



Compartment Review Presentation

Traverse City Forest Management Unit

Compartment 61134

Entry Year 2023

Acreage: 2,024

County Kalkaska

Management Area: Kirtland's Warbler

Revision Date: 2021-07-21

Stand Examiner: Steve Crigier

Legal Description:

T26N, R6W: Sections 34, 35.

T25N, R6W: Sections 2, 3, 4, 5.

Identified Planning Goals:

Kirtland's warbler management is guided by two documents: Kirtland's Warbler Breeding Range Conservation Plan and Operational Plan for Kirtland's Warbler Habitat Management on Michigan State Forests. Of the 148,017 acres of state forest land that make up the Kirtland's Warbler management area, approximately 90,000 acres, most of the jack pine in the management area, have been identified as essential habitat where management is done in accordance with the Kirtland's Warbler Conservation Plan and Operational Plan. Management on the portion that is not classified as essential habitat will emphasize balancing the age classes of aspen and red pine and regenerating the aging oak resource. Management activities may be constrained or modified based on management recommendations described in the Conservation Strategy. Expected trends within this 10-year planning period are introduced pests and diseases and assuring jack pine regeneration on Kirtland's warbler sites.

Soil and topography:

Terrain is mostly flat with slight undulations close to the Manistee River. Soils are Grayling and Rubicon Sands on the uplands and Rifle Peat in the lowlands.

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

The Manistee River, a blue ribbon trout stream, borders this compartment to the north. Devil and Little Devil Creeks run along the southern border. To the east is Hanson Military Reserve land. The western border contains private holdings. Most private holdings within the compartment contain summer cottages and a few year-round residential homes, especially along the Manistee River.

Unique Natural Features:

The Manistee River and Little Devil Creek fall under the Natural River Act. Kirtland's Warbler is also present in and adjacent to the compartment.

Archeological, Historical, and Cultural Features:

None known

Special Management Designations or Considerations:

The Manistee River is a designated Natural River. The majority of the the compartment is in the Kirtland's Warbler Management Area.

Watershed and Fisheries Considerations:

The Manistee River, Big Devil Creek, and Little Devil Creek flow through Compartment 134. They are all Designated Trout Streams. The Manistee River has naturally reproducing populations of brook, brown, and rainbow trout. Big Devil Creek has a naturally reproducing population of brook and brown trout. The Natural Rivers native vegetation buffer is 75', so no cutting should occur within 75' of any of the streams in the compartment or their tributaries. Also, BMPS should be followed when working in wet areas near the streams.

Wildlife Habitat Considerations:

Compartment 134 is part of a broad, flat outwash plain, comprised mainly of excessively drained soils. Grayling and Rubicon sands predominates, creating a flat, drought-prone landscape adapted to frequent wildfires. The Sharon Area Kirtland's Warbler (KW) Management Unit includes nearly all of Compartment 134, making habitat management for KW's a priority in this compartment. Management is guided by the Kirtland's Warbler Recovery Plan.

Jack pine stands are regenerated naturally by wildfires which were common on the sandy outwash plains. However modern fire prevention and suppression techniques, inhibit natural regeneration of jack pine after a wildfire. Breeding habitat for the KW is provided by logging and replanting in a distinctive converging wave pattern on a rotational basis to

provide approximately 38,000 acres of productive nesting habitat at all times. Carrying these stands to a 50 year rotational age permits nesting habitat to be maintained for the warblers with little loss of jack pine from the commercial harvest. These jack pine stands also provide habitat for the upland sandpiper, Eastern bluebird, white tailed deer, black bear snowshoe hare, and for several protected prairie plants, including the Allegheny plum, Hill's thistle, and rough fescue.

Upland brush/grass communities, another early successional fire adapted community, should be maintained by burning, selective felling of woody encroachment and possibly the addition of native grasses, forbs, shrubs for biological diversity. A pattern of scattered brushy openings is appropriate and was commonly found on this fire driven outwash plain.

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 400 feet. Beneath the glacial drift is the Mississippian Michigan Formation. The Michigan is quarried for gypsum. Gravel pits are located in Section 4 and 34 (pit #454). Gravel potential in the compartment is considered good. This area is located two miles northwest of Garfield 8 Field. The field produces from the Devonian Richfield and the Ordovician PdC. The PdC has produced over 46 Bcf gas. Most of this compartment is leased for oil and gas development. There may be additional Devonian and Ordovician potential in the compartment.

Vehicle Access:

Good access via county roads running along Northern edge of compartment, King Road and running along Southern edge of compartment, Military Road. Snowmobile Trail runs along Eastern side of compartment. Two track roads run throughout the interior of the compartment

Survey Needs:

None needed.

Recreational Facilities and Opportunities:

Hunting and fishing are popular recreational activities within the area. Two canoe access sites are available on the Manistee River along King Road. The Cranberry Lake Snowmobile Trail and Kalkaska ORV route run through the eastern border of the compartment.

Fire Protection:

Fire management in this area is handled by the MDNR Kalkaska Field Office with assistance from Grayling DNR, local volunteer fire departments and possibly Camp Grayling National Guard. Fire units may also respond from the Roscommon DNR Office. Water access for fire suppression is good. Road access is limited and due to the Kirkland Warbler habitat on the east side of the compartment potential for large wildfire is possible.

Additional Compartment Information:

The following reports from the Inventory are attached:

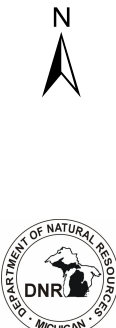
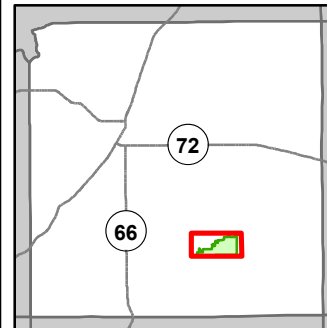
- Total Acres by Cover Type and Age Class**
- Cover Type by Harvest Method**
- Proposed Treatments – No Limiting Factors**
- Proposed Treatments – With Limiting Factors**
- Stand Details (Forested and Nonforested)**
- Dedicated and Proposed Special Conservation Areas**
- Site Condition Details**

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

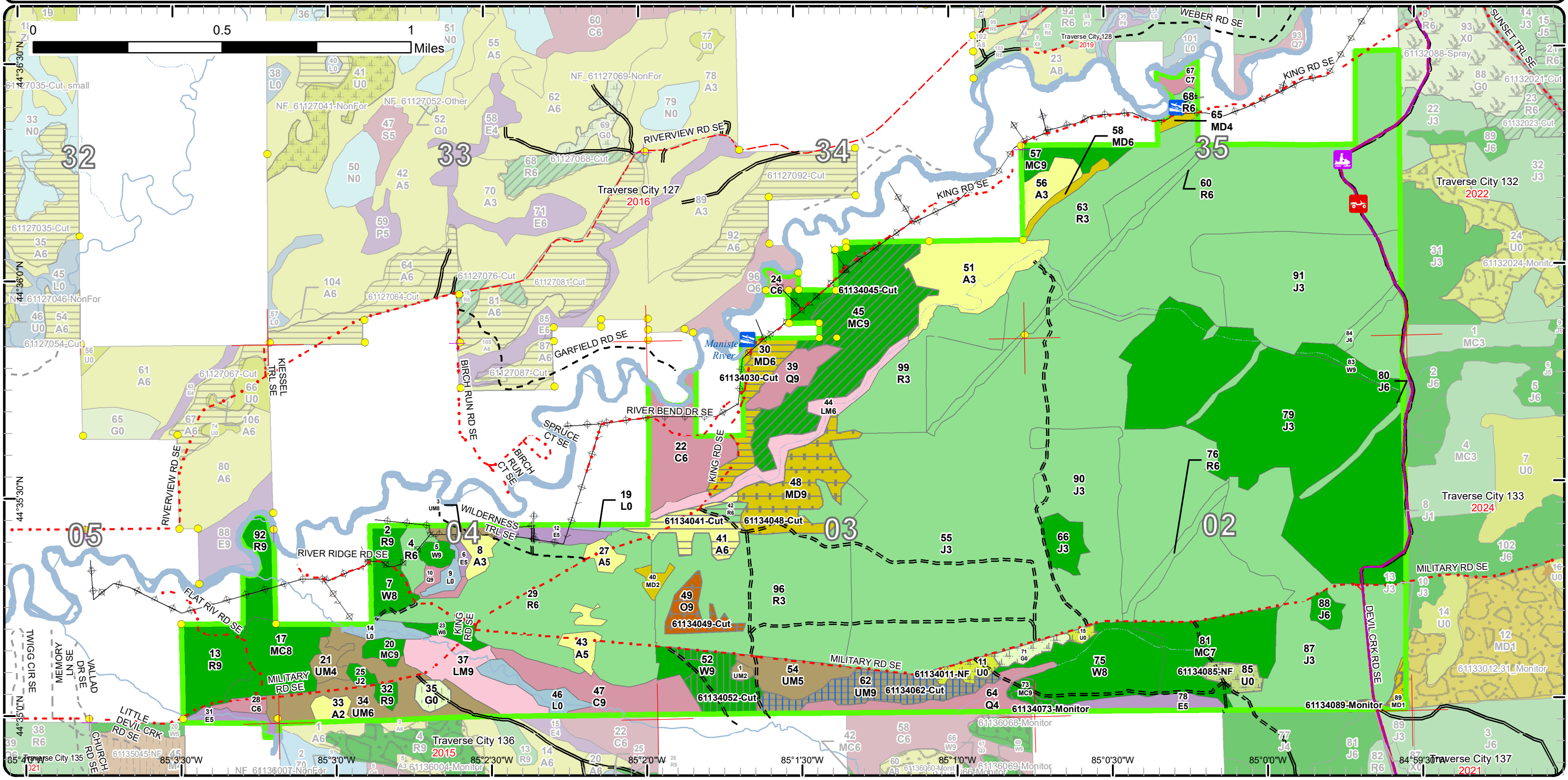
- Base feature information, stand boundaries, cover types, and numbers**
- Proposed treatments**
- Site condition boundaries**
- Details on the road access system**

Cover Type & Treatments Map

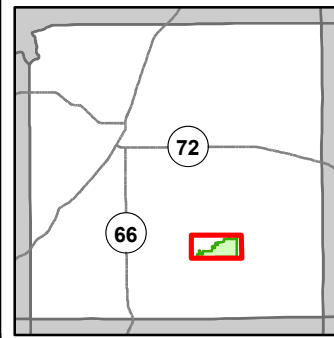
Compartment: 134
 T26N, R06W, Sec. 34, 35
 T25N, R06W, Sec. 2-5
 County: Kalkaska
 Unit: Traverse City
 Mgmt Area: Kirtland's Warbler
 YOE: 2023
 Acres: 2024.1 GIS Calculated
 Examiner: Steve Crigier
 Map Revised: 9/15/2021
 Map Phase: Post-Review



- 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
- 🚙 ORV Routes
- 🚙 Snowmobile Trails
- Designated ORV Route
- Designated Snowmobile Trails
- ▲ Berms
- 🚤 Boating Access Site
- Intermittent Stream
- Island in Lake or River
- Lake/Pond
- Perennial River
- Lakes and Rivers
- ⊕ Powerline
- Compartment Boundary
- Other Treatment - See Comments
- Clearcut (w/Reserves)
- Harvest, Overstory Removal
- Seed Tree (w/Reserves)
- Thinning (Crown, Low, Systematic)
- Regeneration Survey
- Shelter Wood (w/Reserves)
- Opening Maintenance
- 412 - Oak Types
- 413 - Aspen Types
- 419 - Mixed Upland Deciduous
- 421 - Planted Pines
- 422 - Natural Pines
- 430 - Upland Mixed Forest
- 611 - Lowland Deciduous Forest
- 612 - Lowland Coniferous Forest
- 613 - Lowland Mixed Forest
- 310 - Herbaceous Openland
- 320 - Upland Shrub
- 330 - Low Density Trees
- 622 - Lowland Shrub



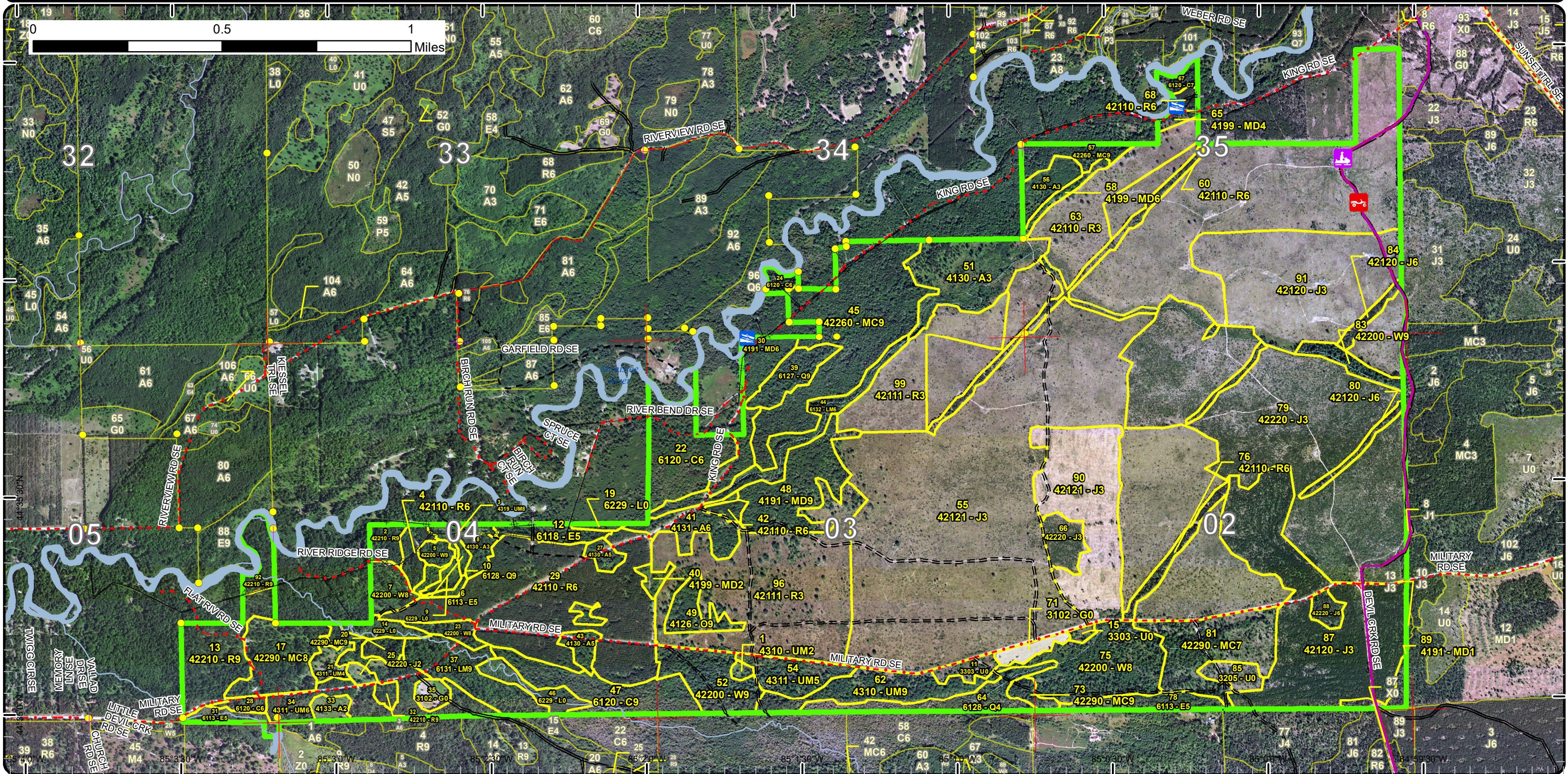
Stand Boundary Map



Compartment: 134
 T26N, R06W, Sec. 34, 35
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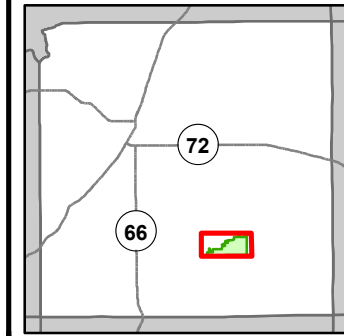


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| <ul style="list-style-type: none"> — Miris Corners — Remonumented Section Corners ● Survey Grade Corners — Counties — DNR - Secondary Forest Road == DNR - Forest Access Route - - Federal / State - Dirt / Gravel Road - · - County - Gravel Road - · · County - Dirt Road (Seasonal) - · - Private - Dirt / Gravel Road ORV Routes Snowmobile Trails Designated ORV Route | <ul style="list-style-type: none"> — Designated Snowmobile Trails ▲ Berms Boating Access Site — Intermittent Stream — Island in Lake or River — Lake/Pond — Perennial River — Lakes and Rivers Powerline Compartment Boundary Stand Boundaries 412 - Oak Types 413 - Aspen Types 419 - Mixed Upland Deciduous 421 - Planted Pines | <ul style="list-style-type: none"> 422 - Natural Pines 430 - Upland Mixed Forest 611 - Lowland Deciduous Forest 612 - Lowland Coniferous Forest 613 - Lowland Mixed Forest 310 - Herbaceous Openland 320 - Upland Shrub 330 - Low Density Trees 622 - Lowland Shrub |
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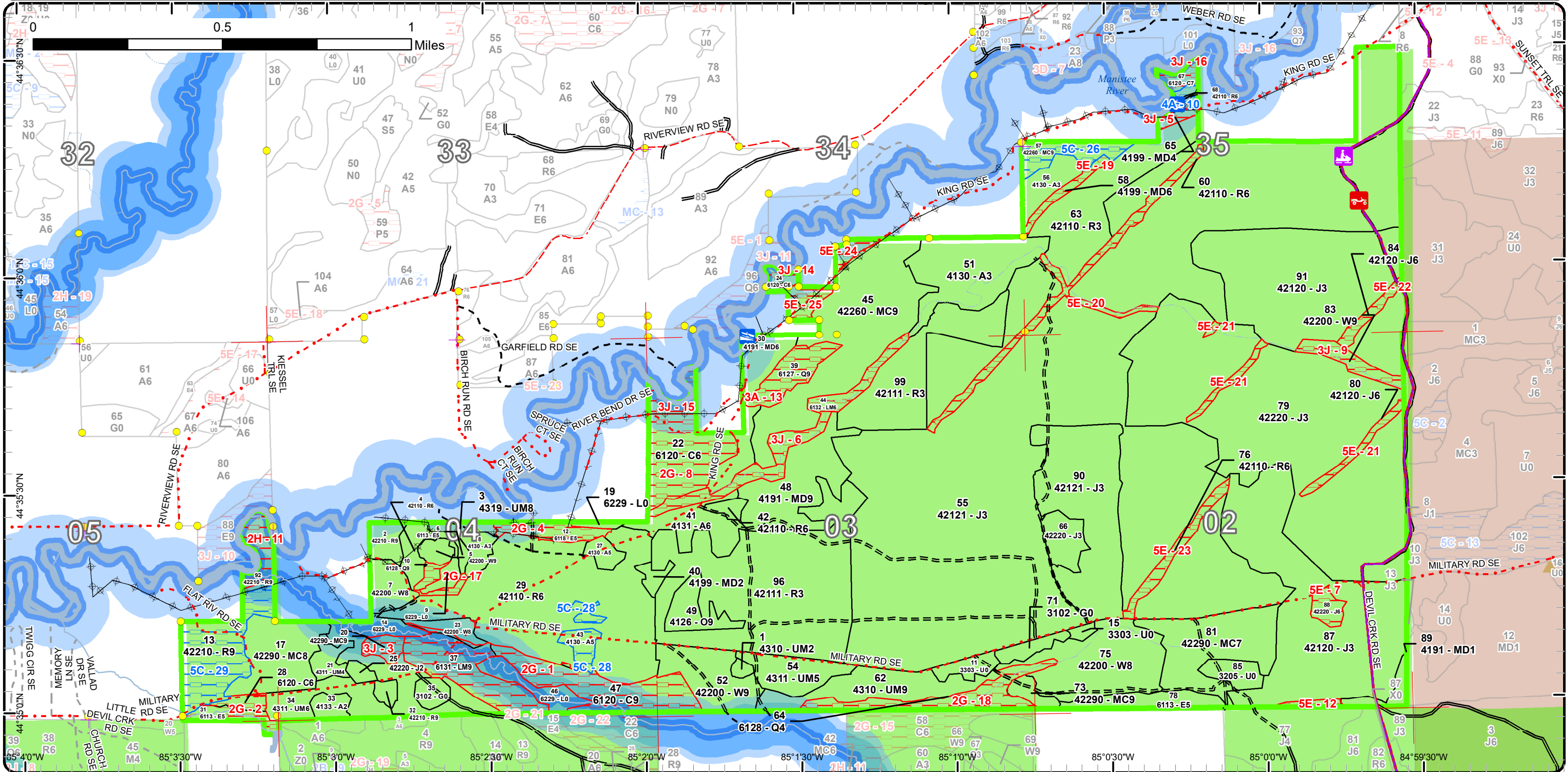


Special Conservation Areas

Compartment: 134
 T26N, R06W, Sec. 34, 35
 T25N, R06W, Sec. 2-5
 County: Kalkaska
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- ~ Intermittent Stream
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- Lake/Pond
- Perennial River
- Lakes and Rivers
- ⊕ Powerline
- Compartment Boundary
- Available w/ Constraints
- 4A: No Markets Available for these Forest Products
- 5C: Delay treatment for age/size class diversity or exceptional site quality
- Unavailable
- 2G: Too wet (sensitive soils, does not include access issues)
- 2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)
- 3A: Conservation Values incompatible with harvest at this time
- 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
- Cold Water Lakes
- 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	0	46	5	0	4	20	0	0	0	0	0	0	0	0	0	0	0	75
Cedar	0	0	0	0	0	0	0	0	0	0	59	0	3	4	0	0	0	0	66
Herbaceous Openland	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
Jack Pine	0	708	202	100	0	0	11	0	4	0	0	0	0	0	0	0	0	0	1025
Low-Density Trees	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
Lowland Conifers	0	0	0	0	0	0	0	0	17	0	0	0	11	0	3	0	0	0	31
Lowland Deciduous	0	0	0	0	0	0	10	1	5	0	7	0	0	0	0	0	0	0	23
Lowland Mixed Forest	0	0	0	0	0	0	0	0	18	0	22	0	0	0	0	0	0	0	40
Lowland Shrub	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18
Mixed Upland Deciduous	0	4	3	0	0	0	0	2	50	0	0	0	0	0	0	0	0	0	59
Natural Mixed Pines	0	0	0	0	0	0	0	0	118	0	28	0	0	0	0	0	0	0	146
Oak	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	9
Red Pine	0	174	0	0	0	0	132	0	8	0	35	0	0	0	0	0	0	0	349
Upland Mixed Forest	0	0	2	0	5	46	0	0	0	4	23	0	0	0	0	0	0	0	80
Upland Shrub	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
White Pine	0	0	0	0	0	0	0	45	25	0	3	0	7	0	0	0	0	0	80
Total	40	886	253	105	5	50	173	48	245	4	177	0	30	4	3	0	0	0	2022



Report 2 – Treatment Summary

Traverse City Mgt. Unit
Year of Entry: 2023

Acres of Harvest

Compartment 134
Total Compartment Acres: 2,024

Commercial Harvest - 172
Harvests with Site Condition - 0
Next Step Harvest - 0
Habitat Cut - 0

Cover Type by Harvest Method

	Clearcut	Selection	Patch Clearcut	Seed Tree	Shelleywood	Thinning	Overstory Removal	Salvage	Other	Total Acres
Aspen	14	0	0	0	0	0	0	0	0	14
Mixed Upland Deciduous	16	0	0	0	0	30	0	0	0	45
Natural Mixed Pines	0	0	0	0	63	0	0	0	0	63
Oak	0	0	0	0	0	9	0	0	0	9
Red Pine	3	0	0	0	0	0	0	0	0	3
Upland Mixed Forest	0	0	23	0	0	0	0	0	0	23
White Pine	0	0	0	16	0	0	0	0	0	16
Total	32	0	0	23	16	63	39	0	0	172

Proposed and Next Step Treatments by Method

	Harvest	Site Prep	Planting	Seeding	Burning	Pesticide	Monitoring	Other	Non-Forest Mgt.	Total Acres
Current	172	0	0	0	0	7	0	21	0	201
Next Step	0	0	0	0	0	70	0	0	0	70
Total	172	0	0	0	0	78	0	21	0	271



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	Habitat Cut
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Approved Treatments:

11	61134011-NF	5.1	3303 - Mixed Low Density Trees	Nonstocked			NonForestMgt	Fruit Tree/Shrub Planting	3204 - Mast Producing Shrub		No
<p><u>Prescription</u> Brush hog (or hand fell) around select leave trees and/or patches . Leave scattered mast producing trees and shrubs and/or conifers for <u>Specs:</u> wildlife food and cover. Could plant site appropriate native shrubs and/or mast producing trees for wildlife food and cover. Protect with wire cages or tubex. Considering adding native herbaceous/forbs ground cover for wildlife food source.</p> <p><u>Next Step</u> <u>Treatments:</u></p> <p><u>Acceptable</u> <u>Regen:</u></p> <p><u>Other</u> <u>Comment:</u></p> <p><u>Site Condition</u> <u>Proposed Start Date:</u> 10/1 /2022</p>											
15	61134015-NF	1.5	3303 - Mixed Low Density Trees	Nonstocked			NonForestMgt	Fruit Tree/Shrub Planting	3204 - Mast Producing Shrub		No
<p><u>Prescription</u> Brush hog (or hand fell) around select leave trees and/or patches . Leave scattered mast producing trees and shrubs and/or conifers for <u>Specs:</u> wildlife food and cover. Could plant site appropriate native shrubs and/or mast producing trees for wildlife food and cover. Protect with wire cages or tubex. Considering adding native herbaceous/forbs ground cover for wildlife food source.</p> <p><u>Next Step</u> <u>Treatments:</u></p> <p><u>Acceptable</u> <u>Regen:</u></p> <p><u>Other</u> <u>Comment:</u></p> <p><u>Site Condition</u> <u>Proposed Start Date:</u> 10/1 /2022</p>											
30	61134030-Cut	15.5	4191 - Mixed Upland Deciduous with Conifer	Poletimber Well	70	141- 170	Harvest	Clearcut with Retention	413 - Aspen	Even-Aged	No
<p><u>Prescription</u> Final harvest stand but mark some white pine to leave, especially in the northwest corner, for aesthetics and seed trees. <u>Specs:</u></p> <p><u>Next Step</u> Monitoring, Natural Regen (Re-Inventory) <u>Treatments:</u></p> <p><u>Acceptable</u> aspen, maple, white pine, birch, cherry. <u>Regen:</u></p> <p><u>Other</u> Buffer the Manistee River appropriately to comply with the Natural Rivers Act. Per PRD: try to keep landings and roads away from Fish Site <u>Comment:</u> and Boating Access Site.</p> <p><u>Site Condition</u> <u>Proposed Start Date:</u> 10/1 /2022</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
35 61134035-NF	4.1	3102 - Grass	Nonstocked		Unspec ified	NonForestMgt	Herbaceous/Crop /Grass Planting	3105 - Mixed Upland Herbaceous		No
<p><u>Prescription</u> This opening is a traditional wildlife planting. Plant to annual rye. Consider alternative seed mixes as soil conditions allow. Resulting forage should be suitable for early spring and late fall grazing. Periodic maintenance such as mowing, fertilization, reseeding, and/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 Regen:</u></p> <p><u>Other Comment:</u></p> <p><u>Site Condition</u></p> <p>Proposed Start Date: 10/1 /2022</p>										
41 61134041-Cut	13.9	4131 - Aspen, Oak	Poletimber Well	50	81-110	Harvest	Clearcut with Retention	4191 - Mixed Upland Deciduous with Conifer	Even-Aged	No
<p><u>Prescription</u> Final harvest stand. Mark some white oak to leave for mast production and regeneration. Also leave a few white pine per acre.</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 Regen:</u> aspen, oak, red maple, white pine</p> <p><u>Other Comment:</u></p> <p><u>Site Condition</u></p> <p>Proposed Start Date: 10/1 /2022</p>										
42 61134042-Cut	2.5	42110 - Planted Red Pine	Poletimber Well	57	141-170	Harvest	Clearcut	413 - Aspen	Even-Aged	No
<p><u>Prescription</u> final harvest stand.</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 Regen:</u> aspen, oak, maple and white pine.</p> <p><u>Other Comment:</u> No retention due to small size.</p> <p><u>Site Condition</u></p> <p>Proposed Start Date: 10/1 /2022</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 61134045-Cut	62.5	42260 - Natural Pine, Mixed Deciduous	Sawtimber Well	70	171-200	Harvest	Crown Thinning	42260 - Natural Pine, Mixed Deciduous	Uneven-Aged	No
<p><u>Prescription</u> Thin the stand by marking the pine down to 80-110 BA. Also, harvest the aspen and red maple and create canopy gaps in the pine around these pockets to ensure good conditions for regeneration. Leave some of the large white pine.</p> <p><u>Specs:</u></p> <p><u>Next Step</u> <u>Treatments:</u></p> <p><u>Acceptable</u> aspen, maple, white pine. <u>Regen:</u></p> <p><u>Other</u> Some areas have hummocky ground and are probably soft. Will probably want to cut during dry or frozen conditions. Hard to tell with the snow on the ground. Try to keep landings or roads away from the boat launch if possible. <u>Comment:</u></p> <p><u>Site Condition</u> <u>Proposed Start Date:</u> 10/1 /2022</p>										
48 61134048-Cut	29.8	4191 - Mixed Upland Deciduous with Conifer	Sawtimber Well	70	81-110	Harvest	Overstory Removal	4199 - Other Mixed Upland Deciduous	Even-Aged	No
<p><u>Prescription</u> Removed the overstory and try to protect as much of the advanced regen as possible. Mark some white oak and white pine to leave for seed and shelter.</p> <p><u>Specs:</u></p> <p><u>Next Step</u> <u>Treatments:</u></p> <p><u>Acceptable</u> oak, pine, aspen and maple <u>Regen:</u></p> <p><u>Other</u> Buffer stand 44, to the north, appropriately. In some spots it would be best to run the boundary on top of the ridge. <u>Comment:</u></p> <p><u>Site Condition</u> <u>Proposed Start Date:</u> 10/1 /2022</p>										
49 61134049-Cut	9.3	4126 - White, Black, N. Pin Oak	Sawtimber Well	110	51-80	Harvest	Overstory Removal	4121 - Oak, Aspen	Even-Aged	No
<p><u>Prescription</u> Remove the overstory oak but leave some scattered white oak for mast (1-2/ac). Try to protect the advanced regen during the harvest.</p> <p><u>Specs:</u> Apply oak wilt spec. Also look for the path of least resistance to skid wood through st 96.</p> <p><u>Next Step</u> <u>Treatments:</u></p> <p><u>Acceptable</u> oak, red maple, white pine, aspen, cherry <u>Regen:</u></p> <p><u>Other</u> <u>Comment:</u></p> <p><u>Site Condition</u> <u>Proposed Start Date:</u> 10/1 /2022</p>										
52 61134052-Cut	15.8	42200 - Natural White Pine	Sawtimber Well	75	141-170	Harvest	Shelterwood	4319 - Mixed Upland Forest	Two-Aged	No
<p><u>Prescription</u> Remove the aspen, red maple spruce and balsam. Mark to leave a variety of species to leave for seed and shelter. Residual target will be variable but 10-40 is a rough target. Buffer out the drainage at the north end.</p> <p><u>Specs:</u></p> <p><u>Next Step</u> Monitoring, Natural Regen (Re-Inventory) <u>Treatments:</u></p> <p><u>Acceptable</u> aspen, fir, maple, pine, oak. <u>Regen:</u></p> <p><u>Other</u> Some areas of low ground. <u>Comment:</u></p> <p><u>Site Condition</u> <u>Proposed Start Date:</u> 10/1 /2022</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
62 61134062-Cut	22.7	4310 - Pine, Oak Mix	Sawtimber Well	90	81-110	Harvest	Seed Tree with Retention	4199 - Other Mixed Upland Deciduous	Even-Aged	No
<p><u>Prescription</u> Mark 10 BA or less of white oak and mixed pine to leave as residual. Leave the white pine that is less than 4" in diameter.</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, maple, pine, cherry,</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 /2022</p>										
73 61134073-Monitor	3.5	42290 - Natural Mixed Pine	Sawtimber Well	90	111-140	Monitoring	Natural Regen (Re-Inventory)	429 - Mixed Upland Conifers	Uneven-Aged	No
<p><u>Prescription</u> monitor regen.</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, aspen, red maple.</p> <p><u>Regen:</u></p> <p><u>Other</u> Percent to Treat = 100%</p> <p><u>Comment:</u></p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2030</p>										
85 61134085-NF	6.3	3205 - Mixed Upland Shrub	Nonstocked			NonForestMgt	Fruit Tree/Shrub Planting	3204 - Mast Producing Shrub		No
<p><u>Prescription</u> 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. Protect with wire cages or tubex. Considering adding native herbaceous/forbs ground cover for wildlife food source.</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 /2022</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
89 61134089-Monitor	3.9	4191 - Mixed Upland Deciduous with Conifer	Sapling Poor	6	Immature	Monitoring	Natural Regen (Re-Inventory)	42220 - Natural Jack Pine	Even-Aged	No
<p><u>Prescription</u> <u>Specs:</u></p> <p><u>Next Step</u> <u>Treatments:</u></p> <p><u>Acceptable</u> Jack pine, oak and lesser amounts of other species. <u>Regen:</u></p> <p><u>Other</u> Percent to Treat = 100% <u>Comment:</u></p> <p><u>Site Condition</u> <u>Proposed Start Date:</u> 10/1 /2023</p>										
71 NF_61134071-NonFor	4.4	3102 - Grass	Nonstocked		Unspecified	NonForestMgt	Other - Specify	31021 - Cool Season Grass		No
<p><u>Prescription</u> This opening is a traditional wildlife planting. Disk in crab/quack grass, plant to annual rye for several years and then convert back to a <u>Specs:</u> pasture mix (i.e. clover/alfalfa). Periodic maintenance such as mowing, fertilization, reseeding, and/or removal of woody encroachment.</p> <p><u>Next Step</u> <u>Treatments:</u></p> <p><u>Acceptable</u> <u>Regen:</u></p> <p><u>Other</u> <u>Comment:</u></p> <p><u>Site Condition</u> <u>Proposed Start Date:</u> 3 /8 /2021</p>										

Total Treatment Acreage Proposed: 200.8

Report 4 – Site Conditions

Traverse City Mgt. Unit
Steve Crigier : Examiner

Compartment: 134
Year of Entry: 2023

Availability for Management

Total Acres	Acres Available	Acres With Condition	Acres Not Available
69	69	6	0

Dominant Site Conditions

	Total Acres	Acres Available	Acres With Condition	Acres Not Available	Dominant Site Condition	Dominant Site Conditions							
						4A	5C	2G	2H	3A	3J	5E	
75	69	69	6	0	Aspen		6						
66	0	0	0	66	Cedar			54			12		
9	9	9	0	0	Herbaceous Openland								
1025	1008	1008	0	17	Jack Pine						0	17	
7	7	7	0	0	Low-Density Trees								
31	0	0	0	31	Lowland Conifers			20		11			
24	12	12	0	13	Lowland Deciduous			13					
41	0	0	0	41	Lowland Mixed Forest			22			18		
18	18	18	0	0	Lowland Shrub			0					
59	54	54	0	6	Mixed Upland Deciduous						2	4	
146	125	125	10	11	Natural Mixed Pines		10	0			4	7	
9	9	9	0	0	Oak								
349	290	290	29	30	Red Pine	3	26	0	8			22	
78	78	78	0	0	Upland Mixed Forest			0					
6	6	6	0	0	Upland Shrub								
80	73	73	0	8	White Pine			1			7		
2,024	1,757	1,757	45	222	Total Forested Acres	3	43	111	8	11	43	50	
	87%	87%	2%	11%	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	2G: Too wet (sensitive soils, does not include access issues)	50	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							

Report 4 – Site Conditions

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Steve Crigier : Examiner

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2	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	8	3J: Water quality / BMPs (stream, river, or lake)	Unspecified	Unspecified	Unspecified
Comments:							
3	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	4	Unspecified	Unspecified	Unspecified	Unspecified
Comments: More than half the stand is below a ridge/ bank down to the creek. Too close to the creek to do anything with the bank there.							
4	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	7	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
5	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	2	2F: Too steep	Unspecified	Unspecified	Unspecified
Comments: Retention from the cut in stand 63. On a hill side and its close to the river and boat launch.							
6	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	18	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
7	Unavailable	5E: Long-Term Retention	4	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							

Report 4 – Site Conditions

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8	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	25	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
9	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	7	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Intermittent drainage.							
10	Available	4A: No Markets Available for these Forest Products	3	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
11	Unavailable	2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)	8	3D: Recreational / Scenic values	3G: Other Influence zones - See comments	Unspecified	Unspecified
Comments:							
12	Unavailable	5E: Long-Term Retention	2	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
13	Unavailable	3A: Conservation Values incompatible with harvest at this time	11	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							

Report 4 – Site Conditions

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14	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	3	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
15	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	5	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
16	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	4	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
17	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	3	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
18	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	17	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
19	Unavailable	5E: Long-Term Retention	4	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							

Report 4 – Site Conditions

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20	Unavailable	5E: Long-Term Retention	15	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
21	Unavailable	5E: Long-Term Retention	8	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
22	Unavailable	5E: Long-Term Retention	4	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
23	Unavailable	5E: Long-Term Retention	7	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
24	Unavailable	5E: Long-Term Retention	2	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
25	Unavailable	5E: Long-Term Retention	4	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
26	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	10	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							

Report 4 – Site Conditions

Traverse City Mgt. Unit
Steve Crigier : Examiner

Compartment: 134
Year of Entry: 2023

28	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	6	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
29	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	26	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	Cold Water Lake	A coldwater lake has temperature and dissolved oxygen conditions that allow naturally-reproduced or stocked trout populations and those of other coldwater fish species to persist from year to year. Suitable conditions for coldwater fishes may occur in Michigan lakes if they are relatively deep, have substantial groundwater inflows, or are located in colder (northern) areas of the state. Such lakes are established by Director's action and designated as trout resources by Fisheries Order 200.
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	4310 - Pine, Oak Mix	Sapling Medium	1.5	12	Immature	N/A	Sale #36-05. Cut in 2009. Originally jack pine stand. - Stand filling in pretty well with white pine and oak.																																																															
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2	42210 - Natural Red Pine	Sawtimber Well	5.6	75	141-170	N/A	Nice natural stand of red pine. some of the spruce starting to die off. Mix of upland and lowland.																																																															
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3	4319 - Mixed Upland Forest	Sawtimber Medium	3.7	85	51-80	N/A	Took out aspen and red maple from stand, except along power line. Sale #61-022-13.																																																															
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4	42110 - Planted Red Pine	Poletimber Well	6.2	57	141-170	N/A	Some aspen and red maple along the edges. Rows are fairly narrow.																																																															
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5	42200 - Natural White Pine	Sawtimber Well	3.3	90	81-110	N/A	Thinned in 2015. Sale #61-022-13. - stand is a mix of pine and spruce. stand is in a slight depression.																																																															
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6	6113 - Lowland Maple	Poletimber Medium	1.4	65	51-80	N/A																																							
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7	42200 - Natural White Pine	Sawtimber Medium	8.4	69	51-80	N/A	Flat River Mix Sale # 036-05. Red and white pine and oak were left. Lots of browse.- Some areas of A3 /M3. Looks to have some drainages and hummocky ground in spots.																																						
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8	4130 - Aspen	Sapling Well	4.7	26	Immature	N/A	Section 4 Aspen Sale # 44-93. - Nice stem density, trees are putting on good height. A few scattered large oak.																																						
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9	6229 - Mixed lowland shrub	Nonstocked	3.2			No																																							
10	6128 - Lowland Coniferous, Mixed Deciduous	Sawtimber Well	3.3	138	111-140	N/A	Dense canopy, deer have been using it a lot.																																						
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11	3303 - Mixed Low Density Trees	Nonstocked	5.1			No	filling in with white pine and cherry.																																						
12	6118 - Lowland Deciduous with Cedar	Poletimber Medium	7.4	95	1-50	N/A																																							
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13	42210 - Natural Red Pine	Sawtimber Well	26.7	90	111-140	N/A	Northern tip of stand was a Consumer lease that came back in 2011 (M-86). Nice natural stand of pine! old fire scarred pine stumps. Nice quality red and white pine. There is a ridge by Military road that has more of an oak and aspen component. Stand was thinned in 2016.																																					
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14	6229 - Mixed lowland shrub	Nonstocked	5.4		Unspecified	No																																						
15	3303 - Mixed Low Density Trees	Nonstocked	1.5			No	filling in with white pine and cherry.																																					
17	42290 - Natural Mixed Pine	Sawtimber Medium	24.2	90	81-110	N/A	Flat River Mix Sale # 036-05. Red and white pine and oak were left and was completed in 2009. - South part of the stand is still pretty dense with BAs around 150. North and east is much more scattered with a heavy aspen understory. Lots of different size classes. Northern tip of stand was a Consumer lease that came back in 2011 (M-86) and this part was not thinned.																																					
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19	6229 - Mixed lowland shrub	Nonstocked	1.4		Unspecified	No																																						
20	42290 - Natural Mixed Pine	Sawtimber Well	3.9	75	111-140	N/A	Nice grove of Pine along the creek. Apply BMP Site condition																																					
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21	4311 - Pine, Aspen Mix	Poletimber Poor	5.0	38	1-50	N/A	Sparse stocking. Looks to be an opening that is filling in.																																					
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Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
22	6120 - Lowland Cedar	Poletimber Well	30.4	95	81-110	N/A	Pockets of blowdown, filling in with fir and birch. Very wet ground.
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	
Red Maple		10	Pole/Log	8		Red Maple	
Paper Birch		10	Pole	8		Medium	
Balsam Fir		10	Pole	8		Variable	
Northern White Cedar		60	Pole/Log	8	95	Low	
White Pine		10	Log/XLog	16		Sapling	
23	42200 - Natural White Pine	Sawtimber Medium	5.0	74	51-80	N/A	Lots of size classes. stocking is variable. Stand drops down to a lowland type on the south.
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	
Red Maple		10	Pole/Log	9		White Pine	
White Oak		5	Log	14		Medium	
White Pine		75	Log/Pole	10	74	Variable	
Red Pine		5	Log/Pole	12		Sapling	
Jack Pine		5	Pole	8			
24	6120 - Lowland Cedar	Poletimber Well	3.0	95	Unspecified	N/A	
25	42220 - Natural Jack Pine	Sapling Medium	2.1	12	Immature	N/A	Sale #36-05. Cut in 2009. Originally jack pine stand. Oak was left.-stand is starting to fill in with jack and white pine.
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	
Red Oak		5	Log	12			
Jack Pine		65	Sapling	1	12		
White Pine		30	Sapling	1			
27	4130 - Aspen	Poletimber Medium	3.8	45	51-80	N/A	small patch of aspen. South of the road is pretty sparse. White oak filling in the understory.
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	
Red Maple		5	Pole	8		White Oak	
White Oak		3	Pole	6		Medium	
Quaking Aspen		90	Pole/Sapling	6	45	Variable	
Balsam Fir		2	Pole	8		Sapling	
28	6120 - Lowland Cedar	Poletimber Well	3.0	110	51-80	N/A	
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	
Red Maple		5	Log/Pole	12		White Pine	
Paper Birch		5	Pole	8		Medium	
Balsam Fir		5	Pole	8		Variable	
Northern White Cedar		60	Pole	8	110	Low	
White Pine		20	Log/XLog	16		Sapling	
Hemlock		5	Log	14		Tall Shrub	



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments																																									
29	42110 - Planted Red Pine	Poletimber Well	98.6	57	81-110	N/A	Planted in 1963. Thinned for first time in 1995, Sale #19-93 .Thinned for 2nd time in 2015. Sale #61-022-13. - Nice quality Plantation. Good heights, but diameters are still pretty small. - BA: 100, 210, 130, 170, 160, 140, 130, 130, 160, AVG= 147																																									
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30	4191 - Mixed Upland Deciduous with Conifer	Poletimber Well	16.8	70	141-170	N/A	Good quality white pine with a mix of aspen and red maple. East line looks to dip down into some lower ground. Healthy stand with a mix of Log and pole timber.																																									
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31	6113 - Lowland Maple	Poletimber Medium	5.3	70	1-50	N/A	Little Devil Creek flows through.																																									
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32	42210 - Natural Red Pine	Sawtimber Well	2.3	75	111-140	N/A	Thinned in 2015. Sale #61-022-13- Nice patch of large Red pine.																																									
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33	4133 - Aspen, Mixed Pine	Sapling Medium	4.1	12	Immature	N/A	Sale #36-05. Cut in 2009. Originally jack pine stand. Oak was left.- Aspen is filling in the east end. West part is Scattered Pine.																																									
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34	4311 - Pine, Aspen Mix	Poletimber Well	32.0	48	51-80	N/A	- stand is a real mix of species and appears to have a couple different age classes. Some nice clones of big tooth, other areas of very poor quality quaking. Pockets of red pine logs. Some spots of immature jack and white pine. some areas are heavier to aspen and others more to pine.																																																
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35	3102 - Grass	Nonstocked	4.1		Unspecified	Managed Opening	Rye field																																																
37	6131 - Hemlock, White Pine, Maple, Birch	Sawtimber Well	22.4	94	81-110	N/A	Large super canopy white pine over a mix of hardwood conifers. low hummocky ground.																																																
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39	6127 - Lowland Pine	Sawtimber Well	11.1	113	171-200	N/A	very cool large white pine mixed with cedar. Heavy deer use.																																																
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40	4199 - Other Mixed Upland Deciduous	Sapling Medium	2.7	18	Immature	N/A	some scattered pole and log trees but is mostly regenerating oak, maple and aspen.																																																
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41	4131 - Aspen, Oak	Poletimber Well	13.9	50	81-110	N/A	Some of the aspen is starting to deteriorate. Quite abit of white oak in the understory.																																							
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42	42110 - Planted Red Pine	Poletimber Well	2.5	57	141-170	N/A	Unthinned plantation. Tall skinny trees. Past the point of thinning.																																							
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43	4130 - Aspen	Poletimber Medium	6.4	50	51-80	N/A	Aspen stand within pine plantation.																																							
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44	6132 - Mixed Lowland Forest with Cedar	Poletimber Well	18.4	70	81-110	N/A	Drainage area.																																							
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45	42260 - Natural Pine, Mixed Deciduous	Sawtimber Well	70.2	70	171-200	N/A	Mostly white pine with mixed aspen and red maple. Ground in the western portion of the stand is hummocky and look to have some soft spots. East sideis definetly upland with higher stocking. Lots of size classes of pine. More of a red pine component along the east boundary. Overall nice quality pine.																																							
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46	6229 - Mixed lowland shrub	Nonstocked	8.3		Unspecified	No																																								
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Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
47	6120 - Lowland Cedar	Sawtimber Well	26.0	95	81-110	N/A	west end has a good component of large white pine. Dense canopy coverage with a pocket here and there of blowdown.
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	
Paper Birch		5	Pole	8		Tag Alder	
Balsam Fir		5	Pole	8		Trace	
Northern White Cedar		60	Log/Pole	10	95	Variable	
White Pine		15	Log	16		Tall Shrub	
Hemlock		5	Pole/Log	9			
Red Maple		10	Log/Pole	10			
48	4191 - Mixed Upland Deciduous with Conifer	Sawtimber Well	29.8	70	81-110	N/A	Aspen stocking is patchy and looks pretty mature. Stand has lots of species diversity. Quite abit of oak in the understory. Decent Bluff on the northwest line.
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	
Red Maple		5	Pole	8		Red Oak	
Red Oak		15	Log	14		Medium	
White Oak		20	Log/Pole	12		< 5 feet	
Quaking Aspen		20	Log/Pole	10		Sapling	
White Pine		35	Pole/Log	9	70	Low	
Red Pine		5	Log/Pole	10		5 - 10 feet	
						Sapling	
49	4126 - White, Black, N. Pin Oak	Sawtimber Well	9.3	110	51-80	N/A	Quite a bit of white oak in the understory. Seeing some individual mortality in the red oak.
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	
Red Maple		5	Pole	8		White Oak	
Red Oak		30	Log	14		Medium	
White Oak		60	Log	14	110	Low	
Bigtooth Aspen		5	Pole	8		Variable	
						Pole	
51	4130 - Aspen	Sapling Well	33.5	14	Immature	N/A	HSB Sale #61-002-05.- Aspen is 20-30' tall and Stocking is very high.
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	
Red Maple		32	Sapling	1			
Bigtooth Aspen		60	Sapling	2	14		
White Pine		3	Sapling/Pole	4			
Red Pine		5	Log	12			
52	42200 - Natural White Pine	Sawtimber Well	20.2	75	141-170	N/A	Large white pine with fir and spruce. Ground is hummocky so there is probably some soft spots. starting to loose some of the spruce and fir. Lots of species diversity. There is a small drainage in the northern portion of the stand. There is a pocket of red pine in the far NW corner of the stand (manage with st29).
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	
Red Maple		5	Pole	8		Red Maple	
White Pine		60	Log	14	75	Low	
Red Pine		15	Log	13		Variable	
Balsam Fir		10	Pole	8		Sapling	
Black Spruce		10	Pole	8		Medium	
						Variable	
						Sapling	



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
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54 4311 - Pine, Aspen Mix Poletimber Medium 13.5 43 1-50 N/A Mix of canopy species and size classes

Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Red Maple	10	Pole/Log	8		Red Maple	Medium	Variable	Sapling
White Oak	5	Log	14		Quaking Aspen	High	Variable	Sapling
Quaking Aspen	30	Pole/Sapling	6	43	White Pine	Medium	Variable	Sapling
White Pine	25	Pole/Sap/Log	8		Jack Pine	Low	Variable	Sapling
Jack Pine	20	Pole/Sapling	7		Black Cherry	Low	Variable	Sapling
Black Cherry	10	Pole/Sapling	6					

55 42121 - Planted Jack Pine, Mixed Deciduous Sapling Well 556.5 9 Immature N/A Trees are 6-8ft tall. A decent amount of oak and cherry.

Canopy Species	% Cover	Size Class	DBH	Age
Jack Pine	70	Sapling	1	9
Black Cherry	15	Sapling	1	
White Oak	13	Sapling	1	
Red Maple	2	Log/Pole	12	

56 4130 - Aspen Sapling Well 8.8 14 Immature N/A HSB Sale #61-002-05- trees are 20-30' tall, regen is very dense.

Canopy Species	% Cover	Size Class	DBH	Age
Red Maple	30	Sapling	2	
Bigtooth Aspen	65	Sapling	2	14
Black Cherry	5	Sapling	2	

57 42260 - Natural Pine, Mixed Deciduous Sawtimber Well 9.9 77 141-170 N/A stand has a decent Bluff on the south boundary. Center portion of the stand is heavy to aspen. Nice quality natural pine.

Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Red Maple	3	Pole	8		White Pine	Low	>20 feet	Sapling
Quaking Aspen	27	Pole	8					
White Pine	55	Log/Pole	12	77				
Red Pine	15	Log/Pole	12					

58 4199 - Other Mixed Upland Deciduous Poletimber Well 3.8 75 81-110 N/A On side slope.

Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Red Maple	50	Pole	8	75	Red Maple	Low	Variable	Sapling
Quaking Aspen	20	Pole	8		White Pine	Low	Variable	Sapling
White Pine	15	Pole/Log	8					
Red Oak	15	Log	14					

60 42110 - Planted Red Pine Poletimber Well 15.0 57 111-140 N/A Retention/leave strips.

Canopy Species	% Cover	Size Class	DBH	Age
Red Pine	80	Pole	8	57
Jack Pine	20	Pole	8	



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments																																											
62	4310 - Pine, Oak Mix	Sawtimber Well	22.7	90	81-110	N/A	stand is more open and sparse by Military Road. Aspen is starting to age out. Lots of white pine in the understory. West end has a higher component of red pine.																																											
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63	42110 - Planted Red Pine	Sapling Well	36.4	9	Immature	N/A	Contract Regen Survey completed 9/21/2020 resulted in 636 TPA with an average height of 5.6 feet that are 61% free to grow. The stand is just below the departments free to grow threshold. Planted red pine 2012. Sprayed 9/11/2017. 1 year regen check regen survey done 10/24/2018. started at 912 trees per acre of red pine, had 20.8 % mortality and 55.8% free to grow according to quantitative data so will do another release spray here and a 3 year regen survey which will capture the herbicide check up and tree stats. ~722 trees per acre but seems to be patchy in some areas. From TMS 9/2020: Per consultation with UM. Originally planted 2012, sprayed in 2017 with replant in 2018. 2018 spray was partially a success. Drop spray treatment do to age of original planting and not replanting and location (River and houses) concerns.- Red pine with a decent amount of jack pine. Red pine is 3-4' tall, jack is 5-6'. some large white oak present.																																											
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64	6128 - Lowland Coniferous, Mixed Deciduous	Poletimber Poor	16.7	70	1-50	N/A																																												
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65	4199 - Other Mixed Upland Deciduous	Poletimber Poor	2.0	65	51-80	N/A	Along King Road, Manistee River and on a slope.																																											
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66	42220 - Natural Jack Pine	Sapling Well	8.8	13	Immature	N/A	small patch of natural jack pine. There are some KW research traps within this stand. Trees are about 15' tall and stem density is high.																																											
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67	6120 - Lowland Cedar	Sawtimber Poor	3.5	120	51-80	N/A	Along Manistee River.- Drainage running through stand. East end is more upland with red maple and scattered oak.																																		
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68	42110 - Planted Red Pine	Poletimber Well	2.5	57	171-200	N/A	Stand includes access site to Manistee River. Gate and driveway through this stand on state land leading to pvt. residence.- Trees have good height but are very skinny. Small crowns.																																		
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71	3102 - Grass	Nonstocked	4.4		Unspecified	Managed Opening	Rye field.																																		
73	42290 - Natural Mixed Pine	Sawtimber Well	3.8	90	111-140	N/A	Nice pocket of mixed natural pine. Thinned in 2021.																																		
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75	42200 - Natural White Pine	Sawtimber Medium	36.5	60	51-80	N/A	Sale #62-03. Cut in winter 2006. All red & white pine, oak & cedar left._ Aspen is up about 20' tall. stocking is patchy. There is a strip of R7 /R8 along the south line.																																		
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76	42110 - Planted Red Pine	Poletimber Well	7.0	57	81-110	N/A	Leave strip for Kalkaska KW RPP #61-036-09																																		
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78	6113 - Lowland Maple	Poletimber Medium	10.1	50	81-110	N/A	South edge of stand drops off to lower ground. Pockets of nice aspen and scattered red pine in the higher areas.																																		
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Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments		
79	42220 - Natural Jack Pine	Sapling Well	191.5	14	Immature	N/A	Sale #62-03. Was scheduled to be planted by Wildlife, however enough natural regeneration has occurred to meet wildlife specs for KW area.		
Canopy Species		% Cover	Size Class	DBH	Age				
Red Maple		2	Pole	8					
Jack Pine		96	Sapling	2	14				
Black Cherry		2	Pole	8					
80	42120 - Planted Jack Pine	Poletimber Well	7.5	58	51-80	N/A	Leave strips		
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Jack Pine		100	Pole	8	58	Jack Pine	Medium	Variable	Sapling
81	42290 - Natural Mixed Pine	Sawtimber Poor	34.0	70	1-50	N/A	jack and red maple removed in 2015/2016... open areas will fill in nicely with mixed jack red maple, oak and pine. most had advanced regen already of mixed pine and oak. manage for understory regen of mixed pine, maple and oak. - Drainage runs through north part of the stand. This area is more of an MC9. Lots of size classes but advanced regen looks to be doing well and density is pretty high.		
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Red Oak		15	Log	12		White Pine	Medium	Variable	Sapling
White Pine		45	Log	16	70	Red Pine	Low	Variable	Sapling
Red Pine		40	Log	14	70	Jack Pine	Medium	Variable	Sapling
83	42200 - Natural White Pine	Sawtimber Well	6.8	113	81-110	N/A	Drainage area.		
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Red Maple		5	Pole/Sapling	6		White Pine	Medium	Variable	Sapling
Quaking Aspen		15	Pole/Log/Sap	5					
White Pine		60	Log/XLog/Pole	16	113				
Red Pine		20	Log/XLog/Pole	16					
84	42120 - Planted Jack Pine	Poletimber Well	3.7	58	51-80	N/A	Leave strips		
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Jack Pine		100	Pole	8	58	Jack Pine	Medium	Variable	Sapling
85	3205 - Mixed Upland Shrub	Nonstocked	6.3			No	Cherry brush and mixed pine		
87	42120 - Planted Jack Pine	Sapling Well	99.6	25	Immature	N/A	Sale #17-93. Seeded with jack pine in 1995.		
Canopy Species		% Cover	Size Class	DBH	Age				
Jack Pine		98	Sapling	3	25				
Black Cherry		2	Sapling	2					
88	42220 - Natural Jack Pine	Poletimber Well	4.1	75	81-110	N/A	starting to see some mortality. White pine starting to fill in the understory.		
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Jack Pine		98	Pole	8	75	White Pine	Medium	Variable	Sapling
White Pine		2	Log/Pole	10					



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments																																													
89	4191 - Mixed Upland Deciduous with Conifer	Sapling Poor	4.4	6	Immature	N/A	Stand was harvested with st 12 in 133. Stocking is still pretty low but starting to fill in with a mix of species.																																													
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90	42121 - Planted Jack Pine, Mixed Deciduous	Sapling Well	55.5	4	Immature	N/A	-stand final harvested, trenched and ready to be planted to jack pine for KW habitat. as it sets now its a trenched open area ready for trees in spring of 2017. - Stand created because it was not cut at the time of review, part of Kalkaska KW RPP. - Trees are about 2-3' tall, Some cherry competition (2021).																																													
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91	42120 - Planted Jack Pine	Sapling Well	95.8	8	Immature	N/A	Trees are about 5ft tall.																																													
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92	42210 - Natural Red Pine	Sawtimber Well	8.6	90	141-170	N/A	M-86 Consumers Lease. Expired in 2011. Nice Natural pine stand. Little Devil Cr. runs through the southern portion of the stand which has some cedar and hemlock along its banks.																																													
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96	42111 - Planted Red Pine, Mixed Deciduous	Sapling Well	100.6	9	Immature	N/A	- Regen Check resulted in 627 TPA at 74% free to grow. The TPA meets the minimum stocking requirements and with the decision to drop an additional release spray we are accepting the current stand. - From TMS 9/2020: Per consultation with UM. Originally planted 2012, sprayed in 2017 with replant in 2018. 2018 spray was partially a success. Drop release spray due to age of original planting and not replanting and location (River and houses) concerns. - Red pine is 3-4ft tall. Lots of large scattered oak. Aspen, oak and cherry are still competing with the red pine. Too many scattered oak to aerial spray. Competition is~ 10' and is too tall for the skidder (2021).																																													
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Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
99	42111 - Planted Red Pine, Mixed Deciduous	Sapling Well	36.5	9	Immature	N/A	- Trenched 2011. Planted 2012. Sprayed 9/11/2017. No regen check data provided. Stocking level unknown. --Regen Survey resulted in 659 TPA with an average height of 4.1 feet that are 78% free to grow. The stand is just below the departments free to grow threshold have a hard time changing the MO through a variance based off of the numbers (which the forest regeneration survey manual requires) asses during inventory. -From TMS 9/2020: Per consultation with UM. Originally planted 2012, sprayed in 2017 with replant in 2018. 2018 spray was partially a success. Drop release spray due to age of original planting and not replanting and location (River and houses) concerns. - Trees are about 5ft tall. Still a decent amount of cherry brush (2021).

Canopy Species	% Cover	Size Class	DBH	Age
Red Pine	65	Sapling	1	9
Black Cherry	25	Sapling	1	
Jack Pine	10	Sapling	1	