of-way.
108	310 - Herbaceous Openland	2.1	NVA	Unspecified	Well site-permit #32488.
109	50 - Water	0.9	NVA	Unspecified	Small corner of South Selkirk Lake
110	122 - Road/Parking Lot	3.8	NVA	Unspecified	Road/pipeline accessing compression station and well site throughout section.
112	310 - Herbaceous Openland	1.9	NVA	Unspecified	
113	310 - Herbaceous Openland	2.1	NVA	Unspecified	Small opening, most likely old well site. Some seedlings scattered throughout.
114	622 - Lowland Shrub	2.9	NVA	Unspecified	Open, lowland shrub stand with pockets of water under dense tag alder.



Stand	Cover Type	Acres	Managed Site	Management Priority (Objective)	General Comments:
118	622 - Lowland Shrub	7.7	N/A	Unspecified	Lowland shrub stand with balsam fir, cedar, black ash and red maple present. Stand could almost be considered forested but not quite 25% coverage from what I could see.
119	622 - Lowland Shrub	47.0	N/A	Unspecified	Lowland stand, dominated by tag alder. Some small aspen throughout along with some red maple and other e-type hardwoods. E-type hardwoods, white pine and cedar are common in southern portion of stand along river corridor. Stand swapped from Forested to Non-Forested.
120	310 - Herbaceous Openland	1.8	N/A	Unspecified	Well site, adjacent to pipeline. permit#39143.



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.