

Compartment Review Presentation

Cadillac Forest Management Unit Compartment 63131 Entry Year 2017 Acreage: 2,271 County Wexford Management Area: Manistee River Valley

Revision Date: 2015-06-12

Stand Examiner: Jim Malloy

Legal Description:

T24N R11W, Sections 10, 11, 14, 15, 22, 23, 27

Identified Planning Goals:

Vegetation management in the Manistee River Valley management area will provide timber products; maintain or enhance wildlife habitat; protect areas of unique character including the Manistee River and its tributaries, a designated natural river; threatened, endangered and special concern species; and provide for forest-based recreational uses. Timber management for this 10-year planning period includes continuing aspen management to maintain early successional habitat for hunting and other wildlife-related recreational opportunities; increasing regeneration of oak; focusing on balancing the red pine age class structure through final harvests and re-planting; and on improving red pine quality through partial harvests. Expected trends within this 10-year planning period are increased recreational pressure, especially on the established trails and along the Manistee River and its tributaries; an increased wildland/urban interface and a need to restore barrens communities through prescribed fire; and invasive plant control.

Soil and topography:

Level to slightly rolling topography throughout the Compartment, with steep ravines along Anderson creek south of 4 rd, and a steep well defined bluff above the Manistee river.

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

Sections 10 and 11 are a patchwork of state forest and private land. The private lands have are a mixture of forested and non-forested land, with some fields and Christmas trees. Sections 14, 22, 23, and 27 are solid state ownership.

Unique Natural Features:

Wood turtle, Blanding's turtle (Emys blandingii, state special concern), and eastern massasauga (Sistrurus catenatus catenatus, state special concern) could occur in stands of swamp conifer and swamp hardwoods associated with the Manistee River and Anderson Creek. Great blue heron rookeries could occur in the swamp hardwood, swamp conifer and swamp hardwood habitat. A great blue heron rookery is known from southeast of the compartment. Bald eagle (Haliaeetus leucocephalus, state threatened, federally threatened) and osprey (Pandion haliaetus, state threatened) could potentially occur within the compartment in upland conifer and lowland conifer if suitable nesting trees/snags are available. Eastern box turtle (Terrapene carolina carolina, state special concern) could occur throughout the compartment. Red-shouldered hawk (Buteo lineatus, state threatened) and northern goshawk (Accipiter gentilis, state special concern) could occur in this compartment in northern hardwoods, oak, mature aspen, swamp hardwoods (red-shouldered hawk), swamp conifer (red-shouldered hawk), and pine stands (goshawk, including plantations). When marking prescribed stands for timber sale, please be observant for stick nests and territorial hawks or goshawks.

Limestone oak fern (Gymnocarpium robertianum, state threatened), round-leaved orchid (Amerorchis rotundifolia, state endangered), ram's head lady's-slipper (Cypripedium arietinum, state special concern), and calypso orchid (Calypso bulbosa, state threatened) could potentially occur within the cedar swamp in the northwest of the compartment. The slopes above of the Manistee River harbor potential for ginseng

Archeological, Historical, and Cultural Features:

Prehistoric camps and earthwork are in the area. The Indian trail from the Cadillac area to Grand Traverse Bay is also in the vicinity.

Special Management Designations or Considerations:

The Manistee River which serves as the southern border of this compartment. It is managed under a MOU as a natural river and the restrictions which go along with that designation are applied to all treatments. Anderson Creek which is a tributary to the Manistee river runs N/S through the compartment also.

Watershed and Fisheries Considerations:

Anderson Creek flows south through this compartment, while the mainstream of the Manistee is the south boundary of the compartment. While the state natural river designation ends at the Missaukee/Wexford County line, Fisheries, Forest

Management, and Wildlife Division entered into an agreement to adopt and utilize the Upper Manistee River state natural river zoning ordinance. Anderson Creek, a designated trout stream, has a long history of beaver activity, which has had an adverse impact on trout populations. On Anderson Creek the vegetative buffer would be 100 feet for slopes 0-10%, 115 feet for slopes 11-20%, 135 feet for slopes 21-32%, and 155 feet for slopes 33+%, unless one of the eight exceptions are met. The vegetative buffer on the mainstream is 175 feet, again unless the proposed treatment met one of the exceptions (page 41 of the Upper Manistee River Natural River Plan).

Wildlife Habitat Considerations:

The Manistee River corridor and associated tributaries are valuable wildlife areas offering a good mixture of aspen, lowland hardwoods, upland hardwoods, mixed fruiting shrubs, and conifer cover providing valuable habitats for many wildlife species. These areas are heavily used by wintering deer. Featured species of special interest include deer, bear, woodcock, ruffed grouse and snowshoe hare. Timber sale specifications to benefit wildlife (where applicable) will include brush pile creation along lowland edges, protection of mast-bearing wildlife shrubs and ironwood, protection of standing dead snags, and creation of drumming logs (1-2 per acre) and woody debris (tops or whole trees) in aspen cuts. (E. Victory 6/2015)

Mineral Resource and Development Concerns and/or Restrictions

Sections 10, 11, 14, 15, 22, & 23, T24N R11W, Wexford County

Surface sediments consist of glacial outwash sand and gravel and postglacial alluvium. The glacial drift thickness varies between 200 and 600 feet. Beneath the glacial drift is the Mississippian Coldwater Shale. The Coldwater does not have an economic use. There are some overgrown sand and gravel pits in the area, and potential appears to be good. This area lies south of the prolific Silurian Niagaran reef trend. There does not appear to be any potential for Niagaran reefs in this area. This area is not currently leased for oil and gas exploration, but active leases are located to the west.

Vehicle Access:

This compartment contains a good system of both county maintained roads and state owned two-tracks. Much of the area is easily accessible by vehicle through the existing road system, with additional trails leading to popular camping spots along the Manistee River. No new roads should be created within the compartment and any roads opened for logging access should be reclosed following harvest activities.

Survey Needs:

None needed at this time.

Recreational Facilities and Opportunities:

The North Country National Scenic Trail (NCNST) runs along the river bluff in Section 22 before crossing a foot bridge on Anderson Creek. From this point the NCNST follows the Manistee River edge into Section 23, before climbing back up the river bluff into Section 14 and exiting the compartment boundary. Trail protection specifications should be included in any timber sale potentially impacting this national trail. Specifically, appropriate measures identified in DNR Policy & Procedures "32.22XX" (Best Management Practices for Forest and Wildlife Management Adjacent to Recreational Trails) should be taken into consideration when setting up timber sales within this compartment. Scenic vistas are numerous along the river bluff that traverses sections 22 and 23. There are numerous opportunities for dispersed camping, canoeing, hunting, and fishing within this compartment. (T.M.N. 12/17/14)

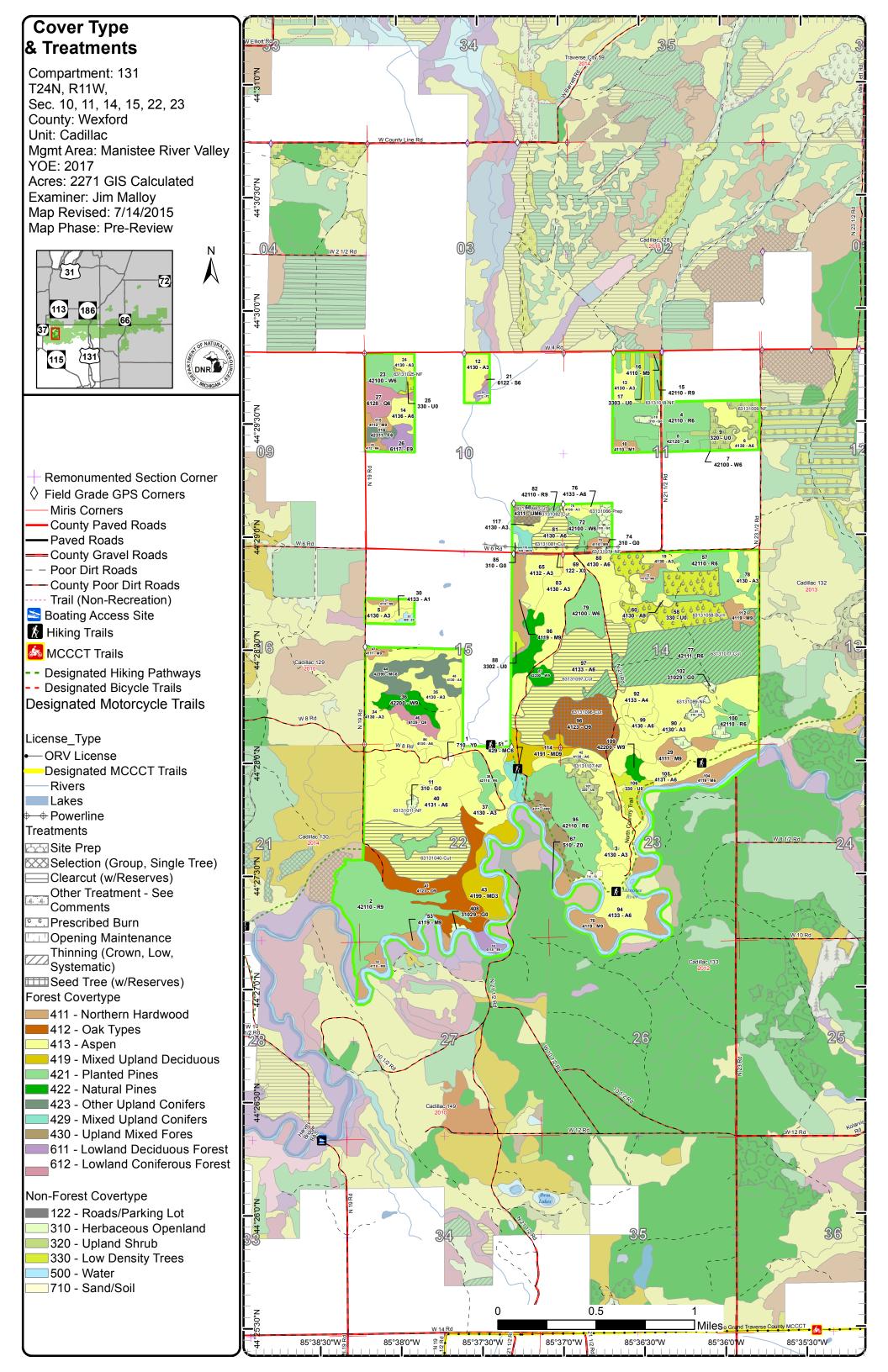
Fire Protection:

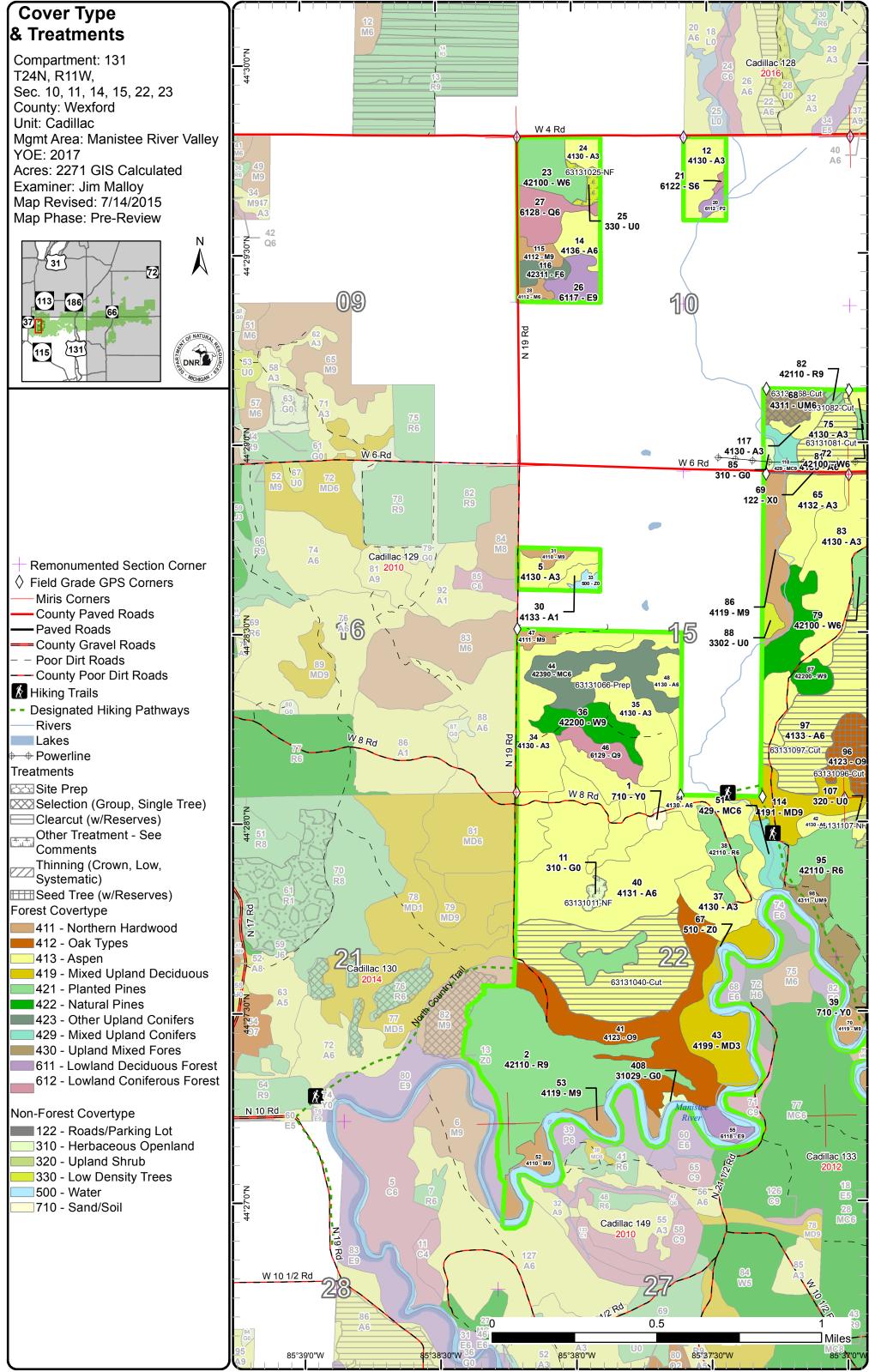
Within this compartment there are numerous forest 2 tracks allowing good access to the compartment. Dispersed camping and recreationalists use this area causing a concern for abandon campfires. Access to the river lowland is very limited.

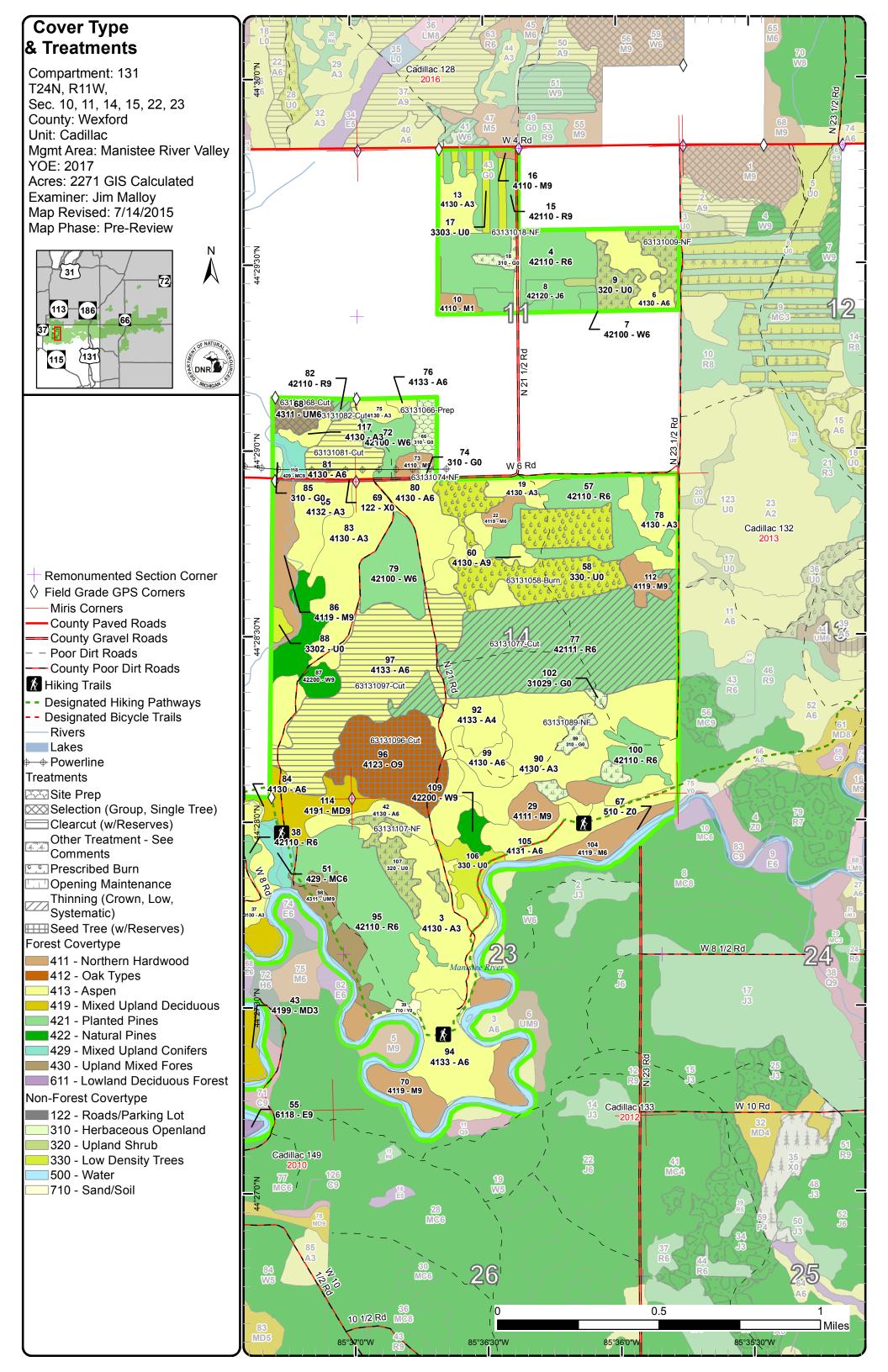
Additional Compartment Information:

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

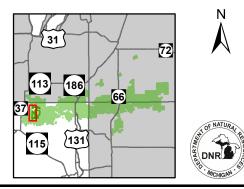




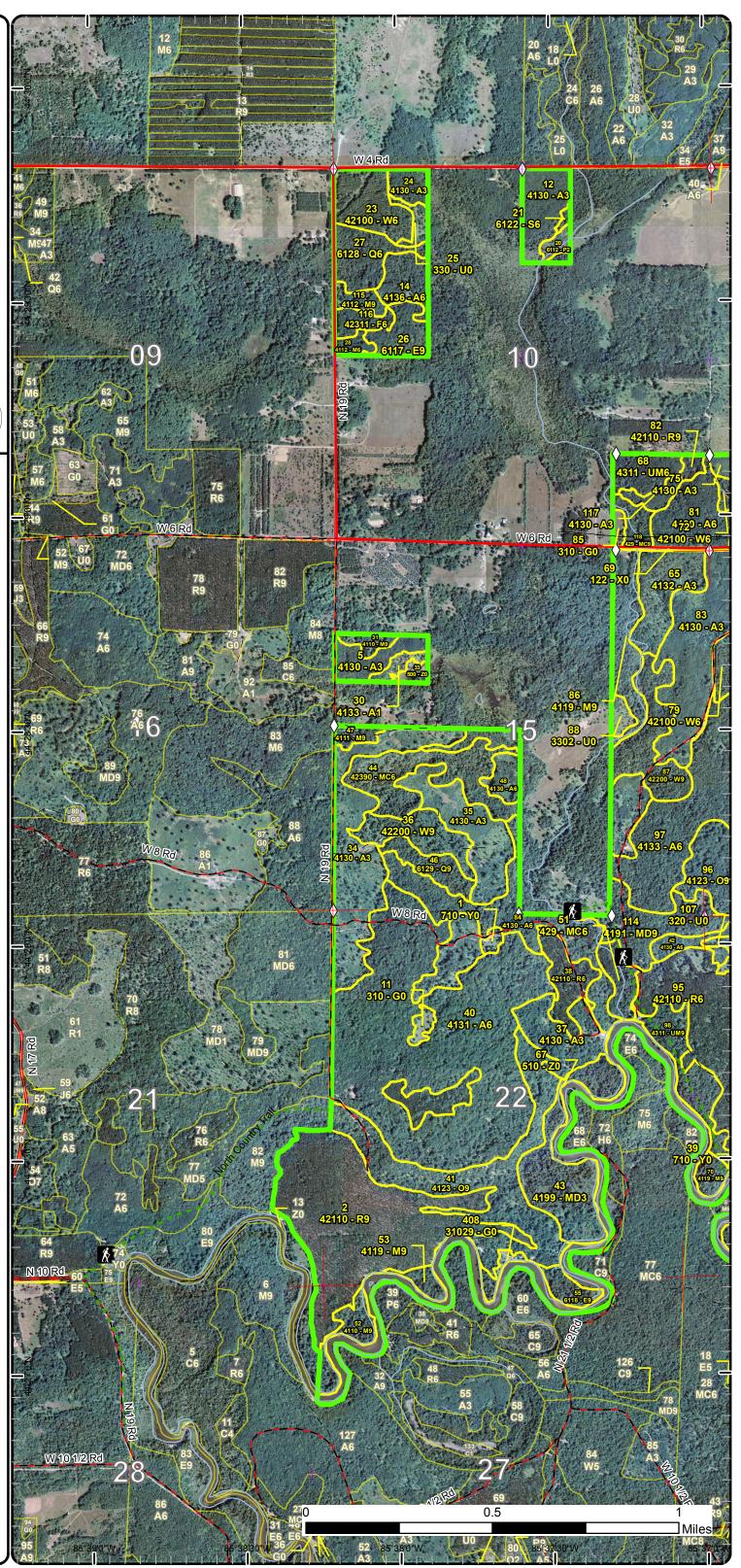


Stand Boundary Map

Compartment: 131 T24N, R11W, Sec. 10, 11, 14, 15, 22, 23 County: Wexford Unit: Cadillac Mgmt Area: Manistee River Valley YOE: 2017 Acres: 2271 GIS Calculated Examiner: Jim Malloy Map Revised: 7/14/2015 Map Phase: Pre-Review



- **Remonumented Section Corner** ♦ Field Grade GPS Corners Miris Corners County Paved Roads -Paved Roads County Gravel Roads - - Poor Dirt Roads - County Poor Dirt Roads & Hiking Trails - - Designated Hiking Pathways Rivers + Powerline Stand Boundaries Forest Covertype 411 - Northern Hardwood 412 - Oak Types 413 - Aspen 419 - Mixed Upland Deciduous 421 - Planted Pines 422 - Natural Pines 423 - Other Upland Conifers 429 - Mixed Upland Conifers 430 - Upland Mixed Fores
 - 611 Lowland Deciduous Forest 612 - Lowland Coniferous Forest

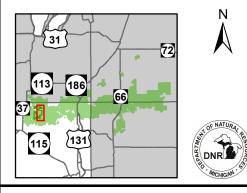


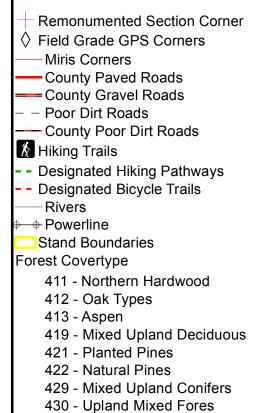
Non-Forest Covertype

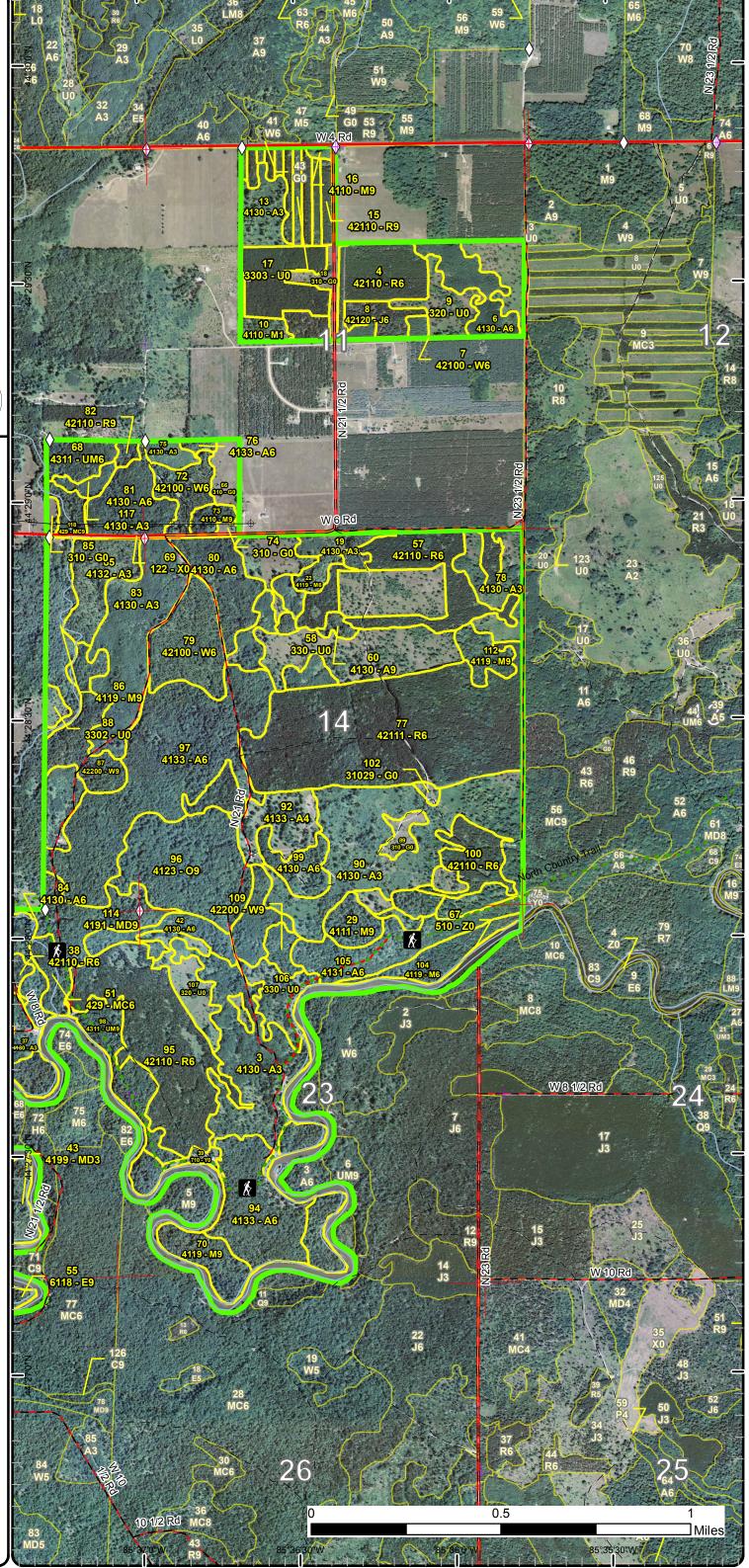
122 - Roads/Parking Lot
310 - Herbaceous Openland
320 - Upland Shrub
330 - Low Density Trees
500 - Water
710 - Sand/Soil

Stand Boundary Map

Compartment: 131 T24N, R11W, Sec. 10, 11, 14, 15, 22, 23 County: Wexford Unit: Cadillac Mgmt Area: Manistee River Valley YOE: 2017 Acres: 2271 GIS Calculated Examiner: Jim Malloy Map Revised: 7/14/2015 Map Phase: Pre-Review



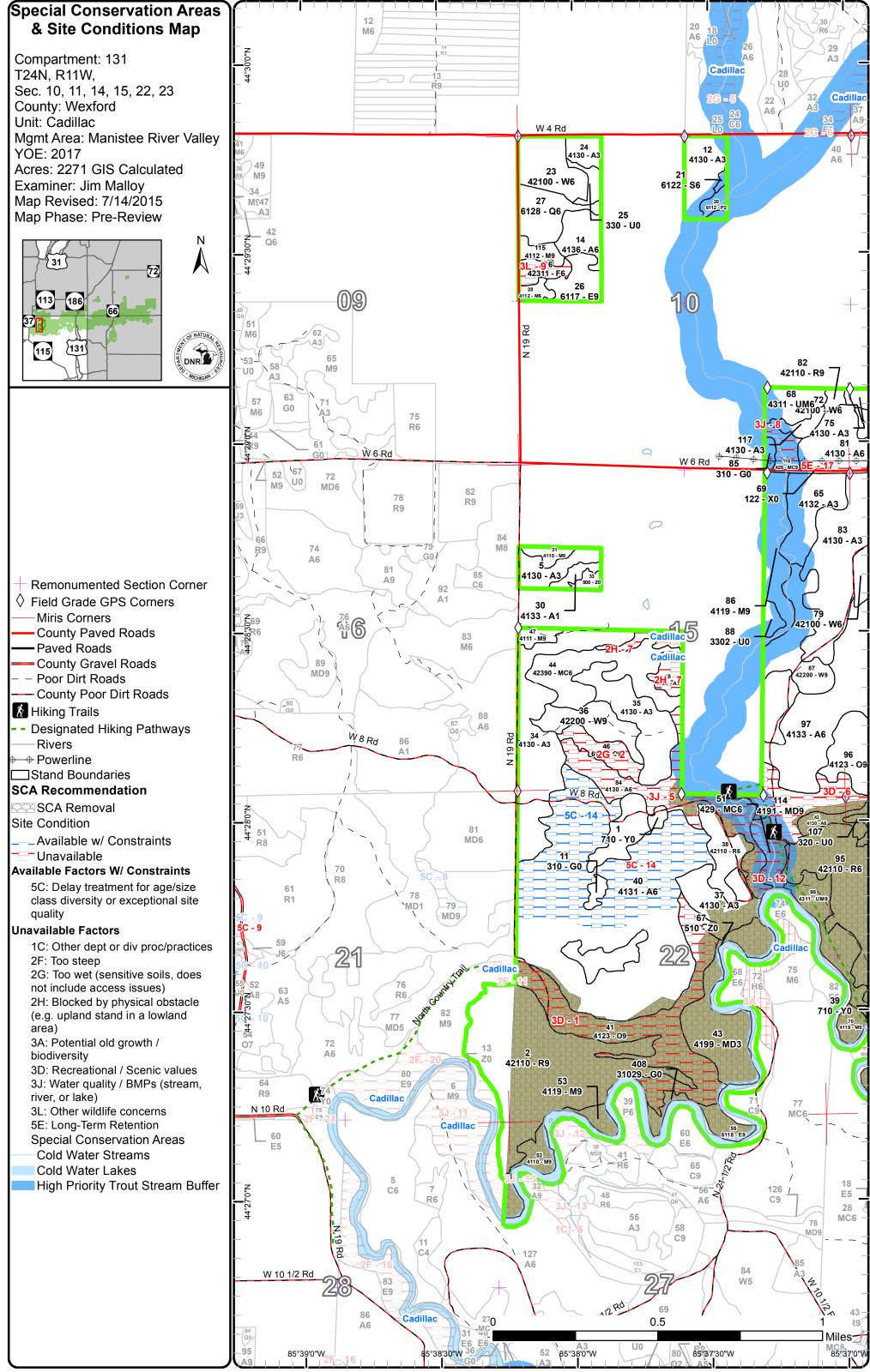


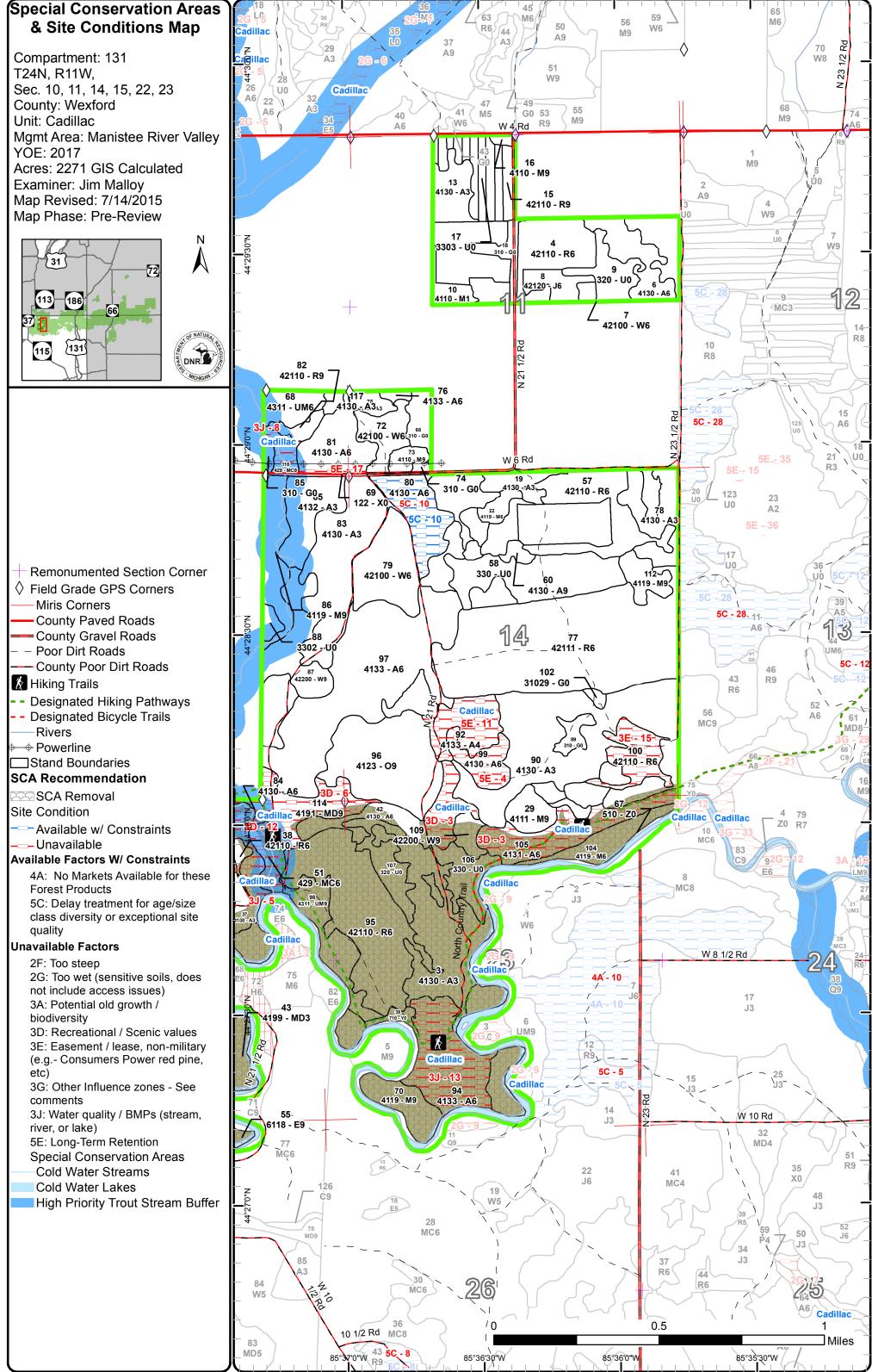


Non-Forest Covertype

122 - Roads/Parking Lot
310 - Herbaceous Openland
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710 - Sand/Soil

611 - Lowland Deciduous Forest





Report 1 – Total Acres by Cover Type and Age Class

Cadillac Mgt. Unit

Jim Malloy : Examiner



Age Class

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Aspen	0	217	181	52	25	3	301	182	0	0	0	0	0	0	0	0	0	0	961
Herbaceous Openland	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36
Jack Pine	0	0	0	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	14
Low-Density Trees	103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	103
Lowland Aspen/Balsam Poplar	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Lowland Conifers	0	0	0	0	0	0	0	0	16	0	0	10	0	0	0	0	0	0	26
Lowland Deciduous	0	0	0	0	0	0	0	11	0	0	0	0	0	0	0	0	0	6	17
Lowland Spruce/Fir	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Mixed Upland Deciduous	0	0	0	0	36	0	0	0	0	0	25	0	0	0	0	0	0	0	61
Northern Hardwood	0	0	0	0	0	9	0	19	35	4	24	0	0	0	0	0	0	51	142
Oak	0	0	0	0	0	0	0	0	0	62	52	0	0	0	0	0	0	0	114
Red Pine	0	0	0	47	0	0	384	16	0	0	0	0	0	0	0	0	0	0	447
Sand, Soil	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Upland Conifers	0	0	0	0	0	0	0	0	0	0	0	6	41	0	0	0	0	0	47
Upland Mixed Forest	0	0	0	0	0	0	20	0	0	0	11	0	0	0	0	0	0	0	31
Upland Shrub	42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42
Upland Spruce/Fir	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	6
Urban	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Water	105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	105
White Pine	0	0	0	0	0	0	65	40	0	6	0	0	0	0	0	0	0	0	111
Total	293	217	181	102	61	26	776	269	51	72	112	16	41	0	0	0	0	57	2274



Cover Type by Harvest Method

			Clearcut	Delection Delection	Long Contraction	Color Loop	Note Mood	Oceaning Oceaning	(e) Police	of the series	Sol Contraction	See of the second
Aspen		186	0	0	0	0	0	0	0	0	186	
Oak		0	0	0	52	0	0	0	0	0	52	
Red Pine		0	0	0	0	0	137	0	0	0	137	
Upland Mixed Forest		0	11	0	0	0	0	0	0	0	11	
	Total	186	11	0	52	0	137	0	0	0	386	

Proposed and Next Step Treatments by Harvest Method

		/.	Les	Co Lo Lo	O NOT	oo oo	in and a second	Concion Marcino	inition of the second	No.	4° / 20	40.98
Current		386	8	0	0	72	0	0	0	64	531	[
Next Step		0	52	8	0	72	0	265	0	0	397	
	Total	386	60	8	0	144	0	265	0	64	928	

S t		Ca	dillac Mgt. Unit		Re	eport 4	Treatmer	nts	-	tment: 131 Entry: 2017	DNR
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
9	63131009-NF	24.2 3	320 - Upland Shrub	Nonstocke	0 b	Unspec ified	NonForestMgt	Other - Specify	320 - Upland Shrub		Proposal
Preso Spec	<u>s:</u> shrubs		Site Condition: aintain as an openin ast/cover species.	ıg. May incl	ude mo	owing, dis	king, fertilizing, p	planting, cutting bru	ish or trees, brus	h pile creation	, planting
	t <u>ments:</u> ptable_ en:										
Othe		ext step co	mments:								
<u>Prop</u>	osed Start Date	<u>e:</u> 1/1/2	2016								
11	63131011-NF	2.7	310 - Herbaceous Openland	Nonstocke	t	Unspec ified	NonForestMgt	Other - Specify	310 - Herbaceous Openland		Proposal
			Site Condition: bening. May include es.	mowing, di	sking, f	fertilizing,	planting, cutting	brush or trees, bru	ish pile creation,	planting shrub	s or other
	<u>Step</u> tments:										
<u>Acce</u> Rege	ptable_ en:										
<u>Othe</u> Com	<u>r</u> Old n ment:	ext step co	mments:								
Prop	osed Start Date	<u>e:</u> 10/1 /	2016								
18	63131018-NF	4.1	310 - Herbaceous Openland	Nonstocke	0 b	Unspec ified	NonForestMgt	Other - Specify	310 - Herbaceous Openland		Proposal
	•		Site Condition: bening. May include es.	mowing, di	sking, f	fertilizing,	planting, cutting	brush or trees, bru	ish pile creation,	planting shrub	s or other
	<u>Step</u> tments:										
Acce Rege	ptable_ en:										
	ment:	ext step co									
	osed Start Date										
25	63131025-NF	3.9	330 - Low-Density Trees	Nonstocke	a 0	Unspec ified	NonForestMgt	Other - Specify	320 - Upland Shrub		Proposal
			Site Condition: bening. May include es.	mowing, di	sking, f	fertilizing,	planting, cutting	brush or trees, bru	sh pile creation,	planting shrub	s or other
	Step	·									
	tments:										
Treat	ptable										
Treat Acce Rege Othe	ptable_ en:	ext step co	mments:								

Cadillac Mgt. Unit Report 4 Treatments Compartment: 131 S Year of Entry: 2017	DNRI
	pproval Status
40 63131040-Cut 72.1 4131 - Aspen, Oak Poletimber 52 51-80 Harvest Clearcut with 413 - Aspen Even-Aged F Well Retention	Proposal
Habitat Cut: No Site Condition: Prescription Final harvest a portion of stand (1/3rd) focusing on the southern portion of this large stand. Final harvest leaving small conifer (>4") and (>8").	d oak
Next Step Treatments:	
<u>Acceptable</u> Aspen, Maple, Pine, Oak <u>Regen:</u>	
Other Apply appropriate trail protections along NCT where necessary. Leave a buffer strip along southern edge to serve as retention and visue from top of bluff. Old next step comments:	ial break
Proposed Start Date: 10/1 /2016	
58 63131058- Burn 72.1 330 - Low-Density Nonstocked 0 Unspec Burn Opening 310 - F Burn Trees ified Herbaceous Openland	Proposal
Habitat Cut: Yes Site Condition: Prescription Burn to keep open Specs: Specs:	
Next Step Treatments:	
Acceptable	
Other Old next step comments: Comment:	
Proposed Start Date: 1 /1 /2016	
66 63131066- Prep 8.1 310 - Herbaceous Nonstocked 0 Unspec SitePrep Trenching 4211 - Planted Even-Aged F Openland ified ified ified ified ified ified ified ified	Proposal
Habitat Cut: Yes Site Condition: Prescription Trench an plant red pine in abandoned field Specs: Specific Condition:	
<u>Next Step</u> Planting, Initial Plant; Monitoring, Artificial Regen(1yr); Monitoring, Artificial Regen(3yr) <u>Treatments:</u>	
Acceptable red pine Regen:	
Other Old next step comments: Comment:	
Proposed Start Date: 10/1 /2016	
6863131068-Cut10.84311 - Pine, AspenPoletimber9881-110HarvestGroup Selection4319 - MixedTwo-AgedFMixWell<	Proposal
Habitat Cut: No Site Condition: Prescription harvest all aspen and red maple and mark white pine to cut to a residual BA of 30-50 to provide a seed source for a new cohort of pine. Specs: Specs:	
Next Step Treatments:	
<u>Acceptable</u> White pine, aspen, red maple. <u>Regen:</u>	
Other Old next step comments: Comment:	
Proposed Start Date: 10/1 /2016	

t		C	adillac Mgt. Unit		Re	eport 4	Treatmei	nts		ment: 131 Entry: 2017	DNR
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
74	63131074-NF	1.1	310 - Herbaceous Openland	Nonstocke	0 b	Unspec ified	NonForestMgt	Herbaceous/Crop /Grass Planting	310 - Herbaceous Openland		Proposal
	<u>itat Cut:</u> Yes cription openin <u>s:</u>	ig maintar	Site Condition:	<u>.</u>							
	<u>Step</u> tments:										
<u>Acce</u> Rege	eptable_ en:										
<u>Othe</u> Com	<u>r</u> Old n <u>ment:</u>	ext step c	comments:								
<u>Prop</u>	osed Start Date	<u>e:</u> 10/1	/2016								
77	63131077-Cut	135.2	42111 - Planted Red Pine, Mixed Deciduous	Poletimber Well	56	171- 200	Harvest	Low Thinning	4211 - Planted Red Pine	Even-Aged	Proposal
		ine to a re	Site Condition: esidual BA of 90. Re	-	rdwood	and aspe	en within stand b	ooundaries.			
	<u>Step</u> tments:										
	ptable										
Rege	211.										
<u>Othe</u>		ext step c	comments:								
<u>Othe</u> Com	<u>r</u> Old n <u>ment:</u> osed Start Date	<u>»:</u> 10/1	/2016								
<u>Othe</u> Com	<u>r</u> Old n <u>ment:</u>	<u>»:</u> 10/1		Poletimber Well	55	81-110	Harvest	Clearcut with Retention	413 - Aspen	Even-Aged	Proposal
Othe Com Prop 81 Hab	r Old n ment: osed Start Date 63131081-Cut itat Cut: No cription Final h	<u>e:</u> 10/1 18.0	/2016	Well				Retention	·	Ū	·
Othe Com Prop 81 Hab Pres Spec	r Old n ment: osed Start Date 63131081-Cut itat Cut: No cription Final h	<u>e:</u> 10/1 18.0	/2016 4130 - Aspen <u>Site Condition</u> :	Well				Retention	·	Ū	·
Othe Com Prop 81 Hab Pres Spec Next Trea	r Old n ment: osed Start Date 63131081-Cut itat Cut: No cription Final h cription Final h ss: stand. Step tments: ptable Aspen	2: 10/1 18.0 harvest the	/2016 4130 - Aspen Site Condition: e portion of the stand	Well				Retention	·	Ū	·
Othe Com Prop 81 Hab Pres Spec Next Trea Acce Rege	r Old n ment: osed Start Date 63131081-Cut itat Cut: No cription Final h sc: stand. Step tments: eptable Aspen en: Old n ment: Old n	2: 10/1 18.0 harvest the , maple an lext step c	/2016 4130 - Aspen Site Condition: e portion of the stand	Well				Retention	·	Ū	·
Othe Com Prop 81 Hab Pres Spec Next Trea Acce Rege Othe Com Prop	r Old n ment: osed Start Date 63131081-Cut itat Cut: No cription Final h stand. Step tments: sptable Aspen en: r Old n ment: osed Start Date	2: 10/1 18.0 harvest the , maple an hext step o 2: 10/1	/2016 4130 - Aspen <u>Site Condition</u> : e portion of the stand nd white pine. comments: /2016	Well	e power	r line ROV	V. The area be	Retention	power line will se	erve as the rete	ntion for this
Othe Com Prop 81 Hab Pres Spec Next Trea Acce Rege Othe Com Prop	r Old n ment: osed Start Date 63131081-Cut itat Cut: No cription Final h sc: stand. Step tments: eptable Aspen en: Old n ment: Old n	2: 10/1 18.0 harvest the , maple an hext step c 2: 10/1	/2016 4130 - Aspen <u>Site Condition</u> : e portion of the stand nd white pine. comments: /2016	Well	e power			Retention	·	Ū	·
Othe Com Prop 81 Press Spec Next Trea Accee Com Prop 82 Rege Othe Com Prop Prop	r Old n ment: osed Start Date 63131081-Cut itat Cut: No cription Final h stand. Step tments: r Old n ment: osed Start Date 63131082-Cut itat Cut: No cription Thin re	2: 10/1 18.0 harvest the , maple an hext step of 2: 10/1 2.3	/2016 4130 - Aspen <u>Site Condition:</u> e portion of the stand nd white pine. comments: /2016 42110 - Planted	Well north of the Sawtimber Well	e power	r line ROV	V. The area be	Retention	power line will se	erve as the rete	ntion for this
Othe Com Prop 81 Hab Pres Spec Next Trea Acce Rege Othe Com Prop 82 Hab Pres Spec Next	r Old n ment: osed Start Date 63131081-Cut itat Cut: No cription Final h stand. Step tments: r Old n ment: osed Start Date 63131082-Cut itat Cut: No cription Thin re	2: 10/1 18.0 harvest the , maple an hext step of 2: 10/1 2.3	/2016 4130 - Aspen Site Condition: e portion of the stand nd white pine. comments: /2016 42110 - Planted Red Pine Site Condition:	Well north of the Sawtimber Well	e power	r line ROV	V. The area be	Retention	power line will se	erve as the rete	ntion for this
Othe Com Prop 81 Hab Pres Spec Next Trea Acce Regr Othe Com Prop 82 Bres Spec Next Trea	r Old n ment: osed Start Date 63131081-Cut itat Cut: No cription Final h s: stand. Step tments: eptable Aspen en: osed Start Date 63131082-Cut itat Cut: No cription Thin re s: Step tments:	2: 10/1 18.0 harvest the , maple an hext step of 2: 10/1 2.3	/2016 4130 - Aspen Site Condition: e portion of the stand nd white pine. comments: /2016 42110 - Planted Red Pine Site Condition:	Well north of the Sawtimber Well	e power	r line ROV	V. The area be	Retention	power line will se	erve as the rete	ntion for this
Othe Com Prop 81 Pres Spec Next Trea Acce Rege Othe Com 82 Prop 82 Pres Spec Next Trea Acce Rege Othe Com Prop	r Old n ment: osed Start Date 63131081-Cut itat Cut: No cription Final h ss: stand. Step tments: cptable Aspen an: osed Start Date 63131082-Cut itat Cut: No cription Thin re ss: Step tments: step	2: 10/1 18.0 harvest the , maple an hext step c 2: 10/1 2.3 ed pine to	/2016 4130 - Aspen Site Condition: e portion of the stand nd white pine. comments: /2016 42110 - Planted Red Pine Site Condition:	Well north of the Sawtimber Well	e power	r line ROV	V. The area be	Retention	power line will se	erve as the rete	ntion for this

S t		Ca	dillac Mgt. Unit		Re	eport 4	Treatmer	nts	•	ment: 131 Entry: 2017	DNRI
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
89	63131089-NF	12.3	310 - Herbaceous Openland	Nonstocke	d	Unspec ified	NonForestMgt	Other - Specify	310 - Herbaceous Openland		Proposal
		in as an or over speci	Site Condition	-	sking, f	ertilizing,	planting, cutting	brush or trees, br	ush pile creation, p	planting shrub	s or other
	<u>Step</u> tments:										
<u>Acce</u> Rege	eptable_ en:										
<u>Othe</u> <u>Com</u>	<u>r</u> Old no <u>ment:</u>	ext step co	omments:								
<u>Prop</u>	osed Start Date	<u>:</u> 10/1 /	/2016								
96	63131096-Cut	52.0	4123 - Red Oak	Sawtimber Well	95	51-80	Harvest	Seed Tree with Retention	412 - Oak Types	Two-Aged	Proposal
		ak to cut to germination	Site Condition o a residual BA of 3 n.	-	III maple	e and asp	oen but leave sca	attered conifer. So	carify stand followi	ng harvest to	encourage
	<u>Step</u> SitePre tments:	ep, Scarific	cation; Monitoring,	Natural Reg	en (Inte	ermediate)				
<u>Acce</u> Rege	e <u>ptable</u> Oak, m en:	aple									
<u>Othe</u> Com	e <u>r</u> leave a <u>ment:</u>	buffer str	ip along southern e	dge to serve	e as rete	ention an	d visual break fro	om top of bluff. Ol	d next step commo	ents:	
<u>Prop</u>	osed Start Date	<u>:</u> 10/1 /	/2016								
97	63131097-Cut	96.0	4133 - Aspen, Mixed Pine	Poletimber Well	62	81-110	Harvest	Clearcut with Retention	413 - Aspen	Even-Aged	Proposal
		arvest asp	Site Condition	-	o cut ta	a residu	al BA of 50 in are	eas of higher dens	iity.		
	<u>Step</u> tments:										
<u>Acce</u> Rege		red maple	e, oak, white pine								
<u>Othe</u> Com	<u>r</u> leave a <u>ment:</u>	buffer str	ip along southern e	dge to serve	e as rete	ention an	d visual break fro	om top of bluff. Ol	d next step commo	ents:	
<u>Prop</u>	osed Start Date	<u>:</u> 10/1 /	/2016								
107	63131107-NF	16.2 \$	320 - Upland Shrub	Nonstocke	d 0	Unspec ified	NonForestMgt	Other - Specify	310 - Herbaceous Openland		Proposal
			Site Condition aintain as an openinast/cover species.	ng. May incl	ude mo	owing, dis	king, fertilizing, p	blanting, cutting br	ush or trees, brush	n pile creation	, planting
	<u>Step</u> tments:										
<u>Acce</u> Rege	eptable_ en:										
<u>Othe</u> Com	<u>r</u> Old no <u>ment:</u>	ext step co	omments:								
<u>Prop</u>	osed Start Date	<u>:</u> 1/1/2	2016								
А	Total Treatme creage Propos		31.0								

Cadillac Mgt. Unit

Report 5 – Site Conditions

Jim Malloy : Examiner

Compartment: 131 Year of Entry: 2017

Availability for Management

	•	U									
Total	Acres	Acres	De	omina	nt Site	e Con	dition	S			
Acres	Available	Not Available		2G	2H	3D	3E	3J	3L	5C	5E
960	670	289	Aspen		12	41		77		124	36
36	36	0	Herbaceous Openland								
14	14	0	Jack Pine								
103	103	0	Low-Density Trees								
3	3	0	Lowland Aspen/Balsam Poplar								
26	16	10	Lowland Conifers	10							
17	17	0	Lowland Deciduous								
1	1	0	Lowland Spruce/Fir								
61	36	25	Mixed Upland Deciduous			25					
141	141	0	Northern Hardwood								
114	52	62	Oak			62					
447	430	16	Red Pine				16				
5	5	0	Sand, Soil								
47	32	15	Upland Conifers			9		6			
31	31	0	Upland Mixed Forest								
42	42	0	Upland Shrub								
6	0	6	Upland Spruce/Fir						6		
2	2	0	Urban								
105	105	0	Water								
111	111	0	White Pine								
2,271	1,848	424	Total Forested Acres	10	12	137	16	83	6	124	36
-	81%	19%	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.

	Dominant Site Cond Availability	Dominant Site Condition	Acres	Other Site Condition	Other Site Condition	Other Site Condition	Other Site Condition
1	Unavailable	3D: Recreational / Scenic values	62	Unspecified	Unspecified	Unspecified	Unspecified
	Comments: Stand occurs along	bluff to Manistee River					

		adillac Mgt. Unit Malloy : Examiner		Report 5 – Site Con	ditions	Compartment: 13 [,] Year of Entry: 201	
2	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	10	Unspecified	Unspecified	Unspecified	Unspecified
	Comments: Cedar spruce swar	np area					
3	Unavailable	3D: Recreational / Scenic values	42	3J: Water quality / BMPs (stream, river, or lake)	Unspecified	Unspecified	Unspecified
	Comments:						
	Stand occurs along	bluff to Manistee River					
4	Unavailable	5E: Long-Term Retention	12	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
5	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	39	2F: Too steep	Unspecified	Unspecified	Unspecified
	Comments: Steep areas along	the Anderson Creek					
6	Unavailable	3D: Recreational / Scenic values	25	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
7	Unavailable	2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)	12	Unspecified	Unspecified	Unspecified	Unspecified
	Comments: Stand is wet to the	north and west					

		adillac Mgt. Unit Malloy : Examiner		Report 5 – Site C	onditions	Compartment: 13 Year of Entry: 20	
8	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	6	2F: Too steep	Unspecified	Unspecified	Unspecified
	Comments: steep areas adjace	nt to Anderson Creek					
9	Unavailable	3L: Other wildlife concerns	6	Unspecified	Unspecified	Unspecified	Unspecified
	Comments: Spruce stand provi	des wildlife cover. Thin next YC	DE				
10	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	22	Unspecified	Unspecified	Unspecified	Unspecified
	Comments: hold for age class of	diversity.					
11	Unavailable	5E: Long-Term Retention	20	Unspecified	Unspecified	Unspecified	Unspecified
	Comments: Hold as retention fo	or surrounding aspen areas.					
12	Unavailable	3D: Recreational / Scenic values	9	2F: Too steep	3J: Water quality / BMPs (stream, river, or lake)	Unspecified	Unspecified
		nderson Creek and contains foo ve effects on water quality.	otbridge	of NCT over the creek.	Steep banks increase risk of e	erosion, and opening up s	stream to sunlight
13	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	38	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						

		adillac Mgt. Unit Malloy : Examiner		Report 5 – Site Cor	nditions	Compartment: 131 Year of Entry: 2017		
14	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	101	Unspecified	Unspecified	Unspecified	Unspecified	
Co	omments:							
15	Unavailable	3E: Easement / lease, non- military (e.g Consumers Power red pine, etc)	16	Unspecified	Unspecified	Unspecified	Unspecified	
	mments: Insumers Pine							
17	Unavailable	5E: Long-Term Retention	4	Unspecified	Unspecified	Unspecified	Unspecified	

west), CONTINUE TREATMENT*



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
Unspecified	Potential Old Growth		SCA Removal	530
Comments				
THIN (heavily) FROM	BELOW AND TAKE OUT ALL DEFECT.	LEAVE ONLY HIGHEST QUALIT	Y RESIDUAL (product wise).	TARGET

RESIDUAL BA OF 100 SQ.FT. LEAVE ALL HARDWOOD (seed source). PLANTATION CONTINUES INTO COMPARTMENT 130 (to the

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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.

Conservati Area	on Type	Description	ERA = Ecological Reference Area HCVA = High Conservation Value Area SCA = Special Conservation Area
SCA	Cold Water Lake	A coldwater lake has temperature and dissolved oxygen conditi stocked trout populations and those of other coldwater fish spec conditions for coldwater fishes may occur in Michigan lakes if th groundwater inflows, or are located in colder (northern) areas o Director's action and designated as trout resources by Fisheries	cies to persist from year to year. Suitable hey are relatively deep, have substantial f the state. Such lakes are established by
SCA	Cold Water Stream	A coldwater stream has temperature and dissolved oxygen con- stocked trout populations and those of other coldwater fish spec year to year. Coldwater streams in Michigan typically provide th contributions of groundwater to their stream flows. Such stream designated as trout resources by Fisheries Order 210.	cies (e.g., slimy sculpin) to persist from ese conditions due to substantial
SCA	Riparian Area	A transitional area between aquatic and terrestrial ecosystems influences the aquatic ecosystem and vice-versa. Because of the streams and open water wetlands, riparian areas harbor a high communities are ecologically and socially significant in their effect as aesthetics, habitat, bank stability, timber production, and the	ne unique conditions adjacent to lakes, diversity of plants and wildlife. Riparian ects on water quality and quantity, as well

S t	Cadillad	Cadillac Mgt. Unit			– Forested	Stands Compartment: 131
a n d	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
2	42110 - Planted Red Pine	Sawtimber Well	96.8	58	81-110	Pine scheduled for treatment last entry. Treatment did not occur until summer 2014. Growing very well with hardwood encroachment in the understory.
3	4130 - Aspen	Sapling Well	51.5	12	81-110	
4	42110 - Planted Red Pine	Poletimber Well	46.6	28	81-110	Planted red pine adjacent to private to the west. Stand is closing in and growing well. Avg 25' height.
5	4130 - Aspen	Sapling Well	10.5	25	1-50	aspen is progressing into pole size. Small unmapped pocket of cedar in the SW of stand.
6	4130 - Aspen	Poletimber Well	18.0	25	1-50	stand of young aspen that is growing well. contains scattered maple and oak throughout.
7	42100 - Planted White Pine	Poletimber Well	4.4	50	141-170	previous inventory cites this as an experimental plantation done by MSU in 1965. Attempted to improve vertical growth by maintain high BA.
8	42120 - Planted Jack Pine	Poletimber Well	13.6	47	81-110	off site jack pine that is falling apart. Mixed with cherry and red maple. Previous inventory indicated an experimental planting done by MSU in1968.
10	4110 - Sugar Maple Association	Sapling Poor	5.8	45	1-50	mostly cherry and maple with a few scattered elm trees. Many of the elm are dead snags. Serves as a different cover surrounded by different pine types. A few scattered maples throughout.
12	4130 - Aspen	Sapling Well	16.8	25	1-50	aspen stand that borders 4 rd to the north and transitions to a wet area toward the south along Anderson creek.
13	4130 - Aspen	Sapling Well	13.5	5	Immature	
14	4136 - Aspen, Mixed Conifer	Poletimber Well	11.3	39	51-80	
15	42110 - Planted Red Pine	Sawtimber Well	15.5	59	141-170	Stand was thinned last entry. Crowns have not closed in yet, so delay next treatment until the next YOE.
16	4110 - Sugar Maple Association	Sawtimber Well	1.3	74	51-80	small pocket of hardwood at edge of red pine strips.
19	4130 - Aspen	Sapling Well	25.3	15	1-50	northern portion of stand contains a few scattered hardwood ans a small open area along county road. these multipule stands are all part of a single sale.
20	6112 - Lowland Aspen	Sapling Medium	3.0	25	1-50	Stand contains Anderson Creek.

S t	Cadilla	c Mgt. Unit		Report 8	– Forested	Stands Compartment: 131
a n d	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
21	6122 - Black Spruce	Poletimber Well	1.0	63	51-80	OPIC - FMD: A3 - 2-3"dia. (avg ht 32').
22	4119 - Mixed Northern Hardwoods	Poletimber Well	4.8	74	51-80	dead ash snags in stand providing good habitat for birds. Aspen encroaching in from edge.
23	42100 - Planted White Pine	Poletimber Well	18.9	50	141-170	White pine was thinned last entry. Crowns not closed yet. Thin or final harvest next entry.
24	4130 - Aspen	Sapling Well	6.1	26	Immature	
26	6117 - Lowland Deciduous, Mixed Coniferous	Sawtimber Well	11.1	64	81-110	aspen occurs mostly along the edge of the stand.
27	6128 - Lowland Coniferous, Mixed Deciduous	Poletimber Well	15.7	74	51-80	
28	4112 - Maple, Beech, Cherry Association	Poletimber Well	3.2	47	51-80	stand is multi stemmed cherry and red maple with a scattered hemlock understory. Ground transitions to a wetter stand to the west, and some hummocks occur.
29	4111 - S.Maple, Hard Mast Association	Sawtimber Well	14.6	92	51-80	stand was treated last entry an all ash removed due to EAB infestation.
30	4133 - Aspen, Mixed Pine	Sapling Poor	3.4	42	1-50	transitional area between aspen stand and beaver flooding. Shows signs of activity.
31	4110 - Sugar Maple Association	Sawtimber Well	3.7	76	81-110	sparse hardwoods with aspen.
34	4130 - Aspen	Sapling Well	60.4	7	1-50	This stand was harvested in the summer of 2008 and was a tree length operation and chipper. A few residual white pine were left. Growing well, this is one stand from a multi stand sale. Stand is adjacent to 19 rd.
35	4130 - Aspen	Sapling Well	27.1	8	1-50	Young aspen stand that was treated last YOE with scattered residual over story oak.
36	42200 - Natural White Pine	Sawtimber Well	16.4	65	81-110	stand was harvested last entry with all maple and aspen being removed along with a portion of the white pine over story. Aspen and maple are now regenerating under the pine.
37	4130 - Aspen	Sapling Well	19.6	17	1-50	aspen stand with a residual over story of red oak.
38	42110 - Planted Red Pine	Poletimber Well	23.7	59	141-170	

S t				Report 8	– Forested	Stands Compartment: 131 Year of Entry: 2017
a n d	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
40	4131 - Aspen, Oak	Poletimber Well	173.3	52	51-80	large aspen complex with red oak, maple, and white pine. This stand occurs entirely above the bluff leading to the Manistee River. stand transitions from almost a pure aspen stand tin the western portion to a more maple oak aspen stand to the east. NCT runs through the stand in the southern portion.
41	4123 - Red Oak	Sawtimber Well	61.8	87	81-110	Stand of oak that occurs along the bluff to the Manistee River.
42	4130 - Aspen	Poletimber Well	13.7	32	51-80	Stand occurs on the face of a bluff and along the top ridge of the bluff.
43	4199 - Other Mixed Upland Deciduous	Sapling Well	36.0	36	51-80	mostly black ask in the river floodplain. Most is dead/dying due to EAB. Flooded during the winter. Heavy use by deer and turkey. Scattered balsam fir.
44	42390 - Mixed Non- Pine Upland Conifers	Poletimber Well	31.6	118	51-80	Cedar and balsam fir with scattered large white pine and red maple. This stand has evidence of flowing water during wet seasons. Some blow down has occurred in the cedar, but little regeneration in evident.
46	6129 - Mixed Coniferous Lowland Forest	Sawtimber Well	10.2	102	51-80	lowland pocket surrounded by upland aspen and pine.
47	4111 - S.Maple, Hard Mast Association	Sawtimber Well	3.8	87	51-80	Stand contains an easement for access to private property to the east. This stand was a small grove of hardwood that was left following the adjacent timber sale. Keep for species diversity in the area. No scale was observed on the beech. Some aspen is bleeding into the stand following the adjacent cut.
48	4130 - Aspen	Poletimber Well	12.0	57	51-80	stand has areas of seasonally wet portions. southern portion of stand is surrounded by adjacent swamp complex.
51	429 - Mixed Upland Conifers	Poletimber Well	9.0	114	51-80	Stand contains Anderson Creek
52	4110 - Sugar Maple Association	Sawtimber Well	9.8	105	81-110	Northern hardwoods on the flood plain several feet above the river, with a mix of cedar.
53	4119 - Mixed Northern Hardwoods	Sawtimber Well	6.2	98	51-80	Stand consists of N.hwds w/some large dia. cedar on the flood plain several feet above the river. Large ash are dead/dying due to EAB
55	6118 - Lowland Deciduous with Cedar	Sawtimber Well	6.2	104	51-80	hardwood stand along river that shows obvious signs of seasonal flooding. Ash is dead/dying due to EAB
57	42110 - Planted Red Pine	Poletimber Well	41.2	55	81-110	
60	4130 - Aspen	Sawtimber Well	4.5	61	51-80	small stands

S t	Cadillac Mgt. Unit			Report 8	– Forested	Stands Compartment: 131
a n d	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
65	4132 - Aspen, Jack Pine	Sapling Well	21.3	12	1-50	Stand consists of jack pine which is falling apart and being succeeded by aspen and red maple.
68	4311 - Pine, Aspen Mix	Poletimber Well	10.8	98	81-110	Stand is combination of over story white pine with an aspen maple understory. In areas of little white pine it is almost pure aspen.
70	4119 - Mixed Northern Hardwoods	Sawtimber Well	34.8	101	51-80	hardwood stand that occurs along river. N hardwood with cedar. Ash component is dying due to EAB.
72	42100 - Planted White Pine	Poletimber Well	13.3	59	81-110	
73	4110 - Sugar Maple Association	Sawtimber Well	4.6	72	81-110	overhead power line runs through stand.
75	4130 - Aspen	Sapling Well	5.0	4	81-110	
76	4133 - Aspen, Mixed Pine	Poletimber Well	1.8	68	81-110	Stand was not cut during previous entry. Hold as retention for adjacent cut.
77	42111 - Planted Red Pine, Mixed Deciduous	Poletimber Well	135.2	56	171-200	Stand was thinned last entry. Thin again this entry, and remove all scattered hardwood and aspen.
78	4130 - Aspen	Sapling Well	19.8	5	1-50	
79	42100 - Planted White Pine	Poletimber Well	28.5	54	111-140	Stand was thinned last entry. All aspen within stand was cut along with 1/2 of white pine removed. Hold until next entry and final harvest then. Determine if stand should be kept as pine or allowed to convert to aspen pine mix.
80	4130 - Aspen	Poletimber Well	22.4	50	81-110	
81	4130 - Aspen	Poletimber Well	21.9	55	81-110	Aspen stand contains a power line ROW in the southern portion along the county road.
82	42110 - Planted Red Pine	Sawtimber Well	2.3	50	171-200	
83	4130 - Aspen	Sapling Well	58.6	15	1-50	
84	4130 - Aspen	Poletimber Well	39.0	58	81-110	Steep bluff along Anderson creek in the eastern portion of the stand. This portion was to steep to be harvested during the adjacent harvest to the west. Ash component is mostly dead snags.
86	4119 - Mixed Northern Hardwoods	Sawtimber Well	20.2	72	81-110	Stand buffers along western edge of Anderson Creek and contains steep bank with very limited access.

S	Cadillac	Cadillac Mgt. Unit			– Forested	Stands Compartment: 131 Year of Entry: 2017
t a n d	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
87	42200 - Natural White Pine	Sawtimber Well	24.1	67	81-110	
90	4130 - Aspen	Sapling Well	91.4	5	1-50	Aspen stand that was harvested last entry. Brush piles were left for habitat and lots of edge was created with the stand boundary. Autumn olive bushes are prevalent in the stand and especially along the two tracks through this stand.
92	4133 - Aspen, Mixed Pine	Poletimber Poor	19.8	55	1-50	
94	4133 - Aspen, Mixed Pine	Poletimber Well	37.8	62	51-80	stand touches Manistee river on two sides and is mostly flat. transitions to lower ground in the adjacent stands to the east and west and transition into a more hardwood component.
95	42110 - Planted Red Pine	Poletimber Well	69.1	58	141-170	
96	4123 - Red Oak	Sawtimber Well	52.0	95	51-80	Stand of red oak that occurs on top of the bluff leading down to the Manistee river.
97	4133 - Aspen, Mixed Pine	Poletimber Well	96.0	62	81-110	aspen and oak with scattered pockets of white pine throughout.
98	4311 - Pine, Aspen Mix	Sawtimber Well	20.4	55	51-80	Mostly white pine with aspen, some scattered hardwood in fringes along the river. Popular caming spot in NW of stand along Manistee river/Anderson creek.
99	4130 - Aspen	Poletimber Well	12.0	54	51-80	stand was left out of large adjacent cut last entry.
100	42110 - Planted Red Pine	Poletimber Well	16.3	62	171-200	previous comments list this stand as consumers pine timber rights
104	4119 - Mixed Northern Hardwoods	Poletimber Well	14.2	69	81-110	stand occurs on the lower flat below the river bluff. Mix of n hardwood with cedar.
105	4131 - Aspen, Oak	Poletimber Well	41.5	62	81-110	
109	42200 - Natural White Pine	Sawtimber Well	5.6	84	51-80	
112	4119 - Mixed Northern Hardwoods	Sawtimber Well	9.3	95	81-110	
114	4191 - Mixed Upland Deciduous with Conifer	Sawtimber Well	25.2	93	81-110	stand occurs along ridge and bluff.
115	4112 - Maple, Beech, Cherry Association	Sawtimber Well	4.8	63	81-110	few scattered log sized cherry throughout stand.

S t a n d	Cadillac Mgt. Unit			Report 8	– Forested	Stands Compartment: 131 Year of Entry: 2017
	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
116	42311 - Planted Spruce, Mixed Deciduous	Poletimber Well	5.8	53	111-140	
117	4130 - Aspen	Sapling Well	4.4	15	1-50	
118	429 - Mixed Upland Conifers	Sawtimber Well	6.1	100	51-80	Stand contains the Anderson Creek. Steep banks to the creek limit access.

Compartment: Year of Entry:



Stand	Cover Type	Acres	Managed Site	General Comments:	WCHIG A
		#Type!			