

Compartment Review Presentation

Cadillac Forest Management Unit

Compartment 63101 Entry Year 2020 Acreage: 1,827

County Missaukee

Management Area: Upper Muskegon

Revision Date: 2018-06-14

Stand Examiner: Steve Eisele

Legal Description:

T21N R5W Sections 22, 23, 24

Identified Planning Goals:

Vegetation management in the Upper Muskegon Management Area will provide forest products; maintain or enhance wildlife habitat; protect areas of unique threatened, endangered and special concern species; and provide for forest-based recreational uses. Timber management for this 10-year period will focus on harvesting older jack pine and balancing age class distributions of oak, aspen and red pine. Wildlife habitat management objectives include perpetuating early-successional communities for species adapted to young forests for hunting and other wildlife-related recreation. Expected trends within this 10-year planning period are the need to manage exotic species (especially Phragmites and glossy buckthorn), the need to continue to manage cover types for a balanced age-class distribution and an expected increase in recreation pressure.

Soil and topography:

Rubicon and Grayling sand/soil types. Eastern edge is lower and wet towards the Muskegon river. Western end has some steeper slopes. The middle is mostly flat with jack pine oak areas.

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

Solid state ownership except for 80 acres in sw corner of section 23. Hunt club property.

Unique Natural Features:

Muskegon river in east end of compartment. Potential for warblers, skippers, and spittle bugs. Also grasses and thistle in openings.

Archeological, Historical, and Cultural Features:

Old fire tower location in NW of section 22. Foundation pads/plates are all that remains. Also a location cap.

Special Management Designations or Considerations:

Manage and monitor the jack pine and oak. Maintain different ages. Look at adding some red pine plantings where practical.

Watershed and Fisheries Considerations:

Muskegon river just to east of compartment.

Wildlife Habitat Considerations:

Featured wildlife species in this Management Area are diverse reflecting the wide range of habitat types present. Featured Species of wildlife include american bittern, american woodcock, beaver, black bear, eastern massasuga rattlesnake, mallard, golden-winged warbler, pileated woodpecker, red-headed woodpecker, ruffed grouse, snowshoe hare, wild turkey, and white-tailed deer. Most of these species benefit from young forest and open types while some require some old trees for foraging and nest/den sites. Maintaining the opening types and balancing harvests with a diverse assortment of age classes in the timber types will meet the goals for these species.

Mineral Resource and Development Concerns and/or Restrictions

Active sand/gravel pits are not located in the area, but there appears to be good sand & gravel potential within the compartment. The nearest production is the Cranberry Lake Field, which is also a gas storage field. All of the state-owned mineral rights in and around the compartment are currently leased for oil and gas exploration and development. Marathon holds these leases, and they have recently been divesting their interests in the state. There is no known metallic mineral potential in this part of the state. The state does not own all of the mineral rights within Sec 24. Private mineral rights owners must be allowed reasonable access to the land should they choose to explore and/or develop the minerals.

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.

Survey Needs:

None at this time.

Recreational Facilities and Opportunities:

Leota ORV trail and Muskegon river.

Fire Protection:

This compartment is within zone 4 response area. Initial attack responsibilities are from Houghton Lake Field office and other field offices for the Zone 4 response. BET 6-4-18

Additional Compartment Information:

None at this time.

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

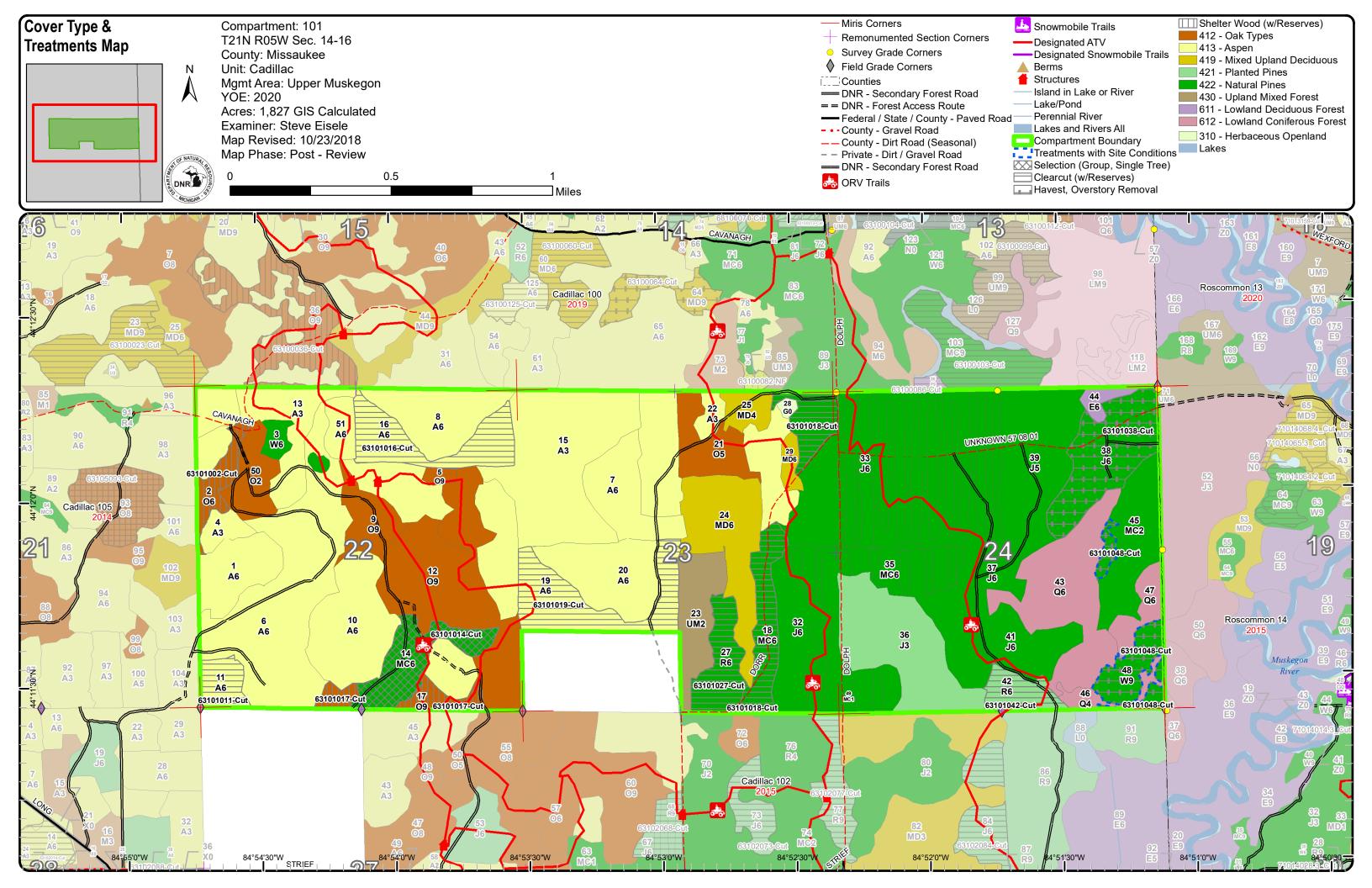
The following information is displayed, where pertinent, on the attached compartment maps:

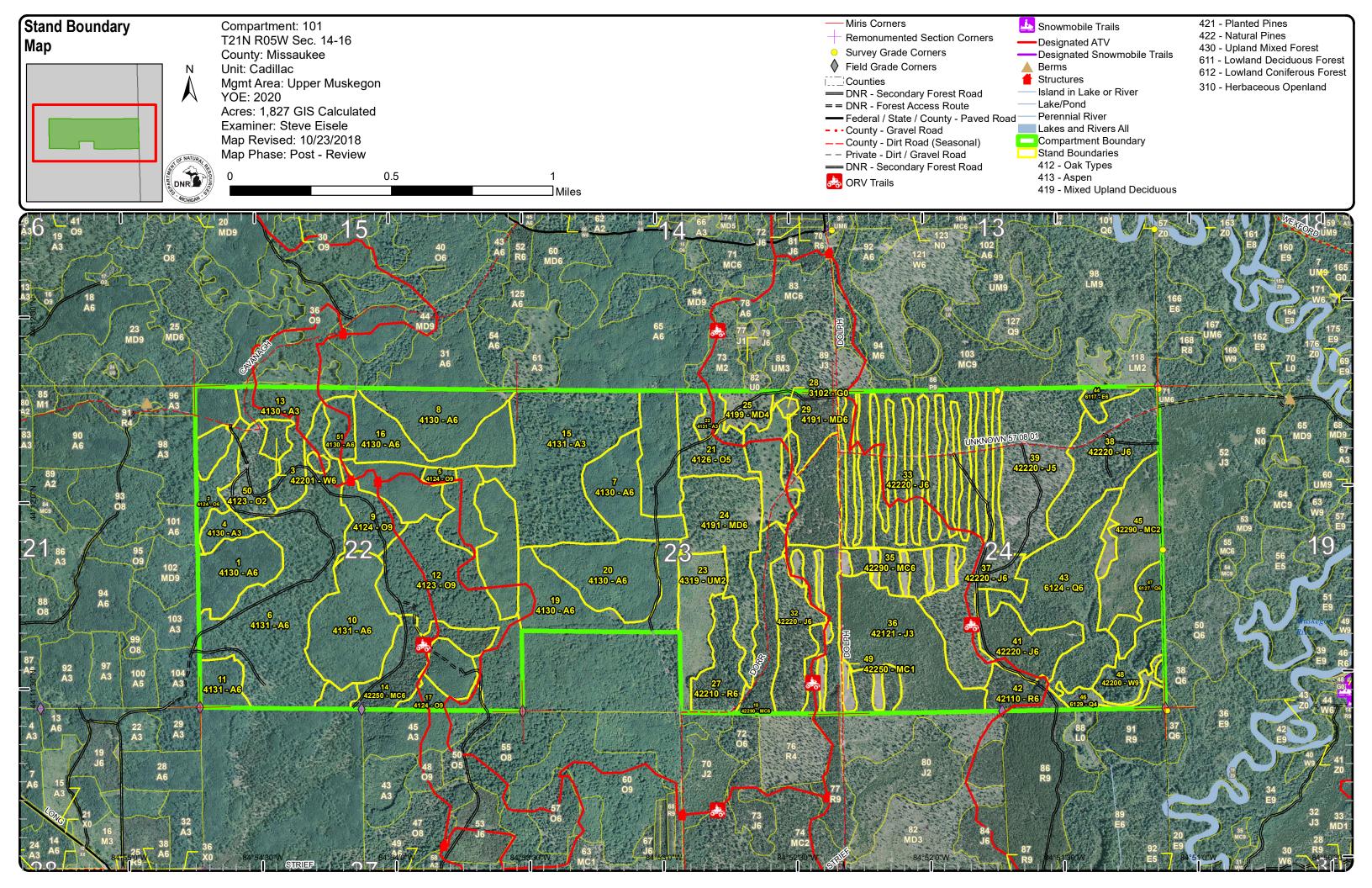
Base feature information, stand boundaries, cover types, and numbers

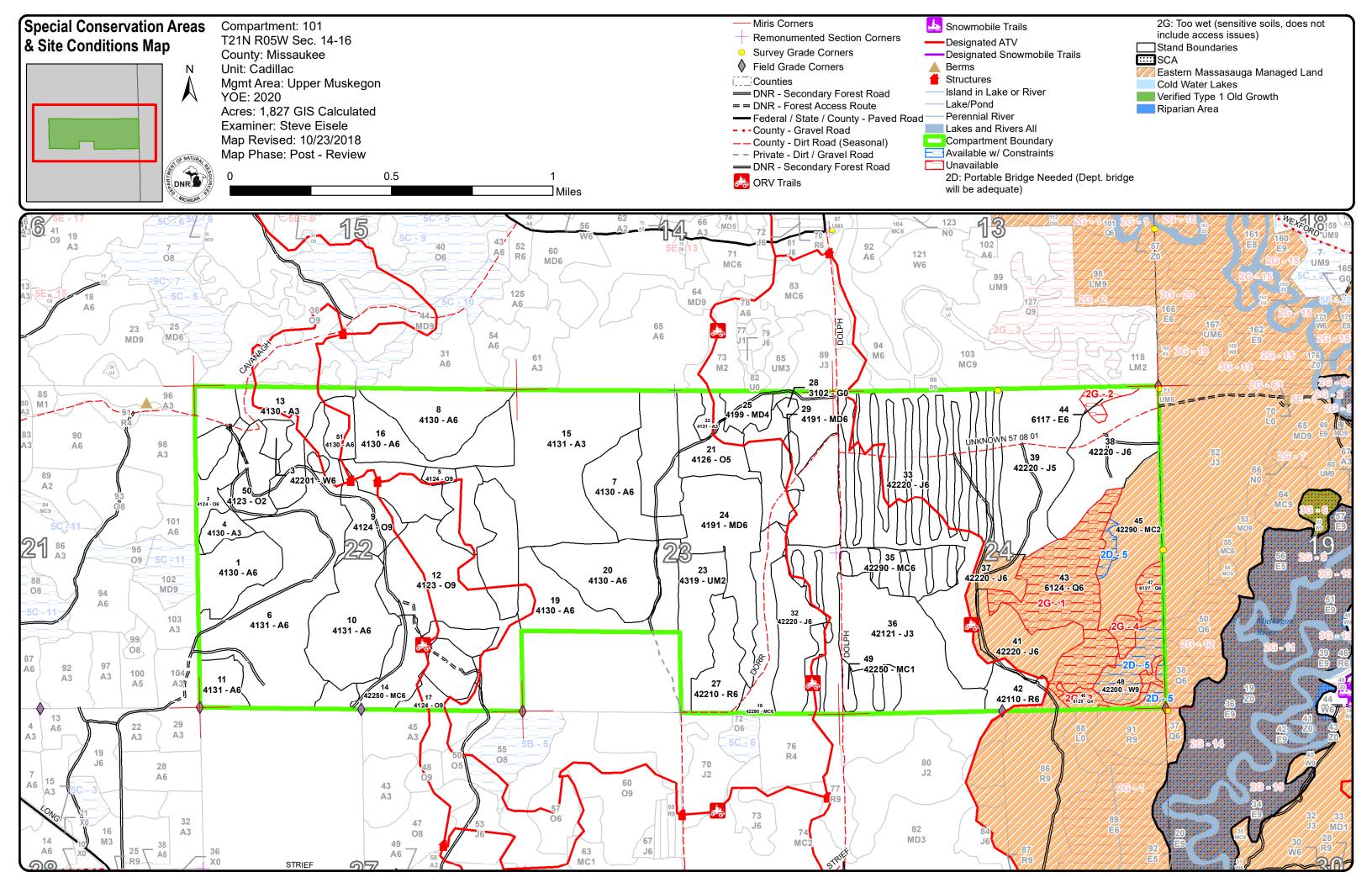
Proposed treatments

Site condition boundaries

Details on the road access system







Compartment 101 Year of Entry 2020

Cadillac Mgt. Unit
Steve Eisele : Examiner



Age Class

Aspen 0 54 240 0 90 298 13 0 <t< th=""><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th></t<>																				
Herbaceous Openland 2 0	The second of th	St Juli	LA A	S. L.	, & / &	\$\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \	20,20,20,20,20,20,20,20,20,20,20,20,20,2	3 / 10	8 8	10 80 B	\$ / R	\$ 	St. St.	8 /4	\$ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	\$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	3 / 2	L'AND S	AQ.	
Jack Pine 0 0 107 67 31 91 56 67 51 0	0 694	0	0	0	0	0	0	0	0	0	0	0	13	298	90	0	240	54	0	Aspen
Lowland Conifers 0	0 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	Herbaceous Openland
Lowland Deciduous 0	0 469	0	0	0	0	0	0	0	0	0	51	67	56	91	31	67	107	0	0	Jack Pine
Mixed Upland Deciduous 0 0 11 0 6 0	0 90	0	0	0	0	0	0	0	0	0	68	0	22	0	0	0	0	0	0	Lowland Conifers
Natural Mixed Pines 0 23 0 0 0 40 0 103 32 0 <td>0 6</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>6</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>Lowland Deciduous</td>	0 6	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	Lowland Deciduous
Oak 0 21 0 0 0 0 0 25 0 81 67 0 0 0 0 0 0 1 Red Pine 0	53 70	53	0	0	0	0	0	0	0	0	0	0	0	0	6	0	11	0	0	Mixed Upland Deciduous
Red Pine 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 198	0	0	0	0	0	0	0	0	0	32	103	0	40	0	0	0	23	0	Natural Mixed Pines
	0 194	0	0	0	0	0	0	0	67	81	0	25	0	0	0	0	0	21	0	Oak
Upland Mixed Forest 0 31 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	25 41	25	0	0	0	0	0	0	0	16	0	0	0	0	0	0	0	0	0	Red Pine
	0 30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31	0	Upland Mixed Forest
White Pine 0 0 0 0 0 8 0 0 27 0 0 0 0 0 0 0 0	0 35	0	0	0	0	0	0	0	0	27	0	0	8	0	0	0	0	0	0	White Pine
Total 2 129 358 67 127 429 99 195 151 130 67 0 0 0 0 0 0 78 1	78 1829	78	0	0	0	0	0	0	67	130	151	195	99	429	127	67	358	129	2	Total



Report 2 – Treatment Summary

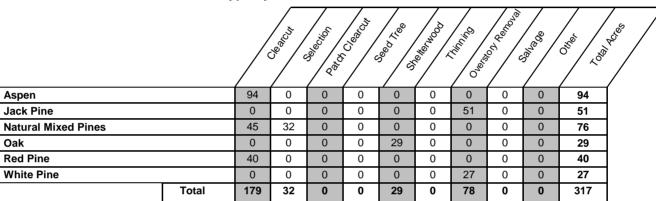
Cadillac Mgt. Unit Year of Entry: 2020

Acres of Harvest

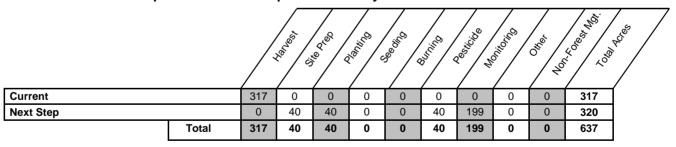
Compartment 101
Total Compartment Acres: 1,827

Commercial Harvest - 290 Harvests with Site Condition - 27 Next Step Harvest - 0 Habitat Cut - 0

Cover Type by Harvest Method



Proposed and Next Step Treatments by Method



Specs:

Other Comment:

Proposed Start Date: 10/1 /2019

16 63101016-Cut 36.0 4130 - Aspen Poletimber 45 Unspec Harvest Clearcut with 4139 - Aspen, Even-Aged Approved Mixed Well ified Retention Proposal

Deciduous

Habitat Cut: No Site Condition:

Prescription Clear cut leave some scattered oak and a few small islands for retention

Specs:

Monitoring, Natural Regen (Re-Inventory) Next Step

Treatments:

Acceptable Mix of aspen and deciduous

Regen:

Other Use road for northern boundary of harvest

Comment:

Proposed Start Date: 10/1 /2019

Cadillac Mgt. Unit Report 3 -- Treatments Compartment: 101 s Year of Entry: 2020 t а **Treatment** Stand Size Stand BA **Treatment Treatment Cover Type** Acres Age **Approval** n Name CoverType Density Age Range Type Method Objective Structure **Status** d 63101017-Cut 15.2 4124 - Red with Sawtimber 81-110 Shelterwood with 4124 - Red with 17 90 Harvest Even-Aged Approved White Oak Well Retention White Oak Proposal **Site Condition: Habitat Cut: No** Prescription Shelter wood oak, leave 10-30 ba, cut all aspen and maple, treat with adjacent stand Mark green to leave along ORV trail Specs: Monitoring, Natural Regen (Re-Inventory) Next Step **Treatments:** Acceptable Mixed oaks with deciduous Regen: Other Comment: **Proposed Start Date:** 10/1 /2019 63101018-Cut 44.7 42290 - Natural Poletimber 60 81-110 Harvest Clearcut with 42260 - Natural Even-Aged Approved Mixed Pine Well Retention Pine, Mixed Proposal Deciduous **Habitat Cut: No Site Condition:** Prescription Remove all jp and oak. Cut only red pine over 10 inches dbh Specs: Next Step Monitoring, Natural Regen (Re-Inventory) Treatments: Acceptable Mix of pine and oak Regen: Other Comment: **Proposed Start Date:** 10/1 /2019 63101019-Cut 44.8 4130 - Aspen Poletimber 46 Unspec Harvest Clearcut with 4139 - Aspen, Even-Aged Approved Well ified Retention Mixed Proposal Deciduous **Habitat Cut: No Site Condition:** Prescription Clear cut leave some scattered oak and a few small islands Specs: Next Step Monitoring, Natural Regen (Re-Inventory)

Treatments:

Acceptable Mix of aspen and deciduous

Regen:

Other Establish private boundary use old roads and skid trails for boundary where possible.

Comment:

Proposed Start Date: 10/1 /2019

63101027-Cut 24.6 42210 - Natural Poletimber 65 81-110 Harvest Clearcut 4211 - Planted Even-Aged Approved Red Pine Proposal

Red Pine Well

Habitat Cut: No Site Condition:

Prescription Clear cut and plant to red pine Specs:

SitePrep, Trenching; Planting, Initial Plant; Pesticide, Skidder/Mechanical Next Step

Treatments:

Acceptable Plant to red pine

Regen: Other Comment:

Proposed Start Date: 10/1 /2019

Cadillac Mgt. Unit Report 3 -- Treatments Compartment: 101 s Year of Entry: 2020 t а **Treatment** Acres Stand Size Stand BA **Treatment Treatment Cover Type Approval** Age n Method Objective Name CoverType Density Age Range Type Structure **Status** d Overstory 38 63101038-Cut 51.2 42220 - Natural Poletimber 75 51-80 42260 - Natural Even-Aged Harvest Approved Jack Pine Well Removal Pine, Mixed Proposal Deciduous **Habitat Cut: No Site Condition:** Prescription Do an over story removal of pine and oak over 8 in dbh Specs: Next Step Treatments: Acceptable Mix of pine and oak Regen: Other put in reptile spec Comment: **Proposed Start Date:** 10/1 /2019 42110 - Planted 80 4211 - Planted 42 63101042-Cut 15.6 Poletimber 111-Harvest Clearcut Even-Aged Approved Red Pine Well 140 Red Pine Proposal **Habitat Cut: No Site Condition:** Prescription Clear cut and plant back to red pine. Add reptile spec Specs: Next Step SitePrep, Trenching; Pesticide, Skidder/Mechanical; Planting, Initial Plant Treatments: Acceptable Plant to red pine Regen: **Other** Look at re routing ORV trail at west end of existing stand Comment: **Proposed Start Date:** 10/1 /2019 63101048-Cut 80 26.8 42200 - Natural Sawtimber 81-110 Harvest Overstory 42260 - Natural Two-Aged Approved

Habitat Cut: No Site Condition: Portable Bridge Needed

White Pine

Well

<u>Prescription</u> Will need crane mats or some way to cross some wet areas to access. Should be a winter cut of mostly log size pine and maple. Over story

Removal

Pine. Mixed

Deciduous

Specs: removal

Next Step Treatments:

Acceptable Mix of conifers and maple

Regen:

Other Put in reptile spec

Comment:

Proposed Start Date: 10/1 /2019

Total Treatment

Acreage Proposed:

317.3

Proposal

Cadillac Mgt. Unit

Steve Eisele : Examiner

Compartment: 101
Year of Entry: 2020

Availa	bility for	Managemer	nt				
Total	Acres	Acres Avail	Acres		Domina	nt Site	Conditions
Acres	Available	With Condition	Not Available		2D	2G	
694	694	0	0	Aspen			
2	2	0	0	Herbaceous Openland			
470	470	0	0	Jack Pine			
90	0	0	90	Lowland Conifers		90	
6	0	0	6	Lowland Deciduous		6	
69	69	0	0	Mixed Upland Deciduous			
199	199	0	0	Natural Mixed Pines			
193	193	0	0	Oak			
40	40	0	0	Red Pine			
30	30	0	0	Upland Mixed Forest			
34	8	27	0	White Pine	27		
1,827	1,705	27	96	Total Forested Acres	27	96	
-	93%	1%	5%	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
1	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	68	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
2	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	6	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						

Report 4 – Site Conditions

Cadillac Mgt. Unit
Steve Eisele : Examiner

Compartment: 101 Year of Entry: 2020

3	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	8	Unspecified	Unspecified	Unspecified	Unspecified
•	Comments:						
4	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	14	Unspecified	Unspecified	Unspecified	Unspecified
(Comments:						
5	Available	2D: Portable Bridge Needed (Dept. bridge will be adequate)	27	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						

Mgt. Unit

Compartment: #Type! Year of Entry:

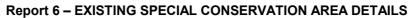


Report 5 - PROPOSED SPECIAL CONSERVATION AREA* (SCA) DETAILS

* 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
Comments				

Cadillac Mgt. Unit Compartment: 101
Year of Entry 2020





* 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.

Conservation Area	Туре	Description	HCVA = High Conservation Value Area SCA = Special Conservation Area
SCA Cold	d Water Lake	stocked trout populations and those of other conditions for coldwater fishes may occur in	lved oxygen conditions that allow naturally-reproduced or coldwater fish species to persist from year to year. Suitable Michigan lakes if they are relatively deep, have substantial (northern) areas of the state. Such lakes are established by ources by Fisheries Order 200.

S t	Cadillad	Cadillac Mgt. Unit			- Forested	Stands Compartment: 101 Year of Entry: 2020
a n d	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
1	4130 - Aspen	Poletimber Well	40.5	45	Unspecified	Good stocking solid aspen stand. Hold until next y.o.e.
2	4124 - Red with White Oak	Poletimber Well	13.6	90	111-140	More oak than aspen.
3	42201 - Natural White Pine, Mixed Deciduous	Poletimber Well	7.6	58	51-80	Conifer stand left out of adjacent cuts.
4	4130 - Aspen	Sapling Well	16.1	16	Immature	Thick aspen, mixed deciduos.
5	4124 - Red with White Oak	Sawtimber Well	3.1	85	51-80	This is retention area left from cuts all around it. leave.
6	4131 - Aspen, Oak	Poletimber Well	116.7	16	Immature	Shelterwood cut last time. Now scattered mature oak over a mix of oak, red maple and aspen regeneration.
7	4130 - Aspen	Poletimber Well	83.9	35	Unspecified	Thick aspen stand, no overstory oak.
8	4130 - Aspen	Poletimber Well	38.0	45	Unspecified	Thick aspen stand with some mixed deciduos. Small diameters. Cut next time
9	4124 - Red with White Oak	Sawtimber Well	38.1	90	51-80	Nice straight red oak with some white mixed in
10	4131 - Aspen, Oak	Poletimber Well	65.7	48	Unspecified	Solid aspen stand with same age oak and red maple
11	4131 - Aspen, Oak	Poletimber Well	13.1	50	Unspecified	Solid aspen with same age oak and maple
12	4123 - Red Oak	Sawtimber Well	77.8	80	51-80	Good straight stem red oak. A lot of red maple regen Treat next time when regen is more established
13	4130 - Aspen	Sapling Well	53.8	6	Immature	Treated with sale 63-044-10-01
14	42250 - Pine, Oak	Poletimber Well	31.7	75	111-140	Has been thinned in the past
15	4131 - Aspen, Oak	Sapling Well	95.6	16	Immature	Cut 2002 with some residual oak left over top of aspen, red maple , oak regen.
16	4130 - Aspen	Poletimber Well	36.0	45	Unspecified	Thick aspen stand with some mixed maple and oak.
17	4124 - Red with White Oak	Sawtimber Well	15.2	90	81-110	
18	42290 - Natural Mixed Pine	Poletimber Well	44.7	60	81-110	

S t	Cadillac	Cadillac Mgt. Unit			– Forested	Stands Compartment: 101 Year of Entry: 2020
a n d	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
19	4130 - Aspen	Poletimber Well	44.8	46	Unspecified	Solid aspen stand with no residual oak over story
20	4130 - Aspen	Poletimber Well	72.6	46	Unspecified	Solid aspen stand with no residual oak over story Look at treating next yoe
21	4126 - White, Black, N. Pin Oak	Poletimber Medium	24.7	65	81-110	Previous sale with scattered oak left as residual. Light stocking right now but regen is coming. Look at treating next yoe
22	4131 - Aspen, Oak	Sapling Well	6.2	35	Unspecified	OLd cut listed as an upland brush last time is now filling in with aspen and mixed deciduos. Alot of deer sign.
23	4319 - Mixed Upland Forest	Sapling Medium	30.5	5	Immature	Trenched in 2010 First planted by hand crew in 2011 Replanted by hand crew in 2015 2 year old red pine seedlings. Regen check 2016, 247 TPA red pine and non target 303 TPA. Allow mixed competition and planted red pine at current stocking. No more need for regeneration check.
24	4191 - Mixed Upland Deciduous with Conifer	Poletimber Well	52.7	65	1-50	Treated with sale 63-052-00-01
25	4199 - Other Mixed Upland Deciduous	Poletimber Poor	10.9	15	Immature	Old brush area now filling in with scattered trees
27	42210 - Natural Red Pine	Poletimber Well	24.6	65	81-110	Has been treated in the past
29	4191 - Mixed Upland Deciduous with Conifer	Poletimber Well	5.7	35	51-80	Open areas patchy poor quality
32	42220 - Natural Jack Pine	Poletimber Well	56.4	55	1-50	Seed tree cut in 2004
33	42220 - Natural Jack Pine	Poletimber Well	90.6	40	81-110	Uncut strips. Look at clear cutting next yoe
35	42290 - Natural Mixed Pine	Poletimber Well	58.7	65	81-110	Uncut areas around strip cuts
36	42121 - Planted Jack Pine, Mixed Deciduous	Sapling Well	67.3	23	81-110	Jack Pine plantation. Cut in 95, trenched and planted.
37	42220 - Natural Jack Pine	Poletimber Well	107.2	18	51-80	Previous Seed tree cut #63-068-00-01 Residual jack pine and oak over natural regen of jack pine and oak.
38	42220 - Natural Jack Pine	Poletimber Well	51.2	75	51-80	Good natural regen coming in.
39	42220 - Natural Jack Pine	Poletimber Medium	66.5	65	51-80	
41	42220 - Natural Jack Pine	Poletimber Well	30.7	35	81-110	Some wet areas

S t	Cadillad	Cadillac Mgt. Unit			- Forested Sta	Ands Compartment: 101 Year of Entry: 2020
a n d	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
42	42110 - Planted Red Pine	Poletimber Well	15.6	80	111-140	Had jack pine removed last time.
43	6124 - Lowland Spruce- Fir	Poletimber Well	67.8	75	111-140	Mixed lowland forest very wet.
44	6117 - Lowland Deciduous, Mixed Coniferous	Poletimber Well	6.0	80	81-110	Wet lowland, old ox bow from river
45	42290 - Natural Mixed Pine	Sapling Medium	40.4	40	51-80	Hummocky , wet spots. Slow growing
46	6129 - Mixed Coniferous Lowland Forest	Poletimber Poor	8.2	50	1-50	Bog areas with scattered trees.
47	6127 - Lowland Pine	Poletimber Well	13.6	50	81-110	Swampy, wet, leather leaf, dense understory
48	42200 - Natural White Pine	Sawtimber Well	26.8	80	81-110	Super canopy white pine over mixed forest.
49	42250 - Pine, Oak	Sapling Poor	23.1	4	Immature	
50	4123 - Red Oak	Sapling Medium	20.6	6	Immature	mix of oak, red maple and aspen regeneration.
51	4130 - Aspen	Poletimber Well	10.8	16	Immature S	Shelterwood cut last time, with stand 6 but this area came back to solid aspen maple with very little oak. Hilly

Cadillac Mgt. Unit

Report 8 - Nonforested Stands

Compartment: 101 Year of Entry: 2020



Stand	Cover Type	Acres	Managed Site	General Comments:
28	3102 - Grass	1.8	No	Leather leaf and sedge, Wet at times