



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

COMPARTMENT # 154 ENTRY YEAR: 2011

Compartment Acreage: 1871 County: Kalkaska

Stand Examiner: Steve Crigier

Legal Description: T26N, R8W, Sec.'s 15-20. Boardman Township

Management Goals: The selection harvests in this compartment aim to improve overall quality of sawtimber in the stands as well as maintaining species diversity. In the pine types we are establishing a sustainable rotation as well as improving stem quality. The shelterwood harvests in the north east part of the compartment will promote regeneration of our lowland conifers species, which will provide new thermal cover for various wildlife species.

Soil and Topography: Section 15 & 16 are low and wet. The rest of the compartment is gently rolling and well drained. There are scattered pot holes in section 19 & 20. Some of these have year round water. The South Branch Boardman River flows through this compartment. Very little is up against state land. About 1/2 mile of Taylor Creek in on state land in section 15. Soils include Rifle peat, Rubicon sand, Kalkaska loamy sand & Emmet sandy loam.

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

The Village of South Boardman falls in this compartment. The state land is in one large block and two smaller ones. The larger one has a piece of private almost dissecting it in a north south direction. This area is experiencing continual development pressure.

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

Hill's thistle in section 19 and further west associated with oak-pine barrens.

Archeological, Historical, and Cultural Features (include only non-site specific and non-sensitive information): There are a couple of old homesteads with in the compartment.

Special Management Designations or Considerations: None.

Watershed and Fisheries Considerations: The South Branch of the Boardman River and Taylor Creek flow through Compartment 154. All streams in Compartment 154 are Designated Trout Streams. The South Branch of the Boardman River and Taylor Creek host naturally reproducing populations of brook and brown trout. The Boardman River and Taylor Creek are protected under the Boardman River Natural Rivers Designation.

Wildlife Habitat Considerations: On outwash plains, maintain age class diversity including a component of young early successional aspen, oak, and pine mixed forest and open grass/brush habitat. Retain some species diversity when thinning pine types in both outwash plain and moraine landscapes. In swamp forests, retain mature conifer cover and provide a component of low deciduous cover as much as possible. On moraines, retain mixed tree sizes and species in northern hardwood forests. Maintaining or creating coarse woody debris is especially important in northern hardwood selection cuts and aspen final harvests. Consider

allowing northern hardwoods to expand naturally into some pine plantations, grass and brush openings over time to connect blocks of existing hardwoods.

A wide variety of wildlife species are associated with this compartment, as it spans 4 different land-type associations. Conifer swamps harbor species such as snowshoe hare, bobcat, winter wren, white-tailed deer, and massasauga rattlesnake. Mixed oak-aspen-pine woods are important for species such as pine warbler, golden-winged warbler, red crossbill, barred owl, wild turkey, and hognose snake. Northern hardwood forests on moraines are important for black-throated blue warbler, blue-spotted salamander, northern goshawk, and numerous neo-tropical migrant songbirds

Mineral Resource and Development Concerns and/or Restrictions: Sections 15 – 20, T26N-R8W, Kankaska Co. Surface sediments consist of an end moraine of coarse-textured till, glacial outwash sand and gravel and postglacial alluvium and dune sand. The glacial drift thickness varies between 400 and 600 feet. Beneath the glacial drift is the Mississippian Coldwater Shale. The Coldwater does not have a current economic use. A gravel pit is located in Section 15 and potential appears to be good on the uplands. The Compartment is located one mile south of the prolific Guelph (Niagaran) reef trend. A few State minerals are leased in the Compartment.

Vehicle Access: The main access into the northeast part of the compartment is US-131 and off from Boardman River Rd. The west block has Supply Road dissecting the compartment with some county gravel roads providing additional access to the east and south. There are also numerous poor dirt roads providing interior access to the entire compartment.

Survey Needs: The treatment in section 16 will need to be surveyed if no private markers are found in the NWNE and in the NWNW. The NENE of section 17 will also need the private boundary established.

Recreational Facilities and Opportunities: The Boardman River offers fishing opportunities. The MCCT trail that runs on the Boardman River roads provides ORV trails heading to the north and west of the compartment. Hunting and hiking activities are also popular within the compartment.

Fire Protection:

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:**

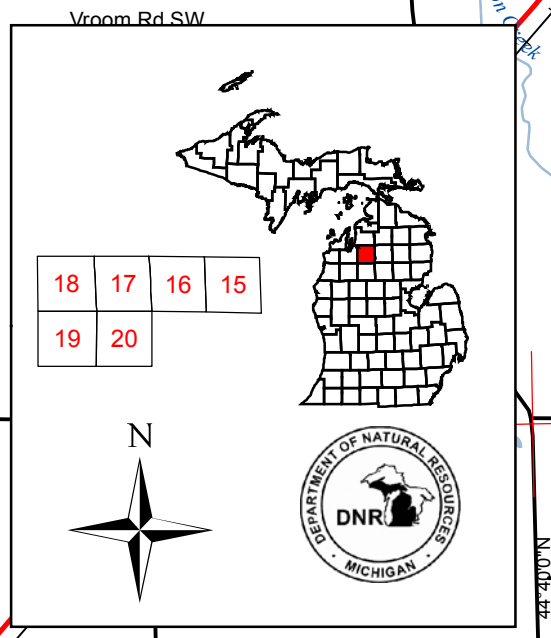
- Base feature information, stand numbers, cover types**
- Proposed treatments**
- Proposed road access system**
- Suggested potential old growth**

Cover Type & Treatment Map

Compartment 154
 T26N, R08W, Sec. 15-20
 County: Kalkaska
 Unit: Traverse City
 YOY: 2011
 Acres: 1,871 GIS Calculated
 Stand Examiner: Steven Crigier
 Map Revised: 10/08/2009
 Map Phase: Pre-Review

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

Stocking Density
 OI
 Code



Legend

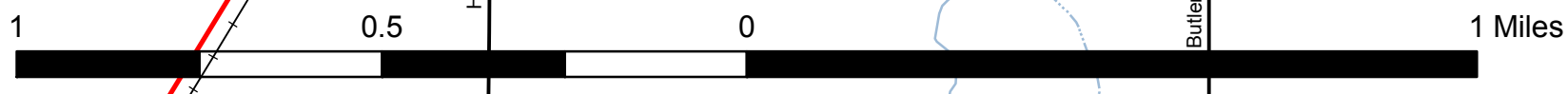
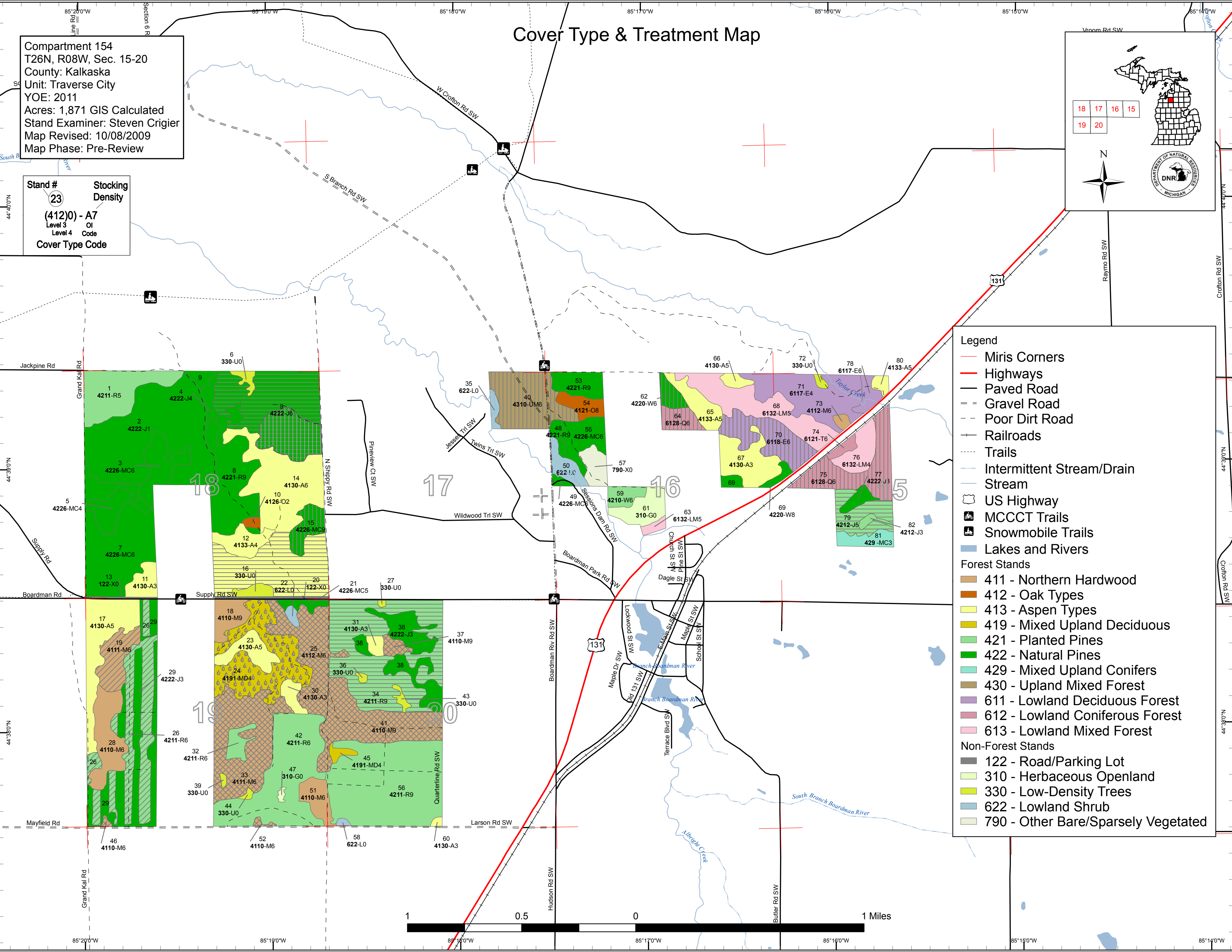
- Miris Corners
- Highways
- Paved Road
- Gravel Road
- Poor Dirt Road
- Railroads
- Trails
- Intermittent Stream/Drain
- Stream
- US Highway
- MCCCT Trails
- Snowmobile Trails
- Lakes and Rivers

Forest Stands

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

Non-Forest Stands

- 122 - Road/Parking Lot
- 310 - Herbaceous Openland
- 330 - Low-Density Trees
- 622 - Lowland Shrub
- 790 - Other Bare/Sparsely Vegetated



Stand Boundary Map

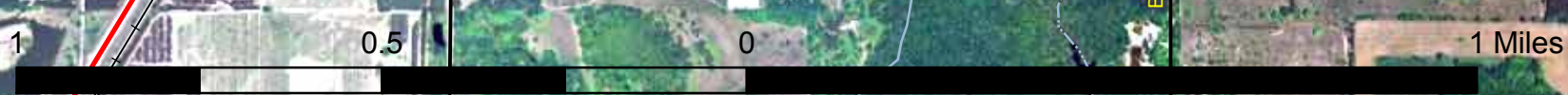
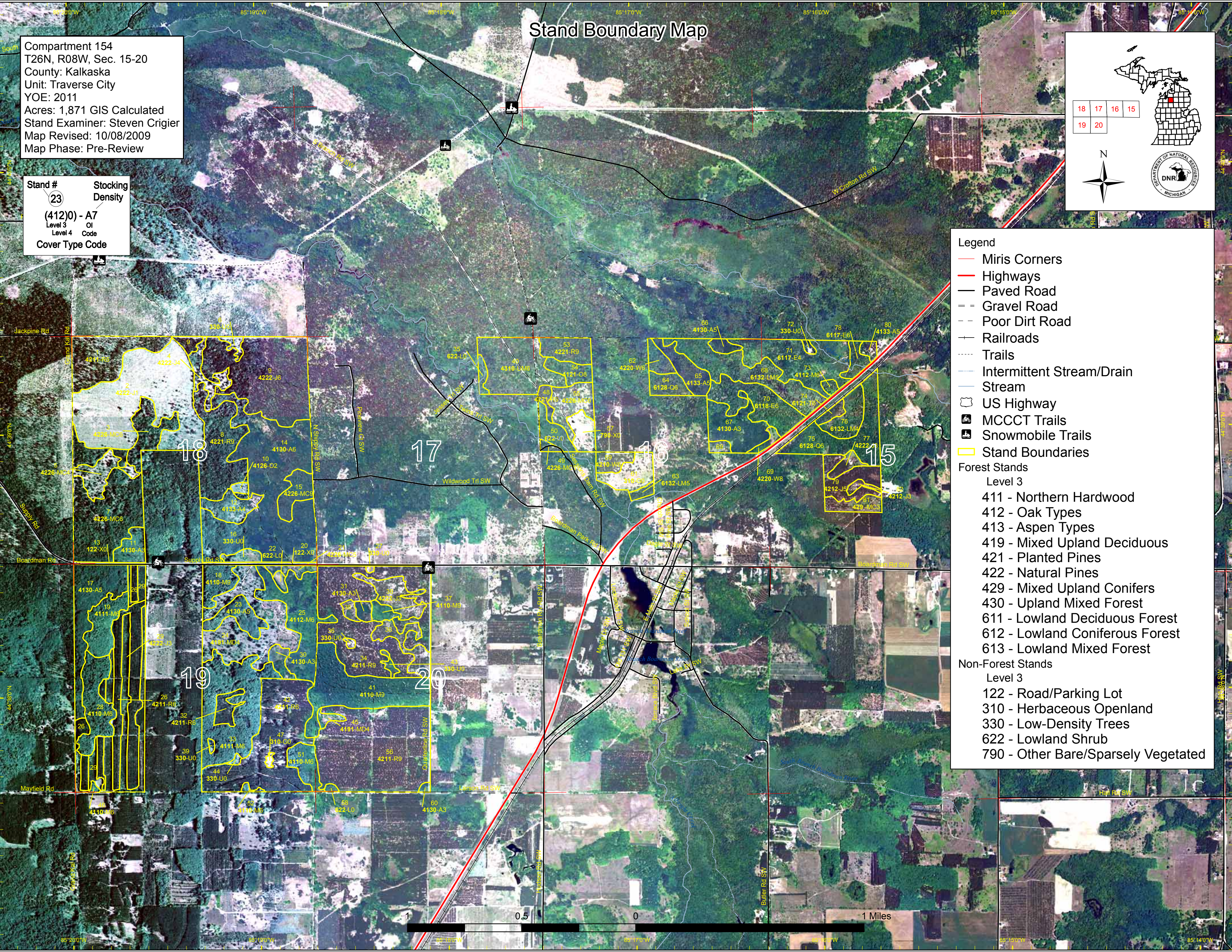
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Legend

- Miris Corners
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 - - Gravel Road
 - - Poor Dirt Road
 - + Railroads
 - - - Trails
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 - Stream
 - US Highway
 - MCCCT Trails
 - Snowmobile Trails
 - Stand Boundaries
- Forest Stands**
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Traverse City Mgt. Unit

Covertime, Acres, and Age summary
(Level 3 Cover Type)

Compartment 154 Year of Entry 2011

Report Date: 10/08/2009



	Age Class															Total
	Non-Forested	1-9	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 Types	0	17	5	42	72	134	0	0	0	0	0	0	0	0	0	270
Herbaceous Openland	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17
Low-Density Trees	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16
Lowland Coniferous Forest	0	0	0	0	0	0	0	0	0	52	0	0	0	0	0	52
Lowland Deciduous Forest	0	0	0	0	48	0	0	0	40	0	0	0	0	0	0	88
Lowland Mixed Forest	0	0	0	0	0	0	0	3	60	0	0	0	0	0	0	63
Lowland Shrub	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17
Mixed Upland Conifers	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	10
Mixed Upland Deciduous	0	0	0	59	0	3	0	0	0	0	0	0	0	0	0	62
Natural Pines	0	113	91	26	0	0	172	95	15	13	0	0	0	4	0	528
Northern Hardwood	0	0	0	0	0	0	0	0	154	97	0	0	0	0	0	251
Oak Types	0	2	0	0	0	0	0	0	0	0	10	0	0	0	0	12
Other Bare/Sparsely Vegetated	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10
Planted Pines	0	0	0	0	0	61	228	0	134	0	0	0	0	0	0	424
Road/Parking Lot	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
Upland Mixed Forest	0	0	0	0	0	0	0	0	45	0	0	0	0	0	0	45
Total	68	132	105	127	120	198	401	98	447	162	10	0	0	4	0	1871

**PROPOSED TREATMENTS
NO LIMITING FACTORS**



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Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective
9 61154009_see dT-Cut	30.1	42220 - Natural Jack Pine	High Density Pole	58	Harvest	Seed Tree	Natural Mixed Pine
<p><u>Rev</u> <u>Cmnt:</u></p> <p><u>Rev</u> mark to leave 10-20sqft/ac of red pine, white pine and oak. Try to do a summer harvest with a tree length equipment. <u>Spec:</u></p> <p><u>Next</u> regen check 4 yrs after harvest. <u>Steps:</u></p>							
9 61154009-Cut	56.1	42220 - Natural Jack Pine	High Density Pole	58	Harvest	Clearcut with Reserves	Planted Jack Pine
<p><u>Rev</u> <u>Cmnt:</u></p> <p><u>Rev</u> Clearcut stand. Leave island of retention in the northwest corner (not in Treatment layer). Also mark to leave scattered red and white pine. <u>Spec:</u></p> <p><u>Next</u> After harvest will need and FTP for trenching and planting. Regen check after planting. <u>Steps:</u></p>							
14 61154014-Cut	67.6	4130 - Aspen	High Density Pole	45	Harvest	Clearcut with Reserves	Aspen
<p><u>Rev</u> <u>Cmnt:</u> Sale will need private boundaries established, should have good corners.</p> <p><u>Rev</u> Clearcut south 1/2 of stand 14. Leave any oak or Juneberry in stand. Also leave 1 CWD tree/ac or an equal amount of topwood. <u>Spec:</u></p> <p><u>Next</u> regen check. <u>Steps:</u></p>							
15 61154015-Cut	12.9	42260 - Natural Pine, Mixed Deciduous	High Density Log	82	Harvest	Shelterwood	Pine, Oak
<p><u>Rev</u> <u>Cmnt:</u></p> <p><u>Rev</u> Shelterwood stand. Leave about 30sqft/ac of redpine, white pine and oak. Summer harvest with tree length equipment would be ideal. <u>Spec:</u></p> <p><u>Next</u> Regen check 4 yrs after harvest. <u>Steps:</u></p>							
19 61154019-Cut	19.8	4111 - S.Maple, Hard Mast Association	High Density Pole	80	Harvest	Crown Thinning	S.Maple, Hard Mast Association
<p><u>Rev</u> <u>Cmnt:</u> Stocking is pretty variable, with some signs of decent hard maple.</p> <p><u>Rev</u> Thin stand to 70 sqft/ac. Try to maintain species diversity. <u>Spec:</u></p> <p><u>Next</u> regen check 4 yrs after harvest. <u>Steps:</u></p>							

**PROPOSED TREATMENTS
NO LIMITING FACTORS**



S t a n d	Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective	Page 2 of 4
25	61154025-Cut	44.4	4112 - Maple, Beech, Cherry Association	High Density Pole	73	Harvest	Single Tree Selection	Maple, Beech, Cherry Association	
<u>Rev</u>									
<u>Cmnt:</u> North end of the stand has more pockets of aspen and is heavier to soft maple. There is a V0 at north end of the stand.									
<u>Rev</u> --Stephen Griffith : 10/06/2009 comments: Create some coarse woody debris (CWD) in areas of the stand where little or none currently exist, during									
<u>Spec:</u> harvest operations. Can be cull lengths, tops of significant volume, or whole unmerchantable trees.									
Thin stand down to 80sqft/ac and cut all aspen.									
<u>Next</u>									
<u>Steps:</u> Regen check 4 yrs after harvest.									
26	61154026-Cut	58.8	42110 - Planted Red Pine	High Density Pole	46	Harvest	Crown Thinning	Planted Red Pine	
<u>Rev</u>									
<u>Cmnt:</u>									
<u>Rev</u> Thin stand to 120sqft/ac. remove poor quality stems									
<u>Spec:</u>									
<u>Next</u>									
<u>Steps:</u>									
33	61154033-Cut	64.7	4111 - S.Maple, Hard Mast Association	High Density Pole	73	Harvest	Single Tree Selection	S.Maple, Hard Mast Association	
<u>Rev</u>									
<u>Cmnt:</u> Stocking is variable. Southern part of stand was thinned in 02'.									
<u>Rev</u> Thin stand down to 70sqft/ac. Leave a cherry and beech component.									
<u>Spec:</u>									
<u>Next</u>									
<u>Steps:</u> Regen check 4 yrs after harvest.									
34	61154034-Cut	95.9	42110 - Planted Red Pine	High Density Log	73	Harvest	Clearcut with Reserves	Planted Red Pine	
<u>Rev</u>									
<u>Cmnt:</u>									
<u>Rev</u> Clearcut stand but leave some residual timber along Supply road for retention.									
<u>Spec:</u>									
<u>Next</u>									
<u>Steps:</u> Trench and plant to red pine after harvest. regen check after planted.									
37	61154037-Cut	4.8	4110 - Sugar Maple Association	High Density Log	88	Harvest	Single Tree Selection	Sugar Maple Association	
<u>Rev</u>									
<u>Cmnt:</u> Some Eutepepla canker present.									
<u>Rev</u> Thin stand to 80sqft/ac. Remove high risk timber									
<u>Spec:</u>									
<u>Next</u>									
<u>Steps:</u> Regen check 4 yrs after harvest.									
40	61154040-Cut	45.1	4310 - Pine, Oak Mix	High Density Pole	78	Harvest	Shelterwood	Natural Pine, Mixed Deciduous	
<u>Rev</u>									
<u>Cmnt:</u> Lots of white pine regen present. Buffer Boardman Cr. by a couple of chains.									
<u>Rev</u> Mark to leave 10-20sqft/ac of white pine, redpine and oak. Harvest all other trees.									
<u>Spec:</u>									
<u>Next</u>									
<u>Steps:</u> Regen check 4 yrs after harvest.									

**PROPOSED TREATMENTS
NO LIMITING FACTORS**



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Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective
41 61154041-Cut	57.9	4110 - Sugar Maple Association	High Density Log	87	Harvest	Single Tree Selection	Sugar Maple Association
<p><u>Rev</u> <u>Cmnt:</u></p> <p><u>Rev</u> thin stand down to 80sqft/ac. Maintain under represented species. <u>Spec:</u></p> <p><u>Next</u> <u>Steps:</u></p>							
46 61154046-Cut	0.9	4110 - Sugar Maple Association	High Density Pole	80	Harvest	Single Tree Selection	Sugar Maple Association
<p><u>Rev</u> <u>Cmnt:</u></p> <p><u>Rev</u> Thin to 80sqft/ac. Set up a small firewood sale. <u>Spec:</u></p> <p><u>Next</u> regen check in 4 yrs. <u>Steps:</u></p>							
52 61154052-Cut	1.2	4110 - Sugar Maple Association	High Density Pole	79	Harvest	Single Tree Selection	Sugar Maple Association
<p><u>Rev</u> Set up as small firewood job? <u>Cmnt:</u></p> <p><u>Rev</u> Thin stand to 70sqft/ac <u>Spec:</u></p> <p><u>Next</u> regen check 4 yrs after harvest. <u>Steps:</u></p>							
62 61154062-Cut	7.1	42200 - Natural White Pine	High Density Pole	61	Harvest	Shelterwood	Natural White Pine, Mixed Deciduous
<p><u>Rev</u> Stand is small would require some line work. Try to lump with lowland type to the south for a sale. <u>Cmnt:</u></p> <p><u>Rev</u> --Stephen Griffith : 10/06/2009 comments: Please leave some residual red oak for mast production. <u>Spec:</u></p> <p>Leave 30 to 40 sqft/ac of white pine and harvest everything else.</p> <p><u>Next</u> regen check 4 yrs after harvest. <u>Steps:</u></p>							
64 61154064-Cut	9.9	6128 - Lowland Coniferous, Mixed Deciduous	High Density Pole	89	Harvest	Shelterwood	Lowland Coniferous, Mixed Deciduous
<p><u>Rev</u> <u>Cmnt:</u> Will need some line work and maybe a survey. Ground will require a winter harvest.</p> <p><u>Rev</u> Shelterwood stand. Cut everything but the cedar, hemlock and yellow birch. <u>Spec:</u></p> <p><u>Next</u> Regen check 4 yrs after harvest. <u>Steps:</u></p>							
70 61154070-Cut	32.6	6118 - Lowland Deciduous with Cedar	High Density Pole	72	Harvest	Shelterwood	Lowland Deciduous with Cedar
<p><u>Rev</u> <u>Cmnt:</u> Stocking become more sparse to the north west would be a good area to leave some retention. Harvest in dry summer or winter. ground is soft. Also talk with MDOT about road approach.</p> <p><u>Rev</u> Shelterwood stand. Leave the cedar, hemlock and white pine. Will want to buffer 131 to reduce visual impact. <u>Spec:</u></p> <p><u>Next</u> regen check 4 yrs after harvest. <u>Steps:</u></p>							



Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective
75 61154075-Cut	38.2	6128 - Lowland Coniferous, Mixed Deciduous	High Density Pole	81	Harvest	Shelterwood	Lowland Coniferous, Mixed Deciduous
<p><u>Rev</u> <u>Cmnt:</u> Survey will probably be required. Access will have to be from the private 'Hayward' property. Met with Steve on 4/15/09 and sounds like we'll be able to use their property to the south for access.</p> <p><u>Rev</u> <u>Spec:</u> Shelterwood stand. Cut everthing but the cedar, hemlock, white pine and yellow birch.</p> <p><u>Next</u> <u>Steps:</u> Regen check 4 yrs after harvest.</p>							
79 61154079-Cut	20.1	42120 - Planted Jack Pine	Medium Density Pole	58	Harvest	Clearcut	Natural Pine, Mixed Deciduous
<p><u>Rev</u> <u>Cmnt:</u> Access through private 'Hayward' property. will need survey done.</p> <p><u>Rev</u> <u>Spec:</u> Clear cut stand and let regenerate naturally</p> <p><u>Next</u> <u>Steps:</u> regen check 4 yrs after harvest.</p>							
24 61154024-Burn	58.9	4191 - Mixed Upland Deciduous with Conifer		25	Prescribed Burn	Unspecified	Mixed Low Density Trees
<p><u>Rev</u> <u>Cmnt:</u> --Stephen Griffith : 10/06/2009 comments: Great idea! Burn this stand at least once per entry period in order to set back woody encroachment, increase species diversity, stimulate native herbaceous vegetation, promote berry production, and recycle nutrients.</p> <p><u>Rev</u> <u>Spec:</u> Burn?? Check with wildlife and Fire officer</p> <p><u>Next</u> <u>Steps:</u> Monitor species diversity. Could seed in additional native plants if needed/desired.</p>							

**Total Treatment
Acreage Proposed: 727.2**

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Traverse City Mgt. Unit
Inventory Method: IFMAP

PROPOSED TREATMENTS WITH LIMITING FACTORS

Compartment: 154

Entry Yr: 2011

Date 10/08/2009



Treatment Name	Acres	Stage1 Cover Type	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective	Page 1 of 1
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Limiting Factor
and Comment:

Rev
Cmnt:

Rev
Spec:

Next
Steps:

No Treatment
Reason

**Total Treatment
Acreage Proposed: 0**



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.

Inventory Method: IFMAP

Stand	SCA Name	Acres	Comments



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
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.
SCA	Archaeological Site	An aquatic or terrestrial area of the State that contains physical remains of human occupation. These are sites of cultural and historical significance that may occur upon terrestrial areas and Great Lakes bottomlands. They include thousands of Native American settlements and burial sites, as well as French and British outposts, nineteenth century logging camps, mines and homesteads. Beneath the waters of the Great Lakes, there are shipwrecks and other remains documenting the maritime trade. Such sites may be identified by Natural heritage data from the State Historic Preservation Office. Proposed treatments in this compartment will be implemented in such a manner as to maintain the integrity of these sites. Due to the sensitive nature of this information, no further detail about location is available.
SCA	Cold Water 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.