Compartment Review Presentation

Grayling Forest Management Unit

Compartment 72208
Entry Year 2022
Acreage: 647
County Crawford
Management Area: Grayling Ice Contact

Revision Date: 2020-06-05

Stand Examiner: Kevin Ehlert

Legal Description:

Crawford County – Frederic Township, T27N R04W Sections 1, 2 and 3.

Identified Planning Goals:

To maintain forest health, productivity, sustainability, and diversity throughout the compartment while providing for multiple use within the area.

Soil and topography:

Flat to gently rolling hills with some steep hills. Soils are mostly well-drained sands comprised of Kalkaska, Rubicon-Roselawn and Blue Lake.

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

Various sized blocks of State-owned land bordering small private parcels. The surrounding private is made up of both permanent and seasonal residences.

Unique Natural Features:

None know at this time.

Archeological, Historical, and Cultural Features:

Special Management Designations or Considerations:

Beech Bark Disease scales have been found with a positive id within the compartment.

Watershed and Fisheries Considerations:

None at this time

Wildlife Habitat Considerations:

Deer and Grouse. Several maintained wildlife openings (mature rye) each year during August will be disc down and fertilize at 200 lbs/acre, covered under existing FTP's.

Mineral Resource and Development Concerns and/or Restrictions

Sections 1–3, T27N-R04W, Crawford County
No known potential exists for commercial metallic mineral production in this part of the state. The closest active sand/gravel pit is more than three miles north. Sand & gravel potential appears to be good in the compartment. The compartment is on the southern edge of the Antrim Shale gas play, and there are producing Antrim wells just to the north. However, the Antrim may be too deep beneath the compartment for gas production. There is no known hydrocarbon potential from other formations within the compartment, and there is no active mineral leasing in the compartment. Oil & gas potential in the compartment is considered moderate due to the nearby production. The state does not own all the mineral rights within the compartment. Because the mineral estate is the dominant estate, reasonable access to the surface must be provided to private owners if they choose to explore or develop their mineral rights.

Vehicle Access:

The compartment can be accessed using county roads. Oil and gas right-of-ways provide multiple access opportunities for wheeled vehicles and foot traffic.

Survey Needs:

No survey requests needed.

Recreational Facilities and Opportunities:

The South Frederic Connector Snowmobile Trail runs through section 1. Frederic ORV Route occurs on Old 27 and Batterson Road in section 2 & 3. The Shore to Shore Equine Trail also occurs on the forest road and Batterson Road in Sections 1 to 3.

Fire Protection:

This compartment is comprised of mostly Northern Hardwoods with very few “high hazard” fuel types, access should be adequate for suppression activities.

Additional Compartment Information:

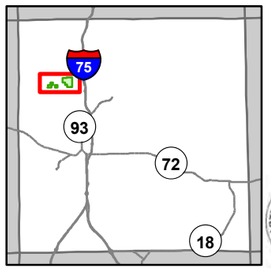
The following reports from the Inventory are attached:

- **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**

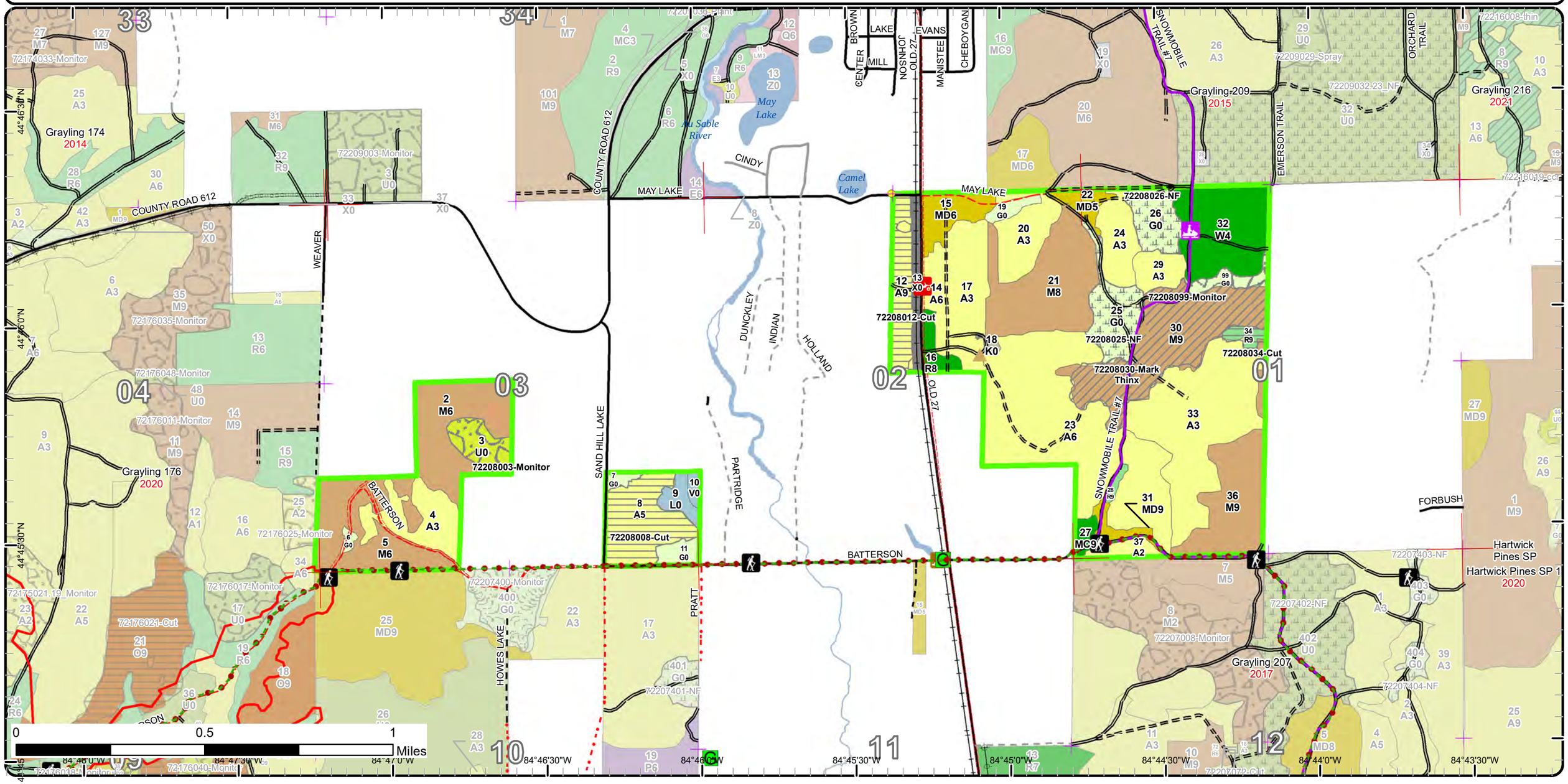
Cover Type & Treatments Map



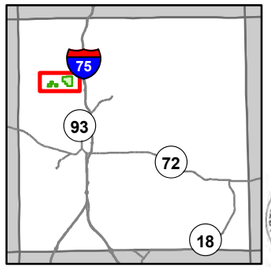
N

Compartment: 208
T28N, R04W, Sec. 01-03
County: Crawford
Unit: Grayling
Mgmt Area: Grayling Ice Contact
YOE: 2022
Acres: 646.9 GIS Calculated
Examiner: Kevin Ehlert
Map Revised: 5/19/2021
Map Phase: Post-Review

- Miris Corners
- Remonumented Section Corners
- Survey Grade Corners
- Counties
- DNR - Secondary Forest Road
- DNR - Forest Access Route
- Federal / State / County - Paved Road
- Federal / State - Dirt / Gravel Road
- County - Gravel Road
- County - Dirt Road (Seasonal)
- Private - Paved Road
- Private - Dirt / Gravel Road
- Active Railroads
- Hiking Trails
- Horse Trails
- ORV Routes
- Snowmobile Trails
- Designated Hiking Trails
- Designated Equestrian Trails
- Designated ATV Trails
- Designated ORV Route
- Designated Snowmobile Trails
- Berms
- Gate
- Campground
- Sign
- Lake/Pond
- Perennial River
- Lakes and Rivers
- Pipeline
- Powerline
- Compartment Boundary
- Pesticide
- Other Treatment - See Comments
- Clearcut (w/Reserves)
- Thinning (Crown, Low, Systematic)
- Regeneration Survey
- 411 - Northern Hardwood
- 413 - Aspen
- 419 - Mixed Upland Deciduous
- 421 - Planted Pines
- 422 - Natural Pines
- 122 - Roads/Parking Lot
- 310 - Herbaceous Openland
- 330 - Low Density Trees
- 622 - Lowland Shrub
- 720 - Exposed Rock



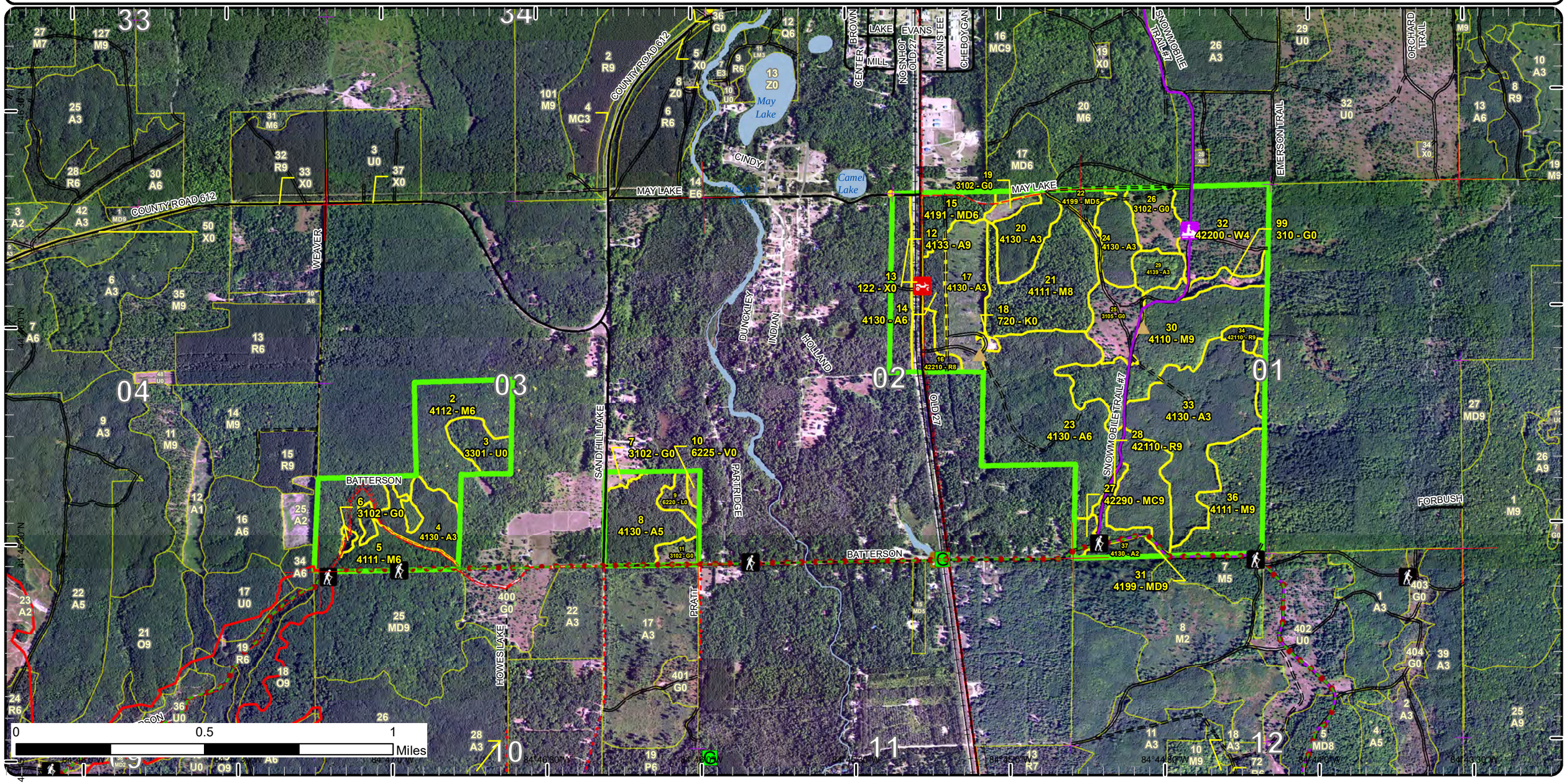
Stand Boundary Map



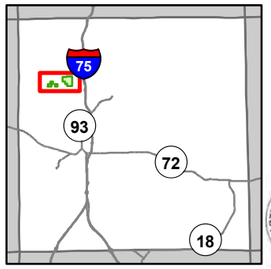
N

Compartment: 208
T28N, R04W, Sec. 01-03
County: Crawford
Unit: Grayling
Mgmt Area: Grayling Ice Contact
YOE: 2022
Acres: 646.9 GIS Calculated
Examiner: Kevin Ehlert
Map Revised: 5/19/2021
Map Phase: Post-Review

- Miris Corners
- Remonumented Section Corners
- Survey Grade Corners
- Counties
- DNR - Secondary Forest Road
- DNR - Forest Access Route
- Federal / State / County - Paved Road
- Federal / State - Dirt / Gravel Road
- County - Gravel Road
- County - Dirt Road (Seasonal)
- Private - Paved Road
- Private - Dirt / Gravel Road
- Active Railroads
- Hiking Trails
- Horse Trails
- ORV Routes
- Snowmobile Trails
- Designated Hiking Trails
- Designated Equestrian Trails
- Designated ATV Trails
- Designated ORV Route
- Designated Snowmobile Trails
- Berms
- Gate
- Campground
- Sign
- Lake/Pond
- Perennial River
- Lakes and Rivers
- Pipeline
- Powerline
- Compartment Boundary
- Stand Boundaries
- 411 - Northern Hardwood
- 413 - Aspen
- 419 - Mixed Upland Deciduous
- 421 - Planted Pines
- 422 - Natural Pines
- 122 - Roads/Parking Lot
- 310 - Herbaceous Openland
- 330 - Low Density Trees
- 622 - Lowland Shrub
- 720 - Exposed Rock



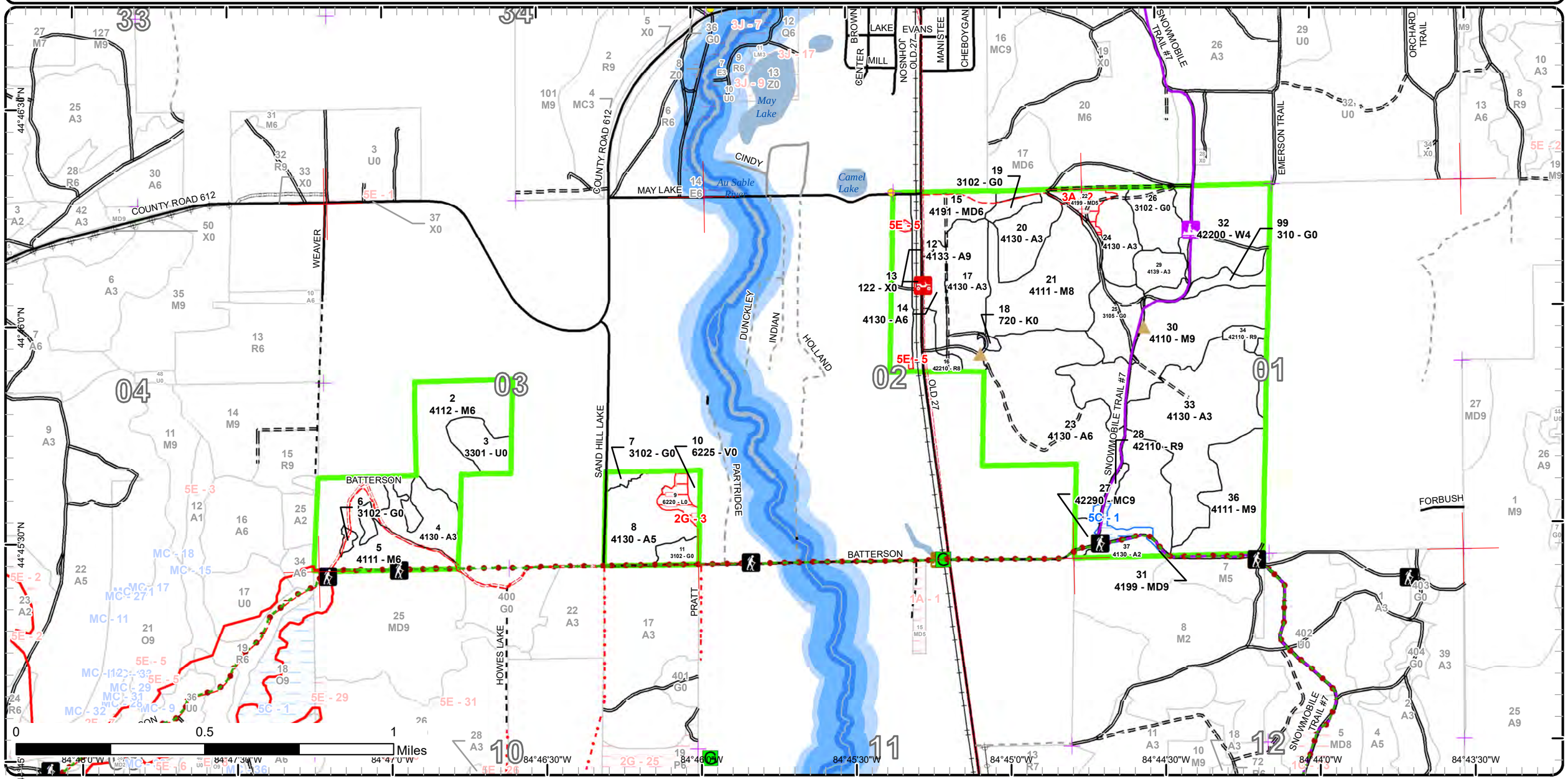
Special Conservation Areas



N

Compartment: 208
T28N, R04W, Sec. 01-03
County: Crawford
Unit: Grayling
Mgmt Area: Grayling Ice Contact
YOE: 2022
Acres: 646.9 GIS Calculated
Examiner: Kevin Ehlert
Map Revised: 5/19/2021
Map Phase: Post-Review

- Miris Corners
- Remonumented Section Corners
- Survey Grade Corners
- Counties
- DNR - Secondary Forest Road
- DNR - Forest Access Route
- Federal / State / County - Paved Road
- Federal / State - Dirt / Gravel Road
- County - Gravel Road
- County - Dirt Road (Seasonal)
- Private - Paved Road
- Private - Dirt / Gravel Road
- Active Railroads
- Hiking Trails
- Horse Trails
- ORV Routes
- Snowmobile Trails
- Designated Hiking Trails
- Designated Equestrian Trails
- Designated ATV Trails
- Designated ORV Route
- Designated Snowmobile Trails
- Berms
- Gate
- Campground
- Sign
- Lake/Pond
- Perennial River
- Lakes and Rivers
- Pipeline
- Powerline
- Compartment Boundary
- Available w/ Constraints
- Unavailable
- 5C: Delay treatment for age/size class diversity or exceptional site quality
- 2G: Too wet (sensitive soils, does not include access issues)
- 3A: Conservation Values incompatible with harvest at this time
- 5E: Long-Term Retention
- Stand Boundaries
- Natural Rivers Vegetative Buffer
- Natural Rivers Zoning District
- High Priority Trout Stream Buffer



Report 1 – Total Acres by Cover Type and Age Class

Grayling Mgt. Unit **Compartment 208** **Year of Entry 2022**

Kevin Ehlert : Examiner

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	31	8	82	137	0	27	0	17	0	0	0	0	0	0	0	0	0	**301**
Bog	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**2**
Exposed Rock	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**
Herbaceous Openland	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**47**
Low-Density Trees	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**11**
Lowland Shrub	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**5**
Mixed Upland Deciduous	0	0	0	0	0	0	13	0	11	0	0	0	0	0	0	0	0	0	**23**
Natural Mixed Pines	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	**4**
Northern Hardwood	0	0	0	0	0	0	0	0	0	77	70	52	0	0	0	0	0	0	**199**
Red Pine	0	0	0	0	0	0	0	0	7	3	0	0	0	0	0	0	0	0	**10**
Urban	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**8**
White Pine	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36	**36**
Total	**74**	**31**	**8**	**82**	**137**	**0**	**40**	**0**	**35**	**84**	**70**	**52**	**0**	**0**	**0**	**0**	**0**	**36**	**647**

Report 2 – Treatment Summary

Grayling Mgt. Unit

Year of Entry: 2022

Acres of Harvest

Compartment 208

Total Compartment Acres: 647

Commercial Harvest - 97

Harvests with Site Condition - 0

Next Step Harvest - 0

Habitat Cut - 0

Cover Type by Harvest Method

		Clearcut	Selection	Patch Clearcut	Seed Tree	Shelterwood	Thinning	Overstory Removal	Salvage	Other	Total Acres
Aspen		43	0	0	0	0	0	0	0	0	**43**
Northern Hardwood		0	0	0	0	0	51	0	0	0	**51**
Red Pine		4	0	0	0	0	0	0	0	0	**4**
	Total	**46**	**0**	**0**	**0**	**0**	**51**	**0**	**0**	**0**	**97**

Proposed and Next Step Treatments by Method

		Harvest	Site Prep	Planting	Seeding	Burning	Pesticide	Monitoring	Other	Non-Forest Mgt.	Total Acres
Current		97	0	0	0	0	0	16	0	30	**143**
Next Step		0	0	0	0	0	0	43	0	0	**43**
	Total	**97**	**0**	**0**	**0**	**0**	**0**	**58**	**0**	**30**	**186**

Approved Treatments:

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
3	72208003-Monitor	10.8	3301 - Low Density Deciduous Trees	Nonstocked		Immature	Monitoring	Natural Regen (Intermediate)	4131 - Aspen, Oak	Even-Aged	No

Prescription Specs: Check regen to confirm success at passing browse line

Next Step Treatments:

Acceptable Regen: A mixture of aspen with associated species meeting minimum stocking densities.

Other Comment: Percent to Treat = 100%

Site Condition

Proposed Start Date: 10/1 /2021

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
8	72208008-Cut	26.5	4130 - Aspen	Poletimber Medium	59	81-110	Harvest	Clearcut with Retention	413 - Aspen	Even-Aged	No

Prescription Specs: Final harvest, cut all species 2"+. Leave white pine less than 5"DBH except where necessary to remove for harvest operation. Follow standard retention guidelines utilizing island retention.
Include drumming log spec. Include trail protection specs where Shore to Shore Trail and ORV Route run along Batterson Rd and require safety signs. Do not allow decking on roadside.

Next Step Treatments: Monitoring, Natural Regen (Re-Inventory)

Acceptable Regen: Aspen, mixed deciduous with a component of white pine.

Other Comment:

Site Condition

Proposed Start Date: 10/1 /2021

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
12	72208012-Cut	16.0	4133 - Aspen, Mixed Pine	Sawtimber Well	78	81-110	Harvest	Clearcut with Retention	413 - Aspen	Even-Aged	No

Prescription Specs: Final harvest all species 2"+. Use island retention retention to meet BMP requirements around the lowland inclusions within the stand (approximated in treatment shape). Include drumming log spec.

Next Step Treatments: Monitoring, Natural Regen (Re-Inventory)

Acceptable Regen: Aspen, mixed deciduous with scattered conifer.

Other Comment: PVT line needed on W side of stand.

Site Condition

Proposed Start Date: 10/1 /2021

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
17	72208017-Spray	0.1	4130 - Aspen	Sapling Well	6	1-50	Pesticide	Hand Application	310 - Herbaceous Openland		No

Prescription Specs: Small pocket of invasive garlic mustard, approximately 20'X20'. Apply pesticide to eradicate.

Next Step Treatments: Monitoring, Invasive Species

Acceptable Regen:

Other Comment: Infestation located on boundary of stands 17 and 18. Coming up in/around a pile of brush.

Site Condition

Proposed Start Date: 10/1 /2020

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
25	72208025-NF	17.3	3105 - Mixed Upland Herbaceous	Nonstocked		Immature	NonForestMgt	Other - Specify	310 - Herbaceous Openland		No

Prescription Specs: Periodic opening maintenance, as needed, that may include disking, fertilizing, liming, food plot seeding, mowing, brushing, tree and shrub planting, herbicide application, and removal of invasive species.

Next Step Treatments:

Acceptable Regen:

Other Comment:

Site Condition

Proposed Start Date: 10/1 /2021

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
26	72208026-NF	13.0	3102 - Grass	Nonstocked		Unspecified	NonForestMgt	Other - Specify	310 - Herbaceous Openland		No

Prescription Specs: Periodic opening maintenance, as needed, that may include disking, fertilizing, liming, food plot seeding, mowing, brushing, tree and shrub planting, herbicide application, and removal of invasive species.

Next Step Treatments:

Acceptable Regen:

Other Comment:

Site Condition

Proposed Start Date: 10/1 /2021

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
30	**72208030-Mark Thinx**	51.1	4110 - Sugar Maple Association	Sawtimber Well	101	111-140	Harvest	Crown Thinning	4111 - S.Maple, Hard Mast Association	Even-Aged	No

Prescription Specs: Thin down to 60-80 BA. When marking in sawlog area-first remove high risk and cull trees. Then take trees of poor form. Always manage for the best tree in place. In the area where the diameter is less than 8" do a seven foot crown release--in areas where the diameter greater than 8" mark two crown competitor. Then thin from below until stocking level is reached.

Next Step Treatments:

Acceptable Regen:

Other Comment: Consider the recreation trail in this Treatment area during sale prep.

A variance was required for the portion of this treatment that is being clearcut (Stand 99). For further details see stand comments for Stand 99.

Site Condition

Proposed Start Date: 10/1 /2011

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
34	**72208034-Cut**	3.6	42110 - Planted Red Pine	Sawtimber Well	89	141-170	Harvest	Clearcut	4111 - S.Maple, Hard Mast Association	Even-Aged	No

Prescription Specs: Final harvest and let natural regeneration take over. Treat with stand 30.

Next Step Treatments:

Acceptable Regen:

Other Comment: Consider the recreation trail in this Treatment area during sale prep.

Site Condition

Proposed Start Date: 10/1 /2011

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
99	**72208099-Monitor**	4.9	310 - Herbaceous Openland	Nonstocked		Immature	Monitoring	Natural Regen (Intermediate)	413 - Aspen	Even-Aged	No

Prescription Specs: Check for natural regeneration.

Next Step Treatments:

Acceptable Regen: Aspen with associated mixed deciduous.

Other Comment:

Site Condition

Proposed Start Date: 10/1 /2021

Total Treatment Acreage Proposed: **143.3**

Report 4 – Site Conditions

Grayling Mgt. Unit

Kevin Ehlert : Examiner

Compartment: 208

Year of Entry: 2022

Availability for Management

Total Acres	Acres Available	*Acres Avail With Condition*	Acres Not Available		Dominant Site Conditions *5C*	2G	3A	5E
301	300	***0***	1	**Aspen**				1
2	2	***0***	0	**Bog**				
1	1	***0***	0	**Exposed Rock**				
47	47	***0***	0	**Herbaceous Openland**				
11	11	***0***	0	**Low-Density Trees**				
5	0	***0***	5	**Lowland Shrub**		5		
23	12	***5***	6	**Mixed Upland Deciduous**	***5***		6	
4	4	***0***	0	**Natural Mixed Pines**				
199	199	***0***	0	**Northern Hardwood**				
10	10	***0***	0	**Red Pine**				
8	8	***0***	0	**Urban**				
36	36	***0***	0	**White Pine**				
647	631	***5***	11	Total Forested Acres	***5***	5	6	1
	98%	***1%***	2%	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	**Available**	**5C: Delay treatment for age/size class diversity or exceptional site quality**	5	Unspecified	Unspecified	Unspecified	Unspecified
	Comments: Small stand, wait to harvest with nearby stand.						
2	**Unavailable**	**3A: Conservation Values incompatible with harvest at this time**	6	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						

3	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	5				
Comments:							
5	**Unavailable**	**5E: Long-Term Retention**	1	3J: Water quality / BMPs (stream, river, or lake)	Unspecified	Unspecified	Unspecified
Comments:							

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

Report 6 – 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	Riparian Area	A transitional area between aquatic and terrestrial ecosystems in which the terrestrial ecosystem influences the aquatic ecosystem and vice-versa. Because of the unique conditions adjacent to lakes, streams and open water wetlands, riparian areas harbor a high diversity of plants and wildlife. Riparian communities are ecologically and socially significant in their effects on water quality and quantity, as well as aesthetics, habitat, bank stability, timber production, and their contribution to overall biodiversity.
HCVA	Natural Rivers	There are two Natural Rivers datasets which are derived from spatial buffers set from an established and approved distance from the river centerlines. The Natural Rivers Zoning District is a 400 foot buffer for most Natural Rivers. The Vegetative Buffer ranges from 25 to 100 feet. To view specific Zoning Districts and Vegetative Buffers for each Natural River see the table located on the I:\Documentation\GDSE data folder.

Stand 2

4112 - Maple, Beech, Cherry Association | Poletimber Well | 33.3 acres | 99 | 51-80 | N/A

Canopy Species	% Cover	Size Class	DBH	Age
Sugar Maple	79	Pole/Log	9	99
Red Maple	21	Log/Pole	10	

Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	Low	Variable	Sapling
Red Maple	Low	Variable	Sapling
Beech	Medium	Variable	Sapling

Stand was harvested in winter of 2016 into 2017, under contract 72-006-13 Comp 208 Hardwoods. Stand was thinned down to 70sqft.muti-stem-Leave for now. Stand is still pole size over all. Stand beaten-up pretty bad during the late 20's early 30's. Stand is a little better than stand #2. Could treat with stand #4 and thin down to 50-70 BA. I would think about leaving all aspen it is in the condition of creating very good standing snags.

Stand 3

3301 - Low Density Deciduous Trees | Nonstocked | 10.8 acres | Immature | 4139 - Aspen, Mixed Deciduous

Sub-Canopy Species	Density	Avg. Height	Size
Oak (spp.)	Low	< 5 feet	Sapling
Red Maple	Medium	< 5 feet	Sapling
Beech	Low	< 5 feet	Sapling
Bigtooth Aspen	Medium	Variable	Sapling

Evidence of browse present. Majority of regen has not yet passed the browse line. A mix of aspen, oak, maple and beech. Stand was harvested in winter of 2016 into 2017, under contract 72-006-13 Comp 208 Hardwoods. Scattered oak was left for retention, BA was less than 10sqft.

Stand 4

4130 - Aspen | Sapling Well | 19.1 acres | 27 | Immature | N/A

Canopy Species	% Cover	Size Class	DBH	Age
Sugar Maple	10	Sapling	3	27
Bigtooth Aspen	90	Sapling/Pole	4	27

Sub-Canopy Species	Density	Avg. Height	Size
Beech	Low	5 - 10 feet	Sapling
Oak (spp.)	Low	5 - 10 feet	Sapling

Mixed species of Aspen, & Maple mosty with some beech and Oak scattered in sub canopy. Stand final harvested 1993.

Stand 5

4111 - S.Maple, Hard Mast Association | Poletimber Well | 36.9 acres | 99 | 81-110 | N/A

Canopy Species	% Cover	Size Class	DBH	Age
Sugar Maple	60	Pole/Log	9	99
Red Maple	5	Log/Pole	10	
Beech	28	Log/Pole	10	
Red Oak	2	XLog/Log	22	113
Paper Birch	2	Pole	7	
Bigtooth Aspen	3	Log	12	

Sub-Canopy Species	Density	Avg. Height	Size
Beech	Medium	Variable	Sapling
Ironwood	Medium	Variable	Sapling

Leave for now. Stand is still pole size over all. Stand beaten-up pretty bad during the late 20's early 30's.

Stand 6

3102 - Grass | Nonstocked | 1.2 acres | No

Sub-Canopy Species	Density	Avg. Height	Size
Bigtooth Aspen	Low		Sapling
Sedges	Full		Non-Wood
White Pine	Low		Pole

Old landing when the stand in the adjacent compartment was harvested. starting is fill in with WP and Aspen

Stand 7

3102 - Grass | Nonstocked | 2.1 acres | No

Sub-Canopy Species	Density	Avg. Height	Size
Little Bluestem	Medium		Non-Wood
Indian Grass	Medium		Non-Wood
Big Bluestem	Low		Non-Wood
Poverty Grass	Medium		Non-Wood

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
8	4130 - Aspen	Poletimber Medium	26.7	59	81-110	N/A	Starting in 1964-65, all cedar was cut. In 1966-68 all aspen and maple was harvested. Only found a small pocket of cedar not enough to make it it's on stand also scattered white pine trees throughout, but mostly in the far East end. Stand does have a high water table. Pockets of heavy white pine cover in sub canopy.

Canopy Species	% Cover	Size Class	DBH	Age
Quaking Aspen	89	Pole/Log	9	59
Bigtooth Aspen	10	Pole/Log	9	59
Black/Red (Hybrid) Oak	1	Log/XLog	14	

Sub-Canopy Species	Density	Avg. Height	Size
Nannyberry	Low	Variable	Tall Shrub
Pin Cherry	Low	Variable	Sapling
Black/Red (Hybrid) Oak	Low	Variable	Sapling
White Pine	Medium	Variable	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
9	6220 - Alder/willow	Nonstocked	4.9			No	Stand is Tag Alder with low density cedar and white pine poles and logs.

Sub-Canopy Species	Density	Avg. Height	Size
Tag Alder	Full		Tall Shrub

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
10	6225 - Bog	Nonstocked	1.9			No	Could not get to stand due to open water and adjacent private property. Appears to be low density scattered lowland conifer/bog.

Sub-Canopy Species	Density	Avg. Height	Size
Black Spruce	Trace		
Sphagnum Moss	Full		Non-Wood
Tamarack	Trace		Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
11	3102 - Grass	Nonstocked	4.5			No	

Sub-Canopy Species	Density	Avg. Height	Size
Poverty Grass	Medium		Non-Wood
Little Bluestem	Medium		Non-Wood
White Pine	Trace	Unspecified	Pole
Sedges	Full		Non-Wood
Black Cherry	Trace		Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
12	4133 - Aspen, Mixed Pine	Sawtimber Well	16.7	78	81-110	N/A	Stand is slowly converting to White pine. One of the adjacent private property owners has expanded their yard, and another has put a gate on state owned land. Trespass reports have been submitted. Stand is west of the railroad tracks (6 chains X 40 chains) and can be accessed off of county road (May Lake). Per 11-3-10 Comp Review: Not for disposal, retain for future recreation opportunity.

Canopy Species	% Cover	Size Class	DBH	Age
Red Maple	23	Log/Pole	12	
Quaking Aspen	43	Log/Pole	12	78
White Pine	32	Log/XLog/Pole	14	111
Paper Birch	2	Pole	8	

Sub-Canopy Species	Density	Avg. Height	Size
Balsam Fir	Medium	Variable	Sapling
White Pine	Medium	Variable	Sapling
Beech	Low	Variable	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
13	122 - Road/Parking Lot	Nonstocked	8.4			No	

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
14	4130 - Aspen	Poletimber Well	8.7	38	1-50	N/A	Stand treated 1983 - everything harvested except Red & White pine.

Canopy Species	% Cover	Size Class	DBH	Age
Bigtooth Aspen	90	Pole/Sapling	6	38
White Pine	2	Log	14	
Sugar Maple	8	Sapling/Pole	4	

Sub-Canopy Species	Density	Avg. Height	Size
White Pine	Low	Variable	Sapling
Beech	Low	5 - 10 feet	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
15	4191 - Mixed Upland Deciduous with Conifer	Poletimber Well	12.5	58	81-110	N/A	Mixed stand of mature Aspen, white pine logs, and poor quality sugar maple poles. Stand was treated 1962-63 all merchantable Paper Birch was harvested. Low hanging utility line runs through the stand.

Canopy Species	% Cover	Size Class	DBH	Age
Sugar Maple	25	Pole	8	
Paper Birch	3	Pole	8	
Quaking Aspen	37	Pole/Log	9	58
White Pine	33	Log/Pole	12	73
Red Pine	2	Log	12	

Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	Low	Variable	Sapling
White Pine	Medium	Variable	Sapling
Beech	Low	< 5 feet	Sapling
Balsam Fir	Trace	5 - 10 feet	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
16	42210 - Natural Red Pine	Sawtimber Medium	5.4	73	51-80	N/A	natural red pine stand, mixed deciduous sub canopy. All aspen and marked red pine harvested last YOE.

Canopy Species	% Cover	Size Class	DBH	Age
Red Maple	2	Pole	8	
White Pine	10	Log/Pole	13	
Red Pine	88	Log	12	73

Sub-Canopy Species	Density	Avg. Height	Size
White Pine	Low	Variable	Sapling
Beech	Low	5 - 10 feet	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
17	4130 - Aspen	Sapling Well	25.8	6	1-50	N/A	Stand was final harvested except leaving skidder 3 pine. 72-016-12-01 Fosters Pit Aspen sale was closed in June of 2015. Regen is mostly Aspen with mixed maple scattered throughout. Aspen is 10-20' tall. A small percentage of the canopy is residual log size white pine.

Canopy Species	% Cover	Size Class	DBH	Age
Bigtooth Aspen	80	Sapling	1	6
White Pine	5	Log	12	
Sugar Maple	5	Sapling	1	
Red Maple	10	Sapling	1	

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
18	720 - Exposed Rock	Nonstocked	1.0			No	Former gravel pit, now being used as an informal shooting range and garbage dump. JC update: A few garlic mustard plants were hand-pulled in 2016 (H72-803) on the NW edge of the stand (OFS point).
19	3102 - Grass	Nonstocked	3.3			No	Open grassy area. Not managed.
20	4130 - Aspen	Sapling Well	17.0	38		N/A	Stand final harvested 1983.

Canopy Species	% Cover	Size Class	DBH	Age
Quaking Aspen	88	Sapling	3	38
White Pine	2	Log/XLog	16	
Sugar Maple	10	Sapling/Pole	3	

Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	Medium	10 - 20 feet	Sapling
Beech	Medium	10 - 20 feet	Sapling
Ironwood	Low	10 - 20 feet	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
21	4111 - S.Maple, Hard Mast Association	Sawtimber Medium	42.7	83	51-80	N/A	Stand was treated last YOE. All aspen and paper birch, red maple was removed. Sub canopy is dominated by beech. BBD common in the area. QD Data: Avg BA/Ac- 58; Avg TPA- 79; QMD- 11.5 Found BBD scale, review stand with Roger Mech with the beech cover over 40% should thin. Sale was harvested in 20012-13 residual BA was at 70, cut under contract 72-003-11-01.

Canopy Species	% Cover	Size Class	DBH	Age
Sugar Maple	75	Log/Pole	11	83
Beech	23	Log/Pole	13	
White Pine	2	XLog/Log	22	

Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	Low	Variable	Sapling
Beech	High	Variable	Sapling
Bigtooth Aspen	Medium	Variable	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
22	4199 - Other Mixed Upland Deciduous	Poletimber Medium	5.6	79	51-80	N/A	Planted black locust with a heavy blackberry. Two big cotton wood trees and one really big sugar maple. Area was part of the Deward Apple Orchard, found old water well.

Canopy Species	% Cover	Size Class	DBH	Age
Sugar Maple	43	Log/Pole	12	
Cottonwood	2	XLog	22	
Black Locust	55	Pole/Log	9	79

Sub-Canopy Species	Density	Avg. Height	Size
Black Raspberry	Medium	Variable	Tall Shrub

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
23	4130 - Aspen	Poletimber Well	96.9	37	1-50	N/A	Stand final harvested 1984, by Champion International Corporation.

Canopy Species	% Cover	Size Class	DBH	Age
Bigtooth Aspen	90	Pole/Sapling	5	37
White Pine	5	Log/Pole	12	
Red Maple	3	Sapling/Pole	4	
Sugar Maple	2	Sapling/Pole	4	

Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	Low	10 - 20 feet	Sapling
Ironwood	Low	10 - 20 feet	Sapling
White Pine	Low	5 - 10 feet	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
24	4130 - Aspen	Sapling Well	13.9	38		N/A	Mixed aspen stand. Was final harvested in 1983. Starting to transition into small end of pole size class in areas.

Canopy Species	% Cover	Size Class	DBH	Age
Quaking Aspen	42	Sapling/Pole	3	38
Bigtooth Aspen	55	Sapling/Pole	4	38
Ironwood	3	Sapling	4	38

Sub-Canopy Species	Density	Avg. Height	Size
Beech	Low	5 - 10 feet	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
25	3105 - Mixed Upland Herbaceous	Nonstocked	17.8		Immature	No	Part of the Deward Apple orchard-no apple trees were planted. Scattered low density trees.

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
26	3102 - Grass	Nonstocked	13.0		Unspecified	Managed Opening	

Sub-Canopy Species	Density	Avg. Height	Size
Little Bluestem	High		Non-Wood
White Pine	Trace		Pole
Staghorn Sumac	Low		Tall Shrub
Paper Birch	Trace		Pole

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
27	42290 - Natural Mixed Pine	Sawtimber Well	4.1	81	81-110	N/A	Old note: Due to close proximity of this stand to residential area and with the possible of BBD in the adjacent stand I do not recommend harvesting this stand except to cut all hardwoods.

Canopy Species	% Cover	Size Class	DBH	Age
Red Maple	10	Log/Pole	12	77
Red Oak	2	Log/Pole/XLog	16	103
Quaking Aspen	10	Log/Pole	13	77
White Pine	44	Log	15	81
Red Pine	34	Log	14	91

Sub-Canopy Species	Density	Avg. Height	Size
Paper Birch	Low	Variable	Sapling
White Pine	Medium	Variable	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
28	42110 - Planted Red Pine	Sawtimber Well	1.7	74	171-200	N/A	Small red pine plantation. 3rd row thinned in 2002 YOE. Beech, maple and white pine in sub canopy

Canopy Species	% Cover	Size Class	DBH	Age
Red Pine	100	Log	13	74

Sub-Canopy Species	Density	Avg. Height	Size
Beech	Low	Variable	Sapling
Red Maple	Low	Variable	Sapling
White Pine	Trace	Variable	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
29	4139 - Aspen, Mixed Deciduous	Sapling Well	8.1	18	51-80	N/A	All aspen harvested last YOE, two 1-acre regen gaps created

Canopy Species	% Cover	Size Class	DBH	Age
Sugar Maple	50	Log/Pole	13	100
Bigtooth Aspen	50	Sapling	2	18

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
30	4110 - Sugar Maple Association	Sawtimber Well	52.0	101	111-140	N/A	Stand is part of Neglected Nomad timber sale. North part of stand has been cut, but the rest is marked and not yet cut. Basal area is in the 60-80 range and beech is a smaller canopy component in the area that has been harvested. Paint is starting to fade, especially stump marks. Stand is a mix of size classes-mostly log. QD Data: AvgBA/Ac-128; Avg Trees/Ac-208; QMD-10.6 This stand also has an interesting history. In 1982 stand was mark to 90 BA residual then divided into four individual sales and sold for fuelwood in 1983. No further work was done since. Stand changes as you head to the northeast more species diversity and larger diameter.

Canopy Species	% Cover	Size Class	DBH	Age
Sugar Maple	80	Log/Pole	10	101
Beech	15	Log/Pole	14	
Paper Birch	2	Log/Pole	12	
Bigtooth Aspen	2	Log/Pole	14	
Red Oak	1	Log/XLog	16	

Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	Low	Variable	Sapling
Beech	Medium	Variable	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
31	4199 - Other Mixed Upland Deciduous	Sawtimber Well	4.6	77	111-140	N/A	Small stand, hold for now until it can be harvested with a neaby stand. BBD previously reported in stand is causing mortality, removing some of the beech component. Possible BDD--sent in field health report to Roger Mech. Found one tree heavyly infected with a white waxy cover, and found many beech trees with tarry spots which can be Nectria infection which is associated with beech bark diease.

Canopy Species	% Cover	Size Class	DBH	Age
Red Maple	30	Log/Pole	13	77
Beech	20	Log/XLog/Pole	14	100
Red Oak	5	XLog/Log	18	113
Paper Birch	15	Log/Pole	14	
Quaking Aspen	15	Log/Pole	14	
White Pine	8	Log/Pole	14	
Red Pine	7	Log	15	

Sub-Canopy Species	Density	Avg. Height	Size
Red Maple	Low	Variable	Sapling
Beech	Low	Variable	Sapling
White Pine	Medium	Variable	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
32	42200 - Natural White Pine	Poletimber Poor	35.7	54	1-50	N/A	Old apple orchard with scattered limby open grown white pine and cherry trees.

Canopy Species	% Cover	Size Class	DBH	Age
White Pine	80	Log/Pole	12	54
Apple (spp.)	10	Pole	8	
Black Cherry	10	Pole/Sapling	7	

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
33	4130 - Aspen	Sapling Well	62.9	25	Immature	N/A	Immature Aspen stand. Stand final harvested and completed in 1996.

Canopy Species	% Cover	Size Class	DBH	Age
Beech	3	Sapling	2	25
Quaking Aspen	85	Sapling	4	25
Ironwood	2	Sapling	3	25
Red Maple	10	Sapling/Pole	4	

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
34	42110 - Planted Red Pine	Sawtimber Well	3.1	89	141-170	N/A	Part of neglected nomad timber sale, to be final harvested and allow natural regeneration to fill in.

Canopy Species	% Cover	Size Class	DBH	Age
Red Pine	100	Log/Pole	12	89

Sub-Canopy Species	Density	Avg. Height	Size
Beech	Medium	Variable	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
36	4111 - S.Maple, Hard Mast Association	Sawtimber Well	34.1	89	81-110	N/A	Stand thinned last YOE. Sub-canopy is mostly beech and ironwood, with a small amount of sugar maple. BBD common in the area. QD Data: AvgBA/Ac- 94, Avg TPA- 153; QMD: 10.6

Canopy Species	% Cover	Size Class	DBH	Age
Sugar Maple	65	Log/Pole	12	89
Red Maple	2	Log/Pole	12	
Beech	33	Log/Pole	12	

Sub-Canopy Species	Density	Avg. Height	Size
Beech	Full	Variable	Sapling
Ironwood	Low	Variable	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
37	4130 - Aspen	Sapling Medium	4.7	9	Immature	N/A	Sale was harvested in the spring and summer of 2012 under contract 72-011-11-01. Old Comment: Do to close proximity of this stand to residential area and with the possible of BBD in the adjacent stand I do not recommend harvesting this stand except to cut all hardwoods.

Canopy Species	% Cover	Size Class	DBH	Age
Bigtooth Aspen	85	Sapling	1	9
White Pine	5	Log/Pole	12	
Red Maple	10	Sapling	1	9

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
99	310 - Herbaceous Openland	Nonstocked	5.4		Immature	No	Stand was recently final harvested. Currently not forested, expect Aspen/ mixed deciduous regen to begin filling in. A variance for the treatment taking place in Stand 30 (and this Stand) is described below. This stand (now 99) was formally part of G0 Stand 32. Because this ~4-acre Stand is now being clearcut (instead of thinned), a variance was required. See below. Note: The canopy/sub-canopy species listing above is based upon observations during sale prep in September 2013 (2-years ago now). Prior to my involvement completing prep work on this sale, a Northwest Lower Michigan district rover forester had already established red-line around the treatment area. As such, a very noticeable portion of Stand 30's treatment area is primarily dominated by log/xlog big tooth aspen, with lesser components of hardwood. This aspen inclusion/vein (now Stand 99) is located along the interface of Stands 30 & 32. Conducting a marking thin within this aspen inclusion was impractical. This small final harvest area should also help to improve "desirable" species composition as beech and ironwood saps primarily dominate the understory. As such, it was my decision to establish an identifiable and visibly different boundary line around the aspen vein. This will separate the aspen final harvest area from the remainder of the stand which has been "cut-tree" marked with orange paint.