



Compartment Review Presentation

Traverse City Forest Management Unit

Compartment 61161

Entry Year 2019

Acreage: 1,938

County Kalkaska

Management Area: Boardman Plains

Revision Date: 2017-06-12

Stand Examiner: Paul Roell

Legal Description:

T27N R08W, Sections 25, 26 and 27

T27N R07W, Section 30

Identified Planning Goals:

This compartment is part of the Boardman Plains management area (MA). Management will provide timber products; maintain or enhance wildlife habitat; and provide for forest-based recreational uses. Timber management objectives for this 10-year planning period include improving the age-class structure of aspen; increasing regeneration of oak; working toward balancing the red pine age-class structure; continuing emphasis on managing the northern hardwood resource for stand quality, age, and species diversity; wildlife values; and continued production of wood products. Wildlife habitat management objectives include perpetuating early-successional communities for species adapted to young forests for hunting and other wildlife-related recreation opportunity. Expected trends within this 10-year planning period are: increased recreational pressure, especially on the Muncie Lakes pathway, North Country and other established trails; increased oil and gas development; an increased wildland/urban interface; a need to restore oak/pine barrens communities; invasive plant control; and the conversion of poor oaks sites to mixed pine/oak sites.

Soil and topography:

Grayling Sand on the uplands and as the elevation begins to drop towards the river the soil shifts to Rubicon and Saugatuck sands. The flood plain of the North Branch of Boardman River and its tributaries contain a rifle peat and Griffin Sandy Loam.

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

Mostly State Land and surrounded by State Land with private parcels in sections 25, 26 and 27. Section 30 is mostly private and heading east land ownership in general transitions to private. There is some oil and gas development within the compartment.

Unique Natural Features:

Potential for Kirtland's warbler and prairie warbler in young jack pine and upland brush, great blue heron rookery, wood turtle, eastern massasauga, and little brown bat.

Archeological, Historical, and Cultural Features:

There are archeological concerns within the compartment.

Special Management Designations or Considerations:

There is Natural River Considerations for the North Branch of the Boardman River.

Watershed and Fisheries Considerations:

This compartment contains the North Branch of the Boardman River and Failing Creek. Reasonable buffers (as outlined in Water Quality Management Practices on Forest Land) and Natural Rivers zoning restrictions should be adhered to around all streams in this compartment. These streams are all naturally reproducing, are Type 1 designated trout streams; existing buffers appear to be appropriate for the proposed treatments.

Wildlife Habitat Considerations:

Compartment 161 is located in western Kalkaska County. The glacial geology underlying this area consists entirely of excessively drained sandy outwash plain (5111). However, the North Branch of the Boardman River, as well as Tailing Creek run through the compartment and both are important riparian corridors. The area that these streams drain supports a mix of wetland communities including, coniferous and hardwood forests, brush, and some emergent marshes. These lowland habitats are important for species like whitetail deer, bear, woodcock, Northern saw-whet owl, Swainson's thrush, and brown snake.

The sandy soil found outside the riparian corridors was often the setting for large wildfires. These fires sustained a variety of fire driven communities, mainly conifer forests at the time of the GLO surveys. Present habitat types include some aspen stands of various ages interspersed with a few grassy openings, upland brush stands, natural and planted pine, and several oak communities. Timber harvests should be designed to mimic wildfires of various intensities, when possible. Several aspen, oak, and pine stands will have cutting prescriptions this entry period. The creation of dead and down logs and residual trees for mast and cover will be included in some sales. Standing dead timber is usually left during harvest operations unless deemed a safety hazard. Several openings are abandoned oil wells pads and have been prescribed for planting. Prescribed fire and brush hogging are also proposed for maintaining a mosaic of non-forested communities. Some species found in these early to mid-successional communities include: white-tailed deer, ruffed grouse, eastern bluebird, smooth green snake, long-tailed weasel, and red-tailed hawk.

Mineral Resource and Development Concerns and/or Restrictions

There is no known metallic mineral potential in this region. The Smith Lake Pit is located just over one mile to the north. There may be some sand and gravel potential within the compartment. The compartment is within the prolific Niagaran reef trend. Some of the wells and corresponding leases are no longer active. There may be some potential for additional future production within the compartment. Some parcels within the compartment are currently leased for development of a proposed new gas storage field.

Vehicle Access:

There are numerous forest roads and county roads throughout the compartment that provide plenty of access. Some of the forest roads are poor quality but are still navigable with a 4-wheel drive vehicle.

Survey Needs:

There are some survey needs in section 27.

Recreational Facilities and Opportunities:

Snowmobile Trail #55, and the Michigan Cross Country Cycle Trail (MCCCT) both are located in the western side of this compartment. There is also potential for the North Country Trail to be located within this compartment, however, the trail proposal has not been approved at the time of this write-up. Policy and Procedure 32.22-01 (Best Management Practices for Forest and Wildlife Management Adjacent to Recreational Trails) should be taken into consideration if forest treatments impact the designated recreation trails within this compartment. (T.M.N. 11-1-16)

Fire Protection:

This area is within a Zone 6 for DNR wildland fire response.

Additional Compartment Information:

The following reports from the Inventory are attached:

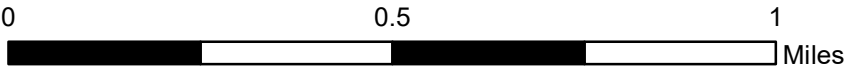
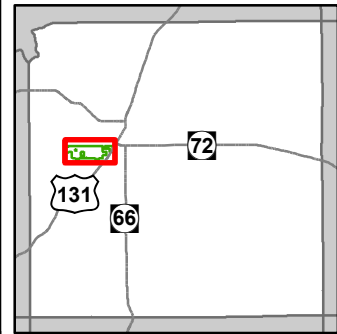
- Total Acres by Cover Type and Age Class**
- Cover Type by Harvest Method**
- Proposed Treatments – No Limiting Factors**
- Proposed Treatments – With Limiting Factors**
- Stand Details (Forested and Nonforested)**
- Dedicated and Proposed Special Conservation Areas**
- Site Condition Details**

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

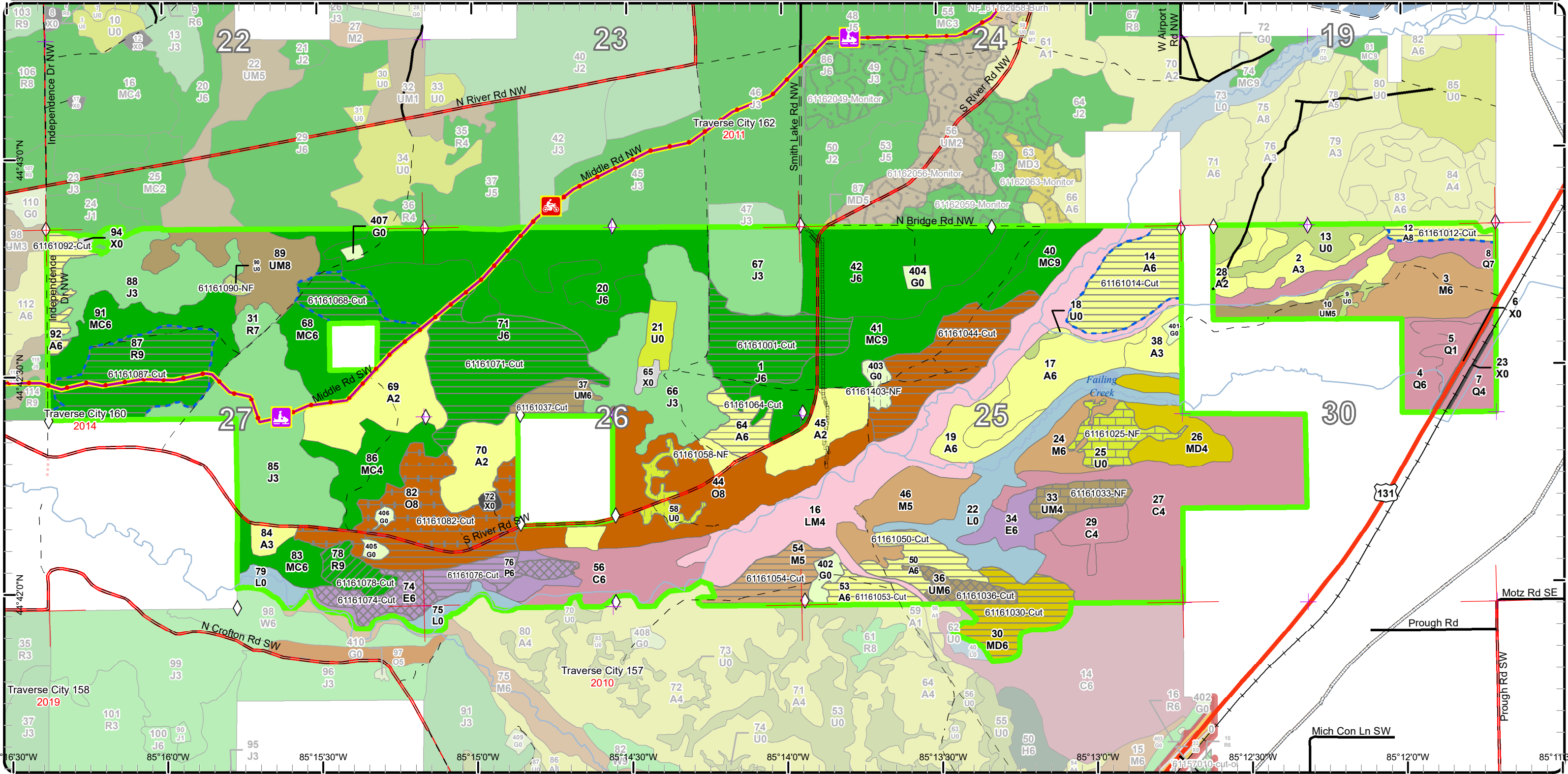
- Base feature information, stand boundaries, cover types, and numbers**
- Proposed treatments**
- Site condition boundaries**
- Details on the road access system**

Cover Type & Treatments Map

Compartment: 161
 T27N R08W Sec. 25-27
 County: Kalkaska
 Unit: Traverse City
 Mgmt Area: Boardman Plains
 YOE: 2019
 Acres: 1937.6 GIS Calculated
 Examiner: Paul Roell
 Map Revised: 8/7/2017
 Map Phase: Post-Review

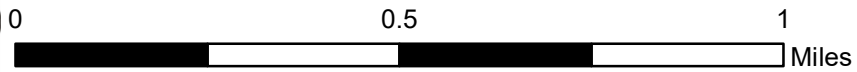
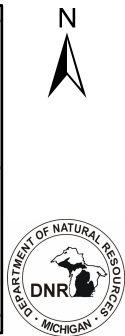
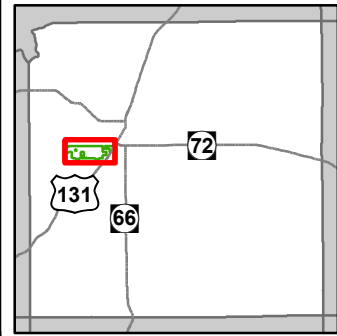


- Miris Corners
- Remonumented Section Corners
- ◇ Field Grade GPS Corners
- Counties
- 🏍 Motorcycle Trails (DNR License)
- 🏍 MCCCT Trails
- 🏍 Snowmobile Trails
- 🚗 ORV License & Trail Permit
- 🏍 Designated Snowmobile Trails
- 🏍 Michigan Cross Country Cycle Trail (MCCCT)
- Highway
- Paved Roads
- County Gravel Roads
- Gravel Roads
- County Poor Dirt Roads
- Poor Dirt Roads
- Closed
- Active Railroads
- Streams
- Lakes and Rivers All
- Pipeline
- 📏 Compartment Boundary
- 📏 Treatments with Site Conditions
- 📏 Selection (Group, Single Tree)
- 📏 Clearcut (w/Reserves)
- 📏 Habitat Structures
- 📏 Opening Maintenance
- 📏 Harvest, Overstory Removal
- 📏 Thinning (Crown, Low, Systematic)
- 📏 123 - Other High Intensity Urban
- 📏 310 - Herbaceous Openland
- 📏 320 - Upland Shrub
- 📏 330 - Low Density Trees
- 📏 411 - Northern Hardwood
- 📏 412 - Oak Types
- 📏 413 - Aspen
- 📏 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
- 📏 110 - Low Intensity Urban
- 📏 122 - Roads/Parking Lot

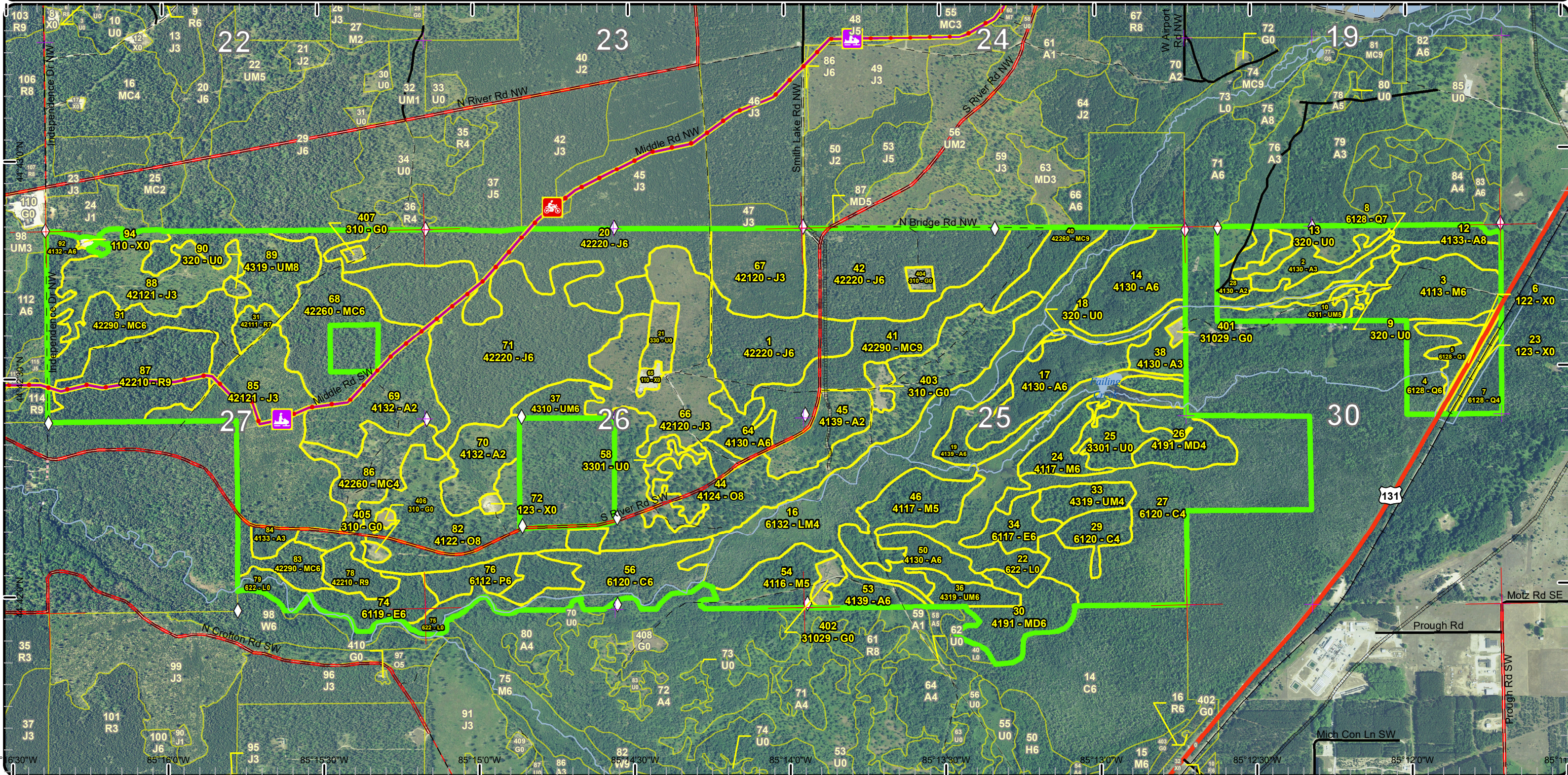


Stand Boundary Map

Compartment: 161
 T27N R08W Sec. 25-27
 County: Kalkaska
 Unit: Traverse City
 Mgmt Area: Boardman Plains
 YOE: 2019
 Acres: 1937.6 GIS Calculated
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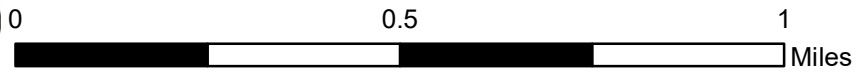
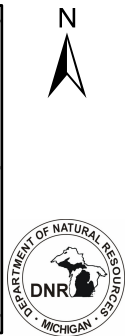
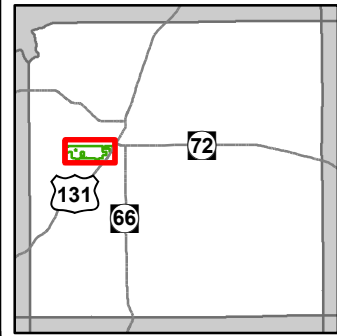
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 - County Gravel Roads
 - Gravel Roads
 - County Poor Dirt Roads
 - Poor Dirt Roads
 - - - Closed
 - Active Railroads
 - Streams
 - Lakes and Rivers All
 - Pipeline
 - Compartment Boundary
 - Stand Boundaries
- 419 - Mixed Upland Deciduous
 - 421 - Planted Pines
 - 422 - Natural Pines
 - 430 - Upland Mixed Forest
 - 611 - Lowland Deciduous Forest
 - 612 - Lowland Coniferous Forest
 - 613 - Lowland Mixed Forest
 - 110 - Low Intensity Urban
 - 122 - Roads/Parking Lot
 - 123 - Other High Intensity Urban
 - 310 - Herbaceous Openland
 - 320 - Upland Shrub
 - 330 - Low Density Trees
 - 622 - Lowland Shrub
 - 413 - Aspen



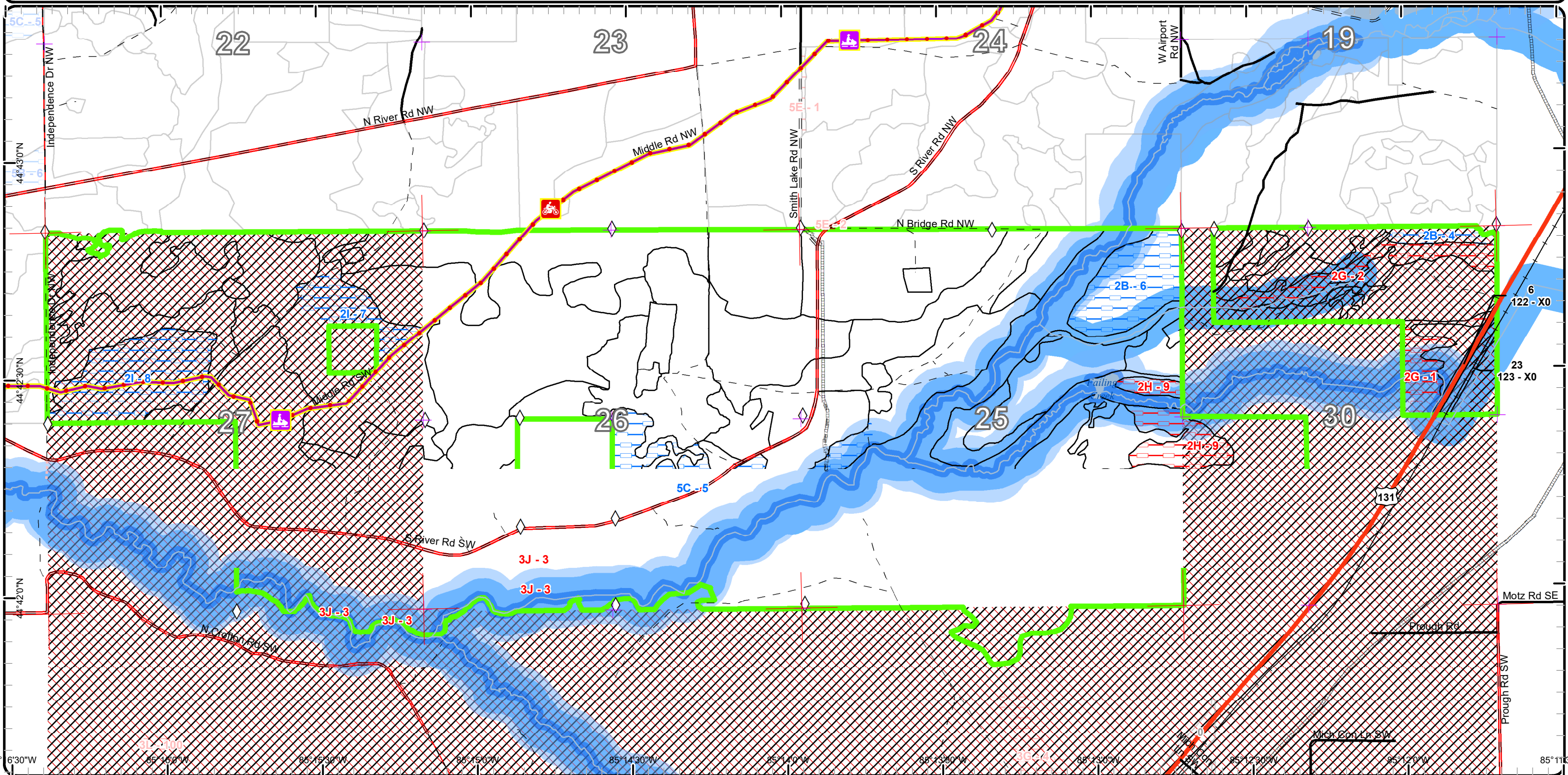
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Special Conservation Areas & Site Conditions Map

Compartment: 161
 T27N R08W Sec. 25-27
 County: Kalkaska
 Unit: Traverse City
 Mgmt Area: Boardman Plains
 YOE: 2019
 Acres: 1937.6 GIS Calculated
 Examiner: Paul Roell
 Map Revised: 8/7/2017
 Map Phase: Post-Review



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- Poor Dirt Roads
- - - Closed
- Active Railroads
- Streams
- Lakes and Rivers All
- Pipeline
- Compartment Boundary
- Available w/ Constraints
- Unavailable
- Stand Boundaries
- Natural Rivers Vegetative Buffer
- Natural Rivers Zoning District
- Cold Water Streams
- High Priority Trout Stream Buffer
- 5C: Delay treatment for age/size class diversity or exceptional site quality
- 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)



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	30	56	42	14	84	22	12	8	0	0	0	0	0	0	0	0	0	268
Cedar	0	0	0	0	0	0	0	0	0	0	118	35	0	0	0	0	0	0	153
Herbaceous Openland	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18
Jack Pine	0	106	110	0	0	139	159	0	0	0	0	0	0	0	0	0	0	0	513
Low-Density Trees	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32
Lowland Aspen/Balsam Poplar	0	0	0	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	12
Lowland Conifers	0	0	0	0	0	21	0	0	15	0	21	0	0	0	0	0	0	0	57
Lowland Deciduous	0	0	0	0	0	13	0	0	0	27	0	0	0	0	0	0	0	0	40
Lowland Mixed Forest	0	0	0	0	0	0	0	103	0	0	0	0	0	0	0	0	0	0	103
Lowland Shrub	59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	59
Mixed Upland Deciduous	0	0	0	0	0	0	23	26	0	0	0	0	0	0	0	0	0	0	49
Natural Mixed Pines	0	0	0	0	0	33	127	0	0	15	0	0	0	0	0	0	0	14	189
Northern Hardwood	0	0	0	0	0	21	0	0	16	60	0	0	0	0	0	0	0	0	97
Oak	0	0	0	0	0	0	0	0	0	46	127	0	0	0	0	0	0	0	173
Red Pine	0	0	0	0	0	0	0	0	6	61	0	0	0	0	0	0	0	0	67
Upland Mixed Forest	0	0	0	0	0	0	67	10	0	0	0	0	0	0	0	0	0	0	77
Upland Shrub	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25
Urban	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10
Total	144	136	166	42	14	311	410	151	45	194	281	35	0	0	0	0	0	14	1942



Report 2 – Treatment Summary

Traverse City Mgt. Unit
Year of Entry: 2019

Compartment 161
Total Compartment Acres: 1,938

Acres of Harvest

Commercial Harvest - 362
Harvests with Site Condition - 112
Next Step Harvest - 0
Habitat Cut - 0

Cover Type by Harvest Method

	Clearcut	Selection	Patch Clearcut	Seed Tree	Shelterwood	Thinning	Overstory Removal	Salvage	Other	Total Acres
Aspen	93	0	0	0	0	0	0	0	0	93
Jack Pine	104	0	0	0	0	0	0	0	0	104
Lowland Aspen/Balsam Poplar	11	0	0	0	0	0	0	0	0	11
Lowland Deciduous	0	19	0	0	0	0	0	0	0	19
Mixed Upland Deciduous	26	0	0	0	0	0	0	0	0	26
Natural Mixed Pines	19	0	0	0	0	0	0	0	0	19
Northern Hardwood	21	0	0	0	0	0	0	0	0	21
Oak	53	0	0	0	0	46	0	0	0	99
Red Pine	50	0	0	0	11	0	0	0	0	60
Upland Mixed Forest	11	10	0	0	0	0	0	0	0	21
Total	388	29	0	0	0	11	46	0	0	473

Proposed and Next Step Treatments by Method

	Harvest	Site Prep	Planting	Seeding	Burning	Pesticide	Monitoring	Other	Non-Forest Mgt.	Total Acres
Current	473	0	0	0	0	0	0	43	0	516
Next Step	0	242	69	0	0	69	531	0	0	911
Total	473	242	69	0	0	69	531	0	43	1427



S t a n d	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
1	61161001-Cut	41.0	42220 - Natural Jack Pine	Poletimber Well	53		Harvest	Clearcut with Retention	4222 - Natural Jack Pine	Even-Aged	Draft Field Boundary

Habitat Cut: No **Site Condition:**

Prescription Cut all trees two inches and larger in diameter. Low stumps and chip tops to facilitate future forestry operations.

Specs:

Next Step SitePrep, Scarification; Monitoring, Natural Regen (Intermediate)

Treatments:

Acceptable Jack pine, aspen, red maple and oak.

Regen:

Other

Comment:

Proposed Start Date: 10/01/2018

12	61161012-Cut	8.0	4133 - Aspen, Mixed Pine	Sawtimber Medium	70	51-80	Harvest	Clearcut with Retention	4139 - Aspen, Mixed Deciduous	Even-Aged	Draft Field Boundary
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Habitat Cut: No **Site Condition:** **Unknown Access**

Prescription Cut all trees two inches and in diameter and larger. Mark to leave some of the larger diameter white and red pine. There are wet areas in the sale

Specs: which may not make this worth trying to cut.

Next Step Monitoring, Natural Regen (Re-Inventory)

Treatments:

Acceptable Aspen, red maple, oak and mixed conifer.

Regen:

Other

Comment:

Proposed Start Date: 10/01/2018

14	61161014-Cut	34.9	4130 - Aspen	Poletimber Well	49	81-110	Harvest	Clearcut with Retention	4139 - Aspen, Mixed Deciduous	Even-Aged	Draft Field Boundary
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Habitat Cut: No **Site Condition:** **Unknown Access**

Prescription Cut all trees two inches in diameter and larger. Leave all white pine. Put in minimal area retention.

Specs:

Next Step Monitoring, Natural Regen (Re-Inventory)

Treatments:

Acceptable Aspen. red maple, cherry and mixed conifer.

Regen:

Other

Comment:

Proposed Start Date: 10/01/2018

25	61161025-NF	15.6	3301 - Low Density Deciduous Trees	Nonstocked			NonForestMgt	Brushpile/Woody Debris Creation	320 - Upland Shrub		Draft Field Boundary
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Habitat Cut: No **Site Condition:**

Prescription Hand fell some of the deciduous component (aspen, maple, etc) in an effort to produce horizontal cover in the form of coarse woody debris, promote

Specs: vertical cover in the form of regenerating deciduous species, and produce woody browse that will be available to a variety of herbivores during winter.

Next Step

Treatments:

Acceptable

Regen:

Other Would need to access in winter with good ice conditions.

Comment:

Proposed Start Date: 10/01/2018



S t a n d	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
30	61161030-Cut	26.0	4191 - Mixed Upland Deciduous with Conifer	Poletimber Well	65	51-80	Harvest	Clearcut	4139 - Aspen, Mixed Deciduous	Even-Aged	Draft Field Boundary

Habitat Cut: No

Site Condition:

Prescription Cut all trees two inches in diameter and larger. No retention to maximize regeneration. Stand has some drainages in it might be best to so a winter harvest or dry summer. Limit skid trails crossing the drainage. May have to use crane mats to access portions of the stand.

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

Acceptable aspen, red maple, and mixed conifer.
Regen:

Other
Comment:

Proposed Start Date: 10/01/2018

33	61161033-NF	12.7	4319 - Mixed Upland Forest	Poletimber Poor	50	1-50	NonForestMgt	Brushpile/Woody Debris Creation	320 - Upland Shrub		Draft Field Boundary
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Habitat Cut: No

Site Condition:

Prescription Hand fell some of the deciduous component (aspen, maple, etc) in an effort to produce horizontal cover in the form of coarse woody debris, promote vertical cover in the form of regenerating deciduous species, and produce woody browse that will be available to a variety of herbivores during winter.

Next Step
Treatments:

Acceptable
Regen:

Other Would need to access during winter with good ice conditions.
Comment:

Proposed Start Date: 10/01/2018

36	61161036-Cut	9.8	4319 - Mixed Upland Forest	Poletimber Well	65	111-140	Harvest	Group Selection	4319 - Mixed Upland Forest	Uneven-Aged	Draft Field Boundary
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Habitat Cut: No

Site Condition:

Prescription Cut all aspen and red maple. Mark to cut any high risk mortality white pine.
Specs:

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

Acceptable white pine, aspen and red maple
Regen:

Other
Comment:

Proposed Start Date: 10/01/2018

37	61161037-Cut	11.4	4310 - Pine, Oak Mix Upland Forest	Poletimber Well	53	81-110	Harvest	Clearcut with Retention	4121 - Oak, Aspen	Even-Aged	Draft Field Boundary
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Habitat Cut: No

Site Condition:

Prescription Cut all trees two inches and larger. Leave minimal area retention along the private line. Low stumps and chipping to promote scarification.
Specs:

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

Acceptable Fully stocked stand of aspen jack pine oak and red maple.
Regen:

Other
Comment:

Proposed Start Date: 10/01/2018



S t a n d	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
44	61161044-Cut	53.1	4124 - Red with White Oak	Sawtimber Medium	94	1-50	Harvest	Clearcut with Retention	4199 - Other Mixed Upland Deciduous	Even-Aged	Draft Field Boundary

Habitat Cut: No

Site Condition:

Prescription Cut all trees two inches and larger. Require low stumps chipping to promote scarification and to allow for possible planting to increase stand stocking.
Specs:

Next Step Monitoring, Natural Regen (Intermediate)
Treatments:

Acceptable A fully stocked stand of oak, pine, red maple and aspen.
Regen:

Other
Comment:

Proposed Start Date: 02/01/2017

50	61161050-Cut	16.3	4130 - Aspen	Poletimber Well	45	51-80	Harvest	Clearcut	413 - Aspen	Even-Aged	Draft Field Boundary
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Habitat Cut: No

Site Condition:

Prescription Cut all trees two inches in diameter and larger, four inches for oak, and Leave all white pine. No retention to maximize regeneration.
Specs:

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

Acceptable Fully stocked stand of aspen, red maple, oak and pine.
Regen:

Other
Comment:

Proposed Start Date: 10/01/2018

53	61161053-Cut	9.9	4139 - Aspen, Mixed Deciduous	Poletimber Well	54	81-110	Harvest	Clearcut	413 - Aspen	Even-Aged	Draft Field Boundary
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Habitat Cut: No

Site Condition:

Prescription Cut all trees two inches in diameter and larger, four inches for oak, and Leave all white pine.
Specs:

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

Acceptable Aspen, red maple, oak and mixed pine.
Regen:

Other
Comment:

Proposed Start Date: 10/01/2018

54	61161054-Cut	20.8	4116 - Mixed N. Hardwood - Aspen	Poletimber Medium	40	1-50	Harvest	Clearcut	413 - Aspen	Even-Aged	Draft Field Boundary
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Habitat Cut: No

Site Condition:

Prescription Cut all trees two inches in diameter and larger, four inches for oak, and Leave all white pine.
Specs:

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

Acceptable Aspen oak and mixed pine.
Regen:

Other
Comment:

Proposed Start Date: 10/01/2018



S t a n d	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
58	61161058-NF	8.2	3301 - Low Density Deciduous Trees	Nonstocked			NonForestMgt	Brush Cutting	320 - Upland Shrub		Draft Field Boundary

Habitat Cut: No **Site Condition:**

Prescription Selectively hand fell woody encroachment to maintain upland brush/grassland community. Leave scattered mast producing trees and shrubs and/or
Specs: conifers for wildlife food and cover.

Next Step
Treatments:

Acceptable
Regen:

Other Could plant site appropriate native shrubs and/or mast producing trees for wildlife food and cover. Fertilize plantings and protect with wire cages or
Comment: tubex.

Proposed Start Date: 10/01/2018

64	61161064-Cut	12.1	4130 - Aspen	Poletimber Well	56	81-110	Harvest	Clearcut	413 - Aspen	Even-Aged	Draft Field Boundary
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Habitat Cut: No **Site Condition:**

Prescription Cut all trees two inches in diameter and larger. No retention to provide maximum regeneration.
Specs:

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

Acceptable Fully stocked stand of aspen with a minor component of oak and red maple.
Regen:

Other
Comment:

Proposed Start Date: 10/01/2018

68	61161068-Cut	19.1	42260 - Natural Pine, Mixed Deciduous	Poletimber Well	51	81-110	Harvest	Clearcut with Retention	4211 - Planted Red Pine	Even-Aged	Draft Field Boundary
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Habitat Cut: No **Site Condition:** **Survey Needed**

Prescription Cut all trees two inches and larger in diameter. Require low stumps and chipping to facilitate planting operations. Require minimal area retention
Specs: along the snowmobile trail. Provide trail protection specs in the sale.

Next Step SitePrep, Roller Chopping; SitePrep, Trenching; Planting, Initial Plant; Monitoring, Artificial Regen(1yr); Monitoring, Artificial Regen(3yr);
Treatments: Pesticide, Aerial

Acceptable A fully stocked stand of red pine.
Regen:

Other
Comment:

Proposed Start Date: 10/01/2018

71	61161071-Cut	63.0	42220 - Natural Jack Pine	Poletimber Well	54	1-50	Harvest	Clearcut with Retention	4222 - Natural Jack Pine	Even-Aged	Draft Field Boundary
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Habitat Cut: No **Site Condition:**

Prescription Cut all trees two inches and larger. Require low stumps and chipping. Minimal area retention. Protect the snowmobile trail.
Specs:

Next Step SitePrep, Scarification; Monitoring, Natural Regen (Intermediate)
Treatments:

Acceptable A fully stock stand of jack pine
Regen:

Other
Comment:

Proposed Start Date: 10/01/2018



Stand Name	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
74	61161074-Cut	19.0	6119 - Mixed Lowland Deciduous Forest	Poletimber Well	89	111-140	Harvest	Single Tree Selection	611 - Lowland Deciduous Forest	Uneven-Aged	Draft Field Boundary

Habitat Cut: No

Site Condition:

Prescription Cut all aspen. Mark the areas of the stand with more of a hardwood component to a residual basal area of 70-80 sqft basal area. Maintain the 100
Specs: buffer along the river.

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

Acceptable Mixed hardwoods
Regen:

Other
Comment:

Proposed Start Date: 10/01/2018

76	61161076-Cut	10.8	6112 - Lowland Aspen	Poletimber Well	53	51-80	Harvest	Clearcut with Retention	6112 - Lowland Aspen	Even-Aged	Draft Field Boundary
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Habitat Cut: No

Site Condition:

Prescription Cut all trees two inches in diameter and larger, four inches for oak, and Leave all white and red pine. Retention will be a portion of the stand with in
Specs: the 100 foot buffer on the river.

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

Acceptable Aspen and mixed deciduous
Regen:

Other
Comment:

Proposed Start Date: 10/01/2018

78	61161078-Cut	10.7	42210 - Natural Red Pine	Sawtimber Well	87	111-140	Harvest	Crown Thinning	42210 - Natural Red Pine	Even-Aged	Draft Field Boundary
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Habitat Cut: No

Site Condition:

Prescription Cut all aspen and red maple. Mark to cut red pine to a residual basal area of 80-100 sqft.
Specs:

Next Step
Treatments:

Acceptable
Regen:

Other
Comment:

Proposed Start Date: 10/01/2018

82	61161082-Cut	46.1	4122 - Oak, Pine	Sawtimber Medium	88	1-50	Harvest	Overstory Removal	4122 - Oak, Pine	Even-Aged	Draft Field Boundary
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Habitat Cut: No

Site Condition:

Prescription Two all trees two inches or larger in diameter. Leave minimal area retention.
Specs:

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

Acceptable Release they existing established oak, pine, aspen, and red maple regeneration.
Regen:

Other
Comment:

Proposed Start Date: 10/01/2018



Stand Name	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
87	61161087-Cut	49.7	42210 - Natural Red Pine	Sawtimber Well	86	111-140	Harvest	Clearcut with Retention	4211 - Planted Red Pine	Even-Aged	Draft Field Boundary

Habitat Cut: No **Site Condition: Survey Needed**

Prescription Cut all trees two inches and larger in diameter. Require low stumps and chipping to facilitate planting operations. Require minimal area retention
Specs: along the snowmobile trail. Provide trail protection specs in the sale.

Next Step SitePrep, Roller Chopping; SitePrep, Trenching; Planting, Initial Plant; Monitoring, Artificial Regen(1yr); Monitoring, Artificial Regen(3yr);
Treatments: Pesticide, Aerial

Acceptable A fully stocked stand of red pine.
Regen:

Other
Comment:

Proposed Start Date: 10/01/2018

90	61161090-NF	1.7	320 - Upland Shrub	Nonstocked		Unspecified	NonForestMgt	Brush Cutting	320 - Upland Shrub		Draft Field Boundary
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Habitat Cut: No **Site Condition:**

Prescription Selectively hand fell woody encroachment to maintain upland brush/grassland community. Leave scattered mast producing trees and shrubs and/or
Specs: conifers for wildlife food and cover.

Next Step
Treatments:

Acceptable
Regen:

Other Could plant site appropriate native shrubs and/or mast producing trees for wildlife food and cover. Fertilize plantings and protect with wire cages or
Comment: tubex.

Proposed Start Date: 10/01/2018

92	61161092-Cut	11.5	4132 - Aspen, Jack Pine	Poletimber Well	61	51-80	Harvest	Clearcut	4133 - Aspen, Mixed Pine	Even-Aged	Draft Field Boundary
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Habitat Cut: No **Site Condition:**

Prescription Cut all trees two inches and larger, four inches on the oak. To provide for maximum regeneration leave no retention.
Specs:

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

Acceptable aspen, red maple, oak and mixed conifer.
Regen:

Other
Comment:

Proposed Start Date: 10/01/2018

403	61161403-NF	4.7	310 - Herbaceous Openland	Nonstocked			NonForestMgt	Herbaceous/Crop/Grass Planting	310 - Herbaceous Openland		Draft Field Boundary
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Habitat Cut: No **Site Condition:**

Prescription Remove exotics as needed by herbiciding, or other methods. Seed in forage crop appropriate for site location and seasonal (i.e. summer vs. winter
Specs: forage) wildlife uses. May want/need to work around existing beneficial vegetation (i.e. blackberry). Maintain as needed with mowing, seeding of native grasses and forbs, fertilizing, burning, or removal of woody encroachment.

Next Step
Treatments:

Acceptable
Regen:

Other
Comment:

Proposed Start Date: 10/01/2018

Total Treatment Acreage Proposed: 516.1

Report 4 – Site Conditions

Traverse City Mgt. Unit

Paul Roell : Examiner

Compartment: 161

Year of Entry: 2019

Availability for Management

Total Acres	Acres Available	Acres Avail		Dominant Site Conditions	Dominant Site Conditions						
		With Condition	Not Available		2B	2I	5C	2G	2H	3J	
267	224	43	0	Aspen	43						
153	153	0	0	Cedar							
18	18	0	0	Herbaceous Openland							
513	513	0	0	Jack Pine							
32	32	0	0	Low-Density Trees							
12	12	0	0	Lowland Aspen/Balsam Poplar							
57	21	0	36	Lowland Conifers				36			
40	32	0	8	Lowland Deciduous							8
103	103	0	0	Lowland Mixed Forest							
59	59	0	0	Lowland Shrub							
49	26	0	23	Mixed Upland Deciduous						23	
189	169	19	0	Natural Mixed Pines		19					
96	96	0	0	Northern Hardwood							
173	99	74	0	Oak			74				
66	16	50	0	Red Pine		50					
77	77	0	0	Upland Mixed Forest							
25	25	0	0	Upland Shrub							
10	10	0	0	Urban							
1,938	1,684	186	68	Total Forested Acres	43	69	74	36	23	8	
	87%	10%	4%	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)	15	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							

Report 4 – Site Conditions

Traverse City Mgt. Unit

Paul Roell : Examiner

Compartment: 161

Year of Entry: 2019

2	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	21	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
3	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	8	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
4	Available	2B: Unknown if access through adjacent landowner(s) is possible	8	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
5	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	74	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
6	Available	2B: Unknown if access through adjacent landowner(s) is possible	35	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
7	Available	2I: Survey needed	19	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							

Report 4 – Site Conditions

Traverse City Mgt. Unit
Paul Roell : Examiner

Compartment: 161
Year of Entry: 2019

8	Available	2I: Survey needed	50	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
9	Unavailable	2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)	23	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 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	Riparian Area	A transitional area between aquatic and terrestrial ecosystems in which the terrestrial ecosystem influences the aquatic ecosystem and vice-versa. Because of the unique conditions adjacent to lakes, streams and open water wetlands, riparian areas harbor a high diversity of plants and wildlife. Riparian communities are ecologically and socially significant in their effects on water quality and quantity, as well as aesthetics, habitat, bank stability, timber production, and their contribution to overall biodiversity.
HCVA	Natural Rivers	There are two Natural Rivers datasets which are derived from spatial buffers set from an established and approved distance from the river centerlines. The Natural Rivers Zoning District is a 400 foot buffer for most Natural Rivers. The Vegetative Buffer ranges from 25 to 100 feet. To view specific Zoning Districts and Vegetative Buffers for each Natural River see the table located on the I:\Documentation\GDSE data folder.

S t a n d	Traverse City Mgt. Unit		Report 7 – Forested Stands			Compartment: 161	General Comments:
	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Year of Entry: 2019	
1	42220 - Natural Jack Pine	Poletimber Well	41.0	53			
2	4130 - Aspen	Sapling Well	19.3	6	Immature	5/25/11 stand final harvested 'Cradle Knoll Mix' some pockets of timber were left uncut do to wet soil conditions in the middle of stand (crigier). 1/21/2008 No retention per compamtment review. (Grieve) 1/24/07 Needs a cut, starting to go bad. Access from north off of state. Any mix of aspen & red maple will be expectable or not fully stocked is an acceptable regeneration.. (Grieve) 1997 Same as stand 36 (Lemmiem)	
3	4113 - R.Maple, Conifer	Poletimber Well	31.7	84	81-110		
4	6128 - Lowland Coniferous, Mixed Deciduous	Poletimber Well	15.3	79	51-80		
5	6128 - Lowland Coniferous, Mixed Deciduous	Sapling Poor	8.7	42	1-50		
7	6128 - Lowland Coniferous, Mixed Deciduous	Poletimber Poor	11.9	48	1-50	Failing Creek flows along the east side of the rail road grade in the ditch.	
8	6128 - Lowland Coniferous, Mixed Deciduous	Sawtimber Poor	20.7	99	1-50	drainage	
10	4311 - Pine, Aspen Mix	Poletimber Medium	9.8	50	1-50		
12	4133 - Aspen, Mixed Pine	Sawtimber Medium	8.0	70	51-80		
14	4130 - Aspen	Poletimber Well	34.9	49	81-110		
16	6132 - Mixed Lowland Forest with Cedar	Poletimber Poor	103.2	65	1-50	North Branch of the Boardman River, lots of tag alder mixed with pockets of timber.	
17	4130 - Aspen	Poletimber Well	32.5	46	81-110		
19	4139 - Aspen, Mixed Deciduous	Poletimber Well	13.6	38	81-110		
20	42220 - Natural Jack Pine	Poletimber Well	73.6	43	1-50	FTP on file portions of the stand have been anchor chained and roller chopped 1975	
24	4117 - Mixed N. Hardwood - Pine	Poletimber Well	15.6	79	51-80		
26	4191 - Mixed Upland Deciduous with Conifer	Poletimber Poor	23.4	59	1-50	Stand has lost most of its mature canopy, some pole sized red maple and white pine haven't blown over yet.	





	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
27	6120 - Lowland Cedar	Poletimber Poor	105.9	91	1-50	Many areas of blow down.
28	4130 - Aspen	Sapling Medium	7.5	14	Immature	
29	6120 - Lowland Cedar	Poletimber Poor	11.8	91	1-50	Many areas of blow down.
30	4191 - Mixed Upland Deciduous with Conifer	Poletimber Well	26.0	65	51-80	
31	42111 - Planted Red Pine, Mixed Deciduous	Sawtimber Poor	5.8	72	51-80	5/26/2011 stand cut 'North River Rd JP.' Leave all oak, cherry and red pine over 12 inches dbh. It has been replanted to red pine. There is a lot of overstory left from the harvest.
33	4319 - Mixed Upland Forest	Poletimber Poor	12.7	50	1-50	
34	6117 - Lowland Deciduous, Mixed Coniferous	Poletimber Well	12.8	49	51-80	
36	4319 - Mixed Upland Forest	Poletimber Well	9.8	65	111-140	
37	4310 - Pine, Oak Mix	Poletimber Well	11.4	53	81-110	Log sized oak and red pine mixed with pole sized jack pine
38	4130 - Aspen	Sapling Well	10.5	9	Immature	Beavers removed most of the aspen south of the two track
40	42260 - Natural Pine, Mixed Deciduous	Sawtimber Well	15.0	90	81-110	Thinned in 1989 North Bridge Red Pine
41	42290 - Natural Mixed Pine	Sawtimber Well	54.5	53	81-110	
42	42220 - Natural Jack Pine	Poletimber Well	64.9	46	51-80	
44	4124 - Red with White Oak	Sawtimber Medium	127.3	94	1-50	Stand Shelterwood cut in the fall of 2011 'South River Rd Oak.' Portions of this stand were cut in 1992 as the South River Road Sale.
45	4139 - Aspen, Mixed Deciduous	Sapling Medium	27.4	14	Immature	TS# 062-99-1
46	4117 - Mixed N. Hardwood - Pine	Poletimber Medium	27.5	89	51-80	There is a couple acre inclusion of bigger white pine
50	4130 - Aspen	Poletimber Well	16.3	45	51-80	



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
53	4139 - Aspen, Mixed Deciduous	Poletimber Well	9.9	54	81-110	Traces of oak, red pine and paper birch in the stand
54	4116 - Mixed N. Hardwood - Aspen	Poletimber Medium	20.8	40	1-50	
56	6120 - Lowland Cedar	Poletimber Well	35.3	101	111-140	
64	4130 - Aspen	Poletimber Well	12.1	56	81-110	
66	42120 - Planted Jack Pine	Sapling Well	62.4	6	Immature	Stand was cut under timber sale 61-026-09-01 Feb Thaw JP. FTP# C62-794
67	42120 - Planted Jack Pine	Sapling Well	34.6	17	Immature	Stand was cut under TS# 062-99-1 South River Jack Pine, sale was completed in 2001 and replanted to jack pine 05-19-02.
68	42260 - Natural Pine, Mixed Deciduous	Poletimber Well	46.5	51	81-110	
69	4132 - Aspen, Jack Pine	Sapling Medium	36.6	25	Immature	Cut in 1992 as the South River Road Sale
70	4132 - Aspen, Jack Pine	Sapling Medium	21.4	16	Immature	Stand was cut under TS# 062-99-1 South River Jack Pine, sale was completed in 2001.
71	42220 - Natural Jack Pine	Poletimber Well	118.0	54	1-50	
74	6119 - Mixed Lowland Deciduous Forest	Poletimber Well	27.4	89	111-140	
76	6112 - Lowland Aspen	Poletimber Well	11.6	53	51-80	
78	42210 - Natural Red Pine	Sawtimber Well	10.7	87	111-140	
82	4122 - Oak, Pine	Sawtimber Medium	46.1	88	1-50	
83	42290 - Natural Mixed Pine	Poletimber Well	13.5	109	81-110	
84	4133 - Aspen, Mixed Pine	Sapling Well	5.0	25	Immature	TS# 26-89
85	42121 - Planted Jack Pine, Mixed Deciduous	Sapling Well	75.0	16	Immature	Stand was cut under TS# 062-99-1 South River Jack Pine, sale was completed in 2001 and replanted to jack pine. FTP Completion report states the area was contract seeded to jack pine with a sigma seeder.

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Traverse City Mgt. Unit

Report 7 – Forested Stands

Compartment: 161
Year of Entry: 2019

	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
86	42260 - Natural Pine, Mixed Deciduous	Poletimber Poor	26.2	50	1-50	
87	42210 - Natural Red Pine	Sawtimber Well	49.7	86	111-140	Portions of this stand were cut under Boardman Red Pine timber sale TS# 8-89.
88	42121 - Planted Jack Pine, Mixed Deciduous	Sapling Well	43.4	5	Immature	5/26/2011 stand cut 'North River Rd JP.' Leave all oak, cherry and red pine over 12 inches dbh. Not replanted yet but is trenched (crigier). There is a lot of overstory left from the harvest.
89	4319 - Mixed Upland Forest	Sawtimber Medium	33.4	59	1-50	
91	42290 - Natural Mixed Pine	Poletimber Well	32.9	48	1-50	
92	4132 - Aspen, Jack Pine	Poletimber Well	11.5	61	51-80	



Stand	Cover Type	Acres	Managed Site	General Comments:
6	122 - Road/Parking Lot	3.5	No	
9	320 - Upland Shrub	2.6	No	Scattered cherry, aspen & jack pine saps.
13	320 - Upland Shrub	19.1	No	OPIC - FMD: 1/24/07 Young aspen moving in. (Grieve)
18	320 - Upland Shrub	1.2	No	
21	330 - Low-Density Trees	8.2	No	
22	622 - Lowland Shrub	43.5	No	old beaver flooding of Failing Creek with a few scattered trees
23	123 - Other High Intensity Urban	1.4	No	
25	3301 - Low Density Deciduous Trees	15.6	No	
58	3301 - Low Density Deciduous Trees	8.2	No	
65	110 - Low Intensity Urban	2.4	No	Merit Energy Co. State Kalkaska G 1-26B. Facility also at this site, tank batteries & evaporator. (Grieve)
72	123 - Other High Intensity Urban	1.7	No	Merit Energy Co. State Kalkaska 3-26 HD-1
75	622 - Lowland Shrub	8.2	No	Boardman river flows through the stand.
79	622 - Lowland Shrub	6.9	No	Stands on both sides of the Boardmen River.
90	320 - Upland Shrub	1.7	Yes	OPIC - FMD: 1/3/2007 Was grass the last time around. Lots of sweat fern, with cherry, jack pine & old white pine stumps. Old rail road grade runs NW/SE through stand. (Grieve)
94	110 - Low Intensity Urban	1.0	No	Active well site.
401	31029 - Grass (OI)	1.6	No	1/19/07 Abandon well site. This old well pad is both on state & private. Most is on state.
402	31029 - Grass (OI)	4.6	Yes	Abandon well site. Lots of spotted knapweed. Also, Russian olive. Plant to red pine & try to push out both. This may become an active well site in the near future.



Stand	Cover Type	Acres	Managed Site	General Comments:
403	310 - Herbaceous Openland	4.7	No	Some knapweed, but not much. Looks like old well site. Jack pine moving in from sides.
404	310 - Herbaceous Openland	2.7	Yes	Abandon well site. Some knapweed & planted Russian olive.
405	310 - Herbaceous Openland	1.8	Yes	
406	310 - Herbaceous Openland	1.3	No	
407	310 - Herbaceous Openland	1.2	No	Old well site.