



Compartment Review Presentation

Gaylord Forest Management Unit

Compartment 68

Entry Year 2015

Acreage: 1,350

County Charlevoix

Management Area: Great Lakes Islands - NLP

Revision Date: 04/10/2013

Stand Examiner: Kim Lentz

Legal Description:

T38N, R10W, Sections 6, 7, 19, 20, 29-32

T38N, R11W, Sec. 24, 25

T39N, R10W, Sec. 32

Identified Planning Goals:

To provide for the protection, integrated management and responsible use of a healthy, productive, and undiminished forest resource base for the social, recreational, environmental, and economic benefit of the State of Michigan.

Soil and topography:

Soil types vary from Kalkaska Sand and Leelanau & Emmet Loamy sands on the upland to Deer Park Dune on the beaches. Lowland with wetlands are rifle peat soils. The terrain is unique along the Lake Michigan Beach parcels with sand dune ridges of hardwoods adjacent to the beach. The interior stands of hardwood are primarily level to slightly rolling terrain.

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

A larger block of state ownership in Section 31 & 32. The remaining state owned property in this compartment has scattered parcels ranging from 10 to 160 acres. The primary use includes deer hunting, small game hunting, camping and hiking along the Lake Michigan waterfront.

Unique Natural Features:

Four parcels within this compartment include portions of the western shorelines on Beaver Island adjacent to Lake Michigan. These unique sandy beaches also include sand dune ecological habitat with vistas overlooking Lake Michigan and nearby islands. On the map, these parcels are identified as McCauley Point, Bonner Landing, Oliver Point, and McFadden Point.

Archeological, Historical, and Cultural Features:

There are known concerns in the compartment. All proposed management activities have taken these concerns into consideration.

Special Management Designations or Considerations:

This compartment is part of the Great Lakes Islands Management Area Plan.

Watershed and Fisheries Considerations:

Greene Lake is located in Section 31 and Fox Lake is in Section 29 with state ownership adjacent to it. Extensive bogs and marshes are associated with these two lakes. Greene Lake also has a fishing boat access site on the northwest corner of lake. Important wetland complexes such as Sweeny Swamp and the areas surrounding Fox and Greene's Lake are found within this compartment. Though none of the treatments proposed appear as though they will impact these areas directly, these wetland areas and popular lakes should be protected with the appropriate BMP's.

Wildlife Habitat Considerations:

This compartment is on Beaver Island and consists mainly of northern hardwoods and pockets lowland. This compartment is utilized by a variety of wildlife species, including white-tailed deer, ruffed grouse, woodcock, wild turkey, furbearers and various songbirds. One stand of hardwoods is prescribed for treatment and it will provide structural diversity to the stand.

Mineral Resource and Development Concerns and/or Restrictions

Surface sediments consist of lacustrine (lake) sand and gravel, dune sand along the coast and coarse-textured glacial till (uplands). The glacial drift thickness varies between 300 and 400 feet based on wells previously drilled on the island. Beneath the glacial drift are the Devonian Detroit River Group and the Bois Blanc formation. The Detroit River is mined for salt and the Bois Blanc is used for stone in other areas in the State. The nearest gravel pit is two miles to the east, but gravel potential on the upland area is thought to be good. Oil and gas potential appears to be limited. Two wells were drilled on Beaver Island in 1961 as dry holes. One of the wells was located in Section 27 to the east. These wells were "deep"

tests, with one reaching Precambrian age rocks. None of the State land is currently leased in the compartment.

Vehicle Access:

There is good access to the state parcels in this compartment by county roads which are either dirt and/or gravel.

Survey Needs:

None needed at this time.

Recreational Facilities and Opportunities:

Fishing boat access site on the northwest corner of Greene Lake. Hiking trails although not state designated are located on the Lake Michigan beach parcels in this compartment.

Fire Protection:

No foreseen problems

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**

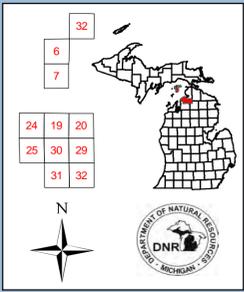
The following information is displayed, where pertinent, on the attached compartment maps:

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

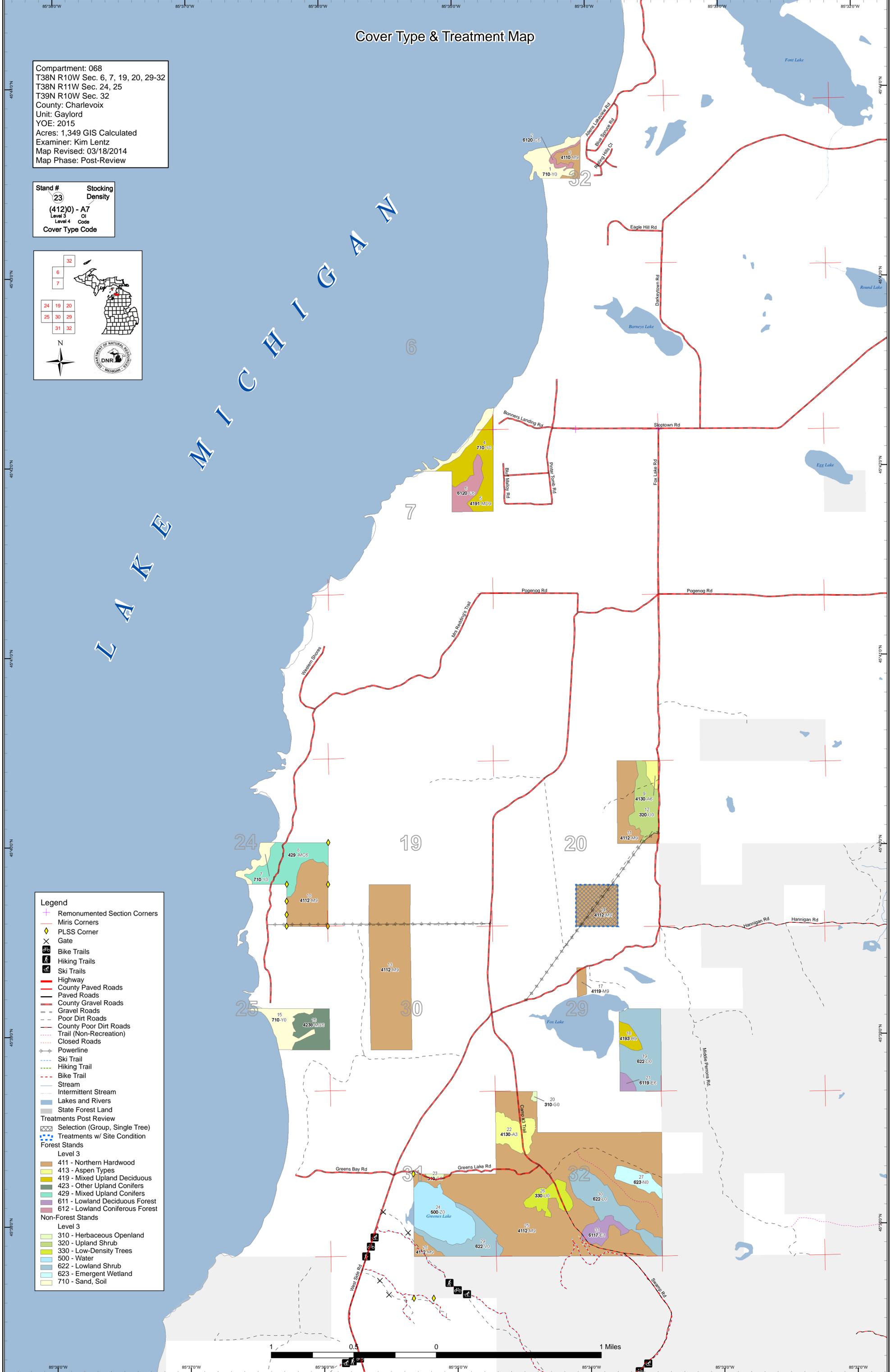
Cover Type & Treatment Map

Compartment: 068
 T38N R10W Sec. 6, 7, 19, 20, 29-32
 T38N R11W Sec. 24, 25
 T39N R10W Sec. 32
 County: Charlevoix
 Unit: Gaylord
 YOY: 2015
 Acres: 1,349 GIS Calculated
 Examiner: Kim Lentz
 Map Revised: 03/18/2014
 Map Phase: Post-Review

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



- Legend**
- ✚ Remonumented Section Corners
 - ✚ Miris Corners
 - ◆ PLSS Corner
 - ✕ Gate
 - 🚲 Bike Trails
 - 👤 Hiking Trails
 - 🛷 Ski Trails
 - 🛣 Highway
 - 🛣 County Paved Roads
 - 🛣 Paved Roads
 - 🛣 County Gravel Roads
 - 🛣 Gravel Roads
 - 🛣 Poor Dirt Roads
 - 🛣 County Poor Dirt Roads
 - 🛣 Trail (Non-Recreation)
 - 🛣 Closed Roads
 - ⚡ Powerline
 - 🛤 Ski Trail
 - 👤 Hiking Trail
 - 🚲 Bike Trail
 - 🌊 Stream
 - 🌊 Intermittent Stream
 - 🌊 Lakes and Rivers
 - 🌊 State Forest Land
 - Treatments Post Review**
 - 📦 Selection (Group, Single Tree)
 - 📦 Treatments w/ Site Condition
 - Forest Stands**
 - Level 3**
 - 🟤 411 - Northern Hardwood
 - 🟡 413 - Aspen Types
 - 🟢 419 - Mixed Upland Deciduous
 - 🟢 423 - Other Upland Conifers
 - 🟢 429 - Mixed Upland Conifers
 - 🟢 611 - Lowland Deciduous Forest
 - 🟢 612 - Lowland Coniferous Forest
 - Non-Forest Stands**
 - Level 3**
 - 🟡 310 - Herbaceous Openland
 - 🟡 320 - Upland Shrub
 - 🟡 330 - Low-Density Trees
 - 🟡 500 - Water
 - 🟡 622 - Lowland Shrub
 - 🟡 623 - Emergent Wetland
 - 🟡 710 - Sand, Soil

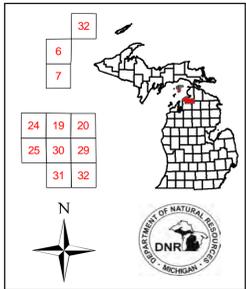


Special Conservation Areas & Site Conditions Map

Compartment: 068
 T38N R10W Sec. 6, 7, 19, 20, 29-32
 T38N R11W Sec. 24, 25
 T39N R10W Sec. 32
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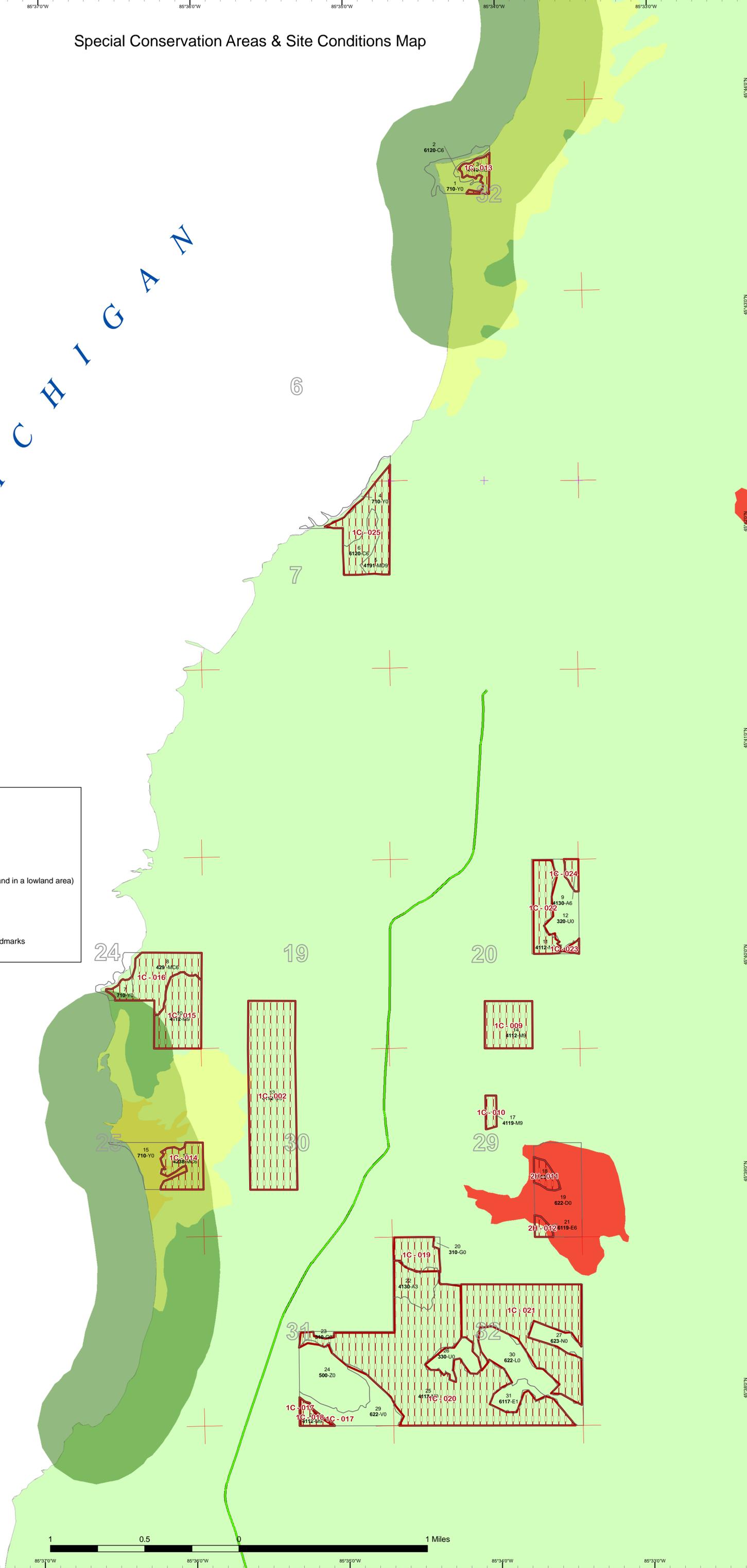
Stand #	Stocking Density
(412)0 - A7	Ol
Level 3	Code
Level 4	Code

Cover Type Code



Legend

- Remonumented Section Corners
- Miris Corners
- Stand Boundaries
- Site Condition Available
- Unavailable (Factor - Number)
- Site Condition Type
 - 1C: Other dept or div proc/practices
 - 2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)
- Dedicated Special Conservation Areas
 - Natural Beauty Roads
 - Ecological Reference Areas
 - Critical Dunes
 - Critical Coastal Habitat (Piping Plover)
 - Non-Dedicated Natural Areas and National Natural Landmarks
 - Great Lakes Islands



Report 1 – Total Acres by Cover Type and Age Class



	Age Class													Total	
	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 +		Uneven Age
Aspen	28	0	0	7	0	0	0	0	0	0	0	0	0	0	34
Bog	37	0	0	0	0	0	0	0	0	0	0	0	0	0	37
Cedar	0	0	0	0	0	0	0	0	5	21	0	0	0	0	26
Herbaceous Openland	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Low-Density Trees	22	0	0	0	0	0	0	0	0	0	0	0	0	0	22
Lowland Deciduous	0	0	0	16	0	0	0	0	5	0	0	0	0	0	21
Lowland Shrub	51	0	0	0	0	0	0	0	0	0	0	0	0	0	51
Marsh	17	0	0	0	0	0	0	0	0	0	0	0	0	0	17
Mixed Upland Deciduous	0	0	0	0	0	0	0	0	0	50	0	0	0	0	50
Northern Hardwood	0	0	0	0	0	0	0	160	108	491	0	0	0	0	760
Paper Birch	0	0	0	0	0	0	0	0	10	0	0	0	0	0	10
Sand, Soil	75	0	0	0	0	0	0	0	0	0	0	0	0	0	75
Treed Bog	65	0	0	0	0	0	0	0	0	0	0	0	0	0	65
Upland Conifers	0	0	0	0	0	30	52	0	0	0	0	0	0	0	82
Upland Shrub	35	0	0	0	0	0	0	0	0	0	0	0	0	0	35
Water	61	0	0	0	0	0	0	0	0	0	0	0	0	0	61
Total	394	0	0	23	0	30	52	160	128	562	0	0	0	0	1349



Report 2 – Proposed Treatment Summaries

Gaylord Mgt. Unit
Year of Entry 2015

Compartment 068
Total Compartment Acres: 1,350

Acres by Treatment Type

Commercial Harvest - 41	Tree Planting - 0	Other - 0
Habitat Cut - 0	Opening Maintenance - 0	

Cover Type by Harvest Method

		Clearcut	Selection	Seed Tree	Shelterwood	Thinning	Other - Specify	Total Acres
Northern Hardwood	0	41	0	0	0	0	0	41
Total	0	41	0	0	0	0	0	41



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

Prescription
Specs:

Other
Comments:

Next
Steps:

Proposed
Start Date: #Type!

**Total Treatment
Acreage Proposed: 0.0**

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	Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
14	52068014-Cut	40.5	4112 - Maple, Beech, Cherry Association	High Density Log	90	111-140	Harvest	Single Tree Selection	4112 - Maple, Beech, Cherry Association	Fld. Tr. Bdy. - Incomplete

Prescription Specs: Single tree selection to salvage the beech with BBD, mature White Birch sawtimber, and a minor volume of sugar maple logs. Target residual density is 80 sq.ft. BA/acre leaving some of the quality sugar maple in the 12- 16" dbh size class.

Other Comment: This stand has good access from Fox Lake Rd. along the powerline. The terrain is flat to slightly rolling with a good mix of Sugar Maple, Beech, White Birch, and Red Maple ranging from 12" -16" dbh.

Next Steps: Monitor the success of regeneration with an acceptable mix of all the overstory species.

Proposed Start Date: 10/01/2014

Limiting Factor 1C: Other dept or div proc/practices

**Total Treatment
Acreage Proposed: 40.5**

Report 5 – Site Conditions

Gaylord Mgt. Unit
Kim Lentz : Examiner

Compartment 068
Year of Entry 2015

Availability for Management

Total Acres	Acres		Dominant Site Conditions	No	2H	1C
	Available	Not Available				
34	1	33	Aspen	1		33
26	5	21	Cedar	5		21
21	15	6	Lowland Deciduous	15	5	0
50	1	49	Mixed Upland Deciduous	1		49
758	18	740	Northern Hardwood	18		740
10		10	Paper Birch		10	
82		82	Upland Conifers			82
981	40	941	Total Forested Acres	40	15	925
	4%	96%	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
002	Not Available	1C: Other dept or div proc/practices	160				
Comments:							
009	Not Available	1C: Other dept or div proc/practices	41				
Comments:							
010	Not Available	1C: Other dept or div proc/practices	6				
Comments:							

Report 5 – Site Conditions

Gaylord Mgt. Unit
Kim Lentz : Examiner

Compartment 068
Year of Entry 2015

011	Not Available	2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)	10	
Comments:				
012	Not Available	2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)	5	
Comments:				
013	Not Available	1C: Other dept or div proc/practices	12	
Comments:				
014	Not Available	1C: Other dept or div proc/practices	30	
Comments:				
015	Not Available	1C: Other dept or div proc/practices	54	
Comments:				
016	Not Available	1C: Other dept or div proc/practices	52	
Comments:				

Report 5 – Site Conditions

Gaylord Mgt. Unit
Kim Lentz : Examiner

Compartment 068
Year of Entry 2015

017 Not Available 1C: Other dept or div
proc/practices 1

Comments:

018 Not Available 1C: Other dept or div
proc/practices 8

Comments:

019 Not Available 1C: Other dept or div
proc/practices 25

Comments:

020 Not Available 1C: Other dept or div
proc/practices 291

Comments:

021 Not Available 1C: Other dept or div
proc/practices 144

Comments:

022 Not Available 1C: Other dept or div
proc/practices 34

Comments:

023 Not Available 1C: Other dept or div
proc/practices 2

Comments:

Report 5 – Site Conditions

Gaylord Mgt. Unit
Kim Lentz : Examiner

Compartment 068
Year of Entry 2015

024	Not Available	1C: Other dept or div proc/practices	7
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Comments:

025	Not Available	1C: Other dept or div proc/practices	71
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Comments:



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
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Comments				
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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.

ERA = Ecological Reference Area
HCVA = High Conservation Value Area
SCA = Special Conservation Area

Conservation Area	Type	Description
SCA	Archaeological Site	An aquatic or terrestrial area of the State that contains physical remains of human occupation. These are sites of cultural and historical significance that may occur upon terrestrial areas and Great Lakes bottomlands. They include thousands of Native American settlements and burial sites, as well as French and British outposts, nineteenth century logging camps, mines and homesteads. Beneath the waters of the Great Lakes, there are shipwrecks and other remains documenting the maritime trade. Such sites may be identified by Natural heritage data from the State Historic Preservation Office. Proposed treatments in this compartment will be implemented in such a manner as to maintain the integrity of these sites. Due to the sensitive nature of this information, no further detail about location is available.
SCA	Great Lakes Islands	Great Lakes Islands provide significant habitat for numerous species, including many rare plants and animals, several of which are endemic or largely restricted to the Great Lakes region. Due to their isolation, islands provide good examples of many Great Lakes-associated natural communities and ecosystems, and thus have potential to provide insights for understanding the consequences of human disturbance on the increasingly fragmented ecosystems of the mainland.
SCA	Non-Dedicated Natural Areas and National Natural Landmarks	This category is comprised of those Natural, Wilderness and Wild Areas that have been nominated or proposed for legal dedication, but for which legal dedication by legislature has not occurred. The nomination process is defined by Part 351, Wilderness and Natural Areas, of the Natural Resources and Environmental Protection Act, 1994 PA 451. The program is administered by the DNR. Nominations require the submittal of a Natural Areas Nomination Packet to the DNR. This is an active program, with proposed sites in various stages of review. Final dedication of nominated Natural, Wilderness and Wild Areas is accomplished through legislative action.
SCA	Visual Management Area	An area of general social appreciation that is managed to recognize and preserve a particular visual value. Examples of these areas include scenic vistas, scenic or natural beauty roads, and lakeshore areas.
HCVA	Critical Dunes	Critical dune areas are established via the public legislative process, and governed by Part 353, Sand Dune Protection and Management, of the Natural Resources and Environmental Protection Act, 1994 PA 451. The program is administered by the Michigan Department of Environmental Quality (DEQ). The current distribution of designated critical dunes is established by the DEQ 1989 Atlas of Critical Dune Areas.
HCVA	Designated Critical Habitat	Critical habitat areas are established via a consultative and cooperative process between the DNR and the U.S. Fish and Wildlife service for the recovery of threatened and endangered species, as governed by Part 365, Endangered Species Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, and the Federal Endangered Species Act of 1973. This is an active program, with proposed species plans in various stages of review. As of now only two exist, Kirtland Warbler Habitat and Piping Plover Habitat.
HCVA	Legally dedicated Natural Areas, Wilderness or Wild Areas	The nomination process is defined by Part 351, Wilderness and Natural Areas, of the Natural Resources and Environmental Protection Act, 1994 PA 451. The program is administered by the DNR. Nominations require the submittal of a Natural Areas Nomination Packet to the DNR. This is an active program, with proposed sites in various stages of review. Final dedication of nominated Natural, Wilderness and Wild Areas is accomplished through legislative action.
ERA	Ecological Reference Areas	Ecological Reference Areas (ERAs) are high quality examples of natural communities that have been identified as Element Occurrences (EOs) by the Michigan Natural Features Inventory (MNFI) within the context of their natural community classification system. Element Occurrences with viability ranks of A (Excellent) or B (Good) and a Global (G) or State (S) element (rarity) ranking of endangered (1), threatened (2), or rare (3) serve as an initial base of ERAs. They may be located upon any ownership in the State. The system is comprised of individual or associations of natural community types that are managed for restoration and maintenance of natural ecological processes and values. The public may submit recommendations for lands as ERAs using the DNR Conservation Area Recommendation Form.



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
2	6120 - Lowland Cedar	High Density Pole	4.6	86	81-110	Narrow transitional stand between Lake Michigan Beach and the hardwood. White cedar & balsam fir is predominant with some deciduous species intermixed.
3	4110 - Sugar Maple Association	High Density Log	11.5	90	111-140	Northern Hardwood log stand which has developed on low dunal ridges & steeper hillsides. Beech bark disease is advance with some snap. White birch component has also died in stand.
5	4191 - Mixed Upland Deciduous with Conifer	High Density Log	50.1	94	81-110	Deciduous with conifer. Unique, old growth stand with overmature big tooth aspen, white birch, and red maple which is mostly cull. Cedar & conifer is primarily on the transition from the beach into the dunal ridges. white birch is primarily dead or defective.
6	6120 - Lowland Cedar	High Density Pole	21.2	94	111-140	Truly a cedar forest with some black spruce & heavy balsam fir understorey.
8	429 - Mixed Upland Conifers	High Density Pole	51.7	62	81-110	Dense pine on west side of the stand, black spruce and white pine more common in the middle, and Red maple and aspen more common on the east side of the stand, lots of evidence of RDR's
9	4130 - Aspen	High Density Pole	6.6	36	51-80	
10	4112 - Maple, Beech, Cherry Association	High Density Log	54.2	89	81-110	BBD advanced, lots of snap prevalent, scattered large hemlock, even the beech regen has BBD
11	4112 - Maple, Beech, Cherry Association	High Density Log	38.6	84	81-110	Heavily logged 10 years ago, lots of beech brush, advanced BBD present
13	4112 - Maple, Beech, Cherry Association	High Density Log	160.4	71	51-80	BBD everywhere with some snap. Beech quality is very questionable. Maple is good quality.
14	4112 - Maple, Beech, Cherry Association	High Density Log	40.5	90	111-140	Stand has a mix of mature Sugar Maple logs, beech with BBD, merchantable white birch logs. 10-15% of stand is high quality S. Maple log size trees ranging from 14"-18" dbh. Remaining sawtimber is mature white birch or beech with BBD.
16	42380 - Non Pine Upland Conifer, Mixed Deciduous	High Density Pole	30.1	57	51-80	Dune topography/ very steep and hilly
17	4119 - Mixed Northern Hardwoods	High Density Log	6.3	86	81-110	Unique small stand of hardwood in a narrow strip adjacent to Fox Lake. The north half of stand has an old growth appearance with sugar maple, hemlock, and ash logs. The hardwood along Fox Lake is located on a ridge with a minor component of red oak and white birch.
18	4193 - Birch, Aspen	High Density Log	9.9	83	111-140	Significant red pine in southwest. Very open under heavy canopy. Essentially a small island with no dry access.
21	6119 - Mixed Lowland Deciduous Forest	High Density Pole	5.3	81	81-110	Lots of deadfall and blowdown. Mostly wet hardwoods but a little drier in southwest corner with a couple of oaks.

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Gaylord Mgt. Unit

Report 8 – Forested Stands

Compartment: 068
Year of Entry: 2015

	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
22	4130 - Aspen	High Density Sapling	27.7	4		Aspen stand was final harvested in 2009 which has created a dense stand of aspen regeneration 8- 15' in height.
25	4112 - Maple, Beech, Cherry Association	High Density Log	439.0	94	81-110	Northern hardwood log stand did have a recent selection harvest on 195 acres which was completed in 2010. The stand was cut primarily by Keith Pinney & completed by Richard Gillispie who assumed the contract. The hardwood selection harvest was marked & some of aspen and white birch was species thinned out for merchantable product. There was not a good market for the aspen & birch during the harvest. The selection cut did not extend into the NW 1/4 or SE 1/4 of Section 32.
28	4112 - Maple, Beech, Cherry Association	High Density Log	9.1	84	81-110	This stand was select log harvested in 2011 with the hardwood south of Greene Lake in Compartment 70. Selection cut completed by Leonard Forest Products. Residual beech logs have BBD with some snap occurring. Abundant firewood left after log harvest, but access is blocked by private driveway & owner does not wish to pursue further access for firewooders at this time.
31	6117 - Lowland Deciduous, Mixed Coniferous	Low Density Sapling	16.1	31	1-50	formerly flooded are is now starting to regenerate into a forested stand, age is just a flat out guess



Stand	Cover Type	Acres	Managed Site	Management Priority (Objective)	General Comments:
1	710 - Sand, Soil	24.6	No	Unspecified	
4	710 - Sand, Soil	12.3	No	Unspecified	
7	710 - Sand, Soil	10.9	No	Unspecified	
12	3205 - Mixed Upland Shrub	35.1	No	Unspecified	
15	710 - Sand, Soil	27.0	No	Unspecified	
19	6224 - Treed Bog	65.0	No	Unspecified	Much of this stand was wide open and dominated by Ericaceae, but in places the west it had low to moderate stocking of black spruce and some tamarack.
20	3105 - Mixed Upland Herbaceous	1.2	No	Unspecified	
23	3102 - Grass	1.8	No	Unspecified	
24	50 - Water	60.9	No	Unspecified	
26	3301 - Low Density Deciduous Tree	21.9	No	Unspecified	
27	6230 - Cattail	17.0	No	Unspecified	
29	6225 - Bog	37.4	No	Unspecified	
30	6220 - Alder/willow	51.4	No	Unspecified	