

CADILLAC FOREST MANAGEMENT UNIT**COMPARTMENT REVIEW PRESENTATION****COMPARTMENT # 115 ENTRY YEAR: 2010****Compartment Acreage (GIS Acres): 2135 County: Missaukee**

Revision Date: 12/01/2008 11:32 AM**Stand Examiner:** Steven Eisele, Forest Technician, Manton Field Office**Legal Description:** T23N, R7W, Secs. 4, 5, 7, 8, 9, 17, 18**RMU (if applicable):** 226. Habitat Vegetative- timber intensive**Management Goals:** Continue to do select cuts in the hardwoods moving stands towards high quality logs. Convert some of the poorer sites to red pine and aspen.**Soil and Topography:** Gray calm, Rubicon, Kalkaska, Wexford-Emmet sands. Lupton and Carbondale muck. Rifle peat. Terrain is flat to rolling.**Ownership Patterns, Development, and Land Use in and Around the Compartment:** Missaukee Industrial Park and Lake City Forge are in section 7. A mix of state and private in most of the compartment. The snowmobile trail runs east west through the majority of the northern areas of the compartment. Snowmobiling, and dispersed hunting are the main recreation activities. A very short stretch of Hopkins creek runs through section 18.**Unique, Natural Features (include only non-site specific and non-sensitive information):** Eastern flat whorl land snail has been documented in compartment. Potential for eastern flat whorl to occur in ecotone between swamp conifer stand and upland forest. Potential for Kirtland's warbler, prairie warbler and dickcissel in openings of jack pine. Potential for persius dusky wing, frosted elfin, dusted skipper. Potential for Hill's thistle and rough fescue in grassy openings of jack pine. Potential for rare plants of cedar swamp: limestone oak fern, ram's head, lady slipper and calypso orchid.**Archeological, Historical, and Cultural Features (include only non-site specific and non-sensitive information):** None listed**Special Management Designations or Considerations:** Visual management along M-66/**Watershed and Fisheries Considerations:**

Hopkins Creek and several small tributaries to it flow through Compartment 115. All are Designated Trout Streams, and Hopkins Creek is also under Natural Rivers jurisdiction in the Upper Manistee River Natural Rivers plan. Hopkins Creek in Compartment 115 (Stand 81) was surveyed by Fisheries Division in 2003. The survey showed that in this area, Hopkins Creek supports a population of naturally reproducing brook trout. Here are the field notes from the survey: *"This area is currently being ravaged by beavers. We noted multiple beaver dams upstream of where we shocked. The dams are causing the stream to braid out, resulting in warming of the water, erosion and sedimentation, and possibly blocked fish passage."*

For timber operations near Hopkins Creek (Stands 80), BMPs should be followed with appropriate buffers left to protect this important trout stream.

Wildlife Habitat Considerations: Comp. 115

Priority wildlife species are deer and ruffed grouse. There are seven compartments in RMU 226. Agreements called for a decrease of 120 acres of northern hardwoods and an increase of 120 acres of red pine/white pine. Major management objectives are to try and convert some of the poorer hardwood stands to red pine and aspen and to maintain a variety of cover types and age classes which favor a variety of game and non-game species. (L. Smith, 9/19/08)

Mineral Resource and Development Concerns and/or Restrictions:

COMPARTMENT 115 Sections 4, 5, 7-9, 17 & 18, T23N-R7W, Missaukee Co

Surface sediments consist of an end moraine of coarse-textured till and glacial outwash sand and gravel and postglacial alluvium. The glacial drift thickness varies between 400 and 800 feet. Beneath the glacial drift is the Pennsylvanian Saginaw Formation. The Saginaw is quarried for clay/shale in other parts of the State. Gravel pits are not located in the area, but potential is good. The compartment is located six miles away from any existing fields. Sections 4 and 9 are currently leased and the most of the rest of the Compartment is nominated for the Oct. 2008 lease auction.

Vehicle Access: A forest road access plan is detailed on the compartment map. Identified are state and county roads as well as forest roads and trails under the jurisdiction of the DNR. Also indicated are forest roads and trails under the jurisdiction of the DNR that are proposed for abandonment. These roads were determined to be in excess of the access needs in the area, are a threat to the resources, or are a concern environmentally.

Proposed new roads or roads recommended for substantial improvement are noted below:

Survey Needs: Recently surveyed with new corners put in.

Recreational Facilities and Opportunities: Snowmobile trail.

Fire Protection: There are urban interface areas within the compartment. Terrain would allow for good equipment access in most parts of the compartment.

Additional Compartment Information:

The following parcels are recommended for acquisition if they become available for sale:

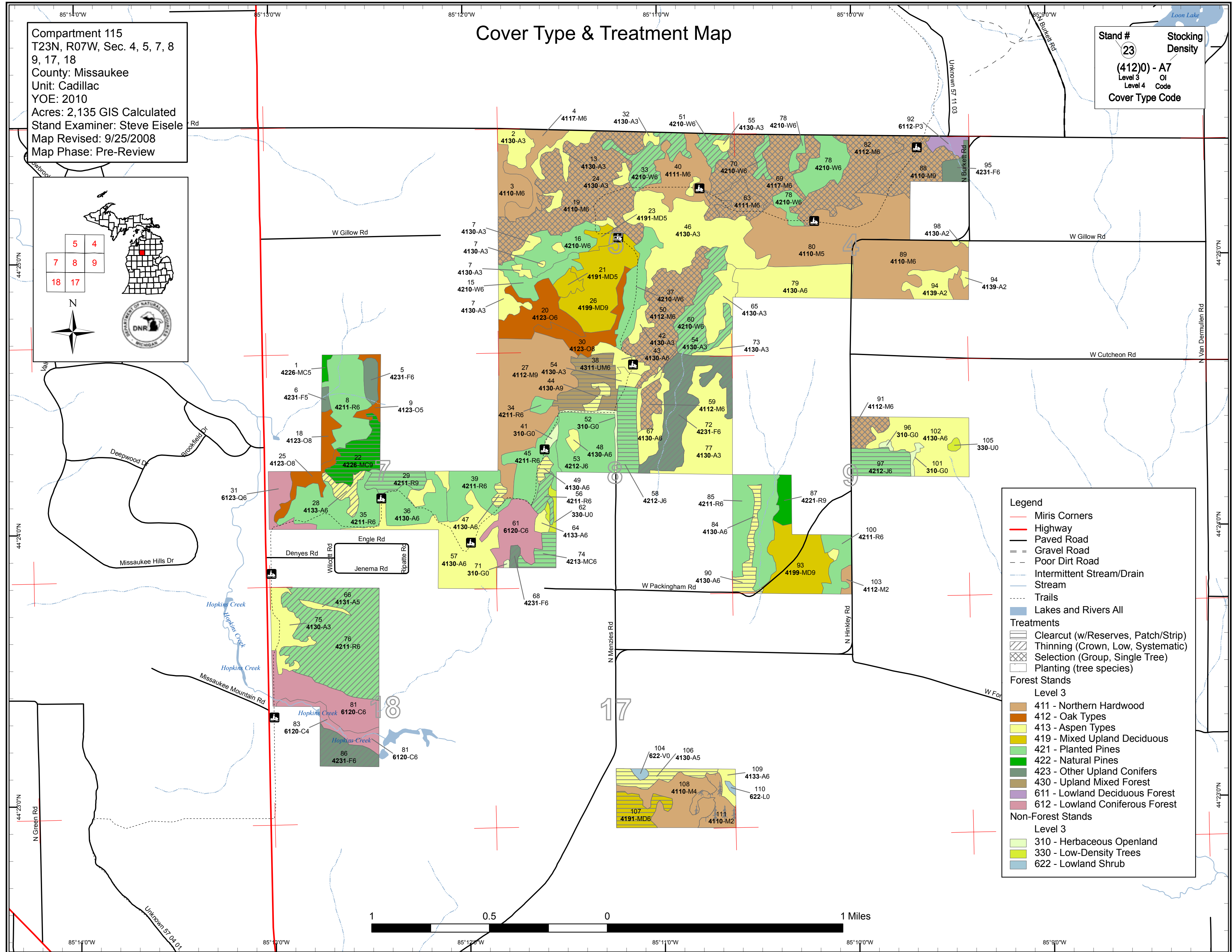
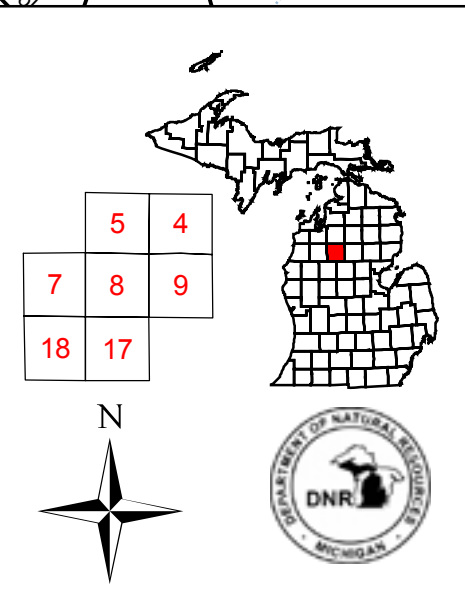
- **The following 5 reports from the Operations Inventory System (OIPC) are attached:**
 - ◆ **Cover Type by Age Class**
 - ◆ **Cover Type by Management Objective**
 - ◆ **Compartment Volume Summary**
 - ◆ **Proposed Treatments – No Limiting Factors**
 - ◆ **Proposed Treatments – With Limiting Factors**

- **The following information is displayed, where pertinent, 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 115
 T23N, R07W, Sec. 4, 5, 7, 8
 9, 17, 18
 County: Missaukee
 Unit: Cadillac
 YOE: 2010
 Acres: 2,135 GIS Calculated
 Stand Examiner: Steve Eisele
 Map Revised: 9/25/2008
 Map Phase: Pre-Review

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



Legend

- Miris Corners
- Highway
- Paved Road
- Gravel Road
- Poor Dirt Road
- Intermittent Stream/Drain
- Stream
- Trails
- Lakes and Rivers All

Treatments

- Clearcut (w/Reserves, Patch/Strip)
- Thinning (Crown, Low, Systematic)
- Selection (Group, Single Tree)
- Planting (tree species)

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
- 430 - Upland Mixed Forest
- 611 - Lowland Deciduous Forest
- 612 - Lowland Coniferous Forest

Non-Forest Stands

Level 3

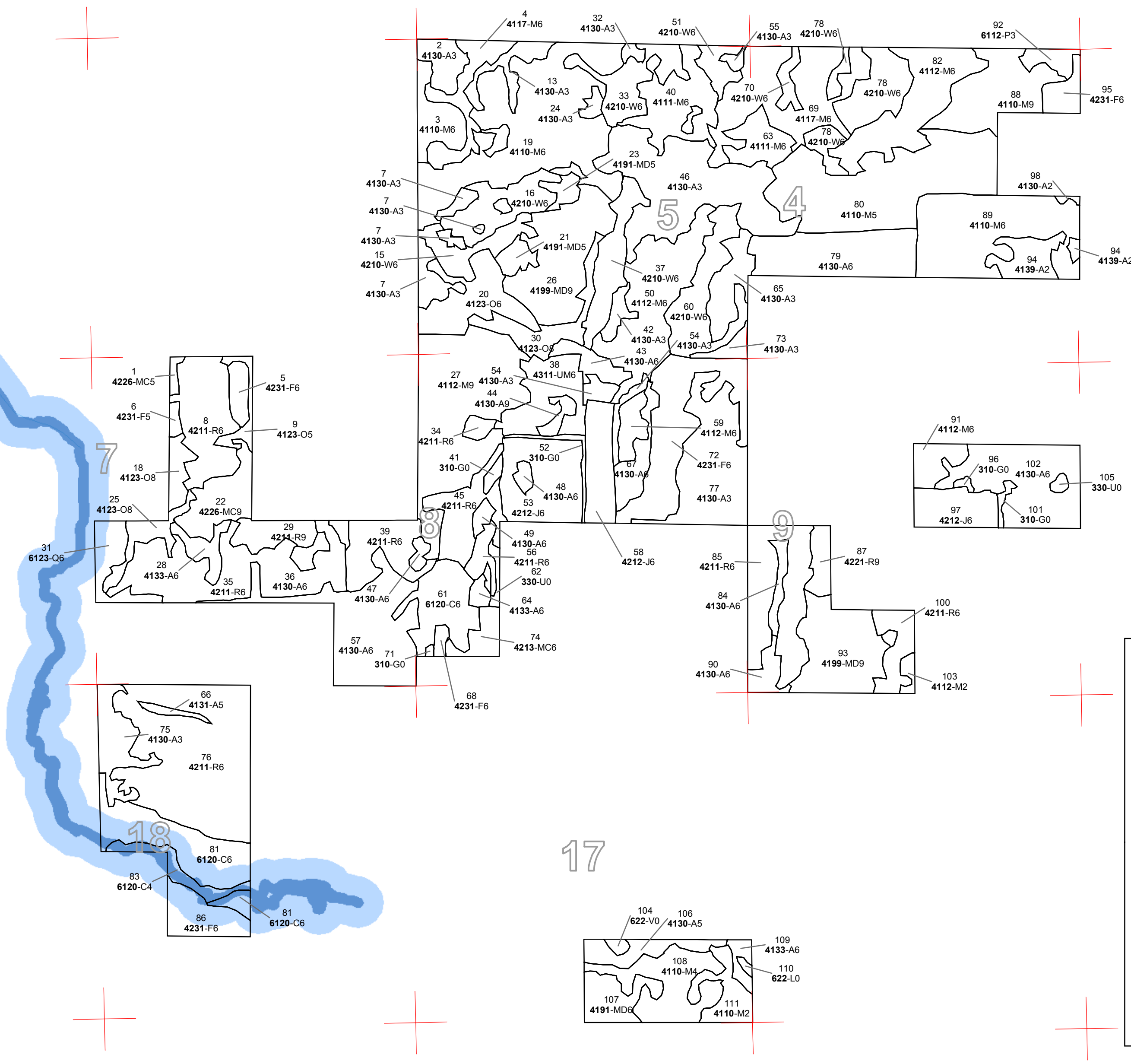
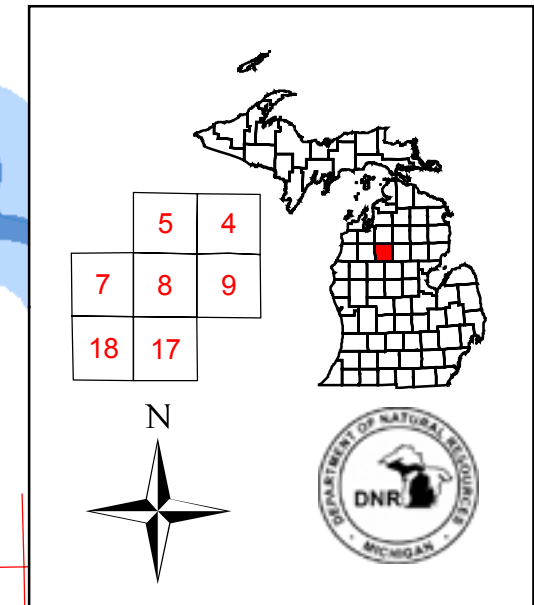
- 310 - Herbaceous Openland
- 330 - Low-Density Trees
- 622 - Lowland Shrub



Dedicated & Proposed Special Conservation Area Map

Compartment 115
 T23N, R07W, Sec. 4, 5, 7, 8
 9, 17, 18
 County: Missaukee
 Unit: Cadillac
 YOE: 2010
 Acres: 2,135 GIS Calculated
 Stand Examiner: Steve Eisele
 Map Revised: 8/27/2008
 Map Phase: Pre-Review

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



Legend

- Miris Corners
- Stand Boundaries
- Natural Rivers Vegetative Buffer
- Natural Rivers Zoning District
- Cold Water Streams

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
- 430 - Upland Mixed Forest
- 611 - Lowland Deciduous Forest
- 612 - Lowland Coniferous Forest

Non-Forest Stands

Level 3

- 310 - Herbaceous Openland
- 330 - Low-Density Trees
- 622 - Lowland Shrub



85°14'0"W 85°13'0"W 85°12'0"W 85°11'0"W 85°10'0"W 85°9'0"W

44°25'0"N
44°24'0"N
44°23'0"N

44°25'0"N
44°24'0"N
44°23'0"N

Cadillac Mgt. Unit

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

Compartment 115 Year of Entry 2010

Report Date: 09/25/2008



	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	55.9	229.3	7.5	51.0	9.0	17.8	12.2	0	0	0	0	0	0	84.3	467.0
Herbaceous Openland	8.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8.8
Low-Density Trees	4.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.6
Lowland Coniferous Forest	0	0	0	0	0	0	0	0	0	76.7	0	0	0	0	13.5	90.2
Lowland Deciduous Forest	0	6.4	0	0	0	0	0	0	0	0	0	0	0	0	0	6.4
Lowland Shrub	2.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.5
Mixed Upland Deciduous	0	0	0	0	0	26.2	0	0	0	89.2	0	0	0	0	0	115.5
Natural Pines	0	0	0	2.0	0	0	0	8.2	0	21.2	0	0	0	0	0	31.4
Northern Hardwood	0	16.9	0	0	31.8	18.1	0	156.1	360.0	83.7	0	0	0	0	0	666.6
Oak Types	0	0	0	0	0	0	0	0	5.7	64.2	0	0	0	0	0	69.9
Other Upland Conifers	0	0	2.2	0	2.3	81.0	0	0	0	0	0	0	0	0	0	85.4
Planted Pines	0	0	0	0	8.8	538.2	0	12.4	0	0	0	0	0	0	0	559.3
Upland Mixed Forest	0	0	0	0	0	26.5	0	0	0	0	0	0	0	0	0	26.5
Total	16.0	79.2	231.4	9.5	93.8	699.1	17.8	188.9	365.6	335.1	0	0	0	0	97.8	2134.2



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Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective
19 63115019-Cut	102.2	4110 - Sugar Maple Association	High Density Pole	75	Harvest	Single Tree Selection	Mixed N. Hardwood - Aspen

Rev
Cmnt:

Rev Remove lower quality hardwoods, let stand develop into sawlogs. Some areas have alot of ironwood saplings. Leave occasional aspen for soft snags.
Spec:

Next
Steps:

22 63115022-Cut	21.2	42260 - Natural Pine, Mixed Deciduous	High Density Log	85	Harvest	Clearcut with Reserves	Aspen, Mixed Pine
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Rev
Cmnt:

Rev Final harvest, leave some oak. Let hardwoods and aspen fill in.
Spec:

Next
Steps:

28 63115028-Cut	8.1	4133 - Aspen, Mixed Pine	High Density Pole	80	Harvest	Crown Thinning	Aspen, Mixed Pine
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Rev This is a multi storied stand with mature log size red pine over top young pole size aspen and maple
Cmnt:

Rev Remove red pine, let the hardwoods fill in naturally.
Spec:

Next
Steps:

29 63115029-Cut	12.4	42110 - Planted Red Pine	High Density Log	68	Harvest	Clearcut	Planted Red Pine
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Rev Old pine plantation filling in with white pine and scattered deciduos.
Cmnt:

Rev Final harvest and re plant to red pine.
Spec:

Next Check with Timber Management Specialist for re planting to red pine after harvest.
Steps:

33 63115033-Cut	21.6	42100 - Planted White Pine	High Density Pole	46	Harvest	Systematic Thinning	Planted White Pine, Mixed Deciduous
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Rev
Cmnt:

Rev White pine plantation. Take 2, leave 2.
Spec:

Next
Steps:

38 63115038-Cut	26.6	4311 - Pine, Aspen Mix	High Density Pole	48	Harvest	Clearcut with Reserves	Planted Jack Pine, Mixed Deciduous
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Rev
Cmnt:

Rev Planted jack pine with areas of mixed hardwoods. Final harvest jack pine, leave oak along with hardwood understory and saps.
Spec:

Next
Steps:

**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
44 63115044-Cut	3.9	4130 - Aspen	High Density Log	48	Harvest	Clearcut with Reserves	Aspen, Mixed Deciduous

Rev This is an aspen, mixed stand in the middle of the jack pine plantation
Cmnt:

Rev Final harvest when treating the jack pine. Leave some residual oak.
Spec:

Next
Steps:

47 63115047-Cut	2.6	4130 - Aspen	High Density Pole	50	Harvest	Clearcut	Aspen, Mixed Deciduous
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Rev Small area of aspen amongst the pine.
Cmnt:

Rev Final harvest with no reserves.
Spec:

Next
Steps:

49 63115049-Cut	2.9	4130 - Aspen	High Density Pole	55	Harvest	Clearcut	Aspen, Mixed Deciduous
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Rev
Cmnt:

Rev Small acreage aspen stand in the midst of the red pine plantation. Final harvest with no reserves.
Spec:

Next
Steps:

50 63115050-Cut	51.5	4112 - Maple, Beech, Cherry Association	High Density Pole	75	Harvest	Single Tree Selection	Sugar Maple Association
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Rev
Cmnt: Large acreage, good quality..

Rev Do a select cut, take out the low quality and suppressed.
Spec:

Next
Steps:

51 63115051-Cut	7.8	42101 - Planted White Pine, Mixed Deciduous	High Density Pole	46	Harvest	Systematic Thinning	Planted White Pine, Mixed Deciduous
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Rev
Cmnt: Planted white pine with a hardwood mix.

Rev White pine plantation with curvy rows. Remove the hardwoods only in the rows. Take 2 leave 2
Spec:

Next
Steps:

56 63115056-Cut	6.4	42110 - Planted Red Pine	High Density Pole	48	Harvest	Systematic Thinning	Planted Red Pine
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Rev
Cmnt: Red pine plantation that was not thinned with adjacent stand.

Rev Do a first thin, third row removal.
Spec:

Next
Steps:



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Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective
58 63115058-Cut	20.2	42120 - Planted Jack Pine	High Density Pole	48	Harvest	Clearcut	Planted Jack Pine

Rev
Cmnt:

Rev Jack pine plantation. Final harvest and re plant to red pine

Spec:

Next
Steps: Have timber management specialist look at for planting to red pine.

59 63115059-Cut	8.4	4112 - Maple, Beech, Cherry Association	High Density Pole	75	Harvest	Single Tree Selection	Sugar Maple Association
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Rev

Cmnt: Mixed stand but good quality.

Rev Do a selection cut, access may be tough, hilly terrain.

Spec:

Next
Steps:

60 63115060-Cut	31.0	42100 - Planted White Pine	High Density Pole	46	Harvest	Systematic Thinning	Planted White Pine, Mixed Deciduous
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Rev

Cmnt:

Rev White pine plantation with mixed deciduous. Do a thinning, take 2 rows, leave 2 rows, let hardwoods move in. Rows are curvy

Spec:

Next
Steps:

63 63115063-Cut	14.5	4111 - S.Maple, Hard Mast Association	High Density Pole	65	Harvest	Single Tree Selection	Sugar Maple Association
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Rev

Cmnt: Mixed hardwood stand with no white pine component

Rev Select out the low quality and suppressed leave some of the aspen here and there for soft snags.

Spec:

Next
Steps:

68 63115068-Cut	2.3	42310 - Planted Spruce	High Density Pole	35	Harvest	Systematic Thinning	Planted Spruce
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Rev

Cmnt: Spruce plantation in a wet lowland

Rev If you can get access, Take 2 leave 2.

Spec:

Next
Steps:

69 63115069-Cut	54.6	4117 - Mixed N. Hardwood - Pine	High Density Pole	65	Harvest	Single Tree Selection	Sugar Maple Association
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Rev

Cmnt: This whole area was planted to white pine in the 60's. Mixed hardwoods have over topped the pine in many areas.

Rev Select cut hardwoods, leave white pine in areas that are not over topped.

Spec:

Next
Steps:

**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
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70 63115070-Cut	5.0	42101 - Planted White Pine, Mixed Deciduous	High Density Pole	46	Harvest	Systematic Thinning	Planted White Pine, Mixed Deciduous
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Rev
Cmnt: White pine plantation with hardwoods

Rev Take 2 rows leave 2 rows. Rows are curvy, remove hardwoods only in rows.

Spec:

Next

Steps:

72 63115072-Cut	48.3	42311 - Planted Spruce, Mixed Deciduous	High Density Pole	48	Harvest	Systematic Thinning	Planted Spruce, Mixed Deciduous
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Rev
Cmnt: Planted spruce with hardwoods mixed.

Rev Take 2 rows leave 2 rows. Good cover stand.

Spec:

Next

Steps:

74 63115074-Cut	8.8	42130 - Planted Scotch Pine	High Density Pole	30	Harvest	Clearcut	Planted Scotch Pine
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Rev
Cmnt: Scotch pine plantation

Rev Final harvest, plant to red pine. Have planting be wildlife friendly. Do a weave pattern and leave some existing openings.

Spec:

Next

Steps: Have timber management specialist look at for planting to red pine.

76 63115076-Cut1	98.2	42111 - Planted Red Pine, Mixed Deciduous	High Density Pole	48	Harvest	Systematic Thinning	Planted Red Pine, Mixed Deciduous
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Rev
Cmnt: Very large area of planted red pine with mixed deciduous.

Rev This plantation varies alot as far as red pine stocking. There is a lot of encroachment of aspen and red maple. The west end of plantation has some thick aspen areas. Rows vary alot as far as straightness. Do a third row thin in most of the stand. Remove aspen and red maple as patch clear cuts in the areas dominated by deciduos trees.

Spec:

Next

Steps:

82 63115082-Cut	41.2	4112 - Maple, Beech, Cherry Association	High Density Pole	65	Harvest	Single Tree Selection	Sugar Maple Association
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Rev
Cmnt: Mixed hardwood stand

Rev Do a select cut. Take out the supressed and low quality, leave some aspen for snags here and there.

Spec:

Next

Steps:

84 63115084-Cut	5.2	4130 - Aspen	High Density Pole	60	Harvest	Clearcut with Reserves	Aspen, Mixed Deciduous
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Rev
Cmnt:

Rev Final harvest, leave some oak.

Spec:

Next

Steps:



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Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective
86 63115086-Cut	17.8	42310 - Planted Spruce	High Density Pole	48	Harvest	Systematic Thinning	Planted Spruce

Rev Cmnt: Spruce plantation. The only access is through private so this may be a limiting factor, the landowner has not been contacted yet.

Rev Spec: Take 2 and leave 2 if access can be gained through private.

Next Steps:

88 63115088-Cut	36.3	4110 - Sugar Maple Association	High Density Log	78	Harvest	Single Tree Selection	Sugar Maple Association
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Rev Cmnt: Solid sugar maple stand.

Rev Spec: Do a select cut. Start to remove the higher quality logs, Make this a shortwood only to reduce damage to residual.

Next Steps:

90 63115090-Cut	7.0	4130 - Aspen	High Density Pole	60	Harvest	Clearcut with Reserves	Aspen, Mixed Deciduous
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Rev Cmnt:

Rev Spec: Remove all aspen, red maple, oak and conifer. Mark some oak to leave for mast.

Next Steps:

91 63115091-Cut	10.2	4112 - Maple, Beech, Cherry Association	High Density Pole	76	Harvest	Single Tree Selection	Maple, Beech, Cherry Association
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Rev Cmnt: Some of this is low quality with a lot of beech.

Rev Spec: Do a select cut, remove mostly pulp, favor sugar maple where you can. Need to establish private line.

Next Steps:

97 63115097-Cut	18.5	42120 - Planted Jack Pine	High Density Pole	45	Harvest	Patch or Strip Clearcut	Planted Jack Pine
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Rev Cmnt: Solid jack pine plantation

Rev Spec: Undecided on treatment. For jack pine this is doing well and healthy. We can do a seed tree, strip cuts, clear cut, leave until next year of entry or plant to red pine.

Next Steps: Final harvest and do a wildlife friendly planting. Weave around hardwoods and leave some openings. Final harvest at 60 years.

106 63115106-Cut	12.3	4130 - Aspen	Medium Density Pole	50	Harvest	Clearcut with Reserves	Aspen, Mixed Deciduous
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Rev Cmnt: This is more clones of scattered aspen than a solid stand. Need to establish private line.

Rev Spec: Do a final harvest in the winter to promote better sprouting. The west side is wet. Leave some of the better oak.

Next Steps:

**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
107 63115107-Cut	15.6	4191 - Mixed Upland Deciduous with Conifer	High Density Pole	48	Harvest	Clearcut with Reserves	Mixed Upland Deciduous with Conifer

Rev This stand is like adjacent stand but with a conifer component.
Cmnt:

Rev Final harvest but leave some oak and smaller red pine. Need to establish private line.
Spec:

Next
Steps:

111 63115111-Plant	14.3	4110 - Sugar Maple Association		5	Tree Planting	Machine Plant	Planted Jack Pine
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Rev This was cut last year of entry and appears to be trenched but snow is covering the trenches and unable to tell success.
Cmnt:

Rev Look at success of trenching or planting and consider re doing. Right now the over story stand is scattered black cherry and jack.
Spec:

Next Upon second survey this stand is doing well. The trenches have successfull red pine seedlings and the rest of the stand is natural jack pine, white pine,
Steps: black cherry and oak. OK as is...

**Total Treatment
Acreage Proposed: 736.7**

**PROPOSED TREATMENTS
WITH LIMITING FACTORS**



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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
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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	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.