



Compartment Review Presentation

Traverse City Forest Management Unit

Compartment 61118

Entry Year 2018

Acreage: 2,731

County Kalkaska

Management Area: Grayling Outwash

Revision Date: 2016-06-07

Stand Examiner: Katie Armstrong

Legal Description:

T27N R5W Sections 30 and 31; T27N R6W Sections 25, 26 and 36

Identified Planning Goals:

This compartment is part of the Grayling Outwash Management Area (MA). Management goals for this MA include balancing the age classes of aspen on suitable sites, thinning northern hardwoods, balancing age classes of red pine and jack pine, and regenerating the aging swamp hardwood and conifer resource. Management will strive to sustainably produce various timber products, enhance game and non-game wildlife habitat, protect areas of unique character, and provide for forest-based recreational uses. Management challenges include maintaining wildlife openings given the logistical and funding challenges that make prescribed burning increasingly hard to accomplish, regenerating certain species, especially in wet areas, in the context of elevated deer browse levels, increased recreational pressure, and introduced pests and diseases.

Soil and topography:

The compartment is mostly sandy soils including Kalkaska sand, Island Lake sand, Rubicon and Lindquist. There are lesser amounts of mucks or loamy soils along the drainages. The central part of the compartment has some moderately hilly terrain.

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

Since the last inventory, the State acquired the Flowing Well property and 120 acres in Section 26 were added to this compartment. The east side of the compartment is adjacent to the Black River Conservation Association, a relatively large ownership which also practices active forest management. There are a couple of small inholdings including a 40-acre parcel with a township gravel pit and a small, seasonal subdivision on Johnson Lake. The rest of the compartment is bounded by a mix of private and state ownership. There is a large natural gas pipeline running along Sunset Trail.

Unique Natural Features:

MNFI has designated part of Section 26 adjacent to the Flowing Well acquisition as a Rich Conifer Swamp natural community.

Archeological, Historical, and Cultural Features:

Several old railroad grades traverse the compartment. Johnson Lake Road now follows part of an old route. There is a record of an archaeological site in Section 25.

Special Management Designations or Considerations:

See next section for comments about natural rivers.

Watershed and Fisheries Considerations:

The North Branch of the Manistee is a designated High Priority Trout Stream. The North Branch and other unnamed tributaries in Section 26 are protected as natural rivers under the Upper Manistee River Natural River Plan.

Wildlife Habitat Considerations:

Much of this compartment falls on a broad, flat outwash plain (LTA 5149) characterized by poorly drained peat and muck soils. Habitat types found on these wet soils include mixed lowland conifers, lowland hardwoods, and lowland brush. The North Branch of the Manistee River and unnamed tributaries to Morrison and Black creeks flow through the compartment and add important riparian components to the area. Part of the Flowing Well and Black Creek deer yards are found here. Care should be taken to maintain the integrity of this winter thermal cover.

Excessively drained sandy soils are found as part of large irregular ice contact ridges (LTA 3211) in the northeast and as part of a pitted outwash plain (LTA5211) in the northwest part of the compartment. The more varied topographic relief and sandy and sandy-loam soils support aspen, pine, and northern hardwood stands. This mix of upland habitat types adjacent to large swamp complexes provides benefits to wildlife by increasing the amount of edge between upland and

lowland communities. Edge helps to increase species diversity by offering resources from differing habitat types in close proximity. Maintaining a diversity of age classes among aspen stands will add age and structural diversity while increasing habitat suitability for white-tailed deer, ruffed grouse, woodcock, and a variety of other game and non-game species. Some other wildlife species using this habitat mix include bobcat, black bear, coyote, snowshoe hare, raven, alder flycatcher, Eastern milk snake, and wood turtle.

Non-forested upland openings dominated by grasses, forbs, shrubs, and poorly stocked trees are distributed widely across the compartment. Management of these stands will include prescribed burning and mechanical control of bracken fern. The appropriate use of fire in grassland ecosystems kills encroaching hardwood species, prevents or slows the establishment of some invasive plants, and returns nutrients to the soil. Wildlife species benefiting from maintaining openings in this compartment include white-tailed deer, meadow vole, wild turkey, Eastern meadowlark, and garter snake.

Mineral Resource and Development Concerns and/or Restrictions

Surface sediments consist of ice-contact and glacial outwash sand and gravel and postglacial alluvium. The glacial drift thickness varies between 200 and 600 feet. Beneath the glacial drift are the Mississippian Coldwater Shale and Marshall Sandstone. The Marshall was previously used as a building stone. A gravel pit is located in Section 31 and there should be potential on the uplands. This area is located three miles southeast of the Niagaran reef trend. There are no leases currently in the compartment, but active leases are located to the north. [from 2008]

Vehicle Access:

The compartment has relatively good vehicle access. There are three county roads: Sunset Trail (open year-round), Flowing Well Road (open year-round) and Johnson Lake Road (seasonal but plowed to Johnson Lake by residents). In the northeast part of Section 36, there is a poor dirt road which follows an old grade through some very wet stands. This road was not properly constructed for this situation and should be closed until it is needed for timber management and can be properly rebuilt.

Survey Needs:

The northeast corner of the Excelsior Township forty might need to be placed.

Recreational Facilities and Opportunities:

The Kalkaska 50-inch ORV Trail, Kalkaska ORV Route, and Snowmobile Trail #76 run north/south through this compartment. Trail protection specifications should be considered if timber management treatments impact any of these trails. (T.N. 1/26/16)

Fire Protection:

Based on cover types in this compartment, there is little risk of a major wildfire.

Additional Compartment Information:

The following reports from the Inventory are attached:

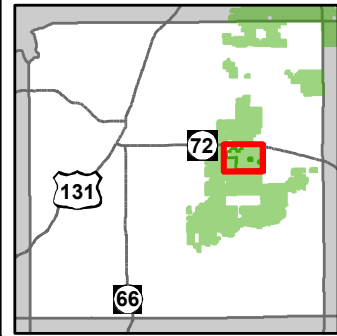
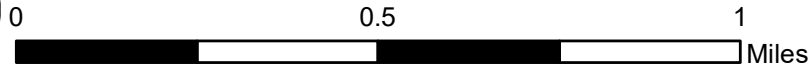
- Total Acres by Cover Type and Age Class**
- Cover Type by Harvest Method**
- Proposed Treatments – No Limiting Factors**
- Proposed Treatments – With Limiting Factors**
- Stand Details (Forested and Nonforested)**
- Dedicated and Proposed Special Conservation Areas**
- Site Condition Details**

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

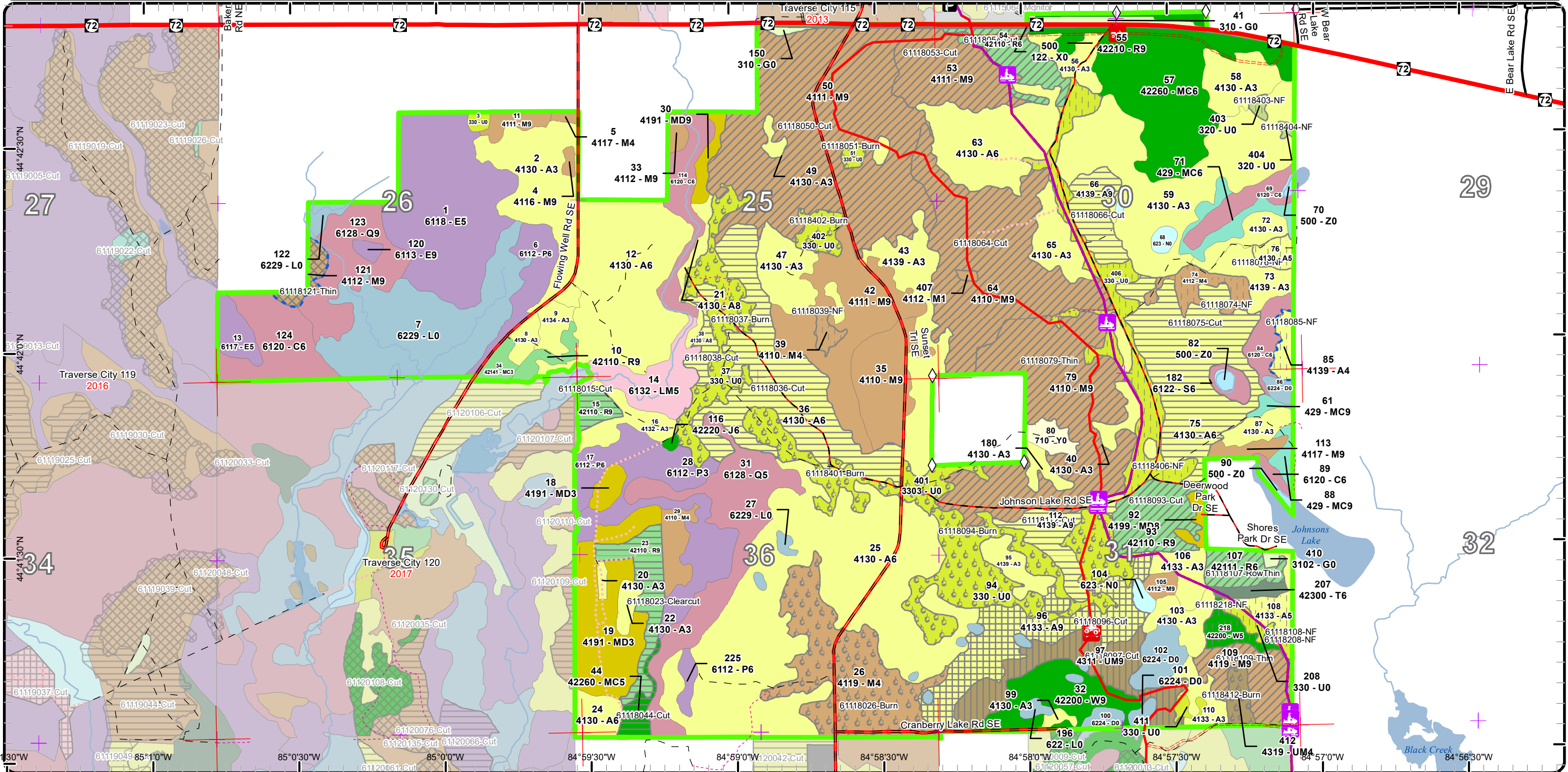
- Base feature information, stand boundaries, cover types, and numbers**
- Proposed treatments**
- Site condition boundaries**
- Details on the road access system**

Cover Type & Treatments Map

Compartment: 118
 T27N R05W Sec. 30, 31
 T27N R06W Sec. 25, 26
 County: Kalkaska
 Unit: Traverse City
 Mgmt Area: Grayling Outwash
 YOE: 2018
 Acres: 2731 GIS Calculated
 Examiner: Katie Armstrong
 Map Revised: 6/6/2016
 Map Phase: Web - Post

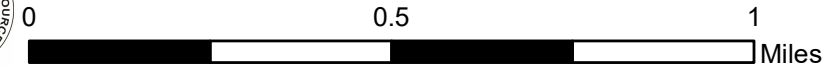
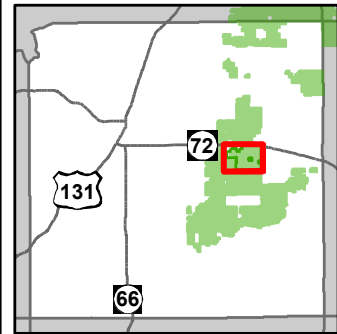


- Miris Corners
- Remonumented Section Corners
- ◇ Field Grade GPS Corners
- P Parking Lot
- ORV Trails
- ORV Routes
- Snowmobile Trails
- Designated ATV Trails
- Designated ORV Route
- Designated Snowmobile Trails
- Highway
- Paved Roads
- County Gravel Roads
- Gravel Roads
- Poor Dirt Roads
- County Poor Dirt Roads
- Trail (Non-Recreation)
- Closed Roads
- Rivers
- Compartment Boundary
- Treatments with Site Conditions
- Selection (Group, Single Tree)
- Clearcut (w/Reserves)
- Prescribed Burn
- Opening Maintenance
- Thinning (Crown, Low, Systematic)
- Shelter Wood (w/Reserves)
- Seed Tree (w/Reserves)
- 411 - Northern Hardwood
- 413 - Aspen Types
- 419 - Mixed Upland Deciduous
- 421 - Planted Pines
- 422 - Natural Pines
- 423 - Other Upland Conifers
- 429 - Mixed Upland Conifers
- 430 - Upland Mixed Forest
- 611 - Lowland Deciduous Forest
- 612 - Lowland Coniferous Forest
- 613 - Lowland Mixed Forest
- 122 - Roads/Parking Lot
- 310 - Herbaceous Openland
- 320 - Upland Shrub
- 330 - Low Density Trees
- 500 - Water
- 622 - Lowland Shrub
- 623 - Emergent Wetland
- 710 - Sand/Soil
- Lakes

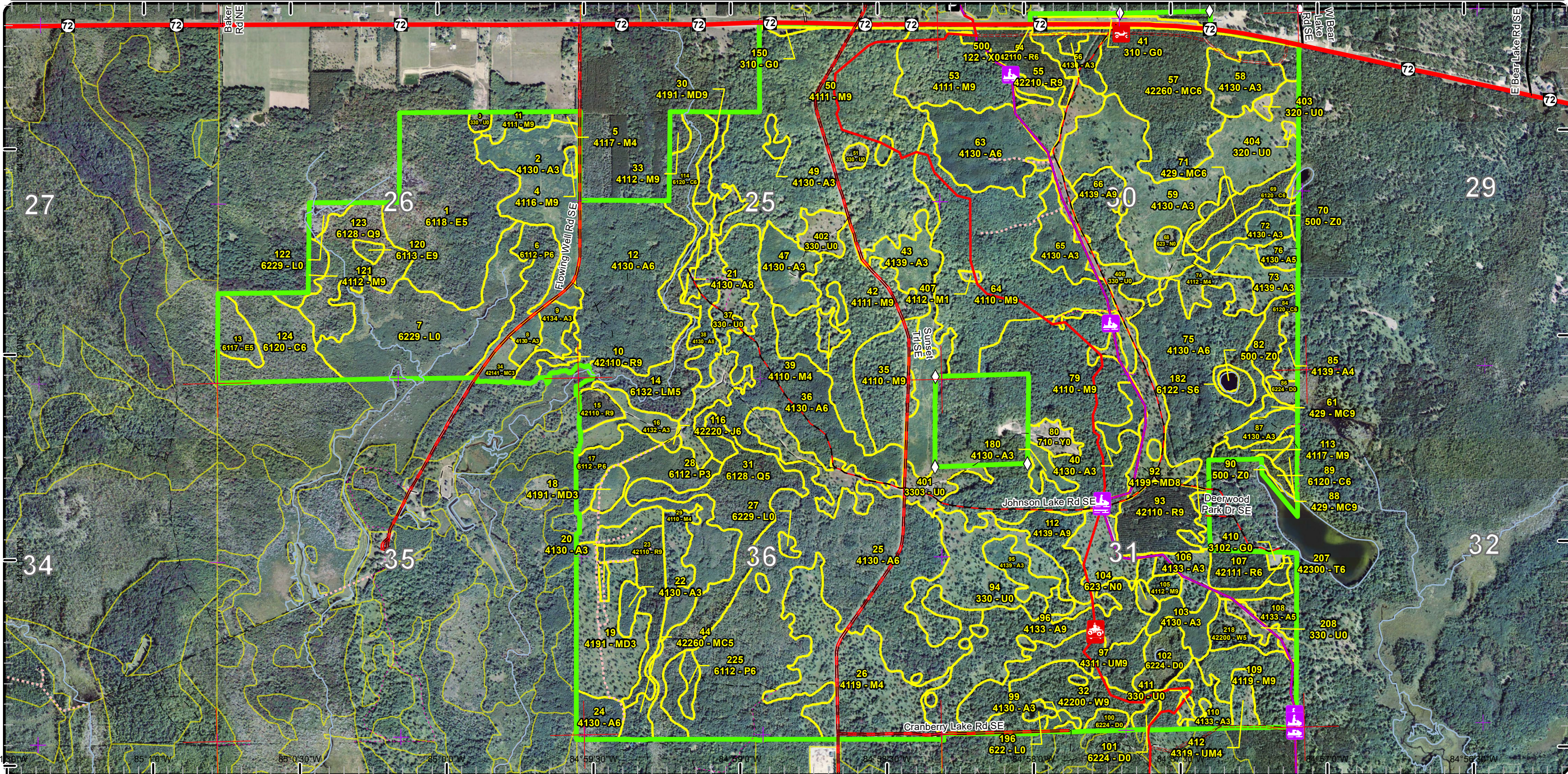


Stand Boundary Map

Compartment: 118
 T27N R05W Sec. 30, 31
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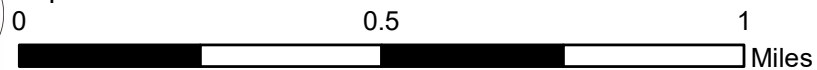
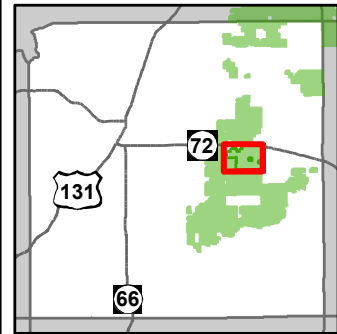


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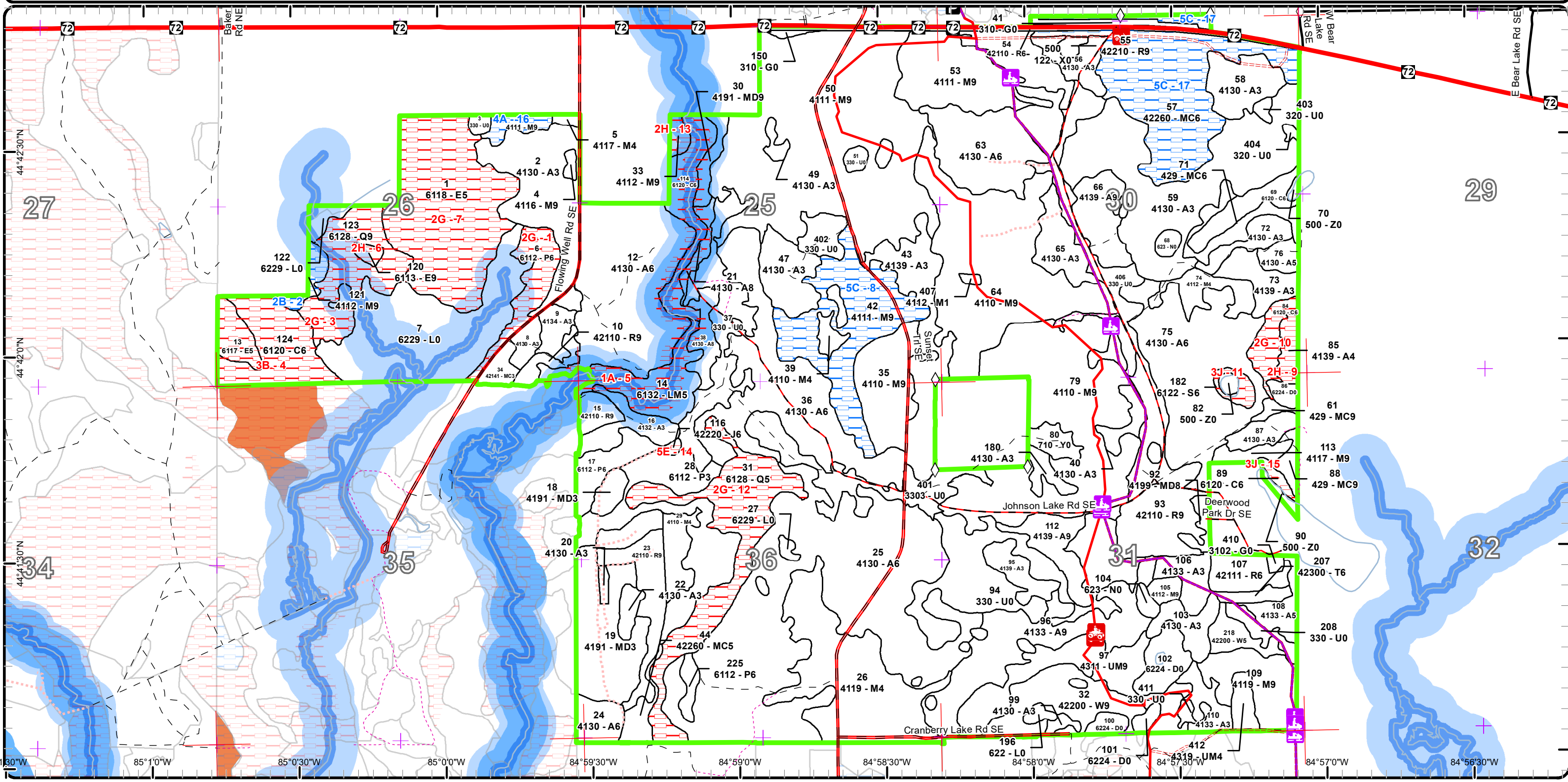


Special Conservation Areas & Site Conditions Map

Compartment: 118
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 T27N R06W Sec. 25, 26
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- Gravel Roads
- - - Poor Dirt Roads
- County Poor Dirt Roads
- - - Trail (Non-Recreation)
- - - Closed Roads
- Rivers
- Compartment Boundary
- Available w/ Constraints
- Unavailable
- 2B: Unknown if access through adjacent landowner(s) is possible
- 4A: No Markets Available for these Forest Products
- 5C: Delay treatment for age/size class diversity or exceptional site quality
- 1A: Federal/State/Local Law
- 2G: Too wet (sensitive soils, does not include access issues)
- 2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)
- 3B: Threatened, endangered, and special concern species/communities
- 3J: Water quality / BMPs (stream, river, or lake)
- 5E: Long-Term Retention
- Stand Boundaries
- Special Conservation Areas
- Natural Rivers Vegetative Buffer
- High Priority Trout Stream Buffer
- Other Habitat Area



Report 1 – Total Acres by Cover Type and Age Class

Traverse City Mgt. Unit

Compartment 118 Year of Entry 2018

Katie Armstrong : 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	287	71	70	301	175	70	15	0	0	0	0	0	0	0	0	0	0	989
Cedar	0	0	0	0	0	0	0	0	0	44	10	24	0	0	0	0	0	0	78
Herbaceous Openland	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
Jack Pine	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Low-Density Trees	196	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	196
Lowland Aspen/Balsam Poplar	0	0	0	45	0	18	18	0	0	0	0	0	0	0	0	0	0	0	81
Lowland Conifers	0	0	0	0	0	0	0	0	0	95	0	0	0	0	0	0	0	0	95
Lowland Deciduous	0	0	0	0	0	0	0	0	2	98	0	0	0	0	0	0	0	0	100
Lowland Mixed Forest	0	0	0	0	0	0	0	0	0	0	0	24	0	0	0	0	0	0	24
Lowland Shrub	92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	92
Lowland Spruce/Fir	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	4
Marsh	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
Mixed Upland Deciduous	0	52	0	0	0	4	0	6	0	0	0	0	0	0	0	0	0	0	62
Natural Mixed Pines	0	0	0	0	0	0	0	88	0	0	0	0	0	0	0	0	0	0	88
Northern Hardwood	0	0	1	0	81	0	12	0	7	11	31	0	0	0	0	0	0	513	656
Planted Mixed Pines	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Red Pine	0	0	0	0	13	45	33	2	0	0	0	0	0	0	0	0	0	0	93
Sand, Soil	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
Tamarack	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Treed Bog	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22
Upland Conifers	0	0	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	7	19
Upland Mixed Forest	0	0	0	7	0	0	0	0	39	0	0	0	0	0	0	0	0	0	46
Upland Shrub	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Urban	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11
Water	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
White Pine	0	0	0	0	9	0	0	0	30	0	0	0	0	0	0	0	0	0	39
Total	350	344	72	122	409	254	133	112	82	248	41	48	0	0	0	0	0	520	2735



Report 2 – Treatment Summary

Traverse City Mgt. Unit
Year of Entry: 2018

Acres of Harvest

Compartment 118
Total Compartment Acres: 2,731

Commercial Harvest - 825
Harvests with Site Condition - 6
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	201	0	0	51	0	0	0	0	0	252
Natural Mixed Pines	7	0	0	0	0	0	0	0	0	7
Northern Hardwood	0	6	0	0	0	442	0	0	0	448
Red Pine	27	0	0	0	0	58	0	0	0	85
Upland Mixed Forest	0	0	0	0	39	0	0	0	0	39
Total	235	6	0	51	39	500	0	0	0	831

Proposed and Next Step Treatments by Method

	Harvest	Site Prep	Planting	Seeding	Burning	Pesticide	Monitoring	Other	Non-Forest Mgt.	Total Acres
Current	831	0	0	0	216	0	0	0	98	1145
Next Step	0	0	0	0	0	0	773	0	216	989
Total	831	0	0	0	216	0	773	0	315	2134



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Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
15	61118015-Cut	6.6	42110 - Planted Red Pine	Sawtimber Well	59	201+	Harvest	Clearcut	4199 - Other Mixed Upland Deciduous	Even-Aged	Proposal

Habitat Cut: No

Site Condition:

Prescription Clearcut and allow to regenerate naturally. Not worth planting red pine based on other stands in the area. Stand is too small for retention.
Specs:

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

Acceptable Aspen, jack pine, red maple, red pine.
Regen:

Other
Comment:

Proposed Start Date: 10/01/2017

23	61118023-Clearcut	20.5	42110 - Planted Red Pine	Sawtimber Well	56	111-140	Harvest	Clearcut with Retention	4199 - Other Mixed Upland Deciduous	Even-Aged	Proposal
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Habitat Cut: No

Site Condition:

Prescription Stand has a fair amount of mortality, defect, BA too low to justify thinning, and heavy deciduous understory. Final harvest to favor single stemmed red maple saplings and sugar maple seedlings. Leave retention in south part of stand along wet, eastern edge or as scattered individuals of desirable species throughout the stand. Road work will be necessary.
Specs:

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

Acceptable Red maple, aspen, white pine, red pine, sugar maple, oak.
Regen:

Other Not worth replanting red pine based on heavy aspen competition in adjacent stands.
Comment:

Proposed Start Date: 10/01/2017

26	61118026-Burn	70.7	4119 - Mixed Northern Hardwoods	Poletimber Poor	35	1-50	Burn	Opening	3205 - Mixed Upland Shrub		Proposal
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Habitat Cut: No

Site Condition:

Prescription Selectively remove woody encroachment via Hydro-axe or a small fire wood sale (?) to remove mainly red maple. May need to mechanically treat bracken fern.
Specs: The main treatment of this stand will be to burn it at least once per entry period in order to set back bracken and woody encroachment, increase species diversity, stimulate native herbaceous vegetation, promote berry production, and recycle nutrients. This stand was burned in 2008.

Next Step NonForestMgt, Herbaceous/Crop/Grass Planting
Treatments:

Acceptable
Regen:

Other Burning for bracken and woody encroachment should take place late spring or early summer post emergence of fronds and leaves.
Comment:

Proposed Start Date: 10/01/2017

36	61118036-Cut	78.7	4130 - Aspen	Poletimber Well	49	Unspecified	Harvest	Clearcut with Retention	4139 - Aspen, Mixed Deciduous	Even-Aged	Proposal
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Habitat Cut: No

Site Condition:

Prescription Clearcut, leaving area retention in wet areas in SW part of stand. Also leave scattered hardwood or conifer trees for seed. Protect areas of desirable advanced regeneration where present and if possible. Treatment may extent into stand 42 to pick up aspen pockets.
Specs:

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

Acceptable Aspen and hardwoods with lesser amounts of conifer.
Regen:

Other Treat with Stand 38.
Comment:

Proposed Start Date: 10/01/2017



Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
37	61118037-Burn	33.8	330 - Low-Density Trees	Nonstocked			Burn	Opening	3205 - Mixed Upland Shrub		Proposal

Habitat Cut: No

Site Condition:

Prescription Selectively remove woody encroachment via Hydro-axe or a small fire wood sale (?) to remove mainly red maple. May need to mechanically treat bracken fern.
Specs: The main treatment of this stand will be to burn it at least once per entry period in order to set back bracken and woody encroachment, increase species diversity, stimulate native herbaceous vegetation, promote berry production, and recycle nutrients. This stand was burned in 2008.

Next Step NonForestMgt, Herbaceous/Crop/Grass Planting
Treatments:

Acceptable Regen:

Other Comment: Burning for bracken and woody encroachment should take place late spring or early summer post emergence of fronds and leaves.

Proposed Start Date: 10/01/2017

38	61118038-Cut	7.9	4130 - Aspen	Sawtimber Medium	61	Unspecified	Harvest	Clearcut	4139 - Aspen, Mixed Deciduous	Even-Aged	Proposal
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Habitat Cut: No

Site Condition:

Prescription Final harvest, leaving the oak and white pine in the understory. Mark a few hard maple to leave. Retention has already been removed from treatment area as 175' buffer on the creek but distance should be verified in the field.
Specs:

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

Acceptable Regen: Mostly aspen with lesser amounts of maple, cherry, oak and white pine.

Other Comment: Combine with treatment on Stand 36.

Proposed Start Date: 10/01/2017

39	61118039-NF	3.7	4110 - Sugar Maple Association	Poletimber Poor	80	1-50	NonForestMgt	Brush Cutting	3205 - Mixed Upland Shrub		Proposal
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Habitat Cut: No

Site Condition:

Prescription Brush hog (or hand fell) around select leave trees and/or patches . Leave scattered mast producing trees and shrubs and/or conifers for wildlife food and cover. Could plant site appropriate native shrubs and/or mast producing trees for wildlife food and cover. Fertilize plantings and protect with wire cages or tubex.
Specs:

Next Step
Treatments:

Acceptable Regen:

Other Comment: Do NOT cut sugar maple in this stand.

Proposed Start Date: 10/01/2017

44	61118044-Cut	6.8	42260 - Natural Pine, Mixed Deciduous	Poletimber Medium	60	51-80	Harvest	Clearcut	4199 - Other Mixed Upland Deciduous	Even-Aged	Proposal
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Habitat Cut: No

Site Condition:

Prescription Clearcut and allow to regenerate naturally. Stand is too small for retention but it may be necessary to leave something along wet edge.
Specs:

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

Acceptable Regen: White pine, red pine, aspen, oak, red maple, jack pine.

Other Comment: Boundary will need to be verified. Trespass?

Proposed Start Date: 10/01/2017



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Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
50 61118050-Cut	171.3	4111 - S.Maple, Hard Mast Association	Sawtimber Well	80	111-140	Harvest	Crown Thinning	411 - Northern Hardwood	Uneven-Aged	Proposal

Habitat Cut: No

Site Condition:

Prescription Remove all beech, ash, and aspen and thin remaining hardwood pockets, where appropriate, to approximately 80 sf/acre. Within denser hardwood pockets, focus on releasing crop trees and removing defect, high risk and suppressed trees. Leave a few beech and aspen for wildlife. Include appropriate trail protect specifications for ORV trail.

Next Step Monitoring, Natural Regen (Re-Inventory)

Treatments:

Acceptable Mostly northern hardwoods with lesser amounts of aspen.

Regen:

Other Survey work may be needed. Pipeline runs along the west side of Sunset Trail.

Comment:

Proposed Start Date: 10/01/2017

51 61118051-Burn	2.5	330 - Low-Density Trees	Nonstocked		Unspecified	Burn	Opening	3205 - Mixed Upland Shrub		Proposal
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Habitat Cut: No

Site Condition:

Prescription Selectively remove woody encroachment via Hydro-axe or a small fire wood sale (?) to remove mainly red maple. May need to mechanically treat bracken fern.

Specs: The main treatment of this stand will be to burn it at least once per entry period in order to set back bracken and woody encroachment, increase species diversity, stimulate native herbaceous vegetation, promote berry production, and recycle nutrients. This stand was burned in 2008.

Next Step NonForestMgt, Herbaceous/Crop/Grass Planting

Treatments:

Acceptable

Regen:

Other Burning for bracken and woody encroachment should take place late spring or early summer post emergence of fronds and leaves.

Comment:

Proposed Start Date: 10/01/2017

53 61118053-Cut	37.9	4111 - S.Maple, Hard Mast Association	Sawtimber Well	90	111-140	Harvest	Crown Thinning	411 - Northern Hardwood	Uneven-Aged	Proposal
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Habitat Cut: No

Site Condition:

Prescription Stand has higher-than-average percentage of beech. Cut all beech except for scattered wildlife trees. Thin rest of stand to approximately 80 sf/acre.

Specs: Some areas will need TSI while other might not need much marking. ORV trail and snowmobile trail/ORV route run through stand; include appropriate trail protection and safety specs.

Next Step Monitoring, Natural Regen (Re-Inventory)

Treatments:

Acceptable Northern hardwood species.

Regen:

Other

Comment:

Proposed Start Date: 10/01/2017

54 61118054-Cut	19.5	42110 - Planted Red Pine	Poletimber Well	46	141-170	Harvest	Low Thinning	4211 - Planted Red Pine	Even-Aged	Proposal
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Habitat Cut: No

Site Condition:

Prescription Stand was row-thinned last YOY but BAs are high enough to justify light thinning. Thin stand to approximately 120 sf/acre, focusing on removing suppressed and high risk trees. Remove aspen and hardwood species for operability but generally leave to prevent sprouting. Rows should be wide enough that stand can be thinned with minimal damage to residual. Include appropriate trail protection/hazard specs for snowmobile and ORV trails.

Specs:

Next Step

Treatments:

Acceptable

Regen:

Other

Comment:

Proposed Start Date: 10/01/2017



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Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
64 61118064-Cut	101.6	4110 - Sugar Maple Association	Sawtimber Well	80	111-140	Harvest	Crown Thinning	411 - Northern Hardwood	Uneven-Aged	Proposal

Habitat Cut: No Site Condition:

Prescription Thin to approximately 80 sf/acre, focusing on releasing crop trees and removing defect and suppressed trees. Cut all aspen, beech, and ash (if any) except for scattered wildlife trees. Create regen gaps per guidelines. Western part of the stand is more open and lesser quality. Include appropriate protection specifications for ORV trail (which is not mapped accurately) and snowmobile trail/ORV route. Access will mostly likely be from Johnson Lake Road to a closed road through stand 65 and/or an old road through an opening at the south end of the stand.

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

Acceptable Mostly desirable hardwoods with pockets of aspen near removals.
Regen:

Other Survey work may be needed. Have not been able to locate NE corner of private property.
Comment:

Proposed Start Date: 10/01/2017

66 61118066-Cut	18.2	4139 - Aspen, Mixed Deciduous	Sawtimber Well	57	111-140	Harvest	Clearcut with Retention	4139 - Aspen, Mixed Deciduous	Even-Aged	Proposal
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Habitat Cut: No Site Condition:

Prescription Clearcut aspen and most other species. Leave scattered hardwood and white pine trees for seed (residual will be variable). Treatment area has already excluded buffer around wet depression on east side of stand but should be confirmed in the field. This will make up area retention. Protect areas of desirable advanced regen, where present.

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

Acceptable Mostly aspen with lesser amounts of sugar maple, red maple, basswood, cherry, oak or white pine.
Regen:

Other
Comment:

Proposed Start Date: 10/01/2017

74 61118074-NF	12.0	4112 - Maple, Beech, Cherry Association	Poletimber Poor	50	1-50	NonForestMgt	Brush Cutting	3205 - Mixed Upland Shrub		Proposal
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Habitat Cut: No Site Condition:

Prescription Brush hog (or hand fell) around select leave trees and/or patches. Leave scattered mast producing trees and shrubs and/or conifers for wildlife food and cover. Could plant site appropriate native shrubs and/or mast producing trees for wildlife food and cover. Fertilize plantings and protect with wire cages or tubex.

Next Step
Treatments:

Acceptable
Regen:

Other
Comment:

Proposed Start Date: 10/01/2017

75 61118075-Cut	78.0	4130 - Aspen	Poletimber Well	38	Unspecified	Harvest	Clearcut with Retention	4139 - Aspen, Mixed Deciduous	Even-Aged	Proposal
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Habitat Cut: No Site Condition:

Prescription Clearcut leaving area retention around the lake and wet edges. Also, leave scattered hardwood and conifer trees for seed. North end of stand is significantly lesser quality and declining rapidly.

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

Acceptable Aspen, with lesser amounts of maple, basswood, cherry, oak and white pine.
Regen:

Other Private line work may be necessary. Aboveground powerline present.
Comment:

Proposed Start Date: 10/01/2017



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Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
76	61118076-NF	5.5	4130 - Aspen	Poletimber Medium	40	Unspecified	NonForestMgt	Brush Cutting	3205 - Mixed Upland Shrub		Proposal

Habitat Cut: No

Site Condition:

Prescription Selectively remove woody encroachment via Hydro-axe or a small fire wood sale (?) to remove mainly red maple. May need to mechanically treat bracken fern.
Specs: The main treatment of this stand will be to burn it at least once per entry period in order to set back bracken and woody encroachment, increase species diversity, stimulate native herbaceous vegetation, promote berry production, and recycle nutrients.

Next Step
Treatments:

Acceptable
Regen:

Other Burning for bracken and woody encroachment should take place late spring or early summer post emergence of fronds and leaves.
Comment:

Proposed Start Date: 10/01/2017

79	61118079-Thin	106.5	4110 - Sugar Maple Association	Sawtimber Well	80	111-140	Harvest	Crown Thinning	411 - Northern Hardwood	Uneven-Aged	Proposal
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Habitat Cut: No

Site Condition:

Prescription Stand was thinned last YOY but BAs are still high enough in most places to justify another thinning. Thin stand to approximately 80 sf/acre focusing on releasing crop trees and removing high risk, poor form, and suppressed trees. Remove all aspen and beech except scattered wildlife trees. It will be hard to meet BA targets in pockets of mortality north of township property. ORV trail runs through sale and snowmobile/ORV route are nearby; include appropriate trail protection and safety specs. [If we decide not to treat all prescribed hardwood stands, I would make this one a lower priority.]
Specs:

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

Acceptable Northern hardwoods with scattered aspen.
Regen:

Other
Comment:

Proposed Start Date: 10/01/2017

85	61118085-NF	6.2	4139 - Aspen, Mixed Deciduous	Poletimber Poor	45	Unspecified	NonForestMgt	Brush Cutting	3205 - Mixed Upland Shrub		Proposal
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Habitat Cut: No

Site Condition: Blocked by Obstacle

Prescription Selectively remove woody encroachment via Hydro-axe or a small fire wood sale (?) to remove mainly red maple. May need to mechanically treat bracken fern.
Specs: The main treatment of this stand will be to burn it at least once per entry period in order to set back bracken and woody encroachment, increase species diversity, stimulate native herbaceous vegetation, promote berry production, and recycle nutrients.

Next Step
Treatments:

Acceptable
Regen:

Other Burning for bracken and woody encroachment should take place late spring or early summer post emergence of fronds and leaves.
Comment:

Proposed Start Date: 10/01/2017



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Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
93 61118093-Cut	25.6	42110 - Planted Red Pine	Sawtimber Well	46	141-170	Harvest	Low Thinning	4211 - Planted Red Pine	Even-Aged	Proposal

Habitat Cut: No

Site Condition:

Prescription Specs: Stand was row-thinned last YOY but BAs are high enough to justify light thinning. Thin stand to approximately 120 sf/acre, focusing on removing suppressed and high risk trees. Remove aspen and hardwood species for operability but generally leave to prevent sprouting. Rows should be wide enough that stand can be thinned with minimal damage to residual. Snowmobile trail is adjacent to sale; include appropriate trail protection/hazard specs.

Next Step Treatments:

Acceptable Regen:

Other Comment:

Proposed Start Date: 10/01/2017

94 61118094-Burn	64.7	330 - Low-Density Trees	Nonstocked		Unspecified	Burn	Opening	3205 - Mixed Upland Shrub		Proposal
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Habitat Cut: No

Site Condition:

Prescription Specs: Selectively remove woody encroachment via Hydro-axe or a small fire wood sale (?) to remove mainly red maple. May need to mechanically treat bracken fern. The main treatment of this stand will be to burn it at least once per entry period in order to set back bracken and woody encroachment, increase species diversity, stimulate native herbaceous vegetation, promote berry production, and recycle nutrients. This stand was burned in 2008.

Next Step Treatments: NonForestMgt, Herbaceous/Crop/Grass Planting

Acceptable Regen:

Other Comment: Burning for bracken and woody encroachment should take place late spring or early summer post emergence of fronds and leaves.

Proposed Start Date: 10/01/2017

96 61118096-Cut	51.2	4133 - Aspen, Mixed Pine	Sawtimber Well	56	Unspecified	Harvest	Seed Tree with Retention	4133 - Aspen, Mixed Pine	Even-Aged	Proposal
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Habitat Cut: No

Site Condition:

Prescription Specs: Remove all aspen and red maple. Cut most cherry except for a few mast producers. Mark pine to leave. Residual BA will be variable: 0-30 sf/acre. Leave area retention around ephemeral ponds. Protect desirable advanced regen especially oak. ORV trail runs through stand; include appropriate trail protection/safety specifications.

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

Acceptable Regen: Aspen, white pine, red pine, red maple, cherry, oak.

Other Comment:

Proposed Start Date: 10/01/2017

97 61118097-Cut	38.7	4311 - Pine, Aspen Mix	Sawtimber Well	77	81-110	Harvest	Shelterwood	4319 - Mixed Upland Forest	Even-Aged	Proposal
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Habitat Cut: No

Site Condition:

Prescription Specs: Remove all aspen and red maple. Cut most cherry except for a few mast producers. Probably best to mark pine to leave. Residual BA will be variable: 20-50 sf/acre. Leave area retention around ephemeral ponds. Consider excluding east end of stand where trail winds through it. Protect desirable advanced regen especially oak. ORV trail runs through stand; include appropriate trail protection/safety specifications.

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

Acceptable Regen: Pine, aspen, red maple, cherry, oak.

Other Comment:

Proposed Start Date: 10/01/2017



S t a n d	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
107	61118107-RowThin	12.6	42111 - Planted Red Pine, Mixed Deciduous	Poletimber Well	38	171-200	Harvest	Systematic Thinning	4211 - Planted Red Pine	Even-Aged	Proposal
Habitat Cut: No			Site Condition:								
<u>Prescription</u> Third row thin. Remove aspen from designated rows but leave the rest of it until a future thinning.											
<u>Specs:</u>											
<u>Next Step</u>											
<u>Treatments:</u>											
<u>Acceptable Regen:</u>											
<u>Other Comment:</u> North boundary is uncertain. May need survey.											
<u>Proposed Start Date:</u> 10/01/2017											
108	61118108-NF	7.4	4133 - Aspen, Mixed Pine	Poletimber Medium	38	1-50	NonForestMgt	Brush Cutting	3205 - Mixed Upland Shrub		Proposal
Habitat Cut: No			Site Condition:								
<u>Prescription</u> Selectively remove woody encroachment via Hydro-axe or a small fire wood sale (?) to remove mainly red maple. May need to mechanically treat bracken fern.											
<u>Specs:</u> The main treatment of this stand will be to burn it at least once per entry period in order to set back bracken and woody encroachment, increase species diversity, stimulate native herbaceous vegetation, promote berry production, and recycle nutrients.											
<u>Next Step</u>											
<u>Treatments:</u>											
<u>Acceptable Regen:</u>											
<u>Other Comment:</u> Burning for bracken and woody encroachment should take place late spring or early summer post emergence of fronds and leaves.											
<u>Proposed Start Date:</u> 10/01/2017											
109	61118109-Thin	24.6	4119 - Mixed Northern Hardwoods	Sawtimber Well	75	111-140	Harvest	Crown Thinning	411 - Northern Hardwood	Even-Aged	Proposal
Habitat Cut: No			Site Condition:								
<u>Prescription</u> Thin stand to approximately 80 sf/acre. Better quality in north half. Remove all aspen, ash, beech and ironwood except for scattered wildlife trees.											
<u>Specs:</u> Snowmobile trail runs through stand; include appropriate trail protection/safety specs.											
<u>Next Step</u> Monitoring, Natural Regen (Re-Inventory)											
<u>Treatments:</u>											
<u>Acceptable Regen:</u> Northern hardwoods. White pine in southern half.											
<u>Other Comment:</u>											
<u>Proposed Start Date:</u> 10/01/2017											
112	61118112-Cut	18.4	4139 - Aspen, Mixed Deciduous	Sawtimber Well	39	Unspecified	Harvest	Clearcut with Retention	4139 - Aspen, Mixed Deciduous	Even-Aged	Proposal
Habitat Cut: No			Site Condition:								
<u>Prescription</u> Clearcut, leaving retention as scattered longer-lived species around the recreation trails and possibly the pocket between the snowtrail and the red pine stand. Also, leave scattered hardwood or pine species throughout the sale for seed. Include appropriate trail protection specifications. Access will need to be from the opening on the east side because Johnson Lake Road is very narrow with steep banks in this area. There is an old road through the stand bottleneck.											
<u>Specs:</u>											
<u>Next Step</u> Monitoring, Natural Regen (Re-Inventory)											
<u>Treatments:</u>											
<u>Acceptable Regen:</u> Aspen with lesser amounts of maple, basswood, cherry, oak and white pine.											
<u>Other Comment:</u>											
<u>Proposed Start Date:</u> 10/01/2017											



S t a n d	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
121	61118121-Thin	5.9	4112 - Maple, Beech, Cherry Association	Sawtimber Well	80	141-170	Harvest	Single Tree Selection	411 - Northern Hardwood	Uneven-Aged	Proposal

Habitat Cut: No **Site Condition:** Unknown Access

Prescription Specs: Thin to approximate BA of 80 sf/ac. Focus on removing dying and defective cherry to release hard maple poles. Protect advance regen where present. Leave hemlock. Edges of stand are wet so treatment may be smaller than stand area.

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

Acceptable Regen: maple, cherry, hemlock, white pine.

Other Comment: Treatment is dependent upon getting access through adjacent private property.

Proposed Start Date: 05/01/2016

208	61118208-NF	5.9	330 - Low-Density Trees	Nonstocked		Unspecified	NonForestMgt	Brush Cutting	3205 - Mixed Upland Shrub		Proposal
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Habitat Cut: No **Site Condition:**

Prescription Specs: Selectively remove woody encroachment via Hydro-axe or a small fire wood sale (?) to remove mainly red maple. May need to mechanically treat bracken fern.

The main treatment of this stand will be to burn it at least once per entry period in order to set back bracken and woody encroachment, increase species diversity, stimulate native herbaceous vegetation, promote berry production, and recycle nutrients.

Next Step Treatments:

Acceptable Regen:

Other Comment: Burning for bracken and woody encroachment should take place late spring or early summer post emergence of fronds and leaves.

Proposed Start Date: 10/01/2017

218	61118218-NF	8.6	42200 - Natural White Pine	Poletimber Medium	38	51-80	NonForestMgt	Brush Cutting	3205 - Mixed Upland Shrub		Proposal
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Habitat Cut: No **Site Condition:**

Prescription Specs: Selectively remove woody encroachment via Hydro-axe or a small fire wood sale (?) to remove mainly red maple. May need to mechanically treat bracken fern.

The main treatment of this stand will be to burn it at least once per entry period in order to set back bracken and woody encroachment, increase species diversity, stimulate native herbaceous vegetation, promote berry production, and recycle nutrients.

Next Step Treatments:

Acceptable Regen:

Other Comment: Burning for bracken and woody encroachment should take place late spring or early summer post emergence of fronds and leaves.

Proposed Start Date: 10/01/2017



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Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
401 61118401-Burn	29.5	3303 - Mixed Low Density Trees	Nonstocked		Unspecified	Burn	Opening	3205 - Mixed Upland Shrub		Proposal

Habitat Cut: No

Site Condition:

Prescription Selectively remove woody encroachment via Hydro-axe or a small fire wood sale (?) to remove mainly red maple. May need to mechanically treat bracken fern.

Specs: The main treatment of this stand will be to burn it at least once per entry period in order to set back bracken and woody encroachment, increase species diversity, stimulate native herbaceous vegetation, promote berry production, and recycle nutrients. This stand was burned in 2008.

Next Step NonForestMgt, Herbaceous/Crop/Grass Planting

Treatments:

Acceptable

Regen:

Other Burning for bracken and woody encroachment should take place late spring or early summer post emergence of fronds and leaves.f

Comment:

Proposed Start Date: 10/01/2017

402 61118402-Burn	8.5	330 - Low-Density Trees	Nonstocked		Unspecified	Burn	Opening	3205 - Mixed Upland Shrub		Proposal
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Habitat Cut: No

Site Condition:

Prescription Selectively remove woody encroachment via Hydro-axe or a small fire wood sale (?) to remove mainly red maple. May need to mechanically treat bracken fern.

Specs: The main treatment of this stand will be to burn it at least once per entry period in order to set back bracken and woody encroachment, increase species diversity, stimulate native herbaceous vegetation, promote berry production, and recycle nutrients. This stand was burned in 2008.

Next Step NonForestMgt, Herbaceous/Crop/Grass Planting

Treatments:

Acceptable

Regen:

Other Burning for bracken and woody encroachment should take place late spring or early summer post emergence of fronds and leaves.

Comment:

Proposed Start Date: 10/01/2017

403 61118403-NF	1.7	320 - Upland Shrub	Nonstocked	0	Unspecified	NonForestMgt	Brush Cutting	3205 - Mixed Upland Shrub		Proposal
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Habitat Cut: No

Site Condition:

Prescription Brush hog (or hand fell) around select leave trees and/or patches . Leave scattered mast producing trees and shrubs and/or conifers for wildlife food and cover. Could plant site appropriate native shrubs and/or mast producing trees for wildlife food and cover. Fertilize plantings and protect with wire cages or tubex.

Next Step

Treatments:

Acceptable

Regen:

Other

Comment:

Proposed Start Date: 10/01/2017

404 61118404-NF	1.0	320 - Upland Shrub	Nonstocked	0	Unspecified	NonForestMgt	Brush Cutting	3205 - Mixed Upland Shrub		Proposal
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Habitat Cut: No

Site Condition:

Prescription Brush hog (or hand fell) around select leave trees and/or patches . Leave scattered mast producing trees and shrubs and/or conifers for wildlife food and cover. Could plant site appropriate native shrubs and/or mast producing trees for wildlife food and cover. Fertilize plantings and protect with wire cages or tubex.

Next Step

Treatments:

Acceptable

Regen:

Other

Comment:

Proposed Start Date: 10/01/2017



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Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
406 61118406-NF	46.4	330 - Low-Density Trees	Nonstocked	0	Unspecified	NonForestMgt	Brush Cutting	3205 - Mixed Upland Shrub		Proposal

Habitat Cut: No

Site Condition:

Prescription Brush hog (or hand fell) around select leave trees and/or patches . Leave scattered mast producing trees and shrubs and/or conifers for wildlife food and cover. Could plant site appropriate native shrubs and/or mast producing trees for wildlife food and cover. Fertilize plantings and protect with wire cages or tubex.

Next Step
Treatments:

Acceptable
Regen:

Other
Comment:

Proposed Start Date: 10/01/2017

412 61118412-Burn	6.6	4319 - Mixed Upland Forest	Poletimber Poor	20	1-50	Burn	Opening	3205 - Mixed Upland Shrub		Proposal
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Habitat Cut: No

Site Condition:

Prescription Selectively remove woody encroachment via Hydro-axe or a small fire wood sale (?) to remove mainly red maple. May need to mechanically treat bracken fern.
Specs: The main treatment of this stand will be to burn it at least once per entry period in order to set back bracken and woody encroachment, increase species diversity, stimulate native herbaceous vegetation, promote berry production, and recycle nutrients.

Next Step NonForestMgt, Herbaceous/Crop/Grass Planting
Treatments:

Acceptable
Regen:

Other
Comment:

Proposed Start Date: 10/01/2017

Total Treatment Acreage Proposed: 1145.2

Report 4 – Site Conditions

Traverse City Mgt. Unit
Katie Armstrong : Examiner

Compartment: 118
Year of Entry: 2018

Availability for Management

Total Acres	Acres Available	Acres Avail With Condition		Acres Not Available		Dominant Site Conditions										
						2B	4A	5C	1A	2G	2H	3B	3J	5E		
988	966	0	21		Aspen				15	1	6					
79	17	0	62		Cedar				17	27		16	2			
8	8	0	0		Herbaceous Openland											
1	0	0	1		Jack Pine										1	
196	195	0	0		Low-Density Trees				0							
80	63	0	18		Lowland Aspen/Balsam Poplar					18						
95	0	0	95		Lowland Conifers					95						
100	0	0	100		Lowland Deciduous					95	2	4				
24	6	0	18		Lowland Mixed Forest				18							
92	92	0	0		Lowland Shrub											
4	0	0	4		Lowland Spruce/Fir									4		
6	6	0	0		Marsh											
62	60	0	2		Mixed Upland Deciduous				2							
88	7	81	0		Natural Mixed Pines			81		0						
656	583	69	3		Northern Hardwood	6	6	58	1		2					
5	5	0	0		Planted Mixed Pines											
93	93	0	0		Red Pine				0							
7	7	0	0		Sand, Soil											
5	5	0	0		Tamarack											
22	22	0	0		Treed Bog											
18	18	0	0		Upland Conifers									0		
45	45	0	0		Upland Mixed Forest											
3	3	0	0		Upland Shrub											
11	11	0	0		Urban											
5	5	0	0		Water									0		
38	38	0	0		White Pine											
2,731	2,255	150	325		Total Forested Acres	6	6	139	53	235	11	19	6	1		
	83%	5%	12%		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	Dominant Site Condition	Acres	Other Site Condition	Other Site Condition	Other Site Condition	Other Site Condition
1	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	18	Unspecified	Unspecified	Unspecified	Unspecified

Report 4 – Site Conditions

Traverse City Mgt. Unit
Katie Armstrong : Examiner

Compartment: 118
Year of Entry: 2018

Comments:							
2	Available	2B: Unknown if access through adjacent landowner(s) is possible	6	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
3	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	59	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
4	Unavailable	3B: Threatened, endangered, and special concern species/communities	19	2G: Too wet (sensitive soils, does not include access issues)	Unspecified	Unspecified	Unspecified
Comments: Part of proposed SCA for MNFI-designated Rich Conifer Swamp.							
5	Unavailable	1A: Federal/State/Local Law	53	3J: Water quality / BMPs (stream, river, or lake)	Unspecified	Unspecified	Unspecified
Comments: Natural Rivers buffer for North Branch of the Manistee River (approx 175')							
6	Unavailable	2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)	2	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							

Report 4 – Site Conditions

Traverse City Mgt. Unit
Katie Armstrong : Examiner

Compartment: 118
Year of Entry: 2018

7	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	88	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
8	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	58	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
9	Unavailable	2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)	6	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
10	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	11	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
11	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	4	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Buffer around Slater's Lake.							
12	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	59	3J: Water quality / BMPs (stream, river, or lake)	Unspecified	Unspecified	Unspecified
Comments: Has unnamed tributaries of Manistee River.							

Report 4 – Site Conditions

Traverse City Mgt. Unit
Katie Armstrong : Examiner

Compartment: 118
Year of Entry: 2018

13	Unavailable	2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)	3	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
14	Unavailable	5E: Long-Term Retention	1	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
15	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	2	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
16	Available	4A: No Markets Available for these Forest Products	6	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Small stand with low volume. Hold until there is something else nearby to sell with it.							
17	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	81	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							

Mgt. Unit

Compartment: #Type!

Year of Entry:



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

* This is a partial list of SCAs for this compartment. Not included are those areas identified under other Department initiatives (Natural Rivers, Deer Wintering Areas, etc.). Those will be identified in separate, future map and report products.

SCA Name	SCA Category	Detail Type	Recommendation	Acres
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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	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
1	6118 - Lowland Deciduous with Cedar	Poletimber Medium	88.3	80	Unspecified	Very wet stand with significant flooding in several areas, especially near the center of the section. Used to have a significant ash component. Conifers dominate the canopy in some areas. Fair amount of windthrow and tip-ups. Heavy browse on understory RM.
2	4130 - Aspen	Sapling Well	46.1	6	Immature	Flowing Well Aspen, 61-063-08-01. Clearcut summer 2009. Left pocket of hardwoods that is now stand 4. Appears that parts of west edge were wetter than anticipated because the redline is a chain or so into stand 6 in places. Left a few scattered overstory trees in southern half. Good stocking.
4	4116 - Mixed N. Hardwood - Aspen	Sawtimber Well	1.6	85	81-110	Small stand. Mediocre quality. Leave for visual concerns adjacent to large aspen clearcut.
5	4117 - Mixed N. Hardwood - Pine	Poletimber Poor	1.5	85	1-50	Small area between aspen clearcut and private boundary. Clump of hard maple along the road and scrubby cherry and a few scotch pine filling in the open part.
6	6112 - Lowland Aspen	Poletimber Well	17.6	57	Unspecified	Variable stand. Parts are more of an E-type. Appears that a chain or so along the eastern edge was supposed to be included with the Flowing Well Aspen sale, but maybe it was too wet. Parts of stand used to have a significant ash component but that has died out. Fair amount of windthrow along the edge of the stand. Red maple understory is heavy in places with some trees approaching pole size.
8	4130 - Aspen	Sapling Well	7.5	6	Immature	Flowing Well Red-Jack, sale 61-078-08-01. Clearcut jack pine summer 2010. Was supposed to be planted to red pine, but it does not look like the whole area got planted. Trees are now about 10-15' tall. Good stem density. Some spots have more jack pine in the open areas.
9	4134 - Aspen, Spruce/Fir	Sapling Well	7.3	6	Immature	Flowing Well Aspen, 61-063-08-01. Clearcut summer 2009. Aspen is 10-15' tall. Scattered fir pockets and red pine trees.
10	42110 - Planted Red Pine	Sawtimber Well	6.2	59	111-140	Good quality red pine. A lot of 6-stick trees. Red maple and aspen in understory. Most of the canopies are open and trees have room to grow. Row-thinned in summer 2010, Flowing Well Red-Jack, 61-078-08-01.
11	4111 - S.Maple, Hard Mast Association	Sawtimber Well	5.9	85	141-170	Small, variable stand. Pocket of aspen in the middle. Mediocre quality.
12	4130 - Aspen	Poletimber Well	83.8	45	Unspecified	A lot of 4-5 stick quaking aspen. Fir and pine in the understory. East half is more of an A5 with 3-4 stick trees and poorer quality. A few clones of bigtooth aspen. Stocking is a bit lower at the south end along the creek with more fir and maple.
13	6117 - Lowland Deciduous, Mixed Coniferous	Poletimber Medium	9.8	80	Unspecified	Cover type estimated based on photo and adjacent stand. Probably a fair amount of dead ash with some red maple and cedar.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
14	6132 - Mixed Lowland Forest with Cedar	Poletimber Medium	24.1	100	Unspecified	Really mixed stand. Some C5/6 pockets of chlorotic-looking cedar. Transition ground to the creek. Beaver activity along the creek.
15	42110 - Planted Red Pine	Sawtimber Well	6.6	59	201+	Third-row thinned in summer 2010 as part of Flowing Well Red-Jack, 61-078-08-01. Fair amount of mortality from windthrow and beetles or HRD?
16	4132 - Aspen, Jack Pine	Sapling Well	13.1	6	Immature	Clearcut with Flowing Well Red-Jack, 61-078-08-01, cut summer 2010. FTP #C62-793 to plant red pine. Cannot find completion report. Fair amount of competition. Parts are A3 and aspen is the tallest species throughout the stand. Second biggest competitor is jack pine. Conclusion from May 2016 field trip was to let this stand go. There are differing opinions as to how much red pine will survive, but the aspen is too tall to spray with skidder and stand is too small to spray with helicopter.
17	6112 - Lowland Aspen	Poletimber Well	13.4	45		Mostly flooded at time of inventory. Shrubby understory with some unknown species. Small pocket of jack pine and white pine south of grade and west of road.
18	4191 - Mixed Upland Deciduous with Conifer	Sapling Well	5.4	6	Immature	Clearcut jack pine with Flowing Well Red-Jack, 61-078-08-01. FTP #C62-793 to plant red pine. Heavy competition over red pine. Regen survey shows that only south half of stand was planted. Conclusion from May 2016 field trip was to let this stand go. There are differing opinions as to how much red pine will survive, but the aspen is too tall to spray with skidder.
19	4191 - Mixed Upland Deciduous with Conifer	Sapling Well	46.6	5	Immature	Cut with Flowing Well Red-Jack, 61-078-08-01. FTP #C62-793 to plant red pine. Red pine has significant competition but left too much cherry (BA ~0-40 sf) to spray with helicopter. Variable composition and stocking. Conclusion from May 2016 field trip was to let this stand go. There are differing opinions as to how much red pine will survive, but there is too much overstory to spray and aspen is too tall to spray with skidder.
20	4130 - Aspen	Sapling Well	1.7	20	Immature	Parts along the road are closer to pole size.
21	4130 - Aspen	Sawtimber Medium	5.0	60	Unspecified	Transition ground to creek. Large, old aspen. Stocking is variable.
22	4130 - Aspen	Sapling Well	4.6	26	Immature	Flooded in middle of stand with lower stocking. Aspen is just reaching pole size.
23	42110 - Planted Red Pine	Sawtimber Well	20.5	56	111-140	Third row thinned with Flowing Well Red-Jack, 61-078-08-01. Very heavy understory. Pocket mortality. Fair amount of defect.
24	4130 - Aspen	Poletimber Well	9.9	28	Unspecified	North part is a small A6. Wet but probably manageable. Fair amount of blowdown along west edge. South part is more BAM and dead ash, very wet. Hummocky ground.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
25	4130 - Aspen	Poletimber Well	195.8	39	Unspecified	Stand contains scattered areas that are seasonally flooded, including drain that crosses Sunset Trail. More white pine east of Sunset Trail. Less dense at south end, especially east of Sunset Trail. More hardwoods in canopy there. Gradual transition into adjacent opening. Pipeline runs along west side of Sunset Trail. Varies between A6 & A8. Heavy RM understory up to 2" dbh.
26	4119 - Mixed Northern Hardwoods	Poletimber Poor	70.7	35	1-50	Opening that appears to have been maintained in the past (plow line), but has filled in with quite a lot of cherry. There is quite a lot of brushy white pine, especially east of Sunset Trail, and scattered A3 pockets.
28	6112 - Lowland Aspen	Sapling Well	44.9	28		Wetter than stand to the north with a few small drainages. Shrubby understory.
29	4110 - Sugar Maple Association	Poletimber Poor	10.7	35	1-50	Scattered pockets of log-sized cherry in poor health with a few pockets of aspen.
30	4191 - Mixed Upland Deciduous with Conifer	Sawtimber Well	6.0	68	111-140	Poor to medium red maple, very clumpy. Lots of fir filling in. Stocking is patchy. Transition ground. Mix of fir, red maple and quaking aspen.
31	6128 - Lowland Coniferous, Mixed Deciduous	Poletimber Medium	58.8	86	Unspecified	Variable stand. Minor upland areas mostly edges or south end. Some areas are more deciduous. Some areas are mostly flooded with tag alder canopy.
32	42200 - Natural White Pine	Sawtimber Well	29.8	77	111-140	Cranberry Lake Aspen, 61-051-08-01. Removed aspen and red maple and some marked pine in 2011. Variable stand. White pine is poor quality with lots of multi-stemmed trees and scattered mortality. Diameters range from 5-18" and BA ranges from 40-180 sf/acre. Very heavy red maple understory with some aspen. Scattered wet areas. Gradual transition from adjacent stands.
33	4112 - Maple, Beech, Cherry Association	Sawtimber Well	3.4	75	111-140	Clumpy red maple, good diameter.
34	42141 - Planted Mixed Pine, Mixed Deciduous	Sapling Well	5.5	6	Immature	Flowing Well Red-Jack, sale 61-078-08-01. FTP C62-793. Jack pine coming in thick. Some quaking aspen and cherry competition too.
35	4110 - Sugar Maple Association	Sawtimber Well	31.0	90	81-110	Seventy-Two Sunset sale, 61-158-98-01, thinned winter 2000-2001. Treatment lines are uncertain. Did not originally include part on east side of Sunset Trail. Average residual at time of sale ~60 sf/acre. Very heavy understory, but not desirable species. Scattered maple mortality. Marathon Oil pipeline on west side of Sunset Trail 866-662-2378
36	4130 - Aspen	Poletimber Well	78.7	49	Unspecified	Heavy hardwood understory, including pockets of hard maple. Fair amount of ash in canopy and understory.
38	4130 - Aspen	Sawtimber Medium	9.6	61	Unspecified	Overmature aspen, starting to deteriorate.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
39	4110 - Sugar Maple Association	Poletimber Poor	3.7	80	1-50	Valley. Scattered trees.
40	4130 - Aspen	Sapling Well	8.3	16	Immature	Target Aspen, 61-031-99-01, clearcut December 1999. Understory hard maple may have started at the same time but it is suppressed.
42	4111 - S.Maple, Hard Mast Association	Sawtimber Well	57.7	90	111-140	Variable stand with diverse canopy. BA variable: 80, 110, 110, 150. Diverse canopy. Small pocket of log-size red pine on east side of Sunset Trail. Hard maple regen. Poor quality timber. Rolling topography. BBD present.
43	4139 - Aspen, Mixed Deciduous	Sapling Well	39.4	6	Immature	Sunset Trail Aspen, 61-042-08-01, clearcut summer 2009. Original stand had sparse aspen in places with M3 underneath. Dense stocking. Fair amount of hardwood regen but aspen is tallest (A3 over M3?). Red maple sprouts are dominant in a few places.
44	42260 - Natural Pine, Mixed Deciduous	Poletimber Medium	6.8	60	51-80	Variable stand. Split stand after fieldwork to satisfy Mifi treatment rules. Cover type is an estimate.
47	4130 - Aspen	Sapling Well	18.8	7	Immature	Sunset Trail Aspen, 61-042-08-01, clearcut summer 2009. A trace of young oak. Trees are about 10' tall. North end of stand is on a decent hill.
49	4130 - Aspen	Sapling Well	2.7	16	Immature	Compartment 18 Aspen, 62-004-98-01, clearcut August 1999. Most of stand is on rolling terrain. Trees are ~25' tall. Well-stocked. more hardwood along edges.
50	4111 - S.Maple, Hard Mast Association	Sawtimber Well	171.3	80	111-140	Rolling terrain. BBD present. Some of the ridgetops are less dense. Some red oak and white ash. Heavy ironwood and beech understory. Medium quality. Some clones of bigtooth aspen. Southwest end has good quality trees. Sunset Trail corridor has some M3 pockets of beech and ironwood and red maple. East part of stand has been thinned before.
53	4111 - S.Maple, Hard Mast Association	Sawtimber Well	37.9	90	111-140	Looks like it has been thinned before but other parts do not. Lots of BBD present. Scattered white ash. Some thick beech areas. Medium quality maple. Heavy beech and ironwood in understory. Some low stocked areas. Better quality in the east end. Brew-John Hardwood, 61-192-98-01, completed December 2001.
54	42110 - Planted Red Pine	Poletimber Well	19.5	46	141-170	Third row thinned as part of 72 & Johnson Lake Red, 61-049-08-01, December 2010 - February 2011. 4-5 stick red pine. Some aspen and cherry mixed in. Hardwoods in understory. Wider rows. Good diameter development.
55	42210 - Natural Red Pine	Sawtimber Well	2.1	61	81-110	Area of heavy residual from M-72 Breakup Sale, 61-014-97-01, cut spring 1997. Clearcut except oak and red pine. Now two-aged with 5-6 stick red pine with an even mix of logs and poles and A3 pockets. Denser red pine in the west; more scattered in the east.
56	4130 - Aspen	Sapling Well	10.6	19	Immature	M-72 Breakup Sale, 61-014-97-01, cut spring 1997. Clearcut except oak and red pine. Trees are 20-25' tall. Scattered red pine logs were left when harvested.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
57	42260 - Natural Pine, Mixed Deciduous	Poletimber Well	81.0	66	141-170	Variable stand. BAs: 180, 190, 100, 120, 160; average 165. East edge and NW corner seem to have a higher quaking aspen component. Some scattered large diameter white pine. Old grade through stand and old burned stumps south of grade. Drop in quality in the southern third. Smaller timber and more forked tops. Heavy red maple in the understory in the south. White pine starting to self-thin. Some quaking aspen looks over-mature. Other trees are 7-8" and healthy. Red pine is in north-central part of stand.
58	4130 - Aspen	Sapling Well	18.3	19	Immature	M-72 Breakup Sale, 61-014-97-01, cut spring 1997. Clearcut except oak and red pine. Trees are about 10' tall. Some white pine and log-size oak scattered in overstory.
59	4130 - Aspen	Sapling Well	106.4	5	Immature	Part of Johnson Lake Road Aspen, 61-050-08-01. Clearcut December 2010. Left white pine in islands and buffer around V0 and scattered overstory oak. Aspen in southern end of Stand 54 was cut as part of 72 & Johnson Lake Red, 61-049-08-01 but cut at same time. Hoping for mixture of aspen, maple and pine. Variable stocking. Aspen is tallest for now but there are a lot of red maple stump sprouts which might catch up. Good amount of oak saplings, especially in western part.
61	429 - Mixed Upland Conifers	Sawtimber Well	2.2	65	81-110	Variable stand. Slopes down to Johnson Lake, where it is wetter ground. Southern part contains a small vernal depression. Heavy white pine in understory. Old RR grade through north end.
63	4130 - Aspen	Poletimber Well	38.0	26	Immature	Clearcut ~1990. First Snow, 61-060-87-01. Well-stocked and good quality. A bit immature. Mostly 4-stick trees. Lots of hard maple in understory. East end of the stand is more quaking aspen that is small and look more like an A3 in transition.
64	4110 - Sugar Maple Association	Sawtimber Well	101.6	80	111-140	Cranberry Hardwoods, 61-010-00-01, completed October 2002. Western edge has sparser BA, more aspen and used to be part of aspen stand (43). Quality increases towards north end. Quite a few hard maple crop trees and a good amount of seedlings ~1' tall. Some regen gaps worked. More ironwood in understory than stand 79. Quality and density decrease west of trail. Some mortality in western quarter.
65	4130 - Aspen	Sapling Well	15.4	27	Immature	Red Snow Sale, 61-003-88. Clearcut except oak in 1989. Well-stocked. Aspen is 25-30' tall. Scattered overstory oak.
66	4139 - Aspen, Mixed Deciduous	Sawtimber Well	18.5	57	111-140	Alternates between aspen and poor quality hardwoods.
69	6120 - Lowland Cedar	Poletimber Well	12.3	80	Unspecified	Small chlorotic-looking cedar. Wet ground. Scattered white pine logs.
71	429 - Mixed Upland Conifers	Poletimber Well	11.6	46	81-110	Transition ground. Decent black spruce on a slight hill to the swamp. Variable stand.
72	4130 - Aspen	Sapling Well	9.4	16	Immature	Compartment 18 Aspen, 62-004-98-01, clearcut December 1999. Trees are about 20' tall. Well stocked. Scattered fir and oak.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
73	4139 - Aspen, Mixed Deciduous	Sapling Well	13.0	5	Immature	Part of Johnson Lake Road Aspen, 61-050-08-01. Clearcut, left cherry and some advanced oak regen. Hoping for mix of aspen, oak, maple, and white pine. Coming back to a mix of hardwoods and aspen. Trees are about 6' tall.
74	4112 - Maple, Beech, Cherry Association	Poletimber Poor	12.0	50	1-50	U0 filling in. Scattered open-grown hardwoods. Stocking is highly variable. West end is smaller cherry, 4", 1 stick. Scattered young oak.
75	4130 - Aspen	Poletimber Well	78.0	38	Unspecified	Mostly aspen with small pockets of mediocre open-grown hardwoods, especially around the lake. Scattered openings with bracken fern and cherry. Aspen quality declines towards the north, where it might not hold much longer. White pine near the lake. Rolling hills with a longitudinal ridge running north-south.
76	4130 - Aspen	Poletimber Medium	5.5	40	Unspecified	Mostly 4-stick aspen. Variable stocking. Old grade runs through stand.
79	4110 - Sugar Maple Association	Sawtimber Well	106.5	80	111-140	Most of stand was part of Gravel Pit Hardwoods, 61-086-08-01, thinned summer 2009. Fairly good quality hardwoods. Scattered pockets of mortality especially north of the township property. Filled with elderberry. BBD present. Minor windthrow. More aspen in SE corner. Part was also Gravel Pit Basswood, 61-041-88-01, 19 acres off NE corner of Excelsior Twp property. Accessed off Johnson Lake Road on roads through U-types.
84	6120 - Lowland Cedar	Poletimber Well	10.4	90	Unspecified	Well-stocked on south end. Fir filling in the canopy gaps. Central part is wetter and not well stocked.
85	4139 - Aspen, Mixed Deciduous	Poletimber Poor	6.2	45	Unspecified	Mostly 4-5 stick aspen. Poor stocking at south end. Clumpy aspen and open-grown red maple. A few scattered oak. Fir along the swamp edge.
87	4130 - Aspen	Sapling Well	8.0	17	Immature	Compartment 18 Aspen, 62-004-98-01, cut December 1999.
88	429 - Mixed Upland Conifers	Sawtimber Well	4.4	65	81-110	Variable stand. Slopes down to Johnson Lake, where it is wetter ground. Southern part contains a small vernal depression. Heavy white pine in understory. Old RR grade through north end. [Canopy data lost during RAS boundary editing.]
89	6120 - Lowland Cedar	Poletimber Well	2.4	106	Unspecified	Wet stand along the edge of Johnson Lake. [Canopy data lost during RAS boundary editing.]
92	4199 - Other Mixed Upland Deciduous	Sawtimber Medium	4.2	45	51-80	Hodgepodge stand. Some planted pine especially along private line.
93	42110 - Planted Red Pine	Sawtimber Well	25.6	46	141-170	Third row thinned as part of 72 & Johnson Lake Red, 61-049-08-01, December 2010 - February 2011. Wide spacing. Crowns are mostly free-to-grow but fair amount of defect that could be removed. Minimal understory. A few aspen pockets with red maple.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
95	4139 - Aspen, Mixed Deciduous	Sapling Well	10.3	6	Immature	Part of Cranberry Lake Aspen, 61-051-08-01. Left cherry and island at east end for retention. Some areas have a lot of cherry.
96	4133 - Aspen, Mixed Pine	Sawtimber Well	51.2	56	Unspecified	Variable stand. Low end of 75% canopy closure with moderately sized gaps full of bracken fern. Canopy alternates between white pine, aspen and large red maple. Poor quality timber. Heavy understory throughout with pockets of taller advanced regen, 1-4" dbh. Large old white pine stumps.
97	4311 - Pine, Aspen Mix	Sawtimber Well	38.7	77	81-110	Variable stand. Transition between white pine to south and more aspen to north. White pine is poor quality with lots of multi-stemmed trees and scattered mortality.
99	4130 - Aspen	Sapling Well	2.0	18	Immature	Clearcut in 1998 as part of sale 61-017-97-01 with Comp 120. Trees are about 20-30' tall and stand has good stem density.
103	4130 - Aspen	Sapling Well	11.2	16	Immature	Compartment 18 Aspen, 62-004-98-01, cut August 1999. Good stocking. Aspen 20-30' tall. Some red maple under aspen and scattered overstory pine.
105	4112 - Maple, Beech, Cherry Association	Sawtimber Well	3.7	75	81-110	Hardwood pocket that was treated with Compartment 18 Aspen, 62-004-98-01, cut March 2000. Only cut aspen and white pine.
106	4133 - Aspen, Mixed Pine	Sapling Well	11.0	5	Immature	Part of Cranberry Lake Aspen, 61-051-08-01, completed January 2011. Left white pine log trees; fair amount of residual. Patchy regen.
107	42111 - Planted Red Pine, Mixed Deciduous	Poletimber Well	12.6	38	171-200	Never thinned. Sizeable aspen pockets, especially in west half. Some aspen is falling over and has restarted already. Rows are not straight but seem wide enough.
108	4133 - Aspen, Mixed Pine	Poletimber Medium	9.0	38	1-50	Variable stand. Used to be typed as part of opening to the SW. Mostly poor quality timber. Some areas are brushy white pine, aspen, or thick maple regen.
109	4119 - Mixed Northern Hardwoods	Sawtimber Well	24.6	75	111-140	North and west part of stands are fair quality hardwoods. Some parts could use a thinning but others have decent hard maple poles and treatment would be more TSI. Southeast part of stand has more aspen and white pine. Ironwood understory is patchy -- bare in some areas but dense and up to 2" dbh in others. BA: 150, 140, 110.
110	4133 - Aspen, Mixed Pine	Sapling Well	9.4	5	Immature	Part of Cranberry Lake Aspen, 61-051-08-01. Left oak, white pine and red pine. Cut winter 2010-11. Heavy residual, especially in north end.
112	4139 - Aspen, Mixed Deciduous	Sawtimber Well	18.4	39	Unspecified	Mostly aspen with scattered hardwood pockets. Fair amount of basswood. Heavy hardwood understory, some pole size. Pockets of hard maple saplings.
113	4117 - Mixed N. Hardwood - Pine	Sawtimber Well	5.5	75	81-110	Variable stand and stocking. Lots of basswood with scattered aspen and white pine. Powerline to private property runs through southern part of stand.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
114	6120 - Lowland Cedar	Poletimber Well	21.4	103	Unspecified	Nice dense cedar. Deer are using this area a lot. Fir is filling in the canopy gaps. Variable stocking.
116	42220 - Natural Jack Pine	Poletimber Well	1.0	60		retention from Flowing Well Red-Jack? Small stand. Fair amount of mortality.
120	6113 - Lowland Maple	Sawtimber Well	2.3	70	81-110	Small area of relative high ground but there is still standing water. Hemlock at the edges.
121	4112 - Maple, Beech, Cherry Association	Sawtimber Well	5.9	80	141-170	Small area of upland extending from private property. Unusual percentage of large cherry trees, but they are starting to go. Fair amount of wind damage. Surprising number of hard maple poles based on canopy. Beech on private property has heavy scale.
123	6128 - Lowland Coniferous, Mixed Deciduous	Sawtimber Well	36.0	80	Unspecified	Wet stand. Contains an unnamed, perennial tributary of the Manistee River. The hemlock in the stand is concentrated along this corridor. Used to have a fair amount of ash.
124	6120 - Lowland Cedar	Poletimber Well	32.2	87	Unspecified	Cover type estimated based on photo and adjacent stand in Comp 120. Included part of stand in proposed SCA for MNFI-designated Rich Conifer Swamp.
180	4130 - Aspen	Sapling Well	5.5	6	Immature	Part of Gravel Pit Hardwoods, 61-086-08-01, clearcut except oak, summer 2009.
182	6122 - Black Spruce	Poletimber Well	4.1	75	Unspecified	4-5 stick white pine and spruce. Decent amount of log size white pine.
207	42300 - Planted Larch	Poletimber Well	4.6	38	Unspecified	Japanese larch with minimal understory. Hold until nearby red pine is restarted and then clearcut and plant red pine.
218	42200 - Natural White Pine	Poletimber Medium	8.6	38	51-80	Hodgepodge stand. Was part of U0 to the NE in OI.
225	6112 - Lowland Aspen	Poletimber Well	4.4	45		South end is wetter, but parts are probably manageable. Thick red maple understory. Heavy browse. Rough trail runs along northeast edge of stand.
407	4112 - Maple, Beech, Cherry Association	Sapling Poor	1.0	15	Immature	Opening filling in with hardwoods. Interesting hard maple regen under pole-sized cherry.
412	4319 - Mixed Upland Forest	Poletimber Poor	6.6	20	1-50	Small opening with scattered white pine, black cherry, and heavy bracken fern. Trail continues off the north end of the stand.



Stand	Cover Type	Acres	Managed Site	General Comments:
3	330 - Low-Density Trees	2.0	No	Area of trespass circa 2002 but no record in file. OI notes: "The property owner to the north was trying to put an ORV race track on state land. CO Kevin Davis handled the trespass. A ticket was never issued. I believe the area was restored." There is now a large berm just north of the property line. DNR survey corner recently established at position 6, which is the northeast corner of this stand. Area is still mostly open with bracken fern and scattered cherry trees. There appears to be a rough road along the east edge of the stand so the landowner might still be using this for access, but the road does not appear to go far after that.
7	6229 - Mixed lowland shrub	78.6	No	Contains an unnamed, perennial tributary of the Manistee River. Some beaver activity. Some dead conifer stumps. Tag alder. Scattered birch, BAM, spruce, and fir seedlings. Cattails. Raspberries. Some 1" DBH Birch ~ 16' tall. Scattered larger Q also.
27	6229 - Mixed lowland shrub	2.5	No	Group of small, seasonally flooded areas. Lighter aspen canopy with tag alder and red osier dogwood underneath.
37	330 - Low-Density Trees	33.8	No	Scattered cherry, hard maple and red maple. Borderline forested stand. Contains old RR grade.
41	310 - Herbaceous Openland	5.0	No	M72 and powerline right-of-way.
51	330 - Low-Density Trees	2.5	No	Opening that is filling in. Sumac present.
68	623 - Emergent Wetland	3.4	No	Small kettle depressions, seasonally wet. Appears to be mostly herbaceous vegetation. Includes tree length buffer from adjacent aspen stand.
70	500 - Water	1.0	No	
80	710 - Sand, Soil	6.5	No	gravel pit.
82	500 - Water	1.8	No	Slater's Pond.
86	6224 - Treed Bog	3.2	No	Flooded. Appears to be some beaver activity on private property to the east. Much of canopy is dead.
90	500 - Water	1.9	No	Part of Johnson Lake/
94	330 - Low-Density Trees	64.7	No	Scattered cherry, aspen, oak saplings, white pine. Bracken fern and blackberry.
100	6224 - Treed Bog	3.8	No	Scattered white pine over bog.
101	6224 - Treed Bog	2.6	No	Scattered white pine over bog.



Stand	Cover Type	Acres	Managed Site	General Comments:
102	6224 - Treed Bog	12.7	No	Treed bog with scattered white pine and spruce.
104	623 - Emergent Wetland	2.6	No	Small kettle depression. Seasonally flooded.
122	6229 - Mixed lowland shrub	4.2	No	Flooded by beaver dam on creek at southern edge of stand. Appears to be mostly dead or dying fir, spruce and cedar.
150	310 - Herbaceous Openland	1.3	No	Grassy slope on M72 hillcut opposite communications tower.
196	622 - Lowland Shrub	6.4	No	Multipart stand. Seasonal ponds in kettle depressions. Vegetation varies from cattails to emergent vegetation to shrubs.
208	330 - Low-Density Trees	5.9	No	Scattered cherry (P/S), aspen, Rubus sp., reindeer moss. Trace of white pine and oak. Has an old plow line.
401	3303 - Mixed Low Density Trees	29.5	Yes	Mostly cherry and aspen clones plus scattered white pine, balsam fir, red maple. Borderline forested stand.
402	330 - Low-Density Trees	8.5	No	Scattered cherry with some oak and pine. Plowline evident.
403	320 - Upland Shrub	1.7	No	
404	320 - Upland Shrub	1.0	No	
406	330 - Low-Density Trees	46.4	No	Narrow opening with ORV route and snow trail. Scattered cherry, oak, and aspen. Power line runs along east side.
410	3102 - Grass	1.3	No	Timber trespass #11-98 & 12-03. Appears to still be used by landowner, at least for access to snowmobile trail.
411	330 - Low-Density Trees	2.4	No	Scattered white pine and black cherry; filling in with aspen from the edges. Bracken fern. ORV trail through northwest part.
500	122 - Road/Parking Lot	11.2	No	M72