



Compartment Review Presentation

Traverse City Forest Management Unit

Compartment 61146

Entry Year 2022

Acreage: 1,730

County Kalkaska

Management Area: Manistee River Valley

Revision Date: 2021-01-04

Stand Examiner: Katie Armstrong

Legal Description:

T25N R6W Sections 28, 29 and 30

Identified Planning Goals:

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

Soil and topography:

Terrain is mostly flat with some rolling hills on the east end. There are significant lowland areas around Big and Little Cannon Creeks.

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

Most of this compartment is contiguous state land with a few parcels of private ownership in Sections 29 and 30. Sections 28 and 29 are part of the 10-year lease to the Department of Military and Veterans Affairs for Camp Grayling training. The S1/2 of the NESE (~20 acres) is an isolated parcel of mostly lowland. This might be considered for disposal.

Unique Natural Features:

Big Cannon and Little Cannon Creeks and several unnamed tributaries flow through this compartment. These are tributaries of the Manistee River. There are also several element occurrences for threatened and endangered species in this compartment.

Archeological, Historical, and Cultural Features:

There are two known historical features in this compartment.

Special Management Designations or Considerations:

As tributaries of the Manistee River, Big Cannon Creek and Little Cannon Creek are protected by the Upper Manistee River Natural River Plan. They are also Designated Trout Streams.

Watershed and Fisheries Considerations:

Big Cannon Creek, Little Cannon Creek, and several unnamed tributaries to Little Cannon Creek flow through Compartment 146. All are Designated Trout Streams. Big Cannon Creek hosts self-sustaining populations of brown trout, brook trout, and rainbow trout, while Little Cannon Creek and its tributaries host self-sustaining populations of brown and brook trout. Big Cannon Creek in particular is heavily fished by trout anglers. Both Big and Little Cannon Creeks are protected under the Upper Manistee River Natural Rivers Designation. Aspen clearcuts along these streams should be avoided to discourage excessive beaver colonization and damming of these vulnerable streams.

Wildlife Habitat Considerations:

This compartment falls across three landforms, a very poorly drained outwash plain that occupies the middle third of the compartment, an ice contact ridge along the eastern edge, and an excessively drained outwash plain fills in the remainder. Low areas currently harbor shrub wetlands and mixed lowland forest. Beaver activity and periodic blowdown events provide sufficient natural disturbance in these areas. Some limited brush regeneration may be implemented to recycle rank alder and fruiting shrubs along upland edges. Lowland conifer habitat should be maintained, and is especially important as winter cover for deer. A large stand of mature oak coincides with the ice contact ridge in this compartment. Harvest in this stand should incorporate variable retention methods, with some patches reserved from cutting, some small

clearcut patches, and everything between. An element of pine should be retained as well. Upland outwash plain areas should be managed for an array of conditions, including open grassy habitat and a variety of age classes of oak-pine-aspen forest. One stand on the west side of section 28 will be prescribed for opening maintenance and herbaceous planting. Final harvests of aspen types should retain snags and pockets of residual live trees as well as some down logs for within stand habitat structure. Tops should be left unchipped and scattered around the sale area in piles for wildlife habitat. Efforts should be made to increase tree species diversity within some of the red pine plantations as they reach maturity and are regenerated. Also, incorporating small (2-5 acre) islands that are left relatively un-thinned within mature pine stands would provide winter roosting cover for turkeys.

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 is the Mississippian Michigan Formation. The Michigan is quarried for gypsum elsewhere in the state. The nearest gravel pit is one-half mile to the southeast in Section 33. Gravel potential in the compartment is considered good, especially the southeast corner. The abandoned Cannon Creek Field lies to the southwest. The field produced over 850,000 mcf gas from the Traverse Limestone. Most of the state land is currently leased for oil and gas development and the rest has been nominated for the May 2010 lease auction.

Vehicle Access:

There is sufficient vehicle access throughout the compartment. The Kalkaska County Road Commission removed the culvert in Beaver Dam Rd a few years ago but ORVs are still driving through the creek. This should be addressed as an RDR.

Survey Needs:

None at this time.

Recreational Facilities and Opportunities:

Dispersed camping is popular along Big Cannon Creek. Part of the North Missaukee ORV route runs through the west half of Section 30. There are also several ORV routes in Section 28.

Fire Protection:

Additional Compartment Information:

The following reports from the Inventory are attached:

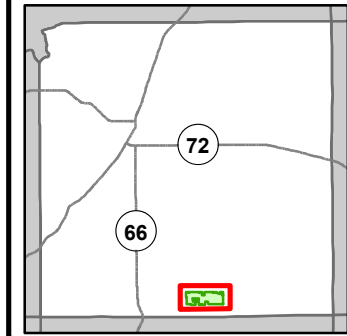
- Total Acres by Cover Type and Age Class**
- Cover Type by Harvest Method**
- Proposed Treatments – No Limiting Factors**
- Proposed Treatments – With Limiting Factors**
- Stand Details (Forested and Nonforested)**
- Dedicated and Proposed Special Conservation Areas**
- Site Condition Details**

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

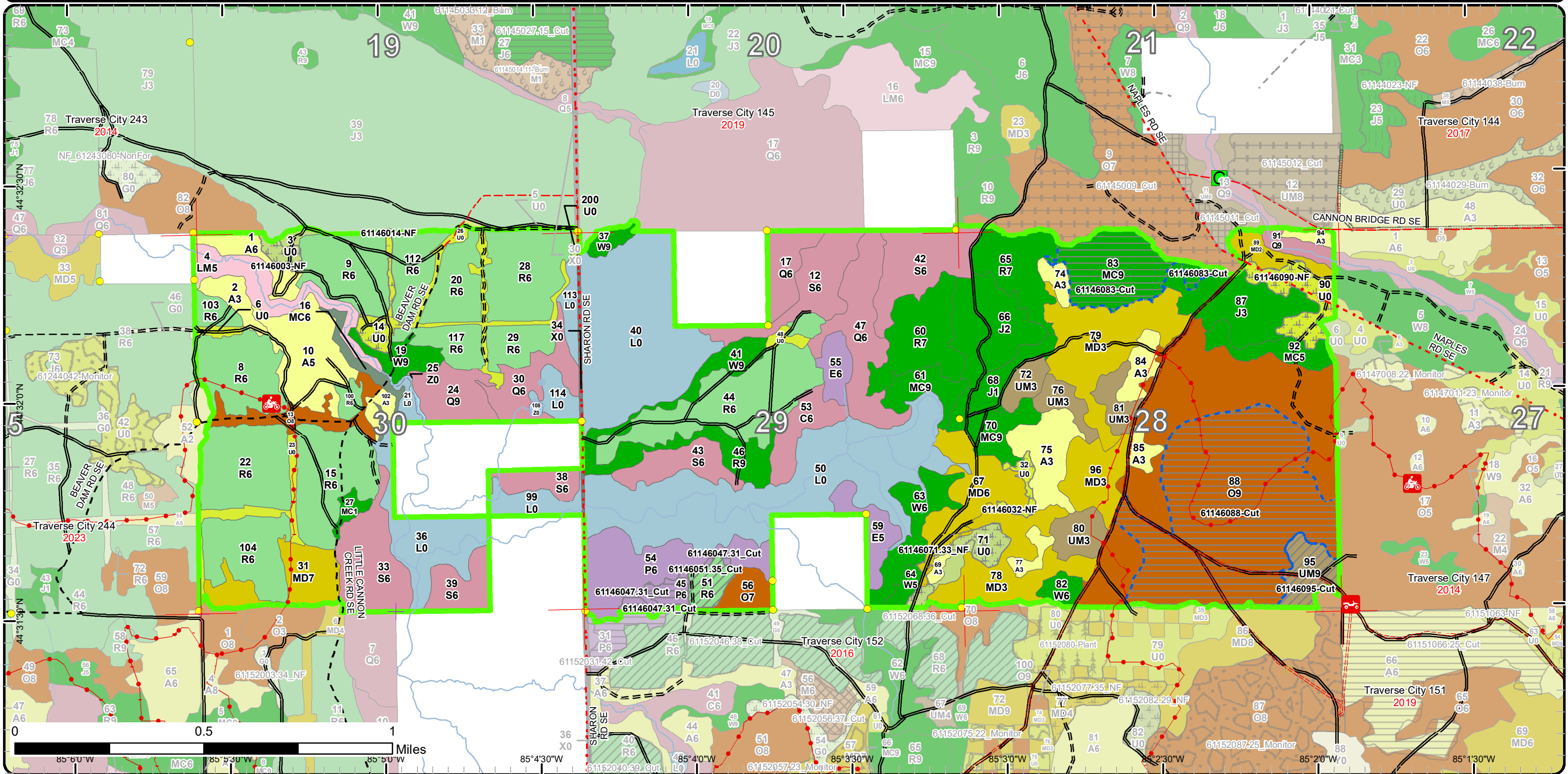
- Base feature information, stand boundaries, cover types, and numbers**
- Proposed treatments**
- Site condition boundaries**
- Details on the road access system**

Cover Type & Treatments Map

Compartment: 146
 T25N R06W Sec. 28-30
 County: Kalkaska
 Unit: Traverse City
 Mgmt Area: Manistee River Valley
 YOE: 2022
 Acres: 1,730.5 GIS Calculated
 Examiner: Katie Armstrong
 Map Revised: 1/6/2021
 Map Phase: Post-Review

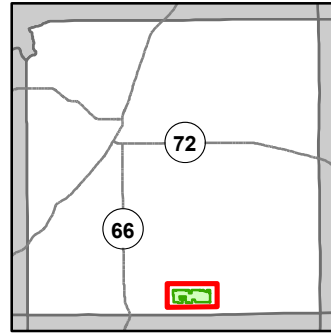


- Miris Corners
- + Remonumented Section Corners
- Survey Grade Corners
- Counties
- DNR - Secondary Forest Road
- DNR - Forest Access Route
- Federal / State - Dirt / Gravel Road
- County - Gravel Road
- County - Dirt Road (Seasonal)
- Private - Dirt / Gravel Road
- 🏍️ Motorcycle Trails (DNR License)
- 🏍️ ORV Routes
- ORV License & Trail Permit
- Designated ORV Route
- ▲ Berms
- G Gate
- Intermittent Stream
- Lake/Pond
- Perennial River
- Lakes and Rivers
- Pipeline
- Compartment Boundary
- Treatments with Site Conditions
- Other Treatment - See Comments
- Clearcut (w/Reserves)
- Thinning (Crown, Low, Systematic)
- 412 - Oak Types
- 413 - Aspen Types
- 419 - Mixed Upland Deciduous
- 421 - Planted Pines
- 422 - Natural Pines
- 423 - Other Upland Conifers
- 430 - Upland Mixed Forest
- 611 - Lowland Deciduous Forest
- 612 - Lowland Coniferous Forest
- 613 - Lowland Mixed Forest
- 122 - Roads/Parking Lot
- 320 - Upland Shrub
- 330 - Low Density Trees
- 500 - Water
- 622 - Lowland Shrub

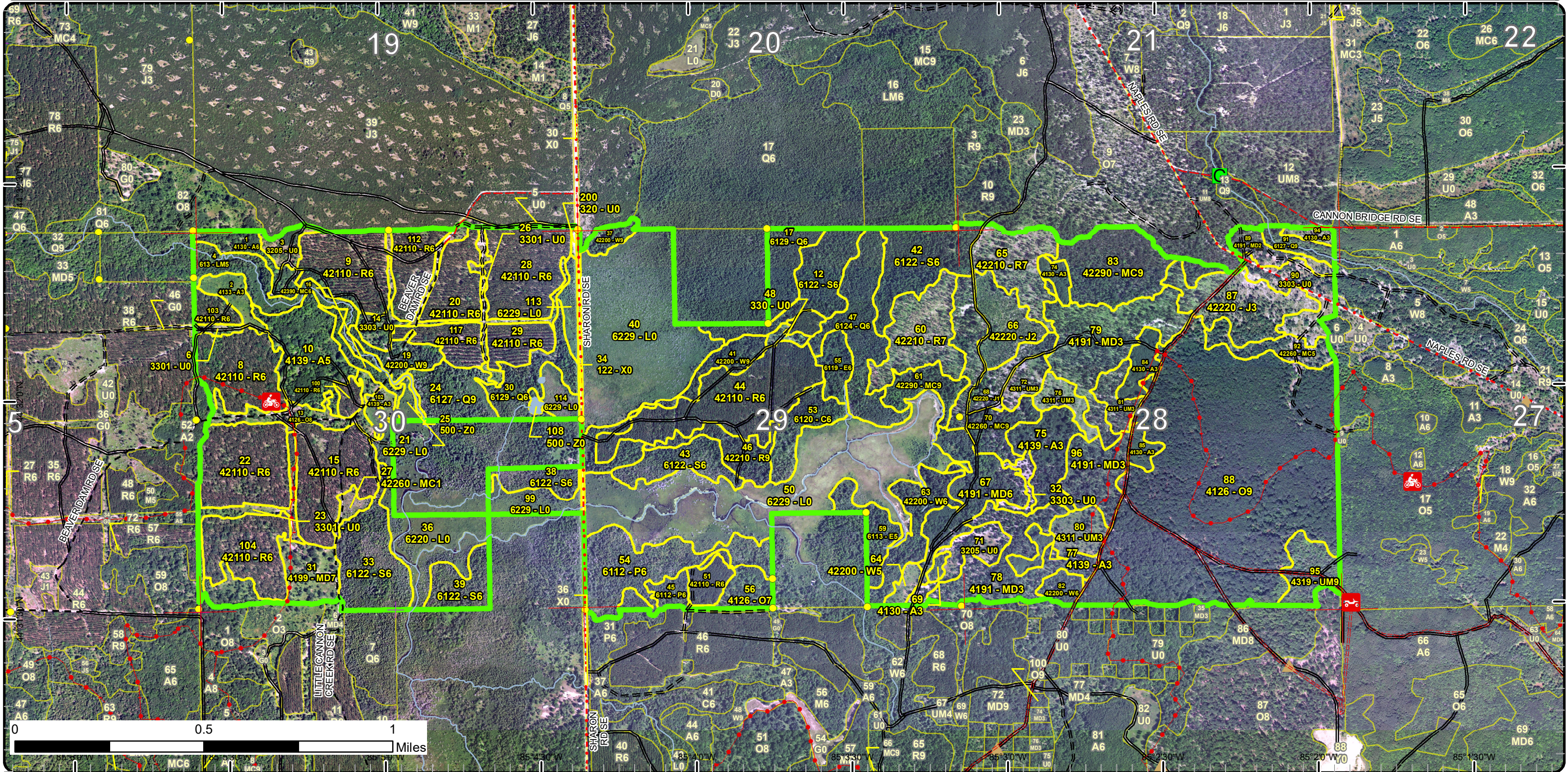


Stand Boundary Map

Compartment: 146
 T25N R06W Sec. 28-30
 County: Kalkaska
 Unit: Traverse City
 Mgmt Area: Manistee River Valley
 YOE: 2022
 Acres: 1,730.5 GIS Calculated
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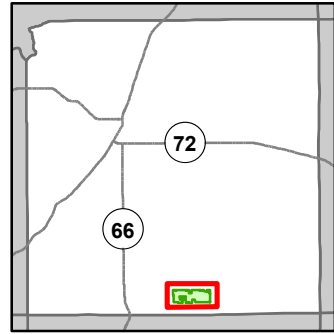


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- + Remonumented Section Corners
- Survey Grade Corners
- Counties
- DNR - Secondary Forest Road
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- 421 - Planted Pines
- 422 - Natural Pines



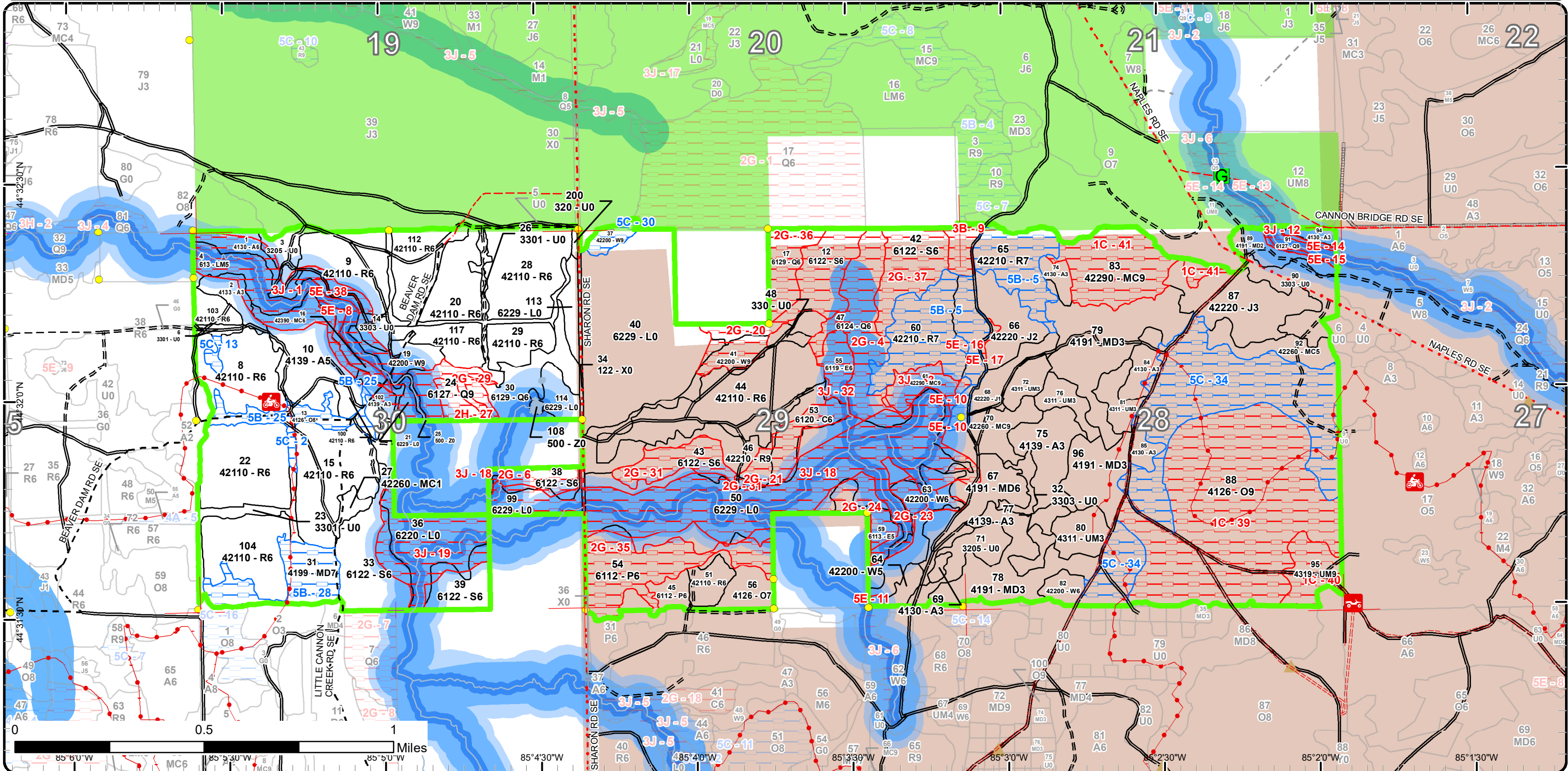
Special Conservation Areas

Compartment: 146
 T25N R06W Sec. 28-30
 County: Kalkaska
 Unit: Traverse City
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- Designated ORV Route
- ▲ Berms
- ⬢ Gate
- Intermittent Stream
- Lake/Pond
- Perennial River
- Lakes and Rivers
- Pipeline
- ⬢ Compartment Boundary
- ⬢ Available w/ Constraints
- ⬢ Unavailable
- 5B: Maintain for regeneration purposes
- 5C: Delay treatment for age/size class diversity or exceptional site quality

- 1C: Other dept or div proc/practices
- 2G: Too wet (sensitive soils, does not include access issues)
- 2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)
- 3J: Water quality / BMPs (stream, river, or lake)
- 5E: Long-Term Retention
- ⬢ Stand Boundaries
- ⬢ Natural Rivers Vegetative Buffer
- ⬢ Natural Rivers Zoning District
- ⬢ Kirtland Warbler Habitat
- ⬢ Cold Water Streams
- ⬢ High Priority Trout Stream Buffer
- ⬢ Research, Development, and Military Lands



Report 1 – Total Acres by Cover Type and Age Class



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	14	41	0	10	30	0	0	0	0	0	0	0	0	0	0	0	0	95
Cedar	0	0	0	0	0	0	0	0	0	14	0	0	0	0	0	0	0	0	14
Jack Pine	0	29	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	55
Low-Density Trees	53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	53
Lowland Aspen/Balsam Poplar	0	0	0	0	0	0	43	0	0	0	0	0	0	0	0	0	0	0	43
Lowland Conifers	0	0	0	0	0	0	0	31	0	49	0	6	0	0	0	0	0	0	86
Lowland Deciduous	0	0	0	0	0	0	0	0	12	8	0	0	0	0	0	0	0	0	20
Lowland Mixed Forest	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	20
Lowland Shrub	245	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	245
Lowland Spruce/Fir	0	0	0	0	0	0	0	42	0	66	0	9	0	0	0	0	0	0	117
Mixed Upland Deciduous	0	81	19	0	0	0	28	0	0	21	0	0	0	0	0	0	0	0	149
Natural Mixed Pines	0	4	0	0	0	0	11	34	0	23	0	0	0	0	0	0	0	0	71
Oak	0	0	0	0	0	0	0	0	0	0	251	0	0	0	0	0	0	0	251
Red Pine	0	0	0	0	0	0	299	0	13	65	0	0	0	0	0	0	0	0	377
Upland Conifers	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	6
Upland Mixed Forest	0	17	15	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	45
Upland Shrub	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18
Urban	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Water	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
White Pine	0	0	0	0	0	0	0	28	9	0	18	5	0	0	0	0	0	0	60
Total	322	145	101	0	10	30	381	155	34	246	269	20	0	0	0	0	0	20	1731



Report 2 – Treatment Summary

Traverse City Mgt. Unit
Year of Entry: 2022

Acres of Harvest

Compartment 146
Total Compartment Acres: 1,730

Commercial Harvest - 15
Harvests with Site Condition - 182
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
Lowland Aspen/Balsam Poplar	8	0	0	0	0	0	0	0	0	8
Natural Mixed Pines	34	0	0	0	0	0	0	0	0	34
Oak	135	0	0	0	7	0	0	0	0	142
Upland Mixed Forest	0	0	0	0	13	0	0	0	0	13
Total	177	0	0	0	21	0	0	0	0	198

Proposed and Next Step Treatments by Method

	Harvest	Site Prep	Planting	Seeding	Burning	Pesticide	Monitoring	Other	Non-Forest Mgt.	Total Acres
Current	198	0	0	0	0	0	0	42	0	239
Next Step	0	0	0	0	0	177	0	0	0	177
Total	198	0	0	0	0	177	0	42	0	416



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Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
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Approved Treatments:

3	61146003-NF	3.9	3205 - Mixed Upland Shrub	Nonstocked		Unspecified	NonForestMgt	Fruit Tree/Shrub Planting	3204 - Mast Producing Shrub	No
<p><u>Prescription Specs:</u> Selectively hand fell woody encroachment to maintain upland brush/grassland community. Leave scattered mast producing trees and shrubs and/or conifers for wildWife food and cover. Could plant site appropriate native shrubs and/or mast producing trees for wildlife food and cover. Could add a seed mix of native grasses and forbs suited to site and soil conditions. Maintain as needed with mowing, seeding of native grasses and forbs, burning, or removal of woody encroachment.</p> <p><u>Next Step Treatments:</u></p> <p><u>Acceptable Regen:</u></p> <p><u>Other Comment:</u></p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2021</p>										
14	61146014-NF	7.2	3303 - Mixed Low Density Trees	Nonstocked			NonForestMgt	Fruit Tree/Shrub Planting	3204 - Mast Producing Shrub	No
<p><u>Prescription Specs:</u> Selectively hand fell woody encroachment to maintain upland brush/grassland community. Leave scattered mast producing trees and shrubs and/or conifers for wildWife food and cover. Could plant site appropriate native shrubs and/or mast producing trees for wildlife food and cover. Could add a seed mix of native grasses and forbs suited to site and soil conditions. Maintain as needed with mowing, seeding of native grasses and forbs, burning, or removal of woody encroachment.</p> <p><u>Next Step Treatments:</u></p> <p><u>Acceptable Regen:</u></p> <p><u>Other Comment:</u></p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2021</p>										
32	61146032-NF	3.8	3303 - Mixed Low Density Trees	Nonstocked			NonForestMgt	Fruit Tree/Shrub Planting	3204 - Mast Producing Shrub	No
<p><u>Prescription Specs:</u> Selectively hand fell woody encroachment to maintain upland brush/grassland community. Leave scattered mast producing trees and shrubs and/or conifers for wildWife food and cover. Could plant site appropriate native shrubs and/or mast producing trees for wildlife food and cover. Could add a seed mix of native grasses and forbs suited to site and soil conditions. Maintain as needed with mowing, seeding of native grasses and forbs, burning, or removal of woody encroachment.</p> <p><u>Next Step Treatments:</u></p> <p><u>Acceptable Regen:</u></p> <p><u>Other Comment:</u></p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2021</p>										



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Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
45 61146047.31_ Cut	8.1	6112 - Lowland Aspen	Poletimber Well	54		Harvest	Clearcut with Retention	6112 - Lowland Aspen	Even-Aged	No
<p><u>Prescription</u> Final harvest stand. May want to use a cut to length system due to the low ground. Also look to save all the cedar either with some retention pockets or by specification. Please include CWD (drumming log spec) in sale. Leave tops unchipped as much as possible, especially in lowland stands and aspen adjacent to lowlands, to provide horizontal habitat component for wildlife. Please leave tops in scattered piles for wildlife habitat as much as possible. Any aspen cuts that are adjacent to a lowland stand please at conclusion of the sale have the logger fell the marked boundary trees in the adjoining lowland stand for hare habitat. Leave younger balsam for wildlife cover.</p> <p><u>Specs:</u></p> <p><u>Next Step</u> Monitoring, Natural Regen (Re-Inventory)</p> <p><u>Treatments:</u></p> <p><u>Acceptable</u> aspen, red maple, spruce, fir</p> <p><u>Regen:</u></p> <p><u>Other</u> manage with the stand to the south in 152</p> <p><u>Comment:</u></p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2011</p>										
56 61146051.35_ Cut	7.1	4126 - White, Black, N. Pin Oak	Sawtimber Poor	99	81-110	Harvest	Systematic Thinning	42110 - Planted Red Pine	Even-Aged	No
<p><u>Prescription</u> Third row thin.</p> <p><u>Specs:</u></p> <p><u>Next Step</u></p> <p><u>Treatments:</u></p> <p><u>Acceptable</u></p> <p><u>Regen:</u></p> <p><u>Other</u> Hold and thin with compartment to the south - 152.</p> <p><u>Comment:</u></p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2015</p>										
71 61146071.33_ NF	10.4	3205 - Mixed Upland Shrub	Nonstocked			NonForestMgt	Other - Specify	3204 - Mast Producing Shrub		No
<p><u>Prescription</u> Selectively hand fell woody encroachment to maintain upland brush with grass. 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. Could work around some of the existing beneficial vegetation to establish a seed mix of native grasses and forbs suited to site and soil conditions. Maintain as needed with mowing, seeding of native grasses and forbs, burning, or removal of woody encroachment.</p> <p><u>Specs:</u></p> <p><u>Next Step</u></p> <p><u>Treatments:</u></p> <p><u>Acceptable</u></p> <p><u>Regen:</u></p> <p><u>Other</u> Old next step comments: Maintain as needed with mowing, seeding, fertilizing, burning, or removal of woody encroachment.</p> <p><u>Comment:</u></p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2021</p>										



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Treatment ID	Treatment Name	Acres	Stand Cover Type	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
83	61146083-Cut	33.7	42290 - Natural Mixed Pine	Sawtimber Well	61	81-110	Harvest	Clearcut with Retention	42250 - Pine, Oak	Even-Aged	No
<p><u>Prescription</u> Clearcut leaving area retention and leave white pine less than 6" dbh. Can probably leave all white oak and use green to mark scattered supercanopy white pine to leave.</p> <p><u>Specs:</u></p> <p><u>Next Step</u> Monitoring, Natural Regen (Re-Inventory)</p> <p><u>Treatments:</u></p> <p><u>Acceptable</u> Jack pine, white pine, red pine, white oak, red oak, aspen.</p> <p><u>Regen:</u></p> <p><u>Other</u></p> <p><u>Comment:</u></p> <p><u>Site Condition</u> Other Dept./Div. Processes</p> <p><u>Proposed Start Date:</u> 10/1 /2021</p>											
88	61146088-Cut	135.2	4126 - White, Black, N. Pin Oak	Sawtimber Well	97	81-110	Harvest	Clearcut with Retention	4122 - Oak, Pine	Even-Aged	No
<p><u>Prescription</u> Cut part of stand now and hold part with more white pine for next time. Treatment acreage is approximate. Clearcut leaving area retention, scattered white oak (mark with green) and white pine < 6" dbh. Protect recreational trails with appropriate specs.</p> <p><u>Specs:</u></p> <p><u>Next Step</u> Monitoring, Natural Regen (Re-Inventory)</p> <p><u>Treatments:</u></p> <p><u>Acceptable</u> Hybrid oak, white oak, red pine, white pine, aspen, red maple. Might push towards white pine.</p> <p><u>Regen:</u></p> <p><u>Other</u></p> <p><u>Comment:</u></p> <p><u>Site Condition</u> Other Dept./Div. Processes</p> <p><u>Proposed Start Date:</u> 10/1 /2021</p>											
90	61146090-NF	16.4	3303 - Mixed Low Density Trees	Nonstocked			NonForestMgt	Fruit Tree/Shrub Planting	3204 - Mast Producing Shrub		No
<p><u>Prescription</u> Selectively hand fell woody encroachment to maintain upland brush/grassland community. Leave scattered mast producing trees and shrubs and/or conifers for wildWife food and cover. Could plant site appropriate native shrubs and/or mast producing trees for wildlife food and cover. Could add a seed mix of native grasses and forbs suited to site and soil conditions. Maintain as needed with mowing, seeding of native grasses and forbs, burning, or removal of woody encroachment.</p> <p><u>Specs:</u></p> <p><u>Next Step</u></p> <p><u>Treatments:</u></p> <p><u>Acceptable</u></p> <p><u>Regen:</u></p> <p><u>Other</u></p> <p><u>Comment:</u></p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2021</p>											
95	61146095-Cut	13.4	4319 - Mixed Upland Forest	Sawtimber Well	61	141-170	Harvest	Crown Thinning	4319 - Mixed Upland Forest	Uneven-Aged	No
<p><u>Prescription</u> Thin pine and hardwood closer to 100-120 sf/acre. Remove all beech except for potentially resistant trees. Maintain species diversity. ORV route runs on road through stand. Protect with appropriate specs. Seasonal restriction for wood turtle (need to confirm season).</p> <p><u>Specs:</u></p> <p><u>Next Step</u></p> <p><u>Treatments:</u></p> <p><u>Acceptable</u> White pine, red pine, sugar maple, red maple, birch.</p> <p><u>Regen:</u></p> <p><u>Other</u> Old site condition for T&E species but no relevant records could be found. Double check before sale prep and be alert for stick nests.</p> <p><u>Comment:</u></p> <p><u>Site Condition</u> Other Dept./Div. Processes</p> <p><u>Proposed Start Date:</u> 10/1 /2021</p>											



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Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
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Total Treatment Acreage Proposed: 239.2

Report 4 – Site Conditions

Traverse City Mgt. Unit
Katie Armstrong : Examiner

Compartment: 146
Year of Entry: 2022

Availability for Management

Total Acres	Acres Available	Acres Avail		Acres Not Available	Dominant Site Conditions	Dominant Site Conditions							
		With Condition				5B	5C	1C	2G	2H	3B	3J	5E
95	75	0		19	Aspen							19	0
14	3	0		11	Cedar				10			0	
55	54	0		1	Jack Pine								1
53	50	1		2	Low-Density Trees		1		0			2	0
43	8	0		35	Lowland Aspen/Balsam Poplar				34			1	
86	18	0		68	Lowland Conifers				45	5		16	2
20	3	0		17	Lowland Deciduous				7			10	
20	0	0		20	Lowland Mixed Forest							19	0
245	115	0		130	Lowland Shrub				7			123	
117	34	0		83	Lowland Spruce/Fir				66		6	10	
149	124	21		4	Mixed Upland Deciduous	21						4	0
71	27	0		45	Natural Mixed Pines			34				9	1
251	9	105		137	Oak	13	93	135				1	0
376	301	65		10	Red Pine	64	2		4			4	2
7	1	0		5	Upland Conifers							1	4
46	32	0		13	Upland Mixed Forest			13					
18	17	0		1	Upland Shrub							1	
4	4	0		0	Urban							0	
2	1	0		1	Water							1	
59	33	5		21	White Pine		5		10			10	1
1,730	910	198		623	Total Forested Acres	97	100	182	184	5	6	233	13
	53%	11%		36%	Relative Percent								

**Due to limitations in the current Site Conditions Analysis tool, all nonforested acres are considered available. Future development will enable analysis of nonforested types.*

Site No.	Dominant Site Cond Availability	Dominant Site Condition	Acres	Other Site Condition	Other Site Condition	Other Site Condition	Other Site Condition
1	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	66	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							

Report 4 – Site Conditions

Traverse City Mgt. Unit
Katie Armstrong : Examiner

Compartment: 146
Year of Entry: 2022

2	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	1	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
4	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	29	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
5	Available	5B: Maintain for regeneration purposes	64	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
6	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	8	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
8	Unavailable	5E: Long-Term Retention	5	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Retention for Stand 16 in Beaver Dam Pine South, 61-056-12-01.							
9	Unavailable	3B: Threatened, endangered, and special concern species	6	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Not treated with rest of Stand 60 to protect stick nest.							

Report 4 – Site Conditions

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10	Unavailable	5E: Long-Term Retention	1	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
11	Unavailable	5E: Long-Term Retention	1	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
12	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	4	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Buffer for Big Cannon Creek.							
13	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	2	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Small pocket, not worth cutting until surrounding stand is final-harvested.							
14	Unavailable	5E: Long-Term Retention	1	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
15	Unavailable	5E: Long-Term Retention	1	3J: Water quality / BMPs (stream, river, or lake)	Unspecified	Unspecified	Unspecified
Comments:							
16	Unavailable	5E: Long-Term Retention	1	2G: Too wet (sensitive soils, does not include access issues)	Unspecified	Unspecified	Unspecified
Comments: Terribly Vexed Pine, 61-092-12-01.							

Report 4 – Site Conditions

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17	Unavailable	5E: Long-Term Retention	1	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Terribly Vexed Pine, 61-092-12-01.							
18	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	115	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
19	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	33	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
20	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	31	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
21	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	15	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
23	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	4	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							

Report 4 – Site Conditions

Traverse City Mgt. Unit
Katie Armstrong : Examiner

Compartment: 146
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24	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	12	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
25	Available	5B: Maintain for regeneration purposes	13	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
27	Unavailable	2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)	5	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
28	Available	5B: Maintain for regeneration purposes	21	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
29	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	2	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
30	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	5	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							

Report 4 – Site Conditions

Traverse City Mgt. Unit
Katie Armstrong : Examiner

Compartment: 146
Year of Entry: 2022

31	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	14	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
32	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	8	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Unmapped stream runs through stand.							
33	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	8	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
34	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	93	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
35	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	34	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
36	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	13	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							

Report 4 – Site Conditions

Traverse City Mgt. Unit
Katie Armstrong : Examiner

Compartment: 146
Year of Entry: 2022

37	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	21	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
38	Unavailable	5E: Long-Term Retention	1	3J: Water quality / BMPs (stream, river, or lake)	Unspecified	Unspecified	Unspecified
Comments: Unthinned red pine, left as retention/turkey-roosting habitat when stand 9 was thinned. Also within Natural Rivers buffer.							
39	Unavailable	1C: Other dept or div proc/practices	135	Unspecified	Unspecified	Unspecified	Unspecified
Comments: See locked comments.							
40	Unavailable	1C: Other dept or div proc/practices	13	Unspecified	Unspecified	Unspecified	Unspecified
Comments: See locked comments.							
41	Unavailable	1C: Other dept or div proc/practices	34	Unspecified	Unspecified	Unspecified	Unspecified
Comments: See locked 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	Cold Water Stream	A coldwater stream has temperature and dissolved oxygen conditions that allow naturally-reproduced or stocked trout populations and those of other coldwater fish species (e.g., slimy sculpin) to persist from year to year. Coldwater streams in Michigan typically provide these conditions due to substantial contributions of groundwater to their stream flows. Such streams are established by Director's action and designated as trout resources by Fisheries Order 210.
SCA	Research and Military Areas	These areas provide facilities and lands specifically dedicated for research, or other purposes. They include the 5,847 acre Forest Fire Experiment Station, the 12,000 acre Houghton Lake Wildlife Research Area, the Beaver Islands Archipelago Wildlife Research Area (that includes most of Garden Island, all of High and Hog Islands, all state owned land on Beaver, South Fox and North Fox Islands), the Cusino Wildlife Research Area, the 3,000 acre Hunt Creek Fisheries Research Station, the 125 acre Wyman Nursery, and over 144,000 acres of Military Lands.
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	Designated Critical Habitat	Critical habitat areas are established via a consultative and cooperative process between the DNR and the U.S. Fish and Wildlife service for the recovery of threatened and endangered species, as governed by Part 365, Endangered Species Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, and the Federal Endangered Species Act of 1973. This is an active program, with proposed species plans in various stages of review. As of now only two exist, Kirtland Warbler Habitat and Piping Plover Habitat.
HCVA	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	Managed Site	General Comments
1	4130 - Aspen	Poletimber Well	10.0	31		N/A	Mixture of aspen and conifer. Canopy data from 2010. Most of stand would be in buffer for Little Cannon Creek.
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	
Bigtooth Aspen		100	Pole/Sapling	7	31	White Pine	
						Black Cherry	
						Density	
						Avg. Height	
						Size	
						Sapling	
						Sapling	
2	4133 - Aspen, Mixed Pine	Sapling Well	7.2	7	Immature	N/A	Cut spring 2015. Fair regen but not great.
Canopy Species		% Cover	Size Class	DBH	Age		
Red Maple		20	Sapling	1	7		
Bigtooth Aspen		60	Sapling	1	7		
White Pine		20	Sapling	1	7		
3	3205 - Mixed Upland Shrub	Nonstocked	5.9		Unspecified	No	Small stand of A3 in NE corner.
Sub-Canopy Species		Density	Avg. Height	Size			
White Oak		Trace		Log			
Black Cherry		Low		Sapling			
White Pine		Medium		Sapling			
4	613 - Lowland Mixed Forest	Poletimber Medium	20.2	46	51-80	N/A	Little Cannon Creek runs through this stand. Semi-open at north end. Denser cedar closer to Beaver Dam Rd.
6	3301 - Low Density Deciduous Trees	Nonstocked	2.1			No	
8	42110 - Planted Red Pine	Poletimber Well	27.1	51	111-140	N/A	Third-row-thinned in spring 2015. Cut red maple and jack pine. Left aspen. Some 0.5-1 acre aspen pockets throughout.
Canopy Species		% Cover	Size Class	DBH	Age		
Black/Red (Hybrid) Oak		2	Log	18			
Red Pine		98	Pole/Log	8	51		
9	42110 - Planted Red Pine	Poletimber Well	27.0	51	111-140	N/A	Row thinned in 2016.
Canopy Species		% Cover	Size Class	DBH	Age		
Red Pine		100	Pole	8	51		
10	4139 - Aspen, Mixed Deciduous	Poletimber Medium	29.6	42	1-50	N/A	Variable stand with some areas sparsely stocked and some fair aspen. Aspen seems smaller than it should be based on age. Oak is declining but there is not enough to be worth chasing. More conifer towards the creek and two levels of "benches" along creek.
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	
Red Maple		15	Sapling	3		White Pine	
White Oak		2	Log	12		White Oak	
Bigtooth Aspen		35	Pole/Sapling	5	42	Red Maple	
Black/Red (Hybrid) Oak		10	Log/XLog	14		Density	
Black Cherry		5	Sapling	2		Avg. Height	
Quaking Aspen		18	Pole/Sapling	5		Size	
White Pine		15	Pole/Sapling	5		Sapling	
						Sapling	



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments																																										
12	6122 - Black Spruce	Poletimber Well	23.5	81	1-50	N/A	A fringe of decent spruce and tamarack along the red pine edge fades into something shorter Q or E?																																										
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13	4126 - White, Black, N. Pin Oak	Sawtimber Medium	13.9	96	1-50	N/A	Cut, leaving scattered oak, spring 2015.																																										
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16	42390 - Mixed Non-Pine Upland Conifers	Poletimber Well	6.5	66	111-140	N/A	Data was lost in mifi split. Left as buffer along creek when stand 102 was cut.																																										
17	6129 - Mixed Coniferous Lowland Forest	Poletimber Well	13.3	61	Unspecified	N/A																																											
19	42200 - Natural White Pine	Sawtimber Well	9.2	76	81-110	N/A	Variable stand which seems to be popular for camping. Old falling apart trapper cabin.																																										
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21	6229 - Mixed lowland shrub	Nonstocked	2.9	0		No	Data was lost in mifi split.																																														
22	42110 - Planted Red Pine	Poletimber Well	32.6	51	111-140	N/A	Third-row-thinned in spring 2015.																																														
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23	3301 - Low Density Deciduous Trees	Nonstocked	9.1		Unspecified	No	Fire break between red pine stands. Pocket of A3 in north end.																																														
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24	6127 - Lowland Pine	Sawtimber Well	17.4	81	51-80	N/A	Canopy data from 2010.																																														
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25	500 - Water	Nonstocked	1.0	0		No																																															
26	3301 - Low Density Deciduous Trees	Nonstocked	12.1			No	Fire breaks between red pine stands.																																														
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27	42260 - Natural Pine, Mixed Deciduous	Sapling Poor	3.5	6	Immature	N/A	Clearcut spring 2015. Not great regeneration. Lots of JP snags.																																														
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Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
28	42110 - Planted Red Pine	Poletimber Well	31.3	51	111-140	N/A	Row thinned in 2014-2016.
Canopy Species		% Cover	Size Class	DBH	Age		
Red Pine		100	Pole	8	51		
29	42110 - Planted Red Pine	Poletimber Well	11.3	51	111-140	N/A	Row thinned in 2014.
Canopy Species		% Cover	Size Class	DBH	Age		
Red Pine		100	Pole	8	51		
30	6129 - Mixed Coniferous Lowland Forest	Poletimber Well	17.8	61		N/A	
31	4199 - Other Mixed Upland Deciduous	Sawtimber Poor	21.1	86	1-50	N/A	Final harvested in spring 2015, cut everything except oak. Almost no oak regeneration now. Should have cut oak before. Some pockets of good aspen and cherry sprouts. More of a barrens type now.
Canopy Species		% Cover	Size Class	DBH	Age		
Black/Red (Hybrid) Oak		55	Log/XLog	16	86		
Black Cherry		25	Pole/Sapling	5			
Red Maple		20	Pole/Log	8			
Sub-Canopy Species		Density	Avg. Height	Size			
White Pine		Low	5 - 10 feet	Sapling			
Black Cherry		Low	Variable	Sapling			
Quaking Aspen		Low	10 - 20 feet	Sapling			
Red Maple		Low	5 - 10 feet	Sapling			
32	3303 - Mixed Low Density Trees	Nonstocked	3.8			No	
Sub-Canopy Species		Density	Avg. Height	Size			
Black Cherry		Low		Pole			
White Oak		Low		Pole			
White Pine		Low		Pole			
33	6122 - Black Spruce	Poletimber Well	28.7	66	51-80	N/A	Decent spruce but gets too wet not far from edge.
Canopy Species		% Cover	Size Class	DBH	Age		
Red Maple		7	Pole	8			
Balsam Fir		10	Pole	8			
Black Spruce		50	Pole	8	66		
White Pine		10	Log/XLog/Pole	14			
Red Pine		3	Log	16			
Tamarack		10	Pole	8			
Northern White Cedar		10	Pole/Log	8			
Sub-Canopy Species		Density	Avg. Height	Size			
Balsam Fir		Medium	Variable	Sapling			
Black Spruce		Medium	Variable	Sapling			
Red Maple		Low	10 - 20 feet	Sapling			
34	122 - Road/Parking Lot	Nonstocked	4.3			No	S. Sharon Road
36	6220 - Alder/willow	Nonstocked	28.9			No	
Sub-Canopy Species		Density	Avg. Height	Size			
Tag Alder		High		Tall Shrub			



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
37	42200 - Natural White Pine	Sawtimber Well	4.6	101	51-80	N/A	Small pocket of diversity between large KW stand and L0. Maintain for diversity.
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	
Red Maple		10	Pole/Log	10		Balsam Fir	
Black/Red (Hybrid) Oak		5	Log/XLog/Pole	18		Medium	
Balsam Fir		3	Pole	8		Variable	
White Pine		60	Log/XLog/Pole	16	101	Sapling	
Red Pine		2	Log	18		White Pine	
Jack Pine		3	Pole	8		Low	
Black Spruce		15	Pole	8		Variable	
Black Cherry		2	Pole/Log	6		Sapling	
						Trace	
						>20 feet	
						Sapling	
38	6122 - Black Spruce	Poletimber Well	9.3	100		N/A	Canopy data from 2010.
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	
Red Maple		5	Pole	8		Black Spruce	
Paper Birch		3	Pole/Sapling	8		Medium	
Black Spruce		82	Pole	8	100	Variable	
Tamarack		10	Log/Pole	14		Sapling	
						High	
						Variable	
						Tall Shrub	
39	6122 - Black Spruce	Poletimber Well	13.1	66		N/A	Canopy data from 2010.
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	
Red Maple		5	Pole/Sapling	8		Balsam Fir	
Balsam Fir		10	Pole	8		Medium	
Black Spruce		85	Pole	8	66	Variable	
						Sapling	
						Medium	
						Variable	
						Sapling	
40	6229 - Mixed lowland shrub	Nonstocked	81.9			No	Tag alder with standing dead trees.
41	42200 - Natural White Pine	Sawtimber Well	17.8	91	51-80	N/A	Canopy data from 2010.
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	
Red Oak		20	XLog/Log	18		White Pine	
White Pine		60	XLog/Log	18	91	Low	
Red Pine		20	XLog/Log	18		Variable	
						Sapling	
42	6122 - Black Spruce	Poletimber Well	27.1	83	Unspecified	N/A	Canopy data from 2010. Some larger red pine and white pine closer to the road. This was leftover when Stand 60 was cut to protect a nest.
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	
Black Spruce		66	Pole/Log	8	83	Black Spruce	
Balsam Fir		30	Pole	8		High	
Red Maple		2	Pole/Log	8		Variable	
White Pine		2	XLog	20		Sapling	
						Medium	
						Variable	
						Tall Shrub	



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments																																													
43	6122 - Black Spruce	Poletimber Well	15.0	83	Unspecified	N/A	Canopy data from 2010.																																													
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44	42110 - Planted Red Pine	Poletimber Well	50.1	51	111-140	N/A	Thinned in sale # 47-00, during Jan/Feb of 2000. Canopy data from 2010.130, 140, 170, 140borderline ready for thinning. diameters small. crowns just touching. open understory. flat terrain.																																													
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45	6112 - Lowland Aspen	Poletimber Well	8.2	54		N/A	Already prepared for sale. Canopy data from 2010.																																													
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46	42210 - Natural Red Pine	Sawtimber Well	12.7	76	141-170	N/A	Natural red pine stand.																																													
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47	6124 - Lowland Spruce-Fir	Poletimber Well	31.5	83	Unspecified	N/A	Stream runs through stand. Canopy data from 2010.																																													
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48	330 - Low-Density Trees	Nonstocked	2.4			No																																														
50	6229 - Mixed lowland shrub	Nonstocked	108.4		Unspecified	No	MNFI has identified this stand as a Northern Wet Meadow. Monitor for threats to this community type, i.e. exotics.																																													
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Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
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51	42110 - Planted Red Pine	Poletimber Well	7.0	52	201+	N/A	Canopy data from 2010. Part of sale.
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Canopy Species	% Cover	Size Class	DBH	Age
White Oak	2	Log	16	
Red Pine	98	Pole/Log	8	52

Sub-Canopy Species	Density	Avg. Height	Size
Black Cherry	Low	Variable	Sapling

53	6120 - Lowland Cedar	Poletimber Well	14.1	83		N/A	Canopy data from 2010.
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Canopy Species	% Cover	Size Class	DBH	Age
Red Maple	3	Log/Pole	12	
Quaking Aspen	3	Log	16	
Northern White Cedar	94	Pole/Log	8	83

Sub-Canopy Species	Density	Avg. Height	Size
Red Maple	Low	Variable	Sapling
Tag Alder	Medium	Variable	Tall Shrub

54	6112 - Lowland Aspen	Poletimber Well	34.9	54		N/A	Canopy data from 2010. Part of sale.
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Canopy Species	% Cover	Size Class	DBH	Age
Quaking Aspen	94	Pole	8	54
Balsam Fir	3	Pole	8	
Tamarack	3	Pole	8	

Sub-Canopy Species	Density	Avg. Height	Size
Black Spruce	Low	Variable	Sapling
Black Cherry	Low	Variable	Sapling
Tag Alder	High	Variable	Tall Shrub

55	6119 - Mixed Lowland Deciduous Forest	Poletimber Well	8.3	81	51-80	N/A	Small upland patch surrounded by lower ground and flowing stream. Rather diverse for a small stand.
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Canopy Species	% Cover	Size Class	DBH	Age
Red Maple	20	Pole/Log	8	
Quaking Aspen	11	Pole/Log	8	
Black/Red (Hybrid) Oak	35	Log/Pole	12	81
Balsam Fir	5	Pole/Log	8	
Tamarack	4	Log/Pole	12	
Black Cherry	20	Pole/Log	8	
Paper Birch	5	Pole	8	

Sub-Canopy Species	Density	Avg. Height	Size
White Pine	Low	Variable	Sapling
Black Cherry	Low	Variable	Sapling
Balsam Fir	Trace	>20 feet	Sapling
Tag Alder	Medium	5 - 10 feet	Tall Shrub

56	4126 - White, Black, N. Pin Oak	Sawtimber Poor	8.9	99	81-110	N/A	Canopy data from 2010.
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Canopy Species	% Cover	Size Class	DBH	Age
Red Maple	10	Pole	8	
White Oak	40	Log	16	
Black/Red (Hybrid) Oak	50	Log	16	99

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



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
59	6113 - Lowland Maple	Poletimber Medium	11.8	76		N/A	Canopy data from 2010.
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	
Red Maple		85	Pole	8	76	Tag Alder	
Paper Birch		4	Pole	8		High	
Balsam Fir		3	Pole	8		Variable	
Black Spruce		3	Pole	8		Tall Shrub	
Tamarack		2	Log	14			
White Pine		3	Pole	8			
60	42210 - Natural Red Pine	Sawtimber Poor	27.7	87	1-50	N/A	Terribly Vexed Pine, 61-092-12-01, cut 2016. Average residual BA ~ 35 sf/acre. Map of BA by plot in closed sale packet. Consider planting red pine if adequate natural regeneration does not occur. High quality site. Sharon Cabin Logs Sale #050-99-01. Thinning was marked with the heavy emphasis on removing utility pole size trees. Canopy data from 2016.
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	
White Oak		2	Pole	8		White Pine	
White Pine		25	Pole/Log	8		Medium	
Red Pine		64	Log/Pole	12	87	Variable	
Black Spruce		2	Pole	6		Sapling	
Red Maple		2	Pole/Log	8		Red Pine	
Red Oak		5	Log	12		Medium	
61	42290 - Natural Mixed Pine	Sawtimber Well	11.0	87	51-80	N/A	Canopy data from 2010.
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	
Balsam Fir		2	Pole	8		Red Maple	
Black Spruce		10	Pole	8		Medium	
White Pine		40	XLog/Log	18		Variable	
Red Pine		48	XLog/Log	18	87	Sapling	
						White Pine	
						High	
						Sapling	
63	42200 - Natural White Pine	Poletimber Well	18.6	61	141-170	N/A	Canopy data from 2010.
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	
Red Maple		3	Pole	8		White Pine	
White Pine		97	Pole/Log	8	61	Full	
						Variable	
						Sapling	
64	42200 - Natural White Pine	Poletimber Medium	3.7	66	1-50	N/A	Cut as part of Frozen Feet Mix, 61-085-12-01, completed January - April 2014. Left younger, wet aspen in west end of stand for retention. Not a lot of aspen regen.
Canopy Species		% Cover	Size Class	DBH	Age		
Red Maple		3	Sapling	1			
Red Oak		10	Sapling/Pole	4			
White Oak		2	Sapling	1			
Bigtooth Aspen		10	Sapling	1	8		
White Pine		65	Pole/Log/Sap	6	66		
Red Pine		10	Pole/Sapling	6			



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
65	42210 - Natural Red Pine	Sawtimber Poor	36.8	80	1-50	N/A	Seed tree cut, 2016. Residual BA ~35 sf/acre.
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	
Red Pine		60	Log	12	80	White Pine	
White Pine		30	Log	12		Low	
Red Oak		5	Log	12		< 5 feet	
White Oak		5	Log	12		Sapling	
66	42220 - Natural Jack Pine	Sapling Medium	17.2	17		N/A	Naples Gravel Pit Sale #008-02. Canopy data from 2010.
Canopy Species		% Cover	Size Class	DBH	Age		
Red Oak		3	Sapling	2			
White Pine		5	Sapling	2			
Jack Pine		87	Sapling	2	17		
Black Cherry		5	Sapling	2			
67	4191 - Mixed Upland Deciduous with Conifer	Poletimber Well	27.6	51	81-110	N/A	Variable stand. Gets wet on the west side.
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	
Red Maple		10	Pole	6		White Pine	
White Oak		10	Log	16		Medium	
Bigtooth Aspen		20	Pole/Log/Sap	6	51	Variable	
White Pine		25	Log/Pole/XLog	12	51	>20 feet	
Red Pine		15	Log/Pole/XLog	12		Sapling	
Red Oak		20	Log/XLog	12		Sapling	
68	42220 - Natural Jack Pine	Sapling Poor	9.4	17		N/A	Naples Gravel Pit Sale #008-02. Canopy data from 2010.
Canopy Species		% Cover	Size Class	DBH	Age		
White Oak		2	Pole	8			
Bigtooth Aspen		5	Sapling	2			
Jack Pine		91	Sapling	2	17		
Black Cherry		2	Pole	8			
69	4130 - Aspen	Sapling Well	1.7	17		N/A	Naples Gravel Pit Sale #008-02. Canopy data from 2010.
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	
Red Maple		6	Log	18		White Pine	
White Oak		3	Sapling	2		Low	
Bigtooth Aspen		91	Sapling	2	17	< 5 feet	



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
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70	42260 - Natural Pine, Mixed Deciduous	Sawtimber Well	11.5	81	81-110	N/A	limby white pine																																																
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71	3205 - Mixed Upland Shrub	Nonstocked	11.4			No	Scattered oak, white pine, red pine. Some red maple, black cherry, juneberry, clad, sedge, poverty, blueberry, sweet fern, moss.						
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72	4311 - Pine, Aspen Mix	Sapling Well	6.8	6	Immature	N/A	Clearcut except oak in 2015.																													
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74	4130 - Aspen	Sapling Well	4.1	17		N/A	Naples Gravel Pit Sale #008-02. Canopy data from 2010.																			
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75	4139 - Aspen, Mixed Deciduous	Sapling Well	18.9	17		N/A	Naples Gravel Pit Sale #008-02. Canopy data from 2010.																								
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Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments																																								
76	4311 - Pine, Aspen Mix	Sapling Well	7.5	10	Immature	N/A	Original stand heavier to aspen at south end. White pine shelterwood in 2015, left residual of approximately 10 sf/acre + southwestern edge of stand.																																								
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78	4191 - Mixed Upland Deciduous with Conifer	Sapling Well	32.2	8	1-50	N/A	Cut as part of Frozen Feet Mix, 61-085-12-01, completed January - April 2014. Removed all aspen, red maple, jack pine and marked oak.																																								
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79	4191 - Mixed Upland Deciduous with Conifer	Sapling Well	41.0	6	1-50	N/A	Treated summer 2015. Removed all aspen, jack pine, and red maple and marked pine and oak to cut. Average residual BA ~ 30sf/acre. Added additional dead oak volume after sale was marked.																																								
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Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
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80	4311 - Pine, Aspen Mix	Sapling Well	10.1	8	1-50	N/A	Treated as part of Frozen Feet Mix, 61-085-12-01, completed January - April 2014.
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Canopy Species	% Cover	Size Class	DBH	Age
Red Maple	10	Sapling	1	
White Oak	10	Log/Pole	12	97
Bigtooth Aspen	20	Sapling	1	
White Pine	10	Log	10	
White Pine	50	Sapling	1	8

81	4311 - Pine, Aspen Mix	Sapling Well	7.9	10	Immature	N/A	Shelterwood, summer 2015. Left approx 30 sf/acre.
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Canopy Species	% Cover	Size Class	DBH	Age
Red Maple	5	Sapling	1	
Red Oak	3	Pole	8	
White Oak	2	Pole	8	
Bigtooth Aspen	20	Sapling	1	6
White Pine	15	Log	10	62
Jack Pine	3	Sapling	1	
Black Cherry	2	Sapling	1	
White Pine	50	Sapling	1	10

82	42200 - Natural White Pine	Poletimber Well	5.0	62	51-80	N/A	Canopy data from 2010.
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Canopy Species	% Cover	Size Class	DBH	Age
Red Oak	14	Log/Pole	16	
White Oak	12	Log/Pole	14	
Quaking Aspen	3	Pole	8	
White Pine	71	Pole/Log	6	62

Sub-Canopy Species	Density	Avg. Height	Size
White Pine	High	Variable	Sapling

83	42290 - Natural Mixed Pine	Sawtimber Well	33.7	61	81-110	N/A	Dead oak and jack pine in this stand. More jack pine to the north and then more white pine and hardwoods to the south. Some decent advanced oak regen, 2-3' tall. Old railroad grade runs through the stand.
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Canopy Species	% Cover	Size Class	DBH	Age
Black/Red (Hybrid) Oak	12	Log/Pole/XLog	12	95
White Pine	30	Log/Pole/XLog	12	
Red Pine	8	Log/XLog	12	
Jack Pine	40	Log/Pole	10	61
Bigtooth Aspen	5	Log/Pole	10	
White Oak	5	Log/Pole	10	

Sub-Canopy Species	Density	Avg. Height	Size
Black/Red (Hybrid) Oak	Medium	Variable	Sapling
White Pine	Medium	Variable	Sapling
Black Cherry	Low	5 - 10 feet	Sapling
Balsam Fir	Trace	>20 feet	Sapling

84	4130 - Aspen	Sapling Well	8.0	17		N/A	Naples Gravel Pit Sale #008-02. Canopy data from 2010.
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Canopy Species	% Cover	Size Class	DBH	Age
Red Maple	3	Sapling	2	
White Oak	2	Sapling	2	
Bigtooth Aspen	95	Sapling	2	17

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



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
85	4130 - Aspen	Sapling Well	4.3	17		N/A	Naples Gravel Pit Sale #008-02. Canopy data from 2010.
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	
Red Maple		3	Sapling	2		Density	Avg. Height
White Oak		2	Sapling	2			Size
Bigtooth Aspen		95	Sapling	2	17	White Pine	Low
							Variable
							Sapling
87	42220 - Natural Jack Pine	Sapling Well	28.9	6	Immature	N/A	Clearcut summer 2015. Left most red pine and white pine except thinned dense pocket in south-central part of stand. Trace of white oak in the understory.
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	
Red Maple		5	Sapling	1			
Bigtooth Aspen		10	Sapling	1			
White Pine		3	Pole/Log	8			
Red Pine		10	Log/Pole	12			
Jack Pine		70	Sapling	1	6		
Black Cherry		2	Sapling	1			
88	4126 - White, Black, N. Pin Oak	Sawtimber Well	228.2	97	81-110	N/A	Sale #8-02. Variable stand with some areas having significantly denser white pine understory, especially towards the north. Average BA 100 sf/acre. Scattered merchantable red pine in the understory. Scattered red maple stump sprouts.
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	
White Oak		38	Log/Pole	12	97	Red Maple	High
White Pine		10	Log/Pole	10		White Pine	Medium
Black/Red (Hybrid) Oak		48	Log/Pole/XLog	14	97	Witch Hazel	Low
Red Pine		2	Log	14		White Oak	Medium
Red Maple		2	Log/Pole	10		Red Pine	Medium
							>20 feet
							Pole
89	4191 - Mixed Upland Deciduous with Conifer	Sapling Medium	8.2	6	1-50	N/A	Removed aspen, red maple and jack pine in summer 2015. Variable stand with scattered open areas.
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	
Red Maple		10	Sapling	1		White Oak	Low
Red Oak		20	XLog/Log	20	113	White Pine	High
White Oak		20	XLog/Log	20	113		
Bigtooth Aspen		30	Sapling	1	6		
White Pine		5	Pole/Log	8			
Jack Pine		15	Sapling	1			
90	3303 - Mixed Low Density Trees	Nonstocked	16.6			No	Canopy data from 2010.
Sub-Canopy Species		Density	Avg. Height	Size			
Black Cherry		Low		Sapling			
Jack Pine		Trace		Sapling			
Red Oak		Trace		Sapling			
White Oak		Trace		Sapling			



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
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91 6127 - Lowland Pine Sawtimber Well 5.9 101 51-80 N/A Big Cannon Creek runs through stand. Canopy data from 2010.

Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Red Maple	5	Pole	8		Red Maple	Low	Variable	Sapling
Paper Birch	5	Pole	8		Balsam Fir	Low	Variable	Sapling
Balsam Fir	2	Pole	8		White Pine	Low	Variable	Sapling
Northern White Cedar	5	Pole	8		Tag Alder	Low	Variable	Tall Shrub
White Pine	33	Pole/Log	18					
Red Pine	50	XLog	18	101				

92 42260 - Natural Pine, Mixed Deciduous Poletimber Medium 11.4 51 1-50 N/A Clearcut > 4" summer 2015, except oak, white pine, and red pine. Variable residual. Left so much that it's hard to tell it's been cut.

Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Red Maple	20	Sapling	1		White Pine	Medium	Variable	Sapling
White Oak	10	XLog/Log	18		Red Pine	Low	Variable	Sapling
Bigtooth Aspen	10	Sapling	1	6				
White Pine	30	Pole	8	51				
Red Pine	30	Pole/Log	8					

94 4130 - Aspen Sapling Well 3.0 6 Immature N/A Old railroad grade runs through stand. Cut > 6" except scattered marked oak and pine in summer 2015.

Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Red Maple	5	Sapling	1		Balsam Fir	Low	Variable	Sapling
Red Oak	5	Log	16		White Pine	High	Variable	Sapling
White Oak	5	Pole/Log	8	109				
Bigtooth Aspen	75	Sapling	1	6				
Red Pine	5	Log/Pole	14					
White Pine	5	Log/XLog	14					

95 4319 - Mixed Upland Forest Sawtimber Well 13.4 61 141-170 N/A Mixture of pine and hardwood.

Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Red Maple	33	Log/Pole	10	61	Red Maple	Medium	Variable	Sapling
White Pine	28	XLog/Log	18	76	White Pine	Low	Variable	Sapling
Red Pine	30	Log/XLog	16		Serviceberry (Juneberry)	Trace	10 - 20 feet	Sapling
Beech	7	Log/Pole	12		Beech	Low	Variable	Sapling
Paper Birch	2	Pole/Log	8		Witch Hazel	Low	5 - 10 feet	Tall Shrub



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments																																								
96	4191 - Mixed Upland Deciduous with Conifer	Sapling Well	18.9	12	1-50	N/A	Cut as part of Frozen Feet Mix, 61-085-12-01, completed January - April 2014. Used to be combined with Stand 78.																																								
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99	6229 - Mixed lowland shrub	Nonstocked	10.0			No																																									
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100	42110 - Planted Red Pine	Poletimber Well	3.7	51	111-140	N/A																																									
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102	4139 - Aspen, Mixed Deciduous	Sapling Well	3.7	7	1-50	N/A	Cut spring 2015. Surprisingly good aspen regen based on what was here before. Variable, some open areas with white pine seedlings. Drainage runs through.																																								
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Quaking Aspen	58	Sapling	1	7																																											
White Pine	5	Sapling	1	7																																											
Black Cherry	10	Sapling	1																																												
Jack Pine	2	Pole/Sapling	5																																												
103	42110 - Planted Red Pine	Poletimber Well	5.6	51	111-140	N/A	Third-row-thinned in spring 2015.																																								
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Red Pine	95	Pole/Log	8	51																																											
Quaking Aspen	5	Pole	8																																												
104	42110 - Planted Red Pine	Poletimber Well	25.9	51	111-140	N/A	Third-row-thinned in spring 2015. Removed jack pine and red maple, left aspen and oak (relatively high).																																								
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Quaking Aspen	10	Pole	8																																												
108	500 - Water	Nonstocked	0.7			No																																									



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments										
112	42110 - Planted Red Pine	Poletimber Well	15.5	51	111-140	N/A	Row thinned in 2014 or 2016.										
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Canopy Species	% Cover	Size Class	DBH	Age													
Red Pine	100	Pole	8	51													
113	6229 - Mixed lowland shrub	Nonstocked	5.8			No	Tag alder with standing dead trees.										
114	6229 - Mixed lowland shrub	Nonstocked	7.2			No	Tag alder with standing dead trees.										
117	42110 - Planted Red Pine	Poletimber Well	11.5	51	111-140	N/A	Row thinned in 2014 or 2016.										
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Red Pine	100	Pole	8	51													
200	320 - Upland Shrub	Nonstocked	0.7	0		No											