



Crystal Falls Forest Management Unit
Compartment Review Presentation
Compartment #111 Entry Year: 2012
Compartment Acreage: 1546 County: Dickinson

Revision Date: 6/3/2010

Stand Examiner: Otto Jacob

Legal Description: Sections 21,28 and 33, T40N R28W

Identified Planning Goals ('Management Area' or 'RMU', if applicable): Promote white pine succession, especially in the hardwood stands.

Management Goals: On sites where pine is regenerating, encourage the pine succession. Harvest aspen for age distribution. Encourage oak regeneration. Wet drainages should be protected for water quality and for wildlife habitat. Hardwoods should be thinned for optimum value and growth, while preserving wildlife qualities.

Soil and Topography: The topography is flat to rolling sand. Soils are sometimes thin over rock, causing doughty conditions. The growing site is not high in these soils. Aspen is fairly short and short lived and the hardwoods are fair. Spruce and fir grow thick on these soils and are present in most stands.

Ownership Patterns, Development, and Land Use in and Around the Compartment: Privately owned lands are of little impact. This has easy state land access and is largely blocked in with state lands.

Unique, Natural Features: Small tributaries to Cassidy creek.

Archeological, Historical, and Cultural Features: None known.

Special Management Designations or Considerations: The South end is a remote, difficult access area which is good for wildlife. Roads built into it should be closed. Stands with spruce and fir should be cut in 2011, or as soon as possible because of budworm damage losses.

Watershed and Fisheries Considerations: Protect creek corridors and encourage late stage succession near creeks

Wildlife Habitat Considerations: Encourage White Pine succession. Retain den trees and dead snags. Leave transition zones where present. Retain some old aspen on stand edges.

Mineral Resource and Development Concerns and/or Restrictions: Surface sediments consist of thin to discontinuous glacial sediments over bedrock. Minor Cambrian Munising Formation and mostly Precambrian granite/gneiss outcrop at or near the surface. There is not an economic use for these rocks, although some might have dimension stone potential. The compartment is located three miles north of the Vulcan Iron Formation mines. Part of this compartment was previously leased for metallic exploration. The nearest gravel pit is located two miles to the east, but potential appears to be limited. There is no economic oil and gas production in the UP.

Vehicle Access: Good sand roads.

Survey Needs: None.

Recreational Facilities and Opportunities: Orv and snowmobile trails. Hunting should be good. There are many age classes of aspen with much conifer content providing good diversity for hunting and viewing.

Fire Protection: Good access for fire control.

Additional Compartment Information: This is a compartment with rampant spruce budworm. Much of the spruce and fir is dying or dead. Some salvages should be cut as soon as possible. Timber sales should have signs posted warning of logging operations. Most of the area is sandy and quite flat, so there is little threat of erosion. There is very little private land, so access is easy with good roads mostly.

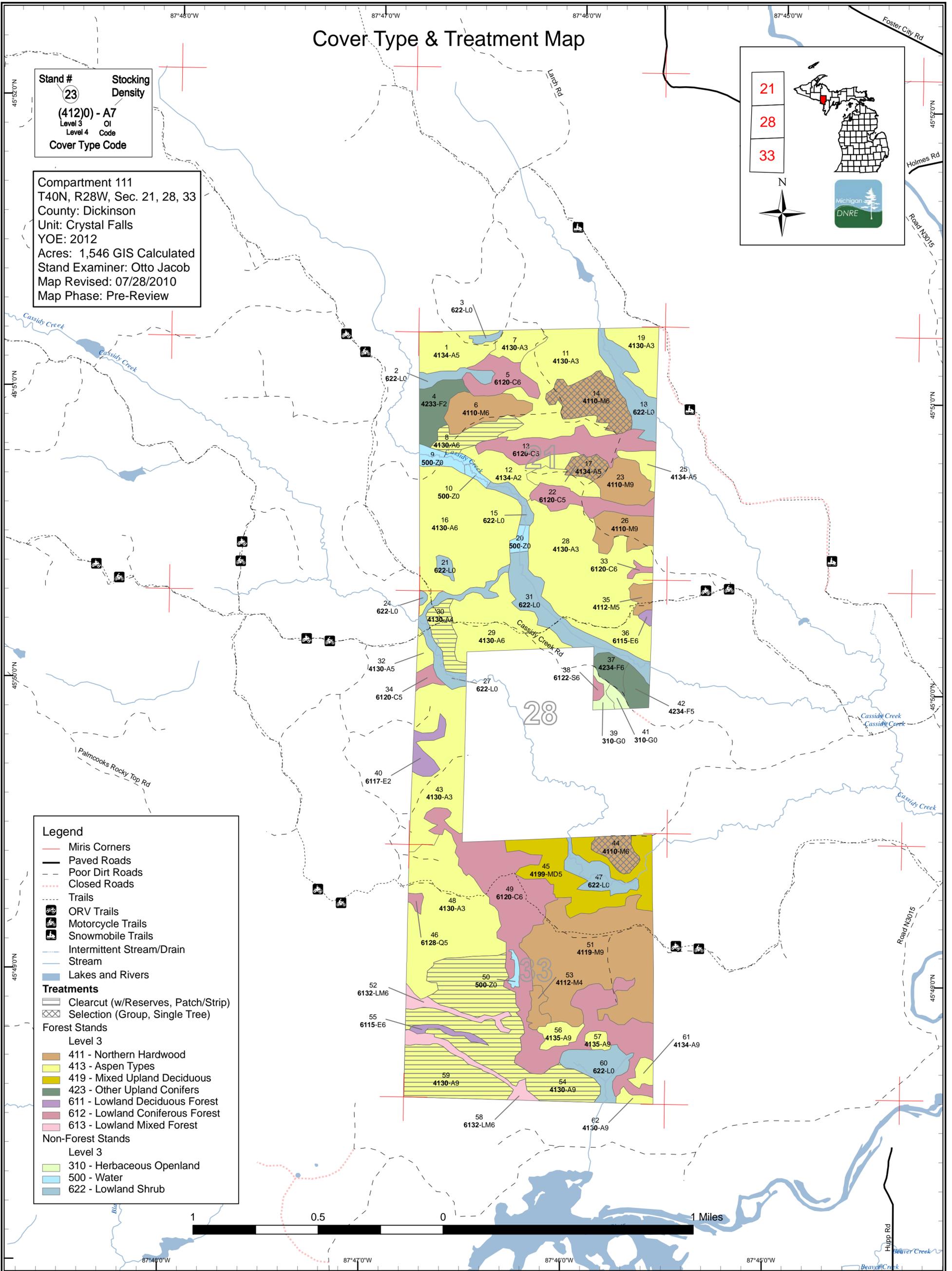
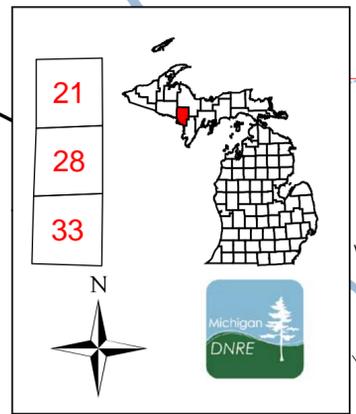
- **The following reports from the Inventory are attached:**
 - ◆ **Total Acres by Cover Type and Age Class**
 - ◆ **Proposed Treatment Summary**
 - ◆ **Proposed Treatments – No Limiting Factors**
 - ◆ **Proposed Treatments – With Limiting Factors**
 - ◆ **Stand Details (Forested and Nonforested)**
 - ◆ **Dedicated and Proposed Special Conservation Areas**

- **The following information is displayed, where pertinent, on the attached compartment maps:**
 - ◆ **Base feature information, stand boundaries, cover types, and numbers**
 - ◆ **Proposed treatments**
 - ◆ **Details on the road access system**

Cover Type & Treatment Map

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

Compartment 111
 T40N, R28W, Sec. 21, 28, 33
 County: Dickinson
 Unit: Crystal Falls
 YOY: 2012
 Acres: 1,546 GIS Calculated
 Stand Examiner: Otto Jacob
 Map Revised: 07/28/2010
 Map Phase: Pre-Review



Legend

- Miris Corners
- Paved Roads
- - - Poor Dirt Roads
- ⋯ Closed Roads
- ⋯ Trails
- ORV Trails
- Motorcycle Trails
- Snowmobile Trails
- Intermittent Stream/Drain
- Stream
- Lakes and Rivers

Treatments

- Clearcut (w/Reserves, Patch/Strip)
- Selection (Group, Single Tree)

Forest Stands

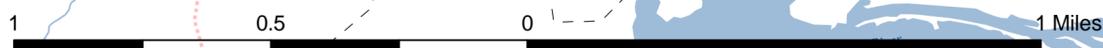
Level 3

- 411 - Northern Hardwood
- 413 - Aspen Types
- 419 - Mixed Upland Deciduous
- 423 - Other Upland Conifers
- 611 - Lowland Deciduous Forest
- 612 - Lowland Coniferous Forest
- 613 - Lowland Mixed Forest

Non-Forest Stands

Level 3

- 310 - Herbaceous Openland
- 500 - Water
- 622 - Lowland Shrub



Dedicated & Proposed Special Conservation Area Map

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

Compartment 111
 T40N, R28W, Sec. 21, 28, 33
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 YOE: 2012
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 Map Revised: 07/28/2010
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Legend

- Miris Corners
- Stand Boundaries
- Proposed Special Conservation Areas**
- ▨ SCA - Special Conservation Area
- ▩ SCA Removal
- Dedicated Special Conservation Areas**
- Deer Wintering Areas
- Cold Water Streams
- ⚓ Boat Access Sites

21

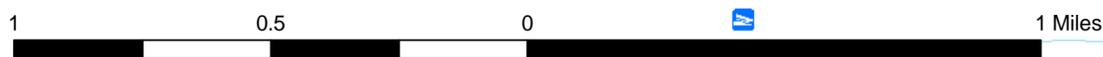
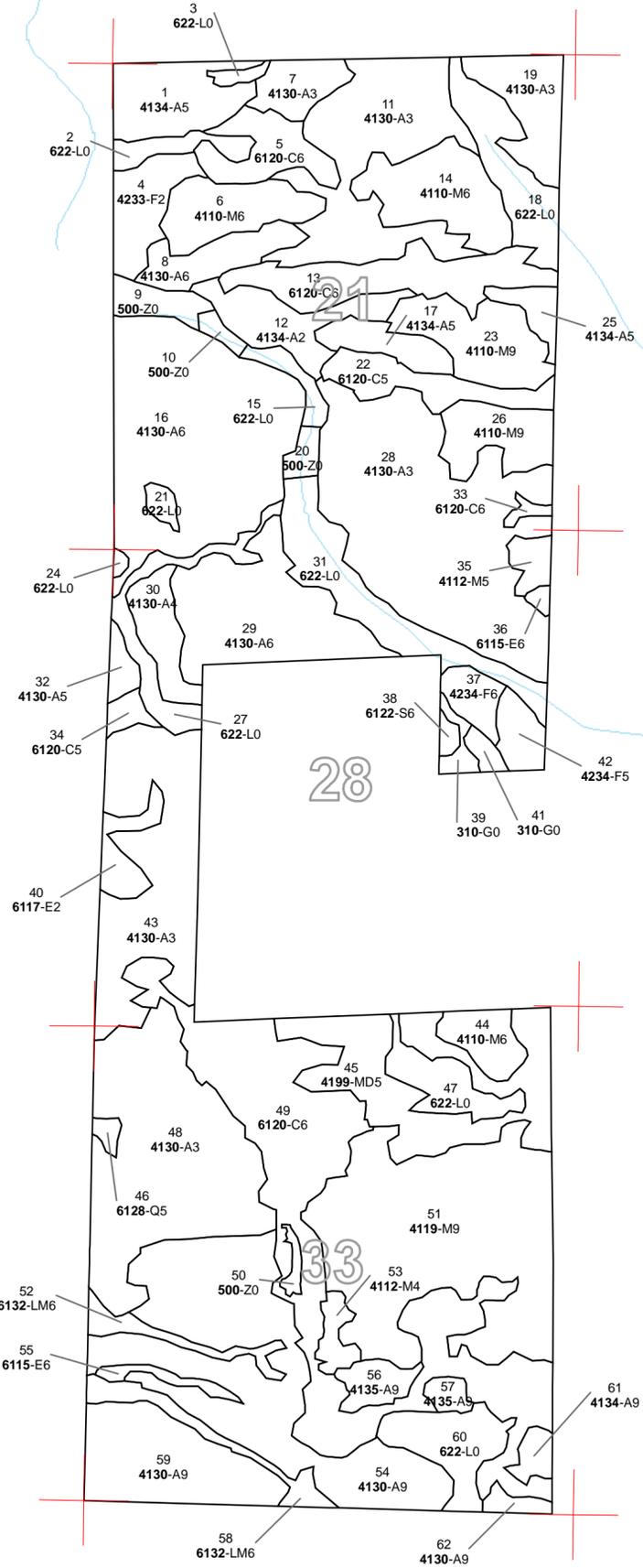
28

33



N



87°48'0"W 87°47'0"W 87°46'0"W 87°45'0"W 87°44'0"W

45°51'0"N
45°50'0"N
45°49'0"N
45°48'0"N

45°52'0"N
45°51'0"N
45°50'0"N
45°49'0"N
45°48'0"N

Table 1 – Total Acres by Cover Type and Age Class



	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	0	0	368	0	26	0	0	0	0	163	0	0	0	0	249	805
Cedar	0	0	0	0	0	0	0	0	0	0	201	0	0	0	6	207
Herbaceous Openland	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
Lowland Conifers	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
Lowland Deciduous	0	0	0	0	9	0	0	0	0	0	4	0	0	0	1	15
Lowland Mixed Forest	0	0	0	0	0	0	0	0	0	0	20	0	0	0	0	20
Lowland Shrub	132	0	0	0	0	0	0	0	0	0	0	0	0	0	0	132
Lowland Spruce/Fir	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
Mixed Upland Deciduous	0	0	0	0	0	0	0	0	56	0	0	0	0	0	0	56
Northern Hardwood	0	0	0	0	0	0	0	6	0	0	235	0	0	0	6	247
Upland Spruce/Fir	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35	35
Water	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17
Total	156	0	368	0	35	0	0	6	56	163	465	0	0	0	297	1546



Table 2 – Proposed Treatment Summaries

Crystal Falls Mgt. Unit
Year of Entry 2012

Compartment 111
Total Compartment Acres: 1546

Acres by Treatment Type

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

Cover Type by Harvest Method

	<i>Clearcut</i>	<i>Selection</i>	<i>Seed Tree</i>	<i>Shelterwood</i>	<i>Thinning</i>	<i>Other - Specify</i>	<i>Total Acres</i>
Aspen	178	0	0	0	0	0	178
Northern Hardwood	0	50	0	0	0	0	50
Total	178	50	0	0	0	0	229



Stand	Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
8	12111008-Cut	15.9	4130 - Aspen	High Density Pole	80	Harvest	Clearcut with Reserves	Aspen	Cmpt. Review Proposal

Prescription Clear cut all species except reserve Balsam under 6 inches, reserve oak, hemlock and pine if present.

Specs:

Other

Comments:

Next

Steps:

14	12111014-Cut	30.6	4110 - Sugar Maple Association	High Density Pole	93	Harvest	Single Tree Selection	Sugar Maple Association	Cmpt. Review Proposal
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Prescription Thin stand to 80 BA. Reserve den trees, mast trees and wildlife trees.

Specs:

Other

Comments:

Next

Check for regen.

Steps:

23	12111023-Cut	8.1	4110 - Sugar Maple Association	High Density Log	93	Harvest	Single Tree Selection	Sugar Maple Association	Cmpt. Review Proposal
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Prescription Thin to Ba 80 leave wildlife trees.

Specs:

Other

Comments:

Next

Steps:

30	12111030-Cut	14.4	4130 - Aspen	Low Density Pole	80	Harvest	Clearcut with Reserves	Aspen, Mixed Conifer	Cmpt. Review Proposal
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Prescription Clearcut, reserving Pine, Cedar, Hemlock, Oak and clumps of submerchable conifers, if present.

Specs:

Other

Spruce budworm damage is real high. May want to harvest as soon as possible.

Comments:

Next

Monitor regeneration success during next entry period.

Steps:

44	12111044-Cut	11.8	4110 - Sugar Maple Association	High Density Pole	90	Harvest	Single Tree Selection	Sugar Maple Association	Cmpt. Review Proposal
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Prescription Thin to BA 80. Protect wildlife trees. Cut no oak, pine, hemlock or cedar, if found.

Specs:

Other

Comments:

Next

Steps:

54	12111054-Cut	105.7	4130 - Aspen	High Density Log	80	Harvest	Clearcut with Reserves	Aspen	Cmpt. Review Proposal
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Prescription Clearcut reserving oak, pine, hemlock, cedar, cherry if present. Leave den trees and snags if safe.

Specs:

Other

Comments:

Next

Steps:

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

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	Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
59	12111059-Cut	42.5	4130 - Aspen	High Density Log	80	Harvest	Clearcut with Reserves	Aspen	Cmpt. Review Proposal

Prescription. Clearcut reserving wildlife trees, oak, hemlock, pine, cedar, cherry if present. Leave den trees and snags if safe.

Specs:

Other

Comments:

Next

Steps:

**Total Treatment
Acreage Proposed: 228.9**

S
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Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
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#Error

Prescription
Specs:

Other
Comment:

Next
Steps:

Limiting Factor and No
Treatment Reason

Total Treatment
Acreage Proposed: 0

Stand	Crystal Falls Mgt. Unit		5 – Forested Stands			Compartment: 111	General Comments:
	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Year of Entry: 2012	
1	4134 - Aspen, Spruce/Fir	Medium Density Pole	25.9	30			Past cut in aspen regenerating poorly. Looks like a poor site. Scattered low vigor stand.
4	42330 - Upland Fir	Medium Density	17.9	Uneven Age			Spotty spruce fir with some aspen. Poor stocking, poor site.
5	6120 - Lowland Cedar	High Density Pole	18.5	90			
6	4110 - Sugar Maple Association	High Density Pole	22.5	90	81-110		South side of stand has patchy, open grown hardwoods and aspen.
7	4130 - Aspen	High Density Sapling	12.2	Uneven Age			
8	4130 - Aspen	High Density Pole	15.9	Uneven Age	81-110		
11	4130 - Aspen	High Density Sapling	64.0	19			
12	4134 - Aspen, Spruce/Fir	Medium Density	22.4	18			Poor open grown regeneration.
13	6120 - Lowland Cedar	High Density Pole	34.9	93			Stand is very dense on West side and sparse on the East side.
14	4110 - Sugar Maple Association	High Density Pole	30.6	93			Many den trees. South part of stand is too open grown to thin.
16	4130 - Aspen	High Density Pole	102.9	Uneven Age			
17	4134 - Aspen, Spruce/Fir	Medium Density Pole	11.7	Uneven Age			Fair to poorly stocked aspen which is patchy. Spruce and fir are coming up with the aspen and filling in the openings.
19	4130 - Aspen	High Density Sapling	21.4	Uneven Age			
22	6120 - Lowland Cedar	Medium Density Pole	18.8	93			Big patches of Tag alder within the stand.
23	4110 - Sugar Maple Association	High Density Log	27.6	93	111-140		Stand East of the road was thinned a few years ago.
25	4134 - Aspen, Spruce/Fir	Medium Density Pole	6.8	Uneven Age			
26	4110 - Sugar Maple Association	High Density Log	19.0	93			Thinned six years ago.
28	4130 - Aspen	High Density Sapling	119.5	19			



S t a n d	Crystal Falls Mgt. Unit		5 – Forested Stands			Compartment: 111
	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Year of Entry: 2012
						General Comments:
29	4130 - Aspen	High Density Pole	52.1	Uneven Age		It is interesting how this stand self thinned to such a low density in large areas. Stand tends to be pure aspen in areas and heavy spruce fir mix in other areas rather than an even mix.
30	4130 - Aspen	Low Density Pole	14.4	80		Spruce budworm converted stand from Spruce Fir to Aspen. Near complete mortality of Spruce Fir. Now there are scattered poor aspen with damaged Fir regeneration in areas.
32	4130 - Aspen	Medium Density Pole	4.6	Uneven Age		Transition zone along creek. High mortality in Spruce Fir.
33	6120 - Lowland Cedar	High Density Pole	1.9	Uneven Age		
34	6120 - Lowland Cedar	Medium Density Pole	4.0	Uneven Age		
35	4112 - Maple, Beech, Cherry Association	Medium Density Pole	5.8	Uneven Age		Approx. 20% of stand dead Spruce Fir from budworm infestation. Now stand is open grown with open grown Iron wood and patchy hardwoods.
36	6115 - Lowland Ash	High Density Pole	1.5	Uneven Age		
37	42340 - Upland Spruce/Fir	High Density Pole	8.6	Uneven Age		All aged conifers with ample white pine regeneration. This is a good stand to manage for a White Pine objective.
38	6122 - Black Spruce	High Density Pole	2.0	90		
40	6117 - Lowland Deciduous, Mixed Coniferous	Medium Density	9.4	30		This is close to an upland site. Budworm has killed a large amount of the spruce and fir. There are patches of tag alders in lower areas within the stand.
42	42340 - Upland Spruce/Fir	Medium Density Pole	8.9	Uneven Age		Spotty regeneration in patches of spruce fir, aspen, and grass.
43	4130 - Aspen	High Density Sapling	66.2	18		
44	4110 - Sugar Maple Association	High Density Pole	11.8	90		Small poles with a few log trees. May need survey corners.
45	4199 - Other Mixed Upland Deciduous	Medium Density Pole	56.1	70		Budworm killed 80% of spruce fir. It looks like this will become a red maple stand. Aspen is not thick enough to restock stand. The topo is 30 ft rock knobs with many drainages. Some White pine in stand. It should seed regenerate.
46	6128 - Lowland Coniferous, Mixed Deciduous	Medium Density Pole	2.2	90		
48	4130 - Aspen	High Density Sapling	95.5	18		Patches of hardwoods were left on rock knobs when last cut.



Stand	Crystal Falls Mgt. Unit		5 – Forested Stands			Compartment: 111	
	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Year of Entry: 2012	
						General Comments:	
49	6120 - Lowland Cedar	High Density Pole	129.0	90		Black ash drainages on West side.	
51	4119 - Mixed Northern Hardwoods	High Density Log	123.5	90		Stand was thinned about five years ago.	
52	6132 - Mixed Lowland Forest with Cedar	High Density Pole	8.6	90			
53	4112 - Maple, Beech, Cherry Association	Low Density Pole	6.3	60		The aspen was cut out of the stand about 5 years ago. The spruce fir has fallen down and left a sparse stand.	
54	4130 - Aspen	High Density Log	105.7	80		Almost all spruce fir is dead. It was 20 to 90 % of stand. Site topography is rock ridges with drainages. Operable for harvest operations, but portions of stand may be left out.	
55	6115 - Lowland Ash	High Density Pole	4.4	90			
56	4135 - Aspen, Cedar	High Density Log	8.5	Uneven Age		This stand has well stocked fingers of cedar growing throughout. Harvesting the aspen would destroy the cedar and there are enough White pines in the area to replace the aspen.	
57	4135 - Aspen, Cedar	High Density Log	3.9	Uneven Age			
58	6132 - Mixed Lowland Forest with Cedar	High Density Pole	11.8	90			
59	4130 - Aspen	High Density Log	42.5	80	51-80	Very rocky with many drainages. Most of spruce fir is dead and much of the birch has died.	
61	4134 - Aspen, Spruce/Fir	High Density Log	4.9	Uneven Age		Rock bluffs and drainages limit operations.	
62	4130 - Aspen	High Density Log	3.6	Uneven Age		This stand is on a rock bluff. Poor operability and access.	





Stand	Cover Type	Acres	Gen Cmts:
2	622 - Lowland Shrub	8.0	
3	622 - Lowland Shrub	2.3	
9	50 - Water	8.4	
10	50 - Water	2.7	
15	622 - Lowland Shrub	5.9	
18	622 - Lowland Shrub	25.0	
20	50 - Water	4.1	
21	622 - Lowland Shrub	2.9	
24	622 - Lowland Shrub	1.0	
27	622 - Lowland Shrub	16.0	
31	622 - Lowland Shrub	34.5	
39	310 - Herbaceous Openland	3.8	
41	310 - Herbaceous Openland	3.1	
47	622 - Lowland Shrub	15.6	
50	50 - Water	2.3	
60	6221 - Fen	20.9	



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.

Inventory Method: IFMAP

Stand	SCA Type	SCA Name	Acres	Comments
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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.