

Crystal Falls Forest Management Unit Compartment Review Presentation Compartment #57 Entry Year: 2013

Compartment Acreage: 1749 County: Dickinson

Revision Date: 6-24-11

Stand Examiner: Debbie Goupell

Legal Description: T42N R29W Sec 10, 11, 13-15, 22-24

Management Goals: This compartment has approximately one-third lowland and two-thirds upland. The upland has about 40% of its composition in aspen, while lowland shrub makes up half of the lowland. Management of all stands is to balance age class distribution, particularly in the aspen, and encourage the best suited species to continue to grow on the best suited sites. Hardwood management goals are to put growth on the best trees in place by removing crown competition. We will protect all bodies of water, particularly Six Mile Creek and its tributaries.

Soil and Topography: Emmet fine sandy loam and Pemene fine sandy loam, both well drained soils found on level to rolling hills, are the dominant upland soils. Other minor soils include Pemene rock outcrop, Mancelona loamy sand, and Zimmerman fine sand. Lowland soils are Carbondale and Cathro mucks which are very poorly drained soils, found on low flats and depressions. Ensley fine sandy loam is a moderately poorly drained soil that is found on some of the wetter aspen sites.

Ownership Patterns, Development, and Land Use in and Around the Compartment: The compartment is bordered almost entirely by State land on all sides. There are some private parcels within the compartment that limit access to the public. The area is heavily used by loggers, hunters, fisherpeople, campers, trappers, general recreationists.

Unique, Natural Features: Six Mile Creek and other unnamed tributaries

Archeological, Historical, and Cultural Features: None known

Special Management Designations or Considerations: None known

Watershed and Fisheries Considerations: Protect water quality for all bodies of water, particularly Six Mile Creek and its tributaries. Promote long lived conifer species along these waterbodies and use adequate buffer protection.

Wildlife Habitat Considerations: All species of wildlife need to be considered and a full range of habitat conditions should be provided. Conditions from early-successional to old growth must be provided to meet these needs. Riparian and transition zones were set aside in prior years of entry to provide some of these habitat requirements. Rich conifer swamps and associated lowland hardwood drainages make this compartment unique. Upland and lowland conifer components should be maintained and enhanced when possible. Opening maintenance will be completed as logistics allow.

Mineral Resource and Development Concerns and/or Restrictions: Surface sediments consist of coarse-textured glacial till and areas of thin to discontinuous coarse-textured till over bedrock. The glacial drift

thickness varies between 10 and 50 feet. The Cambrian Munising Formation, and Precambrian Archean granite/gneiss and volcanic and sedimentary rocks subcrop below the glacial drift. There is not an economic use for these rocks, although the granite/gneiss might have building stone potential. There is a rock quarry/exploration area located in Section 2. The Groveland Iron mine is located approximately three miles to the southwest. This compartment was previously leased for metallic exploration and potential may still exist. Gravel pits are located one mile to the south and two miles to the east. There should be some gravel potential in the compartment. There is no economic oil and gas production in the UP.

Vehicle Access: Six Mile Lake road offers access from the south to a woods road. Access from the north is off the North Wells Grade. Bermed trails and pulled culverts limit access to most of Sec 13 to the public.

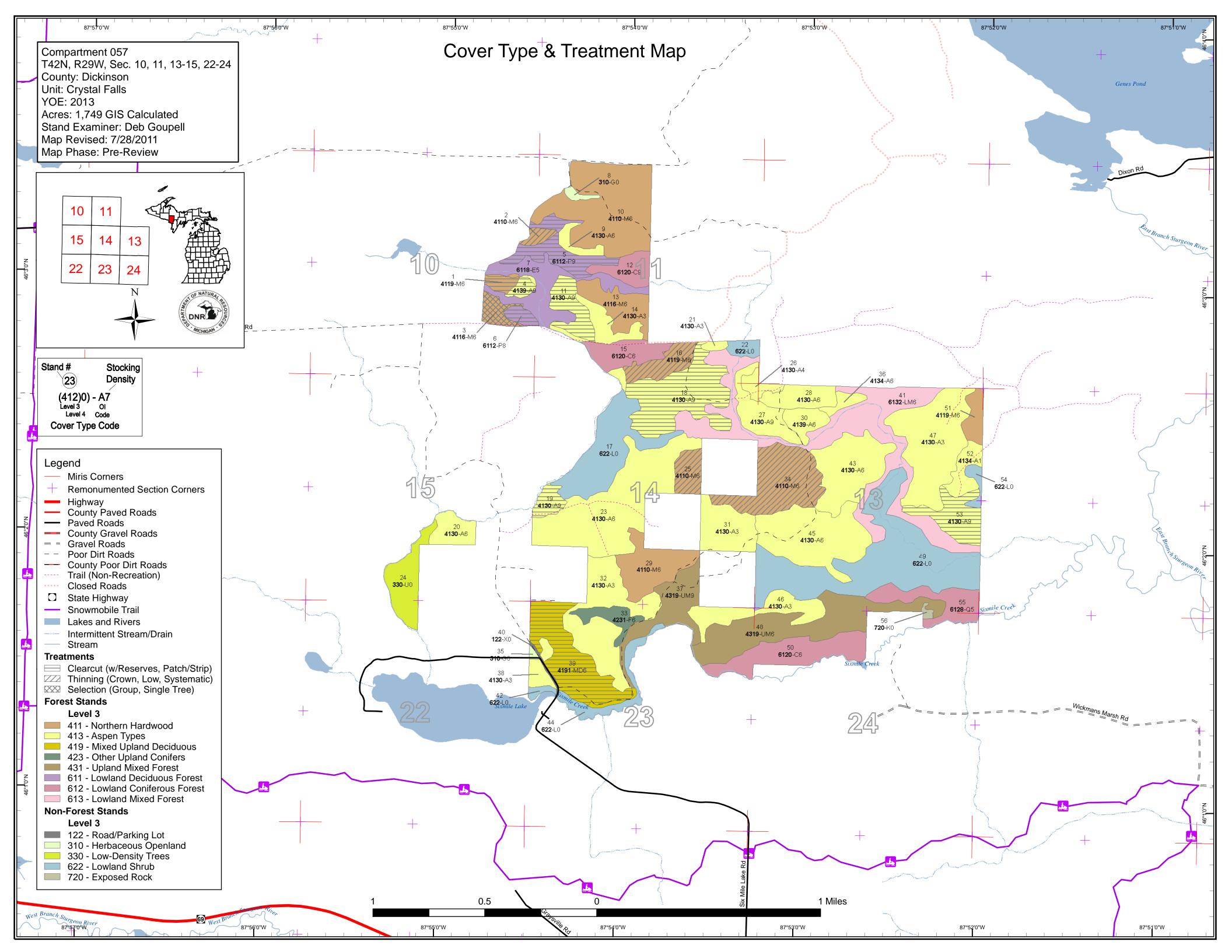
Survey Needs: Needed in Sections 14 & 22

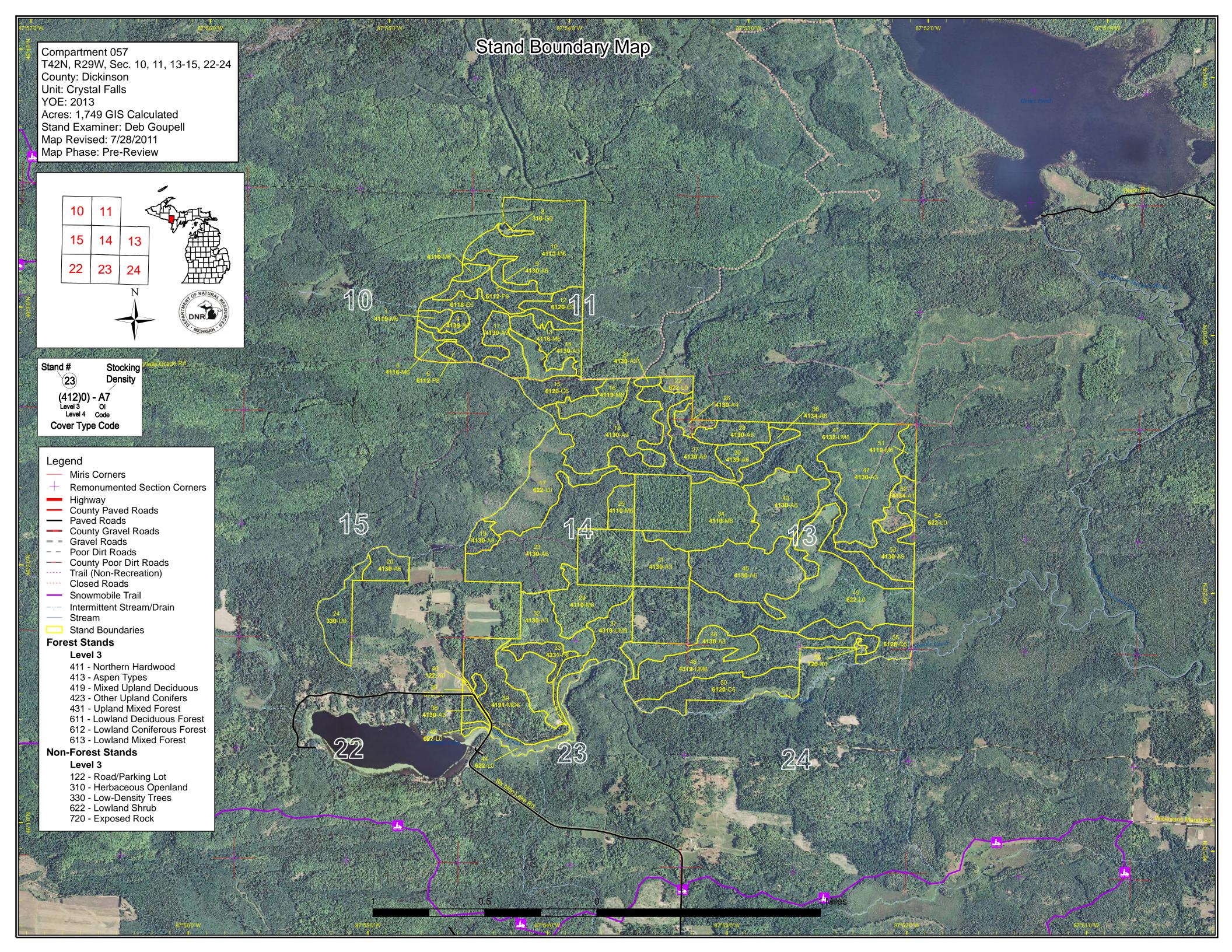
Recreational Facilities and Opportunities: Hunting, camping, fishing, trapping, hiking, canoeing.

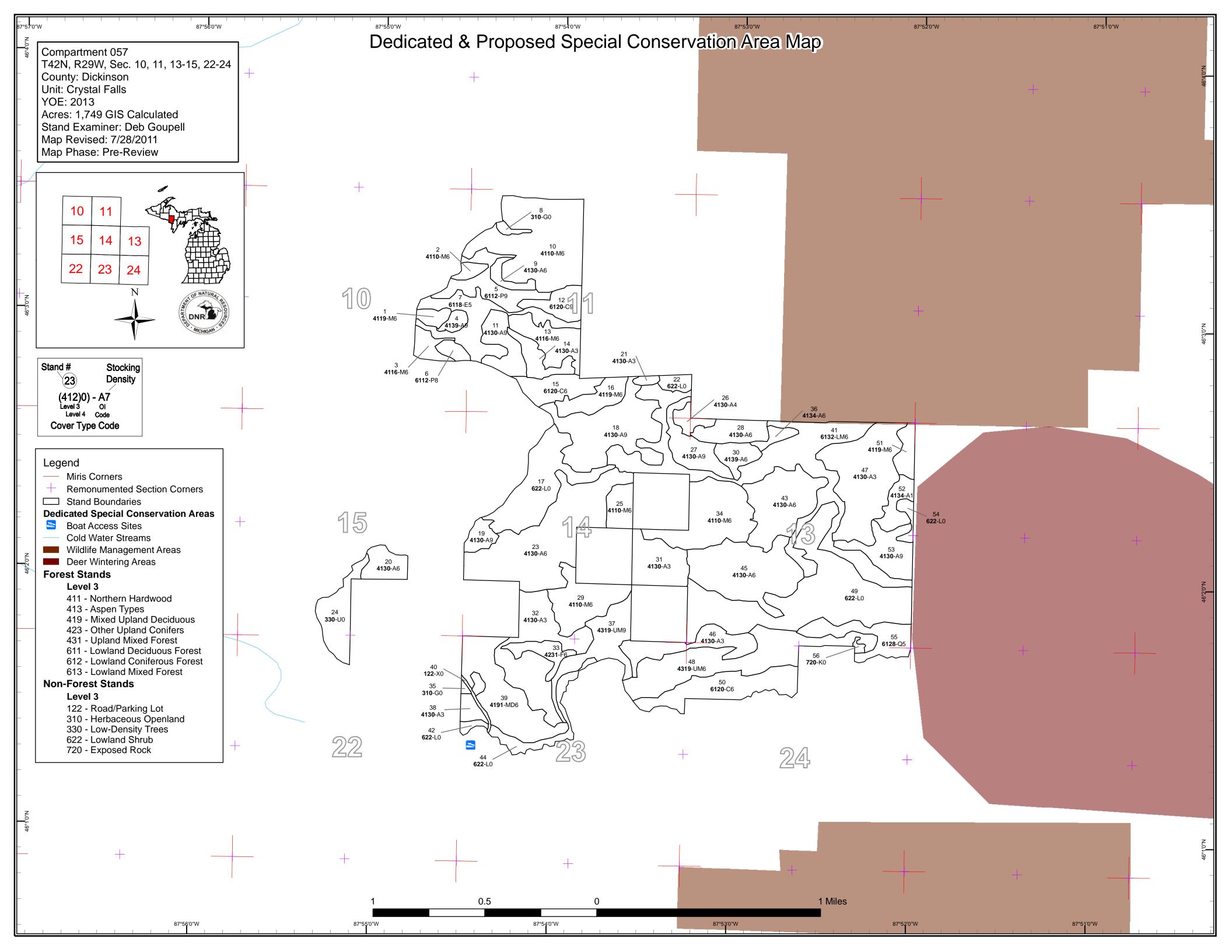
Fire Protection: Felch protection area. Access to most upland stands is fair to poor, primarily due to berms and pulled culverts; access to some swamp types would be very difficult.

Additional Compartment Information:

- ➤ 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







Compartment 057 Year of Entry 2013

Crystal Falls Mgt. Unit
Deborah Goupell : Examiner



Age Class

							Age '										
	, North		8.7	0.79	, c. ,		LO. AS	\$5.05 \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	89.00	, R. / .	\$ / s	No. No.	on on one	70,70 87.70	So* Ju	1 8 / L	No.
Aspen	0	15	237	177	27	72	6	129	32	13	0	0	0	0	0	707	
Cedar	0	0	0	0	0	0	0	0	0	84	0	0	0	0	0	84]
Exposed Rock	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2]
Herbaceous Openland	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	
Low-Density Trees	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28	
Lowland Aspen/Balsam Poplar	0	0	0	0	0	0	28	0	6	0	0	0	0	0	0	34	
Lowland Conifers	0	0	0	0	0	0	0	0	0	29	0	0	0	0	0	29	
Lowland Deciduous	0	0	0	0	0	0	0	0	0	41	0	0	0	0	0	41	
Lowland Mixed Forest	0	0	0	0	0	0	0	0	0	122	0	0	0	0	0	122	
Lowland Shrub	227	0	0	0	0	0	0	0	0	0	0	0	0	0	0	227	
Mixed Upland Deciduous	0	0	0	0	0	0	59	0	0	0	0	0	0	0	0	59	
Northern Hardwood	0	0	0	0	0	0	0	0	0	187	0	0	0	0	97	284	
Upland Mixed Forest	0	0	0	0	0	79	35	0	0	0	0	0	0	0	0	115	
Upland Spruce/Fir	0	0	0	0	0	0	13	0	0	0	0	0	0	0	0	13	
Urban	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2]
Total	263	15	237	177	27	151	141	129	38	476	0	0	0	0	97	1749]



Table 2 – Proposed Treatment Summaries

Crystal Falls Mgt. Unit

Compartment 057 Year of Entry 2013 **Total Compartment Acres: 1749**

Acres by Treatment Type

Commercial Harvest - 332 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

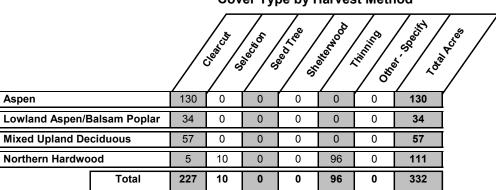


Table 3 -- Treatments Prescribed Compartment: 057 Crystal Falls Mgt. Unit with No Limiting Factor Year of Entry 2013 s t а **Treatment** Acres Size Stand **Treatment Treatment** Cover Type n Stage1 **A**pproval Method Name **Density** Objective Status CoverType Type d Age 12057001-Cut 5.5 4119 - Mixed High Density Pole 83 Harvest Clearcut with 4110 - Sugar Maple Cmpt. Review Northern Hardwoods Reserves Association Proposal Prescription Cut all stems 2" and greater except cedar, pine & hemlock (if found). Retention will be 100' buffer along drainage to north. Mixed hardwood with aspen and mixed conifer will be acceptable regen. Specs: Other . This is a poor quality hardwood stand Comments: **Next** Steps: 2 12057002-Cut 5.0 4110 - Sugar Maple High Density Pole 83 Harvest Crown Thinning 4110 - Sugar Maple Cmpt. Review Association Association Proposal Prescription Release crowns of crop trees by removing poor quality trees and marking to BA 80. Specs: Other_ Comments: <u>Next</u> Steps: 3 12057003-Cut 9.9 4116 - Mixed N. High Density Pole Harvest Single Tree Selection 4110 - Sugar Maple Cmpt. Review Hardwood - Aspen Association Proposal Prescription Cut poorer formed trees and release crown of crop trees. This is part of Elf Pants timber sale, which is already sold and being cut. Specs: <u>Other</u> Comments: Next Steps: 12057004-Cut 4139 - Aspen, High Density Log 4139 - Aspen, Mixed Cmpt. Review 4 7 62 Harvest Clearcut with Mixed Deciduous Reserves Deciduous Proposal Prescription Cut all stems 2" and above, buffering the drainage 100 feet in adjacent stand (north & east side of this stand). This will serve as retention. No cedar will be cut. Expect aspen/mixed deciduous/mixed conifer regeneration. Specs: <u>Other</u> Comments: Next Check regen per WIs Steps: 12057005-Cut 28.3 6112 - Lowland High Density Log 6112 - Lowland 5 50 Harvest Clearcut with Cmpt. Review Aspen Reserves Aspen Proposal Prescription Cut all trees over 2" dbh, reserving any cedar, pine or hemlock (if present). May need to consider making this a frozen ground/very dry ground cut. Expect balsam poplar/mixed deciduous/mixed conifer regeneration. Other_ Most of birch is concentrated on southeast finger. Comments:

Specs:

Check regen per WIs

Next Steps:

> Medium Density 12057006-Cut 75 6 5.9 6112 - Lowland Harvest Clearcut 6112 - Lowland Cmpt. Review Proposal Aspen Log Aspen

> Prescription Cut all stems over 2"dbh. May need to be a winter/dry ground condition cut. Suggest leaving no retention other than 100 foot buffer to stream on far southeast corner (if the stand comes within 100 feet) as this is a sparse stand to begin with. Expect aspen/mixed conifer regen. Specs:

<u>Other</u> Very heavy red maple/brush understory

Comments:

Check regen per WIs Next

Steps:

Table 3 -- Treatments Prescribed with No Limiting Factor

Compartment: 057 Year of Entry 2013

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t a n d	Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
11	12057011-Cut	20.3	4130 - Aspen	High Density Log	75	Harvest	Clearcut with	4136 - Aspen, Mixed	Cmpt. Review

Specs:

s

Prescription Cut all stems 2" dbh and greater except cedar, pine, hemlock (if found). Keep out of draw along east side of stand and buffer stream on south/southwest of stand by 100 feet. Culvert will be needed on South Wells grade for the sale where stream crosses. Expect aspen/mixed

deciduous/mixed coniferous regeneration.

<u>Other</u>

Shallow rocky soils = will need to be administered well. Lots of balsam fir is dead and down.

Comments:

Check regen per WIs <u>Next</u>

Steps:

16 12057016-Cut 18.8 4119 - Mixed High Density Pole Harvest Crown Thinning 4119 - Mixed Cmpt. Review Northern Hardwoods Northern Hardwoods Proposal

Prescription Release crop tree crowns by marking to BA 80; concentrate on removing poorer quality trees, particularly basswood. Retain hemlock & cedar if

Specs:

Other_ Steep hill in center of stand. Quality of stand deteriorates as you go west and becomes heavier to red maple.

Comments:

<u>Next</u> Steps:

> 12057018-Cut 68.1 4130 - Aspen High Density Log Clearcut with 4130 - Aspen Cmpt. Review Harvest Reserves Proposal

Prescription Cut all species 2" dbh and above except cedar, white or red pine, hemlock (if present). Retention will be in far northwest corner on west side of

Specs: stand 16 where it is fairly rough and rocky. Expect aspen/mixed conifer regen

Other_ Comments:

Check regen per WIs <u>Next</u>

Steps:

12057019-Cut Clearcut with 4130 - Aspen 4130 - Aspen High Density Log Harvest Cmpt. Review Reserves Proposal

Prescription Remove all stems 2" dbh and above except red or white pine or cedar (if present). Retention will be 100 foot buffer from stream on north/northwest side. Expect aspen/spruce/fir regeneration

Specs:

Other_ Comments:

Check for regen per WIs <u>Next</u>

Steps:

25 12057025-Cut 14.2 4110 - Sugar Maple High Density Pole 84 Harvest Crown Thinning 4110 - Sugar Maple Cmpt. Review Association Association Proposal

Prescription Release crop tree crowns by removing poorer formed stems and competing trees, reducing BA to 80-90 (90BA where stand is thickest). Focus Specs:

on releasing crop sugar maples by removing competing basswood.

<u>Other</u>

Comments:

Next

Steps:

Table 3 -- Treatments Prescribed with No Limiting Factor

Compartment: 057
Year of Entry 2013

a n d	Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
34	12057034-Cut	57.6	4110 - Sugar Maple	High Density Pole	84	Harvest	Crown Thinning	4110 - Sugar Maple	Cmpt. Review

<u>Prescription</u> Thin to BA 90 by releasing crop trees' crowns by removing poorer formed competing trees. Focus removal on basswood clumps. Stand average <u>Specs:</u> BA is 147.

<u>Other</u>

s

Comments:

Next Steps:

39 12057039-Cut 56.6 4191 - Mixed High Density Pole 50 Harvest Clearcut with 42311 - Planted Cmpt. Review Reserves Spruce, Mixed Proposal with Conifer Deciduous

<u>Prescription</u> Cut all species 2" dbh and greater. May leave pockets of better spruce. Lightly thin small hardwood inclusion in far northeast corner of stand by <u>Specs:</u> removing poorly formed trees. Retention will be south of woods road. Acceptable regeneration will be aspen, mixed deciduous, spruce and fir.

Other There is evidence of spruce budworm damage & some mortality in this stand.

Comments:

If regen is not acceptable, consider herbicide, trench, plant to red pine.

Next Steps:

53 12057053-Cut 27.7 4130 - Aspen High Density Log 65 Harvest Clearcut 4130 - Aspen Cmpt. Review Proposal

Prescription Remove all stems 2" dbh and greater to allow for maximum aspen regeneration. May retain any red or white pine if found (none noted during

<u>Specs:</u> inventory). Anticipate aspen/mixed hardwood/mixed conifer regeneration

Other Comments:

Next Check regen per WIs

Steps:

Total Treatment

Acreage Proposed: 332.2

Crystal Falls Mgt. Unit Table 4 -- Treatments Prescribed with Compartment: 057 a Limiting Factor s Year of Entry 2013 t **Treatment** n **Treatment Acres** Stage1 Size Stand **Treatment Cover Type Approval** Name CoverType Density Method Objective Status Age Type d #Error **Prescription** Specs: <u>Other</u> Comment: <u>Next</u> Steps: Limiting Factor and No

Total Treatment
Acreage Proposed:

0

Treatment Reason

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Out of YOE -- Treatments Prescribed with No Limiting Factor

Year of Entry: 2013

Treatment	Acres	Stage1	Size	Stand	Treatment	Treatment	Cover Type	Approval
Name		CoverType	Density	Age	Type	Method	Objective	Status
12060_OutOfY OE-Cut	6.0				Harvest	Clearcut with Reserves	4130 - Aspen	Cmpt. Review Proposal

<u>Prescription</u> Clearcut 2" dbh and above except cedar, hemlock and pine if present.

Specs:

Other Comments:

Next Steps:

Total Treatment

Acreage Proposed: 6.0

s t	Crystal Fall		5 – Foi	rested Sta	nds Compartment: 057 Year of Entry: 2013	
a n d	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
1	4119 - Mixed Northern Hardwoods	High Density Pole	6.3	83	111-140	not a pretty stand!
2	4110 - Sugar Maple Association	High Density Pole	5.0	83	81-110	small pocket of bigtooth aspen next to road on north
3	4116 - Mixed N. Hardwood - Aspen	High Density Pole	9.9	84	111-140	This stand was marked with C54, Elf Pants TS YOE 2008. It is sold but not cut as of 1/2011
4	4139 - Aspen, Mixed Deciduous	High Density Log	5.3	62		Stand is rocky, shallow soils.
5	6112 - Lowland Aspen	High Density Log	28.3	50		there is some blow down of larger trees; ground has soft soils. White birch is concentrated on east end
6	6112 - Lowland Aspen	Medium Density Log	5.9	75		not a very thick stand; very thick red maple/brush understory
7	6118 - Lowland Deciduous with Cedar	Medium Density Pole	41.4	81		quite wet
9	4130 - Aspen	High Density Pole	7.2	29		cut in 1982
10	4110 - Sugar Maple Association	High Density Pole	96.9	Uneven Age	81-110	C57 Consultant TS cut 2005
11	4130 - Aspen	High Density Log	22.3	75		
12	6120 - Lowland Cedar	High Density Log	16.5	85		
13	4116 - Mixed N. Hardwood - Aspen	High Density Pole	27.0	83	81-110	thinned in 2005 C57 Consultant TS
14	4130 - Aspen	High Density Sapling	14.9	5		Atheist Bear TS cut in 2005
15	6120 - Lowland Cedar	High Density Pole	22.7	87		Quite wet
16	4119 - Mixed Northern Hardwoods	High Density Pole	18.8	84	111-140	Steep hill in center of stand begins a ridge that goes westward into stand.
18	4130 - Aspen	High Density Log	70.7	65		
19	4130 - Aspen	High Density Log	9.6	78		
20	4130 - Aspen	High Density Pole	15.7	29		

s t	Crystal Falls Mgt. Unit			5 – Fo	orested Sta	nds Compartment: 057 Year of Entry: 2013
a n d	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
21	4130 - Aspen	High Density Sapling	2.7	15		2nd Chance TS cut 1995
23	4130 - Aspen	High Density Pole	107.8	29		Sale cut in 1982
25	4110 - Sugar Maple Association	High Density Pole	14.2	84	111-140	Losing aspen in stand
26	4130 - Aspen	Low Density Pole	7.8	30		This is an old grass opening that is being reclaimed
27	4130 - Aspen	High Density Log	25.0	61		
28	4130 - Aspen	High Density Pole	19.4	33		
29	4110 - Sugar Maple Association	High Density Pole	37.2	84	81-110	C57 Consultant TS cut 2005
30	4139 - Aspen, Mixed Deciduous	High Density Pole	12.8	80		Top of rock going east is small hardwood knob, mostly basswood. If/when treated, remove all but sugar maple as rest of hardwood mix is poor quality. Manage as even aged.
31	4130 - Aspen	High Density Sapling	31.9	29		
32	4130 - Aspen	High Density Sapling	63.8	13		6 Mile Racoon TS closed in 1997
33	42310 - Planted Spruce	High Density Pole	12.7	50	111-140	Appears that most of the aspen and other species were removed during the 6 Mile Raccoon TS in 1997; a few white spruce trees were removed.
34	4110 - Sugar Maple Association	High Density Pole	57.6	84		BA is heavy to Basswood
36	4134 - Aspen, Spruce/Fir	High Density Pole	6.1	55		One of the few 50 yr old stands; it is holding up fine. will cut with next entry and adjacent stand to southwest
37	4319 - Mixed Upland Forest	High Density Log	35.2	58		Saw 3 cedar & 2 hemlock trees. Stand has 2-age characteristics; trees are being blown down, many of the conifers are being snapped off also
38	4130 - Aspen	High Density Sapling	9.4	13		Stand was part of 6 Mile Raccoon TS cut 1997
39	4191 - Mixed Upland Deciduous with Conifer	High Density Pole	58.6	50	111-140	
41	6132 - Mixed Lowland Forest with Cedar	High Density Pole	121.6	87		Black ash is fairly wide spread in this stand. Cedar is concentrated in west portion; birch is more in the east portion, particularly in one clump

s t				5 – Fo	orested Stand	S Compartment: 057 Year of Entry: 2013
a n d	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
43	4130 - Aspen	High Density Pole	52.9	12		Uranium Mine TS closed 1998
45	4130 - Aspen	High Density Pole	71.8	45		
46	4130 - Aspen	High Density Sapling	30.3	13		6 Mile Raccoon Sale closed 1997
47	4130 - Aspen	High Density Sapling	77.5	12		Uranium Mine TS closed 1998
48	4319 - Mixed Upland Forest	High Density Pole	79.3	49		Possibility for cut if needed.
50	6120 - Lowland Cedar	High Density Pole	44.8	85		
51	4119 - Mixed Northern Hardwoods	High Density Pole	11.1	84	81-110	Steep on east, several east/west valleys. Not great hardwood quality. Serves as a good cover/food diversion within a sea of aspen. Larger aspen located on fringes of stand.
52	4134 - Aspen, Spruce/Fir	Low Density Sapling	14.1	25		An opening that is being reclaimed
53	4130 - Aspen	High Density Log	27.7	65		
55	6128 - Lowland Coniferous, Mixed Deciduous	Medium Density Pole	28.9	87		There is a rock knob in far east

6 - Nonforested Stands

Compartment: 057 Year of Entry: 2013



Stand	Cover Type	Acres	Managed Site	Management Priority (Objective)	General Comments:
8	310 - Herbaceous Openland	2.9	N\A	Unspecified	
17	622 - Lowland Shrub	58.3	N\A	Unspecified	
22	622 - Lowland Shrub	6.5	N\A	Unspecified	
24	3301 - Low Density Deciduous Tree	28.5	N\A	Unspecified	low density young tamarack
35	310 - Herbaceous Openland	1.1	N\A	Unspecified	
40	122 - Road/Parking Lot	2.1	N\A	Unspecified	
42	622 - Lowland Shrub	2.9	N\A	Unspecified	
44	622 - Lowland Shrub	16.9	N\A	Unspecified	
49	622 - Lowland Shrub	136.9	N\A	Unspecified	
54	622 - Lowland Shrub	5.0	N\A	Unspecified	
56	720 - Exposed Rock	1.5	N\A	Unspecified	

Compartment: 057 Year of Entry: 2013



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

Compartment: 057 Year of Entry 2013



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.

Conservation Area	on Type	Description	HCVA = High Conservation Value Area SCA = Special Conservation Area
SCA	Concentrated Recreation Area	Facilities that are designed and maintained for routine or h State Forest campgrounds, motorized and non-motorized access sites.	
SCA	Habitat Area	An area that provide some specific need for the life cycle of and Waterfowl Production Areas, deer wintering complexe openings and savannas. Habitat areas are distinct from criendangered or threatened species (such as Kirtland's wart general in nature, are not primarily associated with threate covered by species recovery plans that are developed in c	s in lowland conifer communities, grassland tical habitat designated for recovery of oler or piping plover areas) in that they are more ned or endangered species, and are not