



Compartment Review Presentation

Crystal Falls Forest Management Unit

Compartment 12060

Entry Year 2015

Acreage: 2,316

County Dickinson

Management Area: Ralph Ground Moraine

Revision Date: 2013-04-23

Stand Examiner:

Legal Description:

T42N R28W Sec 17-20, 30 T42N R29W Sec 24, 25

Identified Planning Goals:

This compartment is over half upland, the majority of it being aspen cover type. Management of all stands is to balance age class distribution and allow best suited species to grow on best suited sites while promoting sustainable timber production and enhancing and protecting wildlife habitat. Hardwood management goals are to put growth on the best trees in place by removing crown competition. Protect all bodies of water, especially the East Branch of the Sturgeon River.

Soil and topography:

The uplands are predominantly fairly shallow soiled Pemene-rock outcrops with some fine sandy loams. The lowlands are flat, very poorly drained and/or saturated, with Carbondale/Cathro mucks or Waucedah Cathro complex.

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

There are some private parcels intermingled within this compartment. Private ownership bounds most of the compartment exterior boundary except for the northwest.

Unique Natural Features:

Felch Mountain Flooding, which is man-made.

Archeological, Historical, and Cultural Features:

None identified.

Special Management Designations or Considerations:

Deer wintering complex in the north two-thirds. The Felch Mountain Flooding State Wildlife Management Area in the south third of the compartment will be discussed to have this designation removed.

Watershed and Fisheries Considerations:

Six Mile Creek joins the East Branch of the Sturgeon River in the center of the compartment. Felch Mountain Flooding.

Wildlife Habitat Considerations:

This compartment falls within the historic Sturgeon River Deeryard. Winter cover and associated travel corridors will be protected. Transition zones between upland and lowlands are highly productive and provide vital cover and forage for game and nongame species and are particularly important for deer to be able to utilize the forage in the upland stands adjacent to winter cover. The Felch Mountain water control structure was decommissioned and removed. Beaver now maintain a wetland complex that provides valuable habitat for wetland associated species. This area also provides ample recreational opportunities for hunters and trappers. Drainages will be protected as will the fragile soils on rock outcrops and steep slopes so that sensitive species will not be negatively impacted.

Mineral Resource and Development Concerns and/or Restrictions

Surface sediments consist of medium-textured glacial till. There is insufficient data to determine the glacial drift thickness. Precambrian Archean granite/gneiss subcrops below the glacial drift. There is not a current economic use for these rocks, although they have building stone potential. A rock quarry (? type) lies three miles to the north. Iron mines are located approximately twelve miles to the south. Gravel pits are not indicated in this area, but there appears to be good gravel potential. Most of this area was previously leased for metallic exploration and State land to the northwest is currently leased. There is no economic oil and gas production in the UP.

Vehicle Access:

Wickman Marsh Road and Spring Hill Road are county maintained gravel roads that provide access to some of the compartment; the north third is limited via private gate access.

Survey Needs:

Will be needed where treatments are prescribed against private.

Recreational Facilities and Opportunities:

The area is heavily used by loggers, hunters, fisherpeople, campers, trappers, local camp owners, general recreationists. Snowmobile trail #16 crosses through the south third of the compartment.

Fire Protection:

Felch protection area. Access to much of the interior of this compartment would be difficult.

Additional Compartment Information:

The following reports from the Inventory are attached:

- Total Acres by Cover Type and Age Class**
- Cover Type by Harvest Method**
- Proposed Treatments – No Limiting Factors**
- Proposed Treatments – With Limiting Factors**
- Stand Details (Forested and Nonforested)**
- Dedicated and Proposed Special Conservation Areas**
- Site Condition Details**

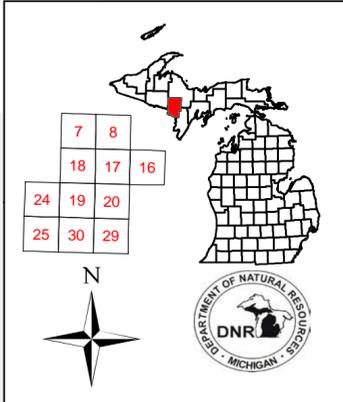
The following information is displayed, where pertinent, on the attached compartment maps:

- Base feature information, stand boundaries, cover types, and numbers**
- Proposed treatments**
- Site condition boundaries**
- Details on the road access system**

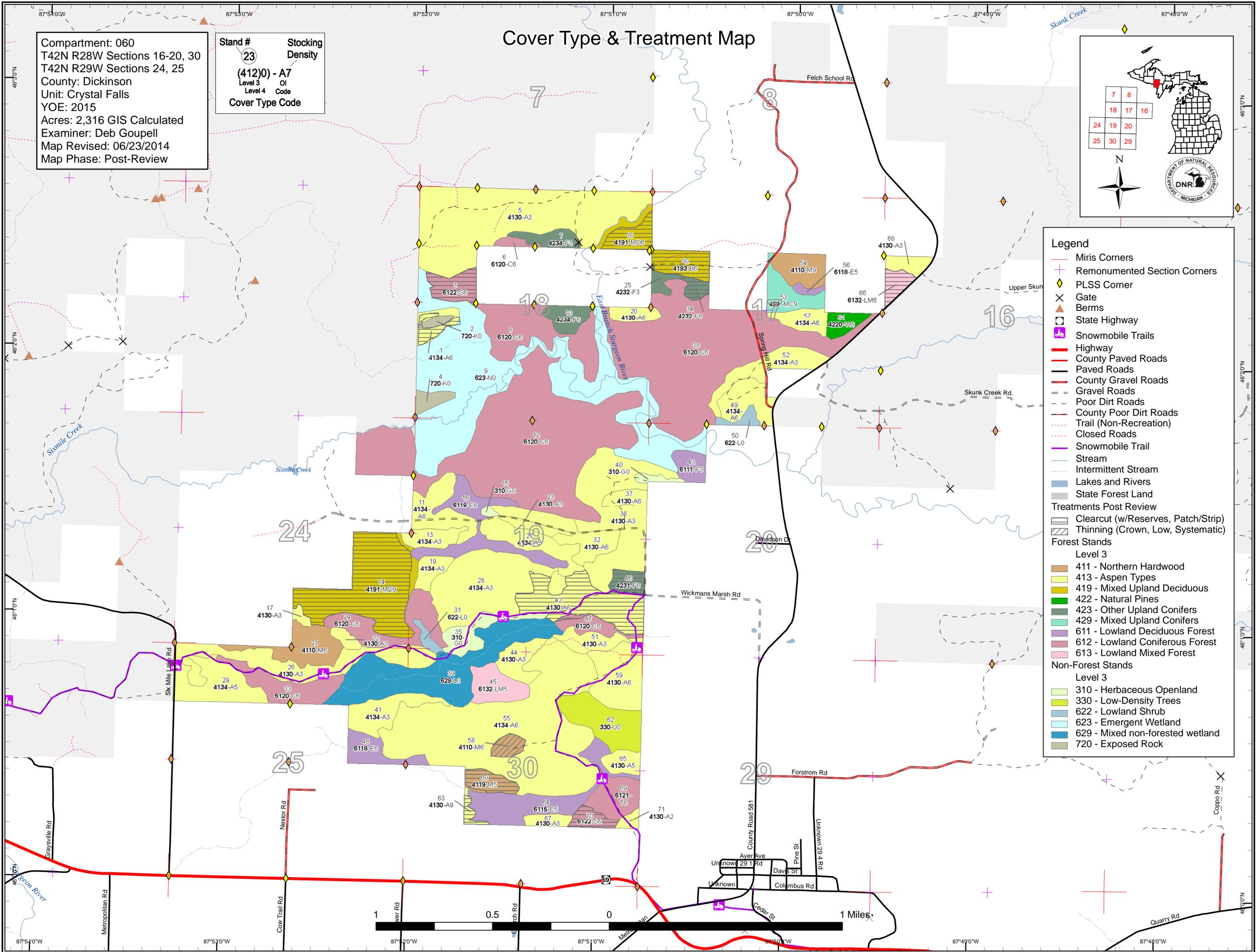
Cover Type & Treatment Map

Compartment: 060
 T42N R28W Sections 16-20, 30
 T42N R29W Sections 24, 25
 County: Dickinson
 Unit: Crystal Falls
 YOE: 2015
 Acres: 2,316 GIS Calculated
 Examiner: Deb Goupell
 Map Revised: 06/23/2014
 Map Phase: Post-Review

Stand #
 (4120) - A7
 Level 3 OI
 Level 4 Code
 Cover Type Code



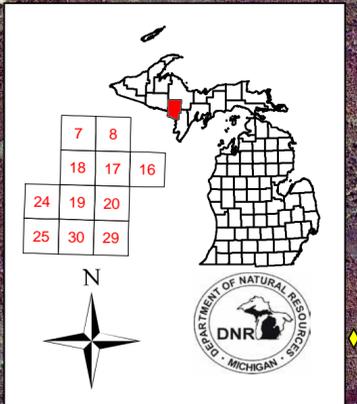
- ### Legend
- Miris Corners
 - Remonumented Section Corners
 - PLS Corner
 - Gate
 - Berms
 - State Highway
 - Snowmobile Trails
 - Highway
 - County Paved Roads
 - Paved Roads
 - County Gravel Roads
 - Gravel Roads
 - Poor Dirt Roads
 - County Poor Dirt Roads
 - Trail (Non-Recreation)
 - Closed Roads
 - Snowmobile Trail
 - Stream
 - Intermittent Stream
 - Lakes and Rivers
 - State Forest Land
- ### Treatments Post Review
- Clearcut (w/Reserves, Patch/Strip)
 - Thinning (Crown, Low, Systematic)
- ### Forest Stands
- Level 3
- 411 - Northern Hardwood
 - 413 - Aspen Types
 - 419 - Mixed Upland Deciduous
 - 422 - Natural Pines
 - 423 - Other Upland Conifers
 - 429 - Mixed Upland Conifers
 - 611 - Lowland Deciduous Forest
 - 612 - Lowland Coniferous Forest
 - 613 - Lowland Mixed Forest
- ### Non-Forest Stands
- Level 3
- 310 - Herbaceous Openland
 - 330 - Low-Density Trees
 - 622 - Lowland Shrub
 - 623 - Emergent Wetland
 - 629 - Mixed non-forested wetland
 - 720 - Exposed Rock



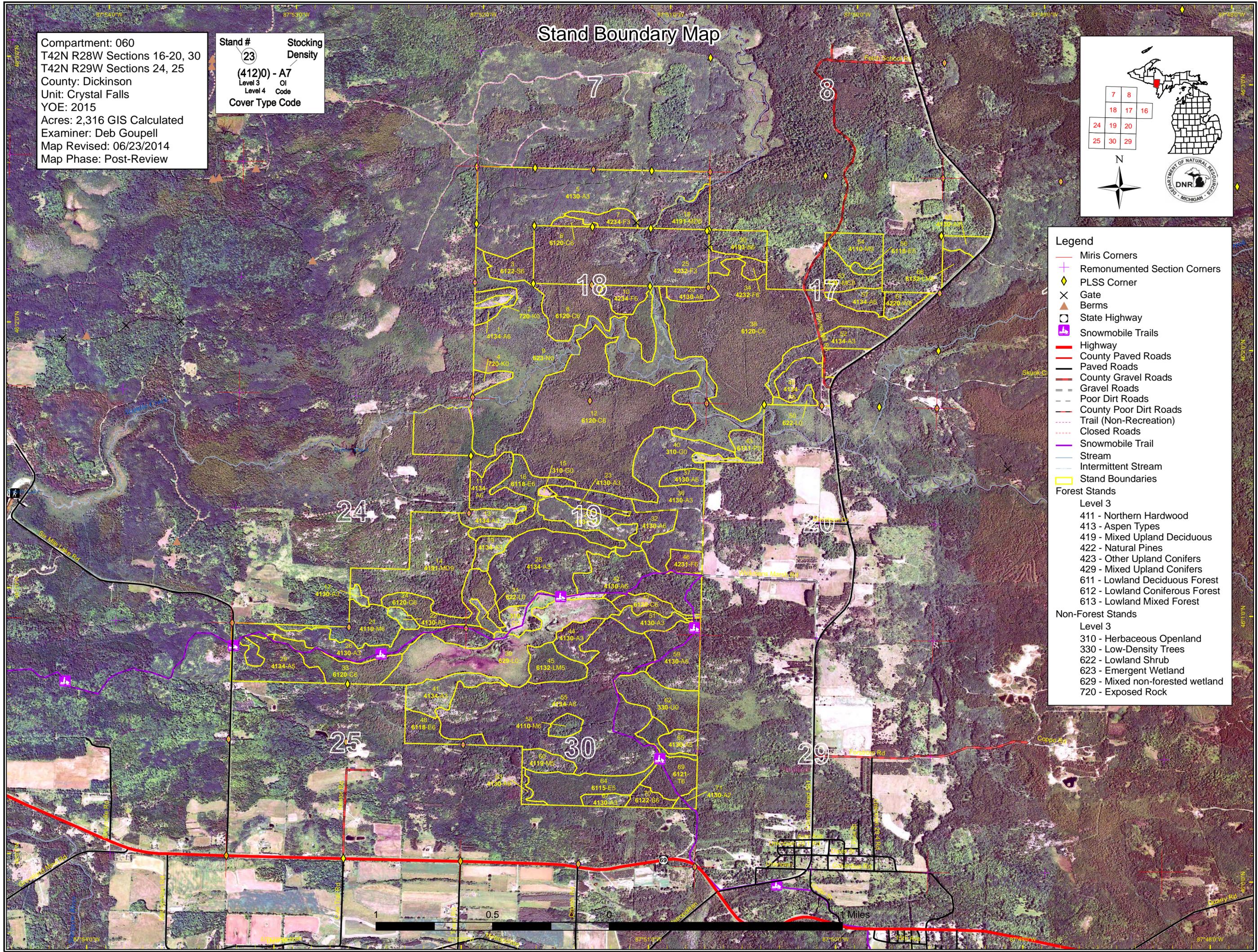
Stand Boundary Map

Compartment: 060
 T42N R28W Sections 16-20, 30
 T42N R29W Sections 24, 25
 County: Dickinson
 Unit: Crystal Falls
 YOE: 2015
 Acres: 2,316 GIS Calculated
 Examiner: Deb Goupell
 Map Revised: 06/23/2014
 Map Phase: Post-Review

Stand #
 23
Stocking Density
 (4120) - A7
 Level 3 OI
 Level 4 Code
Cover Type Code



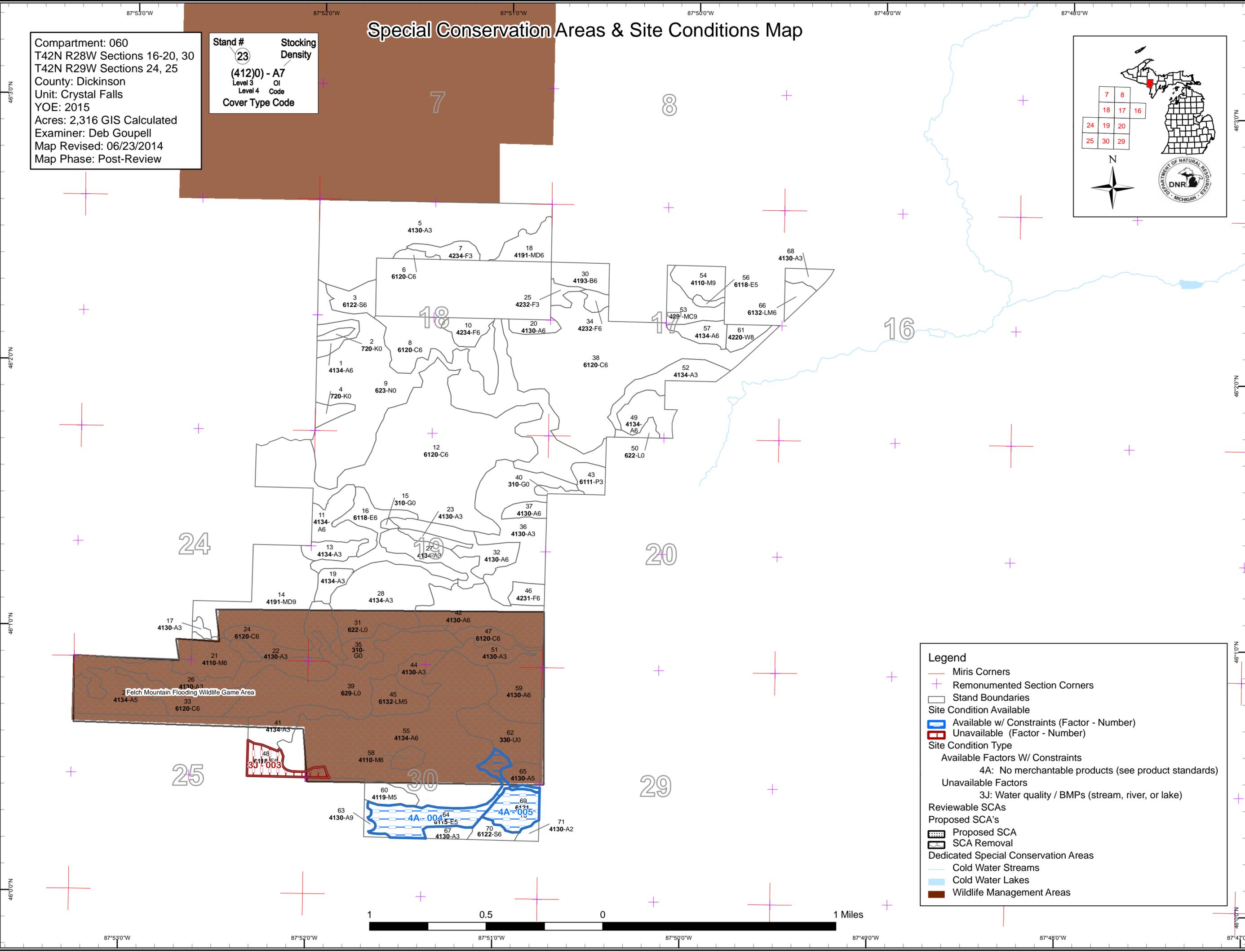
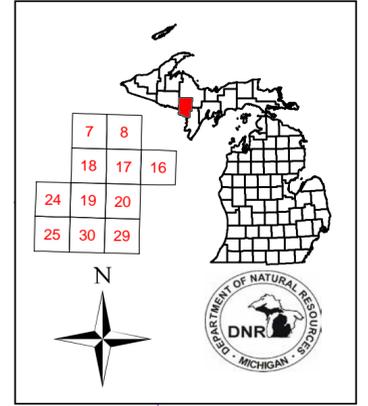
- Legend**
- Miris Corners
 - Remonumented Section Corners
 - ◆ PLSS Corner
 - × Gate
 - △ Berms
 - State Highway
 - Snowmobile Trails
 - Highway
 - County Paved Roads
 - Paved Roads
 - County Gravel Roads
 - Gravel Roads
 - Poor Dirt Roads
 - County Poor Dirt Roads
 - Trail (Non-Recreation)
 - Closed Roads
 - Snowmobile Trail
 - Stream
 - Intermittent Stream
 - Stand Boundaries
- Forest Stands**
- Level 3
- 411 - Northern Hardwood
 - 413 - Aspen Types
 - 419 - Mixed Upland Deciduous
 - 422 - Natural Pines
 - 423 - Other Upland Conifers
 - 429 - Mixed Upland Conifers
 - 611 - Lowland Deciduous Forest
 - 612 - Lowland Coniferous Forest
 - 613 - Lowland Mixed Forest
- Non-Forest Stands**
- Level 3
- 310 - Herbaceous Openland
 - 330 - Low-Density Trees
 - 622 - Lowland Shrub
 - 623 - Emergent Wetland
 - 629 - Mixed non-forested wetland
 - 720 - Exposed Rock



Special Conservation Areas & Site Conditions Map

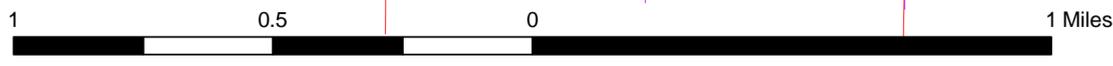
Compartment: 060
 T42N R28W Sections 16-20, 30
 T42N R29W Sections 24, 25
 County: Dickinson
 Unit: Crystal Falls
 YOE: 2015
 Acres: 2,316 GIS Calculated
 Examiner: Deb Goupell
 Map Revised: 06/23/2014
 Map Phase: Post-Review

Stand #
 (4120) - A7
 Level 3 OI
 Level 4 Code
 Cover Type Code



Legend

- Miris Corners
- + Remonumented Section Corners
- Stand Boundaries
- Site Condition Available
- ▭ Available w/ Constraints (Factor - Number)
- ▭ Unavailable (Factor - Number)
- Site Condition Type
- Available Factors W/ Constraints
- 4A: No merchantable products (see product standards)
- Unavailable Factors
- 3J: Water quality / BMPs (stream, river, or lake)
- Reviewable SCAs
- Proposed SCAs
- ▭ Proposed SCA
- ▭ SCA Removal
- Dedicated Special Conservation Areas
- Cold Water Streams
- Cold Water Lakes
- Wildlife Management Areas



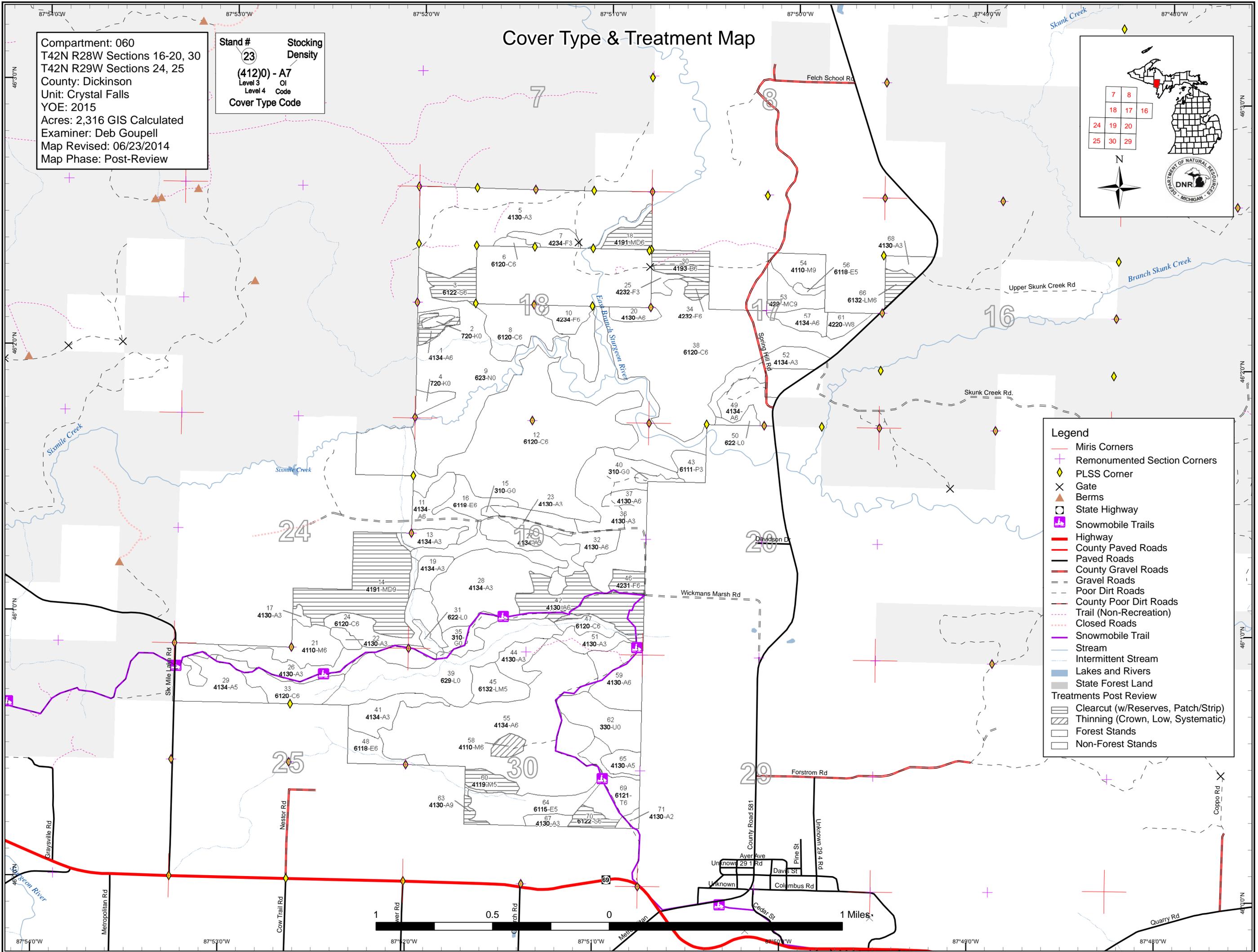
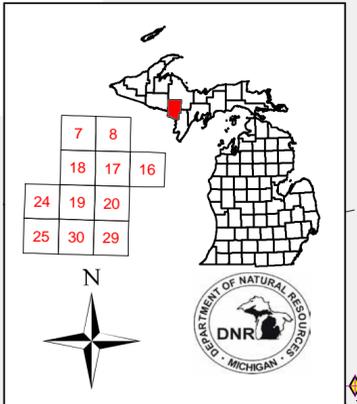
87°53'0"W 87°52'0"W 87°51'0"W 87°50'0"W 87°49'0"W 87°48'0"W

46°30'0"N 46°29'0"N 46°28'0"N 46°27'0"N 46°26'0"N 46°25'0"N 46°24'0"N 46°23'0"N 46°22'0"N 46°21'0"N 46°20'0"N

Cover Type & Treatment Map

Compartment: 060
 T42N R28W Sections 16-20, 30
 T42N R29W Sections 24, 25
 County: Dickinson
 Unit: Crystal Falls
 YOE: 2015
 Acres: 2,316 GIS Calculated
 Examiner: Deb Goupell
 Map Revised: 06/23/2014
 Map Phase: Post-Review

Stand #
 23
(4120) - A7
 Level 3 OI
 Level 4 Code
Cover Type Code



Legend

- Miris Corners
- Remonumented Section Corners
- PLSS Corner
- Gate
- Berms
- State Highway
- Snowmobile Trails
- Highway
- County Paved Roads
- Paved Roads
- County Gravel Roads
- Gravel Roads
- Poor Dirt Roads
- County Poor Dirt Roads
- Trail (Non-Recreation)
- Closed Roads
- Snowmobile Trail
- Stream
- Intermittent Stream
- Lakes and Rivers
- State Forest Land
- Treatments Post Review**
- Clearcut (w/Reserves, Patch/Strip)
- Thinning (Crown, Low, Systematic)
- Forest Stands
- Non-Forest Stands



Report 1 – Total Acres by Cover Type and Age Class



Age Class

	Non-Forest	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100-109	110-119	120-129	130-139	140-149	150+	Uneven-Aged	Total
Aspen	0	77	261	200	224	182	0	0	9	4	0	0	0	0	0	0	0	0	957
Cedar	0	0	0	0	0	0	0	0	0	43	33	478	0	0	0	0	0	0	554
Exposed Rock	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10
Herbaceous Openland	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22
Low-Density Trees	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34
Lowland Aspen/Balsam Poplar	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11
Lowland Deciduous	0	0	0	0	0	0	0	0	39	59	0	0	0	0	0	0	0	0	98
Lowland Mixed Forest	0	0	0	0	0	0	0	0	28	0	0	0	0	0	0	0	0	0	28
Lowland Shrub	97	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	97
Lowland Spruce/Fir	0	0	0	0	0	0	0	0	0	23	0	0	0	0	0	0	0	0	23
Marsh	208	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	208
Mixed Upland Deciduous	0	0	0	0	0	0	0	0	85	18	0	0	0	0	0	0	0	0	103
Northern Hardwood	0	0	0	0	0	0	0	0	0	46	18	0	0	0	0	0	0	0	64
Paper Birch	0	0	0	0	0	0	0	0	0	17	0	0	0	0	0	0	0	0	17
Tamarack	0	0	0	0	0	0	0	0	0	21	0	0	0	0	0	0	0	0	21
Upland Conifers	0	0	0	0	0	0	0	0	0	18	0	0	0	0	0	0	0	0	18
Upland Spruce/Fir	0	0	0	0	5	23	9	0	0	5	0	0	0	0	0	0	0	0	42
White Pine	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0	9
Total	371	88	261	200	229	205	9	0	161	263	51	478	0	0	0	0	0	0	2316



Report 2 – Treatment Summary

Crystal Falls Mgt. Unit
Year of Entry: 2015

Acres of Harvest

Compartment 60
Total Compartment Acres: 2,316

Commercial Harvest - 217
Harvests with Site Condition - 8.
Next Step Harvest - 0
Habitat Cut - 3

Cover Type by Harvest Method

	Clearcut	Selection	Patch Clearcut	Seed Tree	Shelterwood	Thinning	Overstory Removal	Salvage	Other	Total Acres
Aspen	62	0	0	0	0	0	0	0	0	62
Cedar	1	0	0	0	0	0	0	0	0	1
Lowland Mixed Forest	8	0	0	0	0	0	0	0	0	8
Lowland Spruce/Fir	21	0	0	0	0	0	0	0	0	21
Mixed Upland Deciduous	84	0	0	0	0	0	0	0	0	84
Northern Hardwood	11	0	0	0	0	7	0	0	0	18
Paper Birch	18	0	0	0	0	0	0	0	0	18
Upland Spruce/Fir	16	0	0	0	0	0	0	0	0	16
Total	222	0	0	0	0	7	0	0	0	229

Proposed and Next Step Treatments by Harvest Method

	Harvest	Site Prep	Planting	Seeding	Burning	Pesticide	Monitoring	Other	Non-Forest Mgt.	Total Acres
Current	229	0	0	0	0	0	0	0	0	229
Next Step	0	0	0	0	0	0	18	0	0	18
Total	229	0	0	0	0	0	18	0	0	246



Stand Name	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
1	12060_OutOfY OE-Cut_small	7.5	4134 - Aspen, Spruce/Fir	Poletimber Well	70	Unspec ified	Harvest	Clearcut with Retention	4130 - Aspen	Even-Aged	Field Boundary

Prescription Clearcut 2" dbh and above except cedar, hemlock and pine if present.

Specs:

Next Step

Treatments:

Acceptable

Regen:

Other

Comment:

Proposed Start Date: 10/1 /2012

Site Condition: None

3	12060003-Cut	12.6	6122 - Black Spruce	Poletimber Well	89	Unspec ified	Harvest	Clearcut with Retention	6121 - Tamarack	Even-Aged	Draft Field Boundary
---	--------------	------	---------------------	--------------------	----	-----------------	---------	----------------------------	-----------------	-----------	-------------------------

Prescription Remove all species 2"dbh and greater except cedar. Pocket of cedar in north central will be retention; include some black spruce for seed trees

Specs: in exclusion.. Expect tamarack to reclaim stand initially with black spruce recruiting later.

Next Step

Treatments:

Acceptable

Regen:

Other

Old next step comments: Check regen per WIs. Acceptable regen includes birch, balm of gilead, aspen, tamarack, spruce, fir.

Comment:

Proposed Start Date: 10/1 /2014

Site Condition: None

14	12060014-Cut	71.1	4191 - Mixed Upland Deciduous with Conifer	Sawtimber Well	77	Unspec ified	Harvest	Clearcut with Retention	4191 - Mixed Upland Deciduous with Conifer	Even-Aged	Draft Field Boundary
----	--------------	------	--	-------------------	----	-----------------	---------	----------------------------	---	-----------	-------------------------

Prescription Cut all stems 2"dbh and greater except cedar, white or red pine. Buffer 100 feet from stream. Expect ~20% will be unharvestable due to rock faces. Some budworm damage, particularly larger spruce/fir and on rock knobs. Access from north will need to be across private, which has not been requested yet. Snowmobile trail through wet areas limits accessibility via this route, but may need to be considered. Leave hemlock, if found.

Next Step

Treatments:

Acceptable

Regen:

Other

Old next step comments: Acceptable species: red maple, spruce/fir, balm of gilead, aspen, pine, birch

Comment:

Proposed Start Date: 10/1 /2014

Site Condition: None



S t a n d	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
18	12060018-Cut	13.1	4191 - Mixed Upland Deciduous with Conifer	Poletimber Well	85	Unspec ified	Harvest	Clearcut with Retention	4191 - Mixed Upland Deciduous with Conifer	Even-Aged	Draft Field Boundary

Prescription Cut all stems 2" dbh and greater except cedar, red pine, white pine. 100 foot buffer to E. Br. Sturgeon river will serve as retention. North likely to
Specs: have greater than 100 ft, due to steep terrain.

Next Step
Treatments:

Acceptable
Regen:

Other Access will be through private. Larger white spruce hit hard by spruce budworm; aspen and birch are breaking up. Rocky knobs. Cut through
Comment: pocket of tag/ash/red maple south central with some cedar (leaving cedar). Old next step comments: Expect aspen-mixed deciduous regen: red maple, spruce/fir, black ash, possibly birch.

Proposed Start Date: 10/1 /2014

Site Condition: None

30	12060030-Cut	17.7	4193 - Birch, Aspen	Poletimber Well	85	Unspec ified	Harvest	Clearcut with Retention	4191 - Mixed Upland Deciduous with Conifer	Even-Aged	Field Boundary
----	--------------	------	---------------------	--------------------	----	-----------------	---------	----------------------------	---	-----------	----------------

Prescription Cut all stems 2" dbh and greater except cedar, white pine, red pine, hemlock (saw 1). Hardwood quality only in far north/northeast corner: this
Specs: may serve as retention. Consider green-tree marking good quality sugar maple/birch groups or individual trees.

Next Step
Treatments:

Acceptable aspen, mixed hardwood, mixed softwood
Regen:

Other Pine component heavier south of road. Access will be through private. Old next step comments: Check regen per WIs: acceptable regeneration
Comment: includes aspen/maple/birch/pine/spruce/fir

Proposed Start Date: 10/1 /2014

Site Condition: None

34	12060034-Cut	6.7	42320 - Upland Spruce	Poletimber Well	80	Unspec ified	Harvest	Clearcut with Retention	42340 - Upland Spruce/Fir	Even-Aged	Draft Field Boundary
----	--------------	-----	--------------------------	--------------------	----	-----------------	---------	----------------------------	------------------------------	-----------	-------------------------

Prescription Cut all stems greater than 2" dbh except cedar, red pine, white pine.
Specs:

Next Step
Treatments:

Acceptable
Regen:

Other Old next step comments: check regen per WIs: acceptable species are spruce/maple/aspen/birch/fir/tamarack/pine
Comment:

Proposed Start Date: 10/1 /2014

Site Condition: None



S t a n d	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
42	12060042-Cut	51.1	4130 - Aspen	Poletimber Well	49	Unspec ified	Harvest	Clearcut with Retention	4130 - Aspen	Even-Aged	Draft Field Boundary
<u>Prescription</u> Cut all stems 2"dbh and greater except cedar, red pine, white pine. In stand retention will be hardwood pocket in central north, however, aspen											
<u>Specs:</u> should be removed from this patch. Snowmobile trail will need to be posted if harvested in winter.											
<u>Next Step</u>											
<u>Treatments:</u>											
<u>Acceptable</u>											
<u>Regen:</u>											
<u>Other</u> spruce/fir not doing well on rock outcrops. Some autumn olive on rocks in southwest/west. Sugar maple saplings scattered heavily but not											
<u>Comment:</u> consistently throughout the stand. Some rock ridges east/west south of road and out crop on west edge. Old next step comments: check regen per WIs. Acceptable species include aspen/maple/spruce/fir/birch											
<u>Proposed Start Date:</u> 10/1 /2014											
Site Condition: None											
46	12060046-Cut	9.4	42310 - Planted Spruce	Poletimber Well	55	141- 170	Harvest	Clearcut	42110 - Planted Red Pine	Even-Aged	Draft Field Boundary
<u>Prescription</u> Cut all stems. Request no retention due to small size and silvicultural work post harvest. Snowmobile trail will need to be posted if harvested in											
<u>Specs:</u> winter.											
<u>Next Step</u>											
<u>Treatments:</u>											
<u>Acceptable</u>											
<u>Regen:</u>											
<u>Other</u> Old next step comments: Herbicide, trench, plant to red pine.											
<u>Comment:</u>											
<u>Proposed Start Date:</u> 10/1 /2014											
Site Condition: None											
47	12060047-Cut	1.2	6120 - Lowland Cedar	Poletimber Well	87	Unspec ified	Harvest	Clearcut with Retention	6121 - Tamarack	Even-Aged	Draft Field Boundary
<u>Prescription</u> Cut all stems 2"dbh and greater except cedar. This will be 100 ft from drainage/stream. Only a portion of this stand will be harvested (northwest).											
<u>Specs:</u>											
<u>Next Step</u>											
<u>Treatments:</u>											
<u>Acceptable</u>											
<u>Regen:</u>											
<u>Other</u> Old next step comments: Check regen per WIs. Acceptable regen includes tamarack/birch/balm of gilead/spruce											
<u>Comment:</u>											
<u>Proposed Start Date:</u> 10/1 /2014											
Site Condition: None											
58	12060058-Cut	7.0	4110 - Sugar Maple Association	Poletimber Well	87	111- 140	Harvest	Crown Thinning	4110 - Sugar Maple Association	Even-Aged	Draft Field Boundary
<u>Prescription</u> Thin to BA 80 removing poorer formed trees and releasing crowns of crop trees. Some sugar maple saplings on north facing slope should be											
<u>Specs:</u> released.											
<u>Next Step</u>											
<u>Treatments:</u>											
<u>Acceptable</u>											
<u>Regen:</u>											
<u>Other</u>											
<u>Comment:</u>											
<u>Proposed Start Date:</u> 10/1 /2014											
Site Condition: None											

S
t
a
n
d

Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
60 12060060-Cut	11.0	4119 - Mixed Northern Hardwoods	Poletimber Medium	87	81-110	Harvest	Clearcut with Retention	4116 - Mixed N. Hardwood - Aspen	Even-Aged	Draft Field Boundary

Prescription Clearcut all trees 2" dbh and greater. 100 ft buffer to bed/bank on far southwest. If present, any hemlock, cedar, white pine and red pine will be retained.
Specs:

Next Step
Treatments:

Acceptable
Regen:

Other Very poor quality hardwood stand, low BA, rocky ridges, porcupines chewing up basswood. This stand should be managed for pulp. Old next
Comment: step comments: Check for regen per WIs. Acceptable species include maple, birch, spruce/fir, aspen, pine.

Proposed Start Date: 10/1 /2014

Site Condition: None

63 12060063-Cut	3.3	4130 - Aspen	Sawtimber Well	87	Unspecified	Harvest	Clearcut with Retention	4130 - Aspen	Even-Aged	Draft Field Boundary
-----------------	-----	--------------	----------------	----	-------------	---------	-------------------------	--------------	-----------	----------------------

Prescription Cut all trees 2" dbh and greater. Retention will be 100' buffer from bed/bank on far north. Best access will be across private.
Specs:

Next Step
Treatments:

Acceptable
Regen:

Other Old next step comments: Check regen per WIs. Acceptable species include aspen, birch, spruce/fir, pine, balm of gilead, maple
Comment:

Proposed Start Date: 10/1 /2014

Site Condition: None

66 12060066-Cut	8.3	6132 - Mixed Lowland Forest with Cedar	Poletimber Well	72	Unspecified	Harvest	Clearcut with Retention	6111 - Lowland Balsam Poplar	Even-Aged	Draft Field Boundary
-----------------	-----	--	-----------------	----	-------------	---------	-------------------------	------------------------------	-----------	----------------------

Prescription Cut all stems 2" dbh and greater except cedar.
Specs:

Next Step
Treatments:

Acceptable
Regen:

Other Expect balm of gilead to be primary species initially. Old next step comments: check for regen per WIs. Acceptable species include balm of
Comment: gilead, aspen, spruce/fir, tamarack, birch.

Proposed Start Date: 10/1 /2014

Site Condition: None

70 12060070-Cut	8.6	6122 - Black Spruce	Poletimber Well	87	Unspecified	Harvest	Clearcut	6121 - Tamarack	Even-Aged	Draft Field Boundary
-----------------	-----	---------------------	-----------------	----	-------------	---------	----------	-----------------	-----------	----------------------

Prescription Cut all stems 2" dbh and greater. Winter cut. Expect tamarack to reconstitute stand initially with black spruce coming in later. Leave 1 or 2 one-tenth-acre seed source pockets in west OR a strip along west side.. Any cedar will be retained. Best access would be across private on south to reduce snowmobile trail impact.
Specs:

Next Step
Treatments:

Acceptable
Regen:

Other Old next step comments: Check regen per WIs.
Comment:

Proposed Start Date: 10/1 /2014

Site Condition: No Markets



S
t
a
n
d

Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
----------------	-------	-----------------	--------------	-----------	----------	----------------	------------------	----------------------	---------------	-----------------

Total Treatment
Acreage Proposed: 228.5

Dominant Site Conditions

4A

Aspen	
Cedar	
Exposed Rock	
Herbaceous Openland	
Low-Density Trees	
Lowland Aspen/Balsam Poplar	
Lowland Deciduous	42
Lowland Mixed Forest	
Lowland Shrub	
Lowland Spruce/Fir	
Marsh	
Mixed Upland Deciduous	
Northern Hardwood	
Paper Birch	
Tamarack	21
Upland Conifers	
Upland Spruce/Fir	
White Pine	
Total Forested Acres	63
Relative Percent	

**Due to limitations in the current Site Conditions Analysis tool, all nonforested acres are considered available. Future development will enable analysis of nonforested types.*

Site No.	Dominant Site Cond Availability	Dominant Site Condition	Acres	Other Site Condition	Other Site Condition	Other Site Condition	Other Site Condition
3	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	17	2G: Too wet (sensitive soils, does not include access issues)	Unspecified	Unspecified	Unspecified
Comments:							

Report 5 – Site Conditions

Crystal Falls Mgt. Unit

Compartment: 60

Deb Goupell : Examiner

Year of Entry: 2015

4	Available	4A: No Markets Available for these Forest Products	42	2G: Too wet (sensitive soils, does not include access issues)	Unspecified	Unspecified	Unspecified
Comments: most of the ash is 1 or 2 sticks.							
5	Available	4A: No Markets Available for these Forest Products	21	Unspecified	Unspecified	Unspecified	Unspecified
Comments: average dbh is 5"							

Dominant Site Conditions

4A

Aspen	
Cedar	
Exposed Rock	
Herbaceous Openland	
Low-Density Trees	
Lowland Aspen/Balsam Poplar	
Lowland Deciduous	42
Lowland Mixed Forest	
Lowland Shrub	
Lowland Spruce/Fir	
Marsh	
Mixed Upland Deciduous	
Northern Hardwood	
Paper Birch	
Tamarack	21
Upland Conifers	
Upland Spruce/Fir	
White Pine	
Total Forested Acres	63
Relative Percent	

**Due to limitations in the current Site Conditions Analysis tool, all nonforested acres are considered available. Future development will enable analysis of nonforested types.*

Site No.	Dominant Site Cond Availability	Dominant Site Condition	Acres	Other Site Condition	Other Site Condition	Other Site Condition	Other Site Condition
3	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	17	2G: Too wet (sensitive soils, does not include access issues)	Unspecified	Unspecified	Unspecified
Comments:							

Report 5 – Site Conditions

Crystal Falls Mgt. Unit

Compartment: 60

Deb Goupell : Examiner

Year of Entry: 2015

4	Available	4A: No Markets Available for these Forest Products	42	2G: Too wet (sensitive soils, does not include access issues)	Unspecified	Unspecified	Unspecified
Comments: most of the ash is 1 or 2 sticks.							
5	Available	4A: No Markets Available for these Forest Products	21	Unspecified	Unspecified	Unspecified	Unspecified
Comments: average dbh is 5"							

Dominant Site Conditions

4A

Aspen	
Cedar	
Exposed Rock	
Herbaceous Openland	
Low-Density Trees	
Lowland Aspen/Balsam Poplar	
Lowland Deciduous	42
Lowland Mixed Forest	
Lowland Shrub	
Lowland Spruce/Fir	
Marsh	
Mixed Upland Deciduous	
Northern Hardwood	
Paper Birch	
Tamarack	21
Upland Conifers	
Upland Spruce/Fir	
White Pine	
Total Forested Acres	63
Relative Percent	

**Due to limitations in the current Site Conditions Analysis tool, all nonforested acres are considered available. Future development will enable analysis of nonforested types.*

Site No.	Dominant Site Cond Availability	Dominant Site Condition	Acres	Other Site Condition	Other Site Condition	Other Site Condition	Other Site Condition
3	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	17	2G: Too wet (sensitive soils, does not include access issues)	Unspecified	Unspecified	Unspecified
Comments:							

Report 5 – Site Conditions

Crystal Falls Mgt. Unit

Deb Goupell : Examiner

Compartment: 60

Year of Entry: 2015

4	Available	4A: No Markets Available for these Forest Products	42	2G: Too wet (sensitive soils, does not include access issues)	Unspecified	Unspecified	Unspecified
Comments: most of the ash is 1 or 2 sticks.							
5	Available	4A: No Markets Available for these Forest Products	21	Unspecified	Unspecified	Unspecified	Unspecified
Comments: average dbh is 5"							



Report 6 – 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.

SCA Name	SCA Category	Detail Type	Recommendation	Acres
Felch Mountain Flooding Wildlife Game Area	Habitat Areas or Corridors	Other Habitat Area	SCA Removal	732
Comments Wildlife no longer maintains flooding				



Report 7 – EXISTING SPECIAL CONSERVATION AREA DETAILS

* This is a list of SCA's for this compartment along with a 1/4 mile buffer surrounding the compartment. Refer to the Special Conservation Area Map for locations of the below listed Conservation Areas.

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.



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
1	4134 - Aspen, Spruce/Fir	Poletimber Well	9.4	70	Unspecified	north slope too steep to cut; prescribed for harvest with adjacent compartment for YOE 2013
3	6122 - Black Spruce	Poletimber Well	14.9	89	Unspecified	Tamarack/spruce smaller diameters on far west. All cedar will be retention (pocket of cedar in center). Most of what little aspen is there is on north edge and is dying out. Expect tamarack and spruce regeneration.
5	4130 - Aspen	Sapling Well	146.0	16	Unspecified	Beary Patch, Block and Tackle TS 1999, 2000
6	6120 - Lowland Cedar	Poletimber Well	3.6	89	Unspecified	Pockets where black spruce are have mortality and/or mistletoe (witches brooms, tiny clumps of dead needles). There are strips/pockets of cedar. Where black spruce has succumbed, heavy black spruce and balsam fir regenerating 3 feet +. Much of seedlings/saps are also showing brooming/hooking/tiny clumps of dead needles. Suspect volume too low to salvage.
7	42340 - Upland Spruce/Fir	Sapling Well	10.7	41	Unspecified	Most of the aspen concentrated on NW and north and east pieces of stand. Saw 3 white pine. Very thick spruce/fir, mostly black spruce. Spruce does show some signs of mistletoe.
8	6120 - Lowland Cedar	Poletimber Well	50.6	106	Unspecified	
10	42340 - Upland Spruce/Fir	Poletimber Well	12.2	41	Unspecified	Rock knob on north central. Does not appear to be a great aspen site.
11	4134 - Aspen, Spruce/Fir	Poletimber Well	26.3	47	Unspecified	Far south strip is on northfacing rock and has small dbh; some remnants of overgrown white spruce. hemlock in far northeast pocket, many are snags. aspen larger dbh in north but holding ok.
12	6120 - Lowland Cedar	Poletimber Well	238.3	106	Unspecified	species other than cedar found mostly along edges of stand.
13	4134 - Aspen, Spruce/Fir	Sapling Well	11.8	9	Unspecified	Pulp on the Rocks TS 2006. Red & white pine, aspen on west as buffer to creek on steep slope. Some rock outcrops
14	4191 - Mixed Upland Deciduous with Conifer	Sawtimber Well	85.0	77	Unspecified	Some areas are just unharvestable due to rock faces/cliffs. Leave cedar, expect at least 25% of stand to be uncut. Some budworm evidence, particularly large WS/BF on rock tops.
16	6118 - Lowland Deciduous with Cedar	Poletimber Well	36.0	73	Unspecified	heavier black ash in far west, 8"dbh; heavier to white cedar east 1/2; north heavier to E3 type
17	4130 - Aspen	Sapling Well	2.8	5	Unspecified	
18	4191 - Mixed Upland Deciduous with Conifer	Poletimber Well	18.3	85	Unspecified	Pocket of tag/ash/red maple south central with some cedar. Retention: 100' buffer to E. Br. Sturgeon. Larger white spruce hit hard by spruce budworm; Aspen and birch are breaking up. Expect aspen, mixed deciduous regeneration. Rocky knobs & ridges.



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
19	4134 - Aspen, Spruce/Fir	Sapling Well	9.7	9	Unspecified	Pulp on the Rocks TS 2006. Red pine, white pine buffer on west side. Heavier red maple on west rock ridge/cliff and north center of stand.
20	4130 - Aspen	Poletimber Well	8.2	41	Unspecified	closer to 75% crown closure; very thick BS/BF understory, messy stand; this stand may ultimately end up a fir stand
21	4110 - Sugar Maple Association	Poletimber Well	27.3	88	81-110	So Inclined TS 2009. Aspen coming in under near clearcut units
22	4130 - Aspen	Sapling Well	4.7	5	Unspecified	
23	4130 - Aspen	Sapling Well	6.2	27	Unspecified	Spring Break TS 1988; some larger diameter aspen, not many
24	6120 - Lowland Cedar	Poletimber Well	32.7	93	Unspecified	cedar diameter ranges from 5-12"; cedar not doing well: small, thin crowns. Most of tamarack/black spruce is visible from snowmobile trail on east side along upland. Thick cedar further north and west. Trace of white birch and balm of gilead.
25	42320 - Upland Spruce	Sapling Well	5.3	33	Unspecified	Very thick! trace of quaking aspen saps
26	4130 - Aspen	Sapling Well	53.2	24	Unspecified	Southwest lobe was a separate timber sale in 1997 but difficult to distinguish as a separate cut and therefore lumped with sale cut in 1991. Much of spruce/fir overstory is on rock knobs.
27	4134 - Aspen, Spruce/Fir	Sapling Well	24.3	9	Unspecified	Pulp on the Rocks TS 2006; rocky outcrops heavier to red maple sprouts.
28	4134 - Aspen, Spruce/Fir	Sapling Well	72.5	28	Unspecified	Felch Mtn Flooding East TS 1987. Most of spruce/fir and red maple on rocks. Steep rock ridge in northeast corner. Some scattered mature aspen, some white birch regeneration. Plenty of rock knobs, terrain.
29	4134 - Aspen, Spruce/Fir	Poletimber Medium	34.4	25	Unspecified	Very unclean stand; aspen dbh ranges from 4-10". More mature, larger trees along snowmobile trail/rock and swamp edges. Some low areas, some steep rock knobs with stunted regeneration. Steep slope on far south; low areas have black ash 2" dbh.
30	4193 - Birch, Aspen	Poletimber Well	17.4	85	Unspecified	South of trail is more aspen; birch heavier on west half; white pine heavier on far south. Hardwood quality only in far north/northeast corner. This may serve as retention. May consider leaving additional good quality sugar maple (indicated by green paint). Expect aspen, mixed deciduous (red maple, sugar maple), some mixed conifer regeneration.
32	4130 - Aspen	Poletimber Well	27.6	47	Unspecified	
33	6120 - Lowland Cedar	Poletimber Well	27.4	87	Unspecified	Most balsam poplar on north side of snowmobile trail, far west. East portion is very stunted cedar.



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
34	42320 - Upland Spruce	Poletimber Well	5.3	80	Unspecified	1939 photos show this piece cut
36	4130 - Aspen	Sapling Well	76.0	14	Unspecified	Anderson Camp TS cut 1991. Does not have a heavy conifer component.
37	4130 - Aspen	Poletimber Well	7.8	47	Unspecified	
38	6120 - Lowland Cedar	Poletimber Well	189.0	106	Unspecified	cedar diameters smaller as you go south, more tag alder. NWSW Sec 17: 7 acre piece was cut in 1974 -- currently it is mostly residual WC, heavy tag, some black spruce saps 1-3" dbh. This stand was merged with current stand.
41	4134 - Aspen, Spruce/Fir	Sapling Well	23.2	7	Unspecified	Rock Cuts TS 2008; adequate regen but less aspen on rock faces and north facing slope
42	4130 - Aspen	Poletimber Well	54.6	49	Unspecified	White spruce/fir not doing well on rock outcrops, mostly 4-7" red maple on these outcrops along with some autumn olive on rocks in southwest corner. Aspen not holding well. Lots of sugar maple saplings scattered heavily but not consistently throughout. Some rock ridges east/west south of road plus outcrop on west edge. Hardwood knob in north-center of stand that will serve as retention; remove aspen from this hardwood pocket.
43	6111 - Lowland Balsam Poplar	Sapling Well	10.7	7	Unspecified	Spruce Swamp TS 2008. Quaking aspen along south, nearer upland. Cedar and balsam poplar were left as residual
44	4130 - Aspen	Sapling Well	15.4	17	Unspecified	Tracking Snow TS 1998. Balsam/spruce residual on north/northwest edge on rocks (buffer? or uncutable)
45	6132 - Mixed Lowland Forest with Cedar	Poletimber Medium	19.9	73	Unspecified	Cedar is concentrated in center of stand; Lots of black ash saplings, particularly in the south half, heavily browsed. Stand density decreases as you go south.
46	42310 - Planted Spruce	Poletimber Well	8.8	55	141-170	Some budworm on ends. Damage likely to increase.
47	6120 - Lowland Cedar	Poletimber Well	11.7	87	Unspecified	Stream/drainage is further south than the GDSE shows. Will harvest species other than cedar on north edge of this stand, keeping 100 feet from this drainage. Tag alder is heavier in spruce/tamarack component, very little in central.
48	6118 - Lowland Deciduous with Cedar	Poletimber Well	16.5	87	Unspecified	more pure black ash on east 1/3; drainage with bed and bank
49	4134 - Aspen, Spruce/Fir	Poletimber Well	21.1	40	Unspecified	Heavier to larger white spruce against lowland; trace of white birch and cedar.
51	4130 - Aspen	Sapling Well	13.1	17	Unspecified	Tracking Snow TS 1998



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
52	4134 - Aspen, Spruce/Fir	Sapling Well	25.2	28	Unspecified	
53	429 - Mixed Upland Conifers	Sawtimber Well	18.0	87	Unspecified	The south half of this has a very steep east/west rock ridge, where most of the pine/cedar/hemlock is. Very diverse stand. North half more operable but trees only 8"dbh - will hold and put on more growth. Small tag swale separates north/south.
54	4110 - Sugar Maple Association	Sawtimber Well	18.4	92	81-110	Spring Hill TS cut 2006
55	4134 - Aspen, Spruce/Fir	Poletimber Well	201.2	33	Unspecified	A few ash swales. Stand is littered with rock knobs/outcrops. Much of conifer is along snowmobile trail and north lobe and on rock knobs.
56	6118 - Lowland Deciduous with Cedar	Poletimber Medium	2.7	75	Unspecified	large rock ridge bounds this stand on south.
57	4134 - Aspen, Spruce/Fir	Poletimber Well	12.6	34	Unspecified	
58	4110 - Sugar Maple Association	Poletimber Well	7.0	87	111-140	Heavier to sugar maple saplings on north facing slope as opposed to ironwood on south.
59	4130 - Aspen	Poletimber Well	36.7	49	Unspecified	Larger diameter aspen in south quarter of stand. Rock knob on far south where red maple is struggling (no soil). Some other rock knobs along east line. Stand is holding well. Conifer heavier on far north.
60	4119 - Mixed Northern Hardwoods	Poletimber Medium	11.7	87	81-110	Very poor quality hardwoods, low BA, rock ridge, porcupines chewing basswood. This stand should be managed for pulp. Aspen found more on edge of stand. North 1/4 of this stand is M3.
61	42200 - Natural White Pine	Sawtimber Medium	9.3	87	1-50	Neumann TS cut 2006; management objective was changed to white pine. Many rocky knobs, where most of the white pine is.
63	4130 - Aspen	Sawtimber Well	3.6	87	Unspecified	Small ash swale in stand. Stay 50' from drainage in far north. Make as negotiated sale due to access through private and small acreage.
64	6115 - Lowland Ash	Poletimber Medium	42.0	87	Unspecified	Drainage on far northwest; did not follow easterly
65	4130 - Aspen	Poletimber Medium	9.7	33	Unspecified	aspen thick in far west half; conifer heavier along north edge. black cherry on rock on east half.
66	6132 - Mixed Lowland Forest with Cedar	Poletimber Well	8.3	72	Unspecified	black spruce heaviest along road and northeast. More quaking aspen on south
67	4130 - Aspen	Sapling Well	6.7	16	Unspecified	Bradley TS 1999. On rock knob

S
t
a
n
d

Crystal Falls Mgt. Unit

Report 8 – Forested Stands

Compartment: 60
Year of Entry: 2015



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
68	4130 - Aspen	Sapling Well	8.4	28	Unspecified	Upper Skunk Creek Curve TS 1987
69	6121 - Tamarack	Poletimber Well	20.8	87	Unspecified	a few scattered, larger tamarack & black spruce. This stand has been filling in slowly since at least 1930s, per 1939 photo.
70	6122 - Black Spruce	Poletimber Well	8.3	87	Unspecified	Negotiated? if winter cut, less trail impacted taking it out south
71	4130 - Aspen	Sapling Medium	3.8	16	Unspecified	Anderson Permit, cut 1999.



Stand	Cover Type	Acres	Managed Site	General Comments:
2	720 - Exposed Rock	3.2	No	
4	720 - Exposed Rock	6.9	No	
9	623 - Emergent Wetland	207.8	No	
15	310 - Herbaceous Openland	1.5	No	
31	622 - Lowland Shrub	4.3	No	
35	310 - Herbaceous Openland	17.3	No	
39	629 - Mixed non-forested wetland	88.1	No	
40	310 - Herbaceous Openland	3.4	No	
50	622 - Lowland Shrub	4.7	No	
62	330 - Low-Density Trees	34.0	No	