



Compartment Review Presentation

Traverse City Forest Management Unit

Compartment 61029

Entry Year 2022

Acreage: 1,980

County Benzie

Management Area: Benzie Outwash

Revision Date: 2020-07-31

Stand Examiner: Craig Allen

Legal Description:

Benzie County, T25N- R14W; Sections 19, 29, 30, 31, 32

Identified Planning Goals:

Compartment 29 is a part of the Benzie Outwash management area (MA). Vegetation management in this MA will provide forest products; maintain or enhance wildlife habitat; protect areas of unique character, including the Betsie River which is a designated natural river; and threatened, endangered and special concern species and provide for forest-based recreational uses and Native American non-commercial uses of forest products. Timber management for the next 10 years includes improving the age-class distribution of aspen and red pine. Northern hardwoods management includes continued selective or regeneration harvesting of northern hardwoods to achieve an uneven age-class structure or improve timber quality. Wildlife management objectives include increasing the structural complexity of northern hardwood communities for interior forest species and perpetuating early-successional communities for species adapted to young forests. Expected trends in this 10-year planning period are increased recreational pressure on recreational trails and introduced insect and disease concerns, especially emerald ash borer and beech bark disease.

Soil and topography:

The terrain in this area is mostly level. The soils in the area are mostly Deer Park fine sands, Kalkaska- Rubicon association with Roscommon- Au Gres-Croswell association in the lowland areas.

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

This compartment is on the southern end of a large area of state ownership in Weldon Township. Crystal Mountain Ski/Golf Resort, which borders on the east, is well developed with year round and seasonal homes. The resort has a golf course and hiking/skiing trails that are directly adjacent to this compartment. Other private holdings in the area are being split and sold as smaller parcels. State highway M-115 runs through the area.

Unique Natural Features:

The Betsie River, flowing through sections 19, 30 and 31 of the compartment. Dair Creek flows through the north portion of the compartment and into the Betsie River. The Betsie River system is a Michigan Natural River. The designation begins at the Grass Lake Dam, then extending downstream to its mouth at Betsie Lake in Frankfort and includes all tributaries.

Archeological, Historical, and Cultural Features:

Early Native Americans would commonly establish settlements, camps and trails along the River/ creek corridors. There are also a few old homestead sites within or near the compartment. There are old railroad grades within or near the compartment that were used during the original logging operations in this area around the turn of the 20th century.

Special Management Designations or Considerations:

Visual management is an important consideration when proposing vegetative management along recreational trails on State lands. Also, all proposed land management activities near the Betsie River should reference the Betsie River Natural River Plan for guidance and consideration.

Watershed and Fisheries Considerations:

This compartment contains parts of the Betsie River, its associated wetlands, and Dair Creek. Dair Creek has a history of negative beaver interactions, and treatments within this compartment should not encourage beaver development. Appropriate buffers (as outlined in Water Quality Management Practices on Forest Land) and restrictions should be adhered to around all streams in this compartment. These streams are all naturally reproducing Type 1 coldwater streams; existing buffers appear to be appropriate for the proposed treatments. (Comments by Heather Hettinger, DNR Fisheries Management Biologist)

Wildlife Habitat Considerations:

This compartment falls entirely within a broad, flat outwash plain with few wetlands and excessively drained sand. This

compartment is situated at the southern extent of this expansive land type association (LTA) and lies just northeast of the Betsie River and hilly moraine landscapes. Consequently, this compartment may have been less influenced by the historic large-scale fires that affected the rest of the LTA and therefore possibly more successional advanced. Maintenance of some northern hardwoods in association with the Betsie River and Dair Creek will provide mature interior forest habitat for numerous forest and riparian associates, most notably the threatened red-shouldered hawk. Maintaining diversity of hardwood species and retention of cavity trees and down logs should be a part of selection cutting in such stands. Much of the upland in this compartment has been intensively cultured in the past, including numerous conifer plantations and remnant orchards. Upland areas should continue to be managed for a variety of successional stages and age classes of mixed aspen, pine, and hardwood forest, including everything from grass/shrub openings to late-successional hardwood/conifer forest. Where harvesting is to occur in these types, we should maintain within stand structural diversity by retaining various leave trees (particularly mast producers), snags, and down logs. Tops should be left unchipped and preferably in scattered brush piles as cover for small animals. Some supplemental planting of native fruiting shrubs may be prescribed in openings, and perhaps some maintenance of remnant apple trees for bear and deer food. Incorporating small (2-5 acre) islands that are left relatively un-thinned within mature pine stands would provide winter roosting cover for turkeys. Spruce was historically a minor component at best in upland forests of this LTA. Although white spruce plantings in section 32 are well established and in need of release, retention of a mix of tree species in white spruce plantations is important to maintain long-term natural diversity. (Comments by Steve Griffith, DNR Wildlife Biologist)

Mineral Resource and Development Concerns and/or Restrictions

Surface sediments consist of glacial outwash sand and gravel and postglacial alluvium. The glacial drift thickness varies between 400 and 600 feet. Beneath the glacial drift is the Devonian Ellsworth Shale. There is no current economic use for the Ellsworth Shale. The nearest gravel pit is within two miles to the southeast in the SE of Section 3 T24N R14W. Gravel potential in the compartment is considered good. This area is located northwest of the Antrim Shale gas play. The State land is currently leased for oil and gas development. The Antrim Shale appears to have potential.

Vehicle Access:

Highway M-115 along with many gravel and seasonal county roads throughout the compartment within this area offer good access to State lands. There are also many forest "2-track" roads in various areas of the compartment that are in good condition and are used for public and DNR land management accessibility.

Survey Needs:

There may be a need to establish survey corners in section 30 around some of the adjacent private lands.

Recreational Facilities and Opportunities:

The Betsie River Pathway runs through the compartment providing cross-country skiing, hiking and biking opportunities. Hunting, fishing, trapping, kayaking, mushroom hunting and dispersed camping are other popular recreational activities throughout these lands.

Fire Protection:

Wildfire protection is accomplished through coordination of local volunteer fire departments along with DNR fire staff. DNR wildfire protection is from the Traverse City Field Office. Fire vehicle access in this compartment is good. The majority of this compartment and surrounding areas are forested in mesic hardwood deciduous types so the opportunity for large scale wildfires are relatively minimal.

Additional Compartment Information:

The following reports from the Inventory are attached:

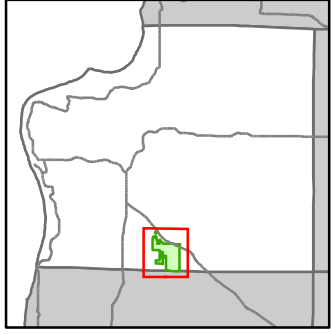
- Total Acres by Cover Type and Age Class**
- Cover Type by Harvest Method**
- Proposed Treatments – No Limiting Factors**
- Proposed Treatments – With Limiting Factors**
- Stand Details (Forested and Nonforested)**
- Dedicated and Proposed Special Conservation Areas**
- Site Condition Details**

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

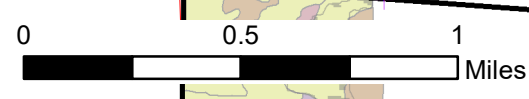
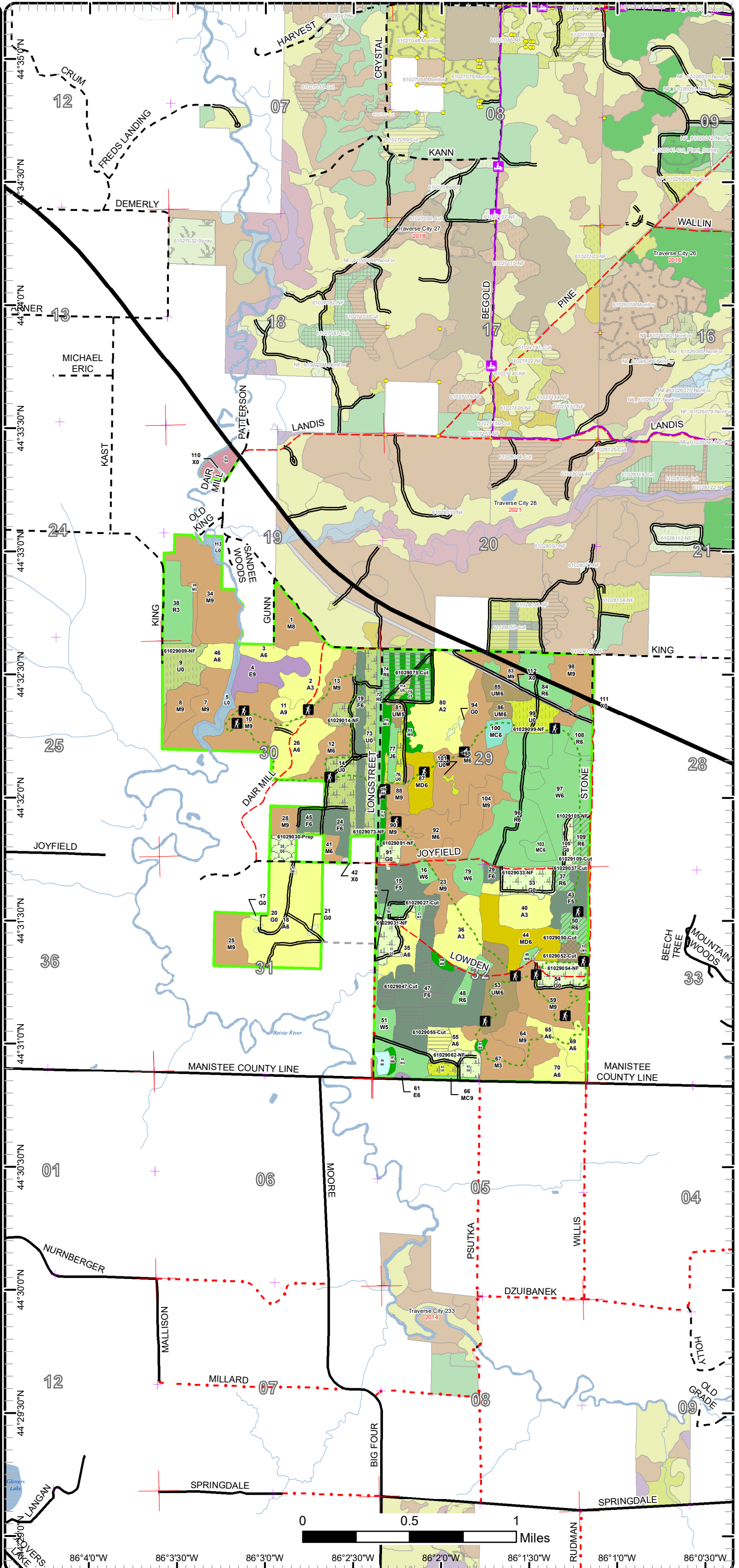
- Base feature information, stand boundaries, cover types, and numbers**
- Proposed treatments**
- Site condition boundaries**
- Details on the road access system**

Cover Type & Treatments Map

Compartment: 29
 T25N - R14W Sec. 19, 29-32
 County: Benzie
 Unit: Traverse City
 Mgmt Area: Benzie Outwash
 YOE: 2022
 Acres: 1979.8 GIS Calculated
 Examiner: Craig Allen
 Map Revised: 1/7/2021
 Map Phase: Post-Review



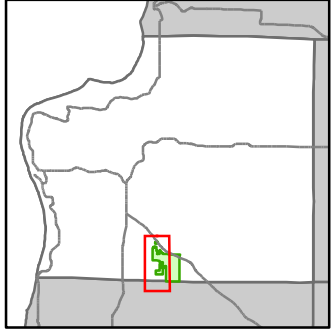
- Miris Corners
- + Remonumented Section Corners
- Survey Grade Corners
- Counties
- DNR - Secondary Forest Road
- Federal / State Highway
- Federal / State / County - Paved Road
- - - Federal / State - Dirt / Gravel Road
- . - . County - Gravel Road
- - - County - Dirt Road (Seasonal)
- - - Private - Dirt / Gravel Road
- Hiking Trails
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- Designated Hiking Trails
- Designated Bicycle Trails
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- Island in Lake or River
- Lake/Pond
- Perennial River
- Lakes and Rivers
- Bridges
- Culvert
- Parking Lot
- Trailhead
- Compartment Boundary
- Other Treatment - See Comments
- Selection (Group, Single Tree)
- Clearcut (w/Reserves)
- Thinning (Crown, Low, Systematic)
- Shelter Wood (w/Reserves)
- Opening Maintenance
- Site Prep
- 411 - Northern Hardwood
- 413 - Aspen
- 419 - Mixed Upland Deciduous
- 421 - Planted Pines
- 422 - Natural Pines
- 423 - Other Upland Conifers
- 429 - Mixed Upland Conifers
- 430 - Upland Mixed Forest
- 611 - Lowland Deciduous Forest
- 612 - Lowland Coniferous Forest
- 110 - Low Intensity Urban
- 310 - Herbaceous Openland
- 320 - Upland Shrub
- 330 - Low Density Trees
- 622 - Lowland Shrub
- 623 - Emergent Wetland



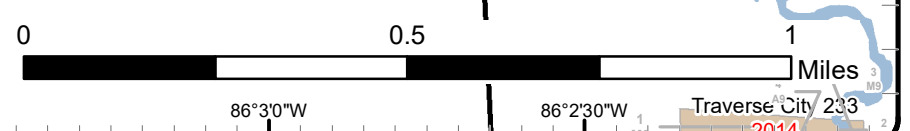
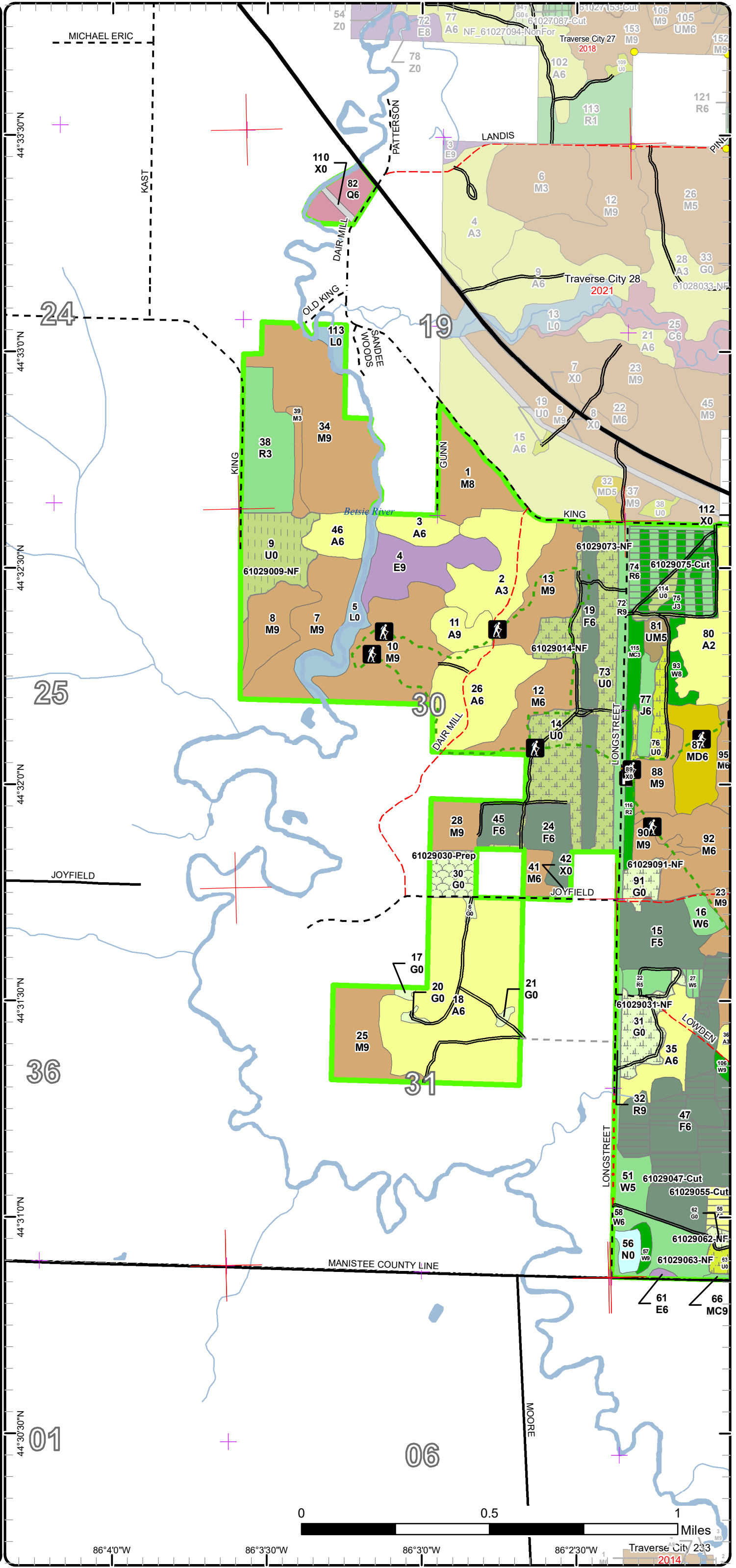
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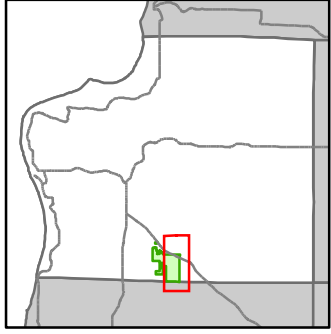


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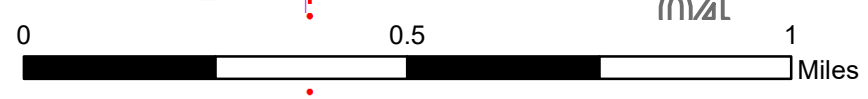
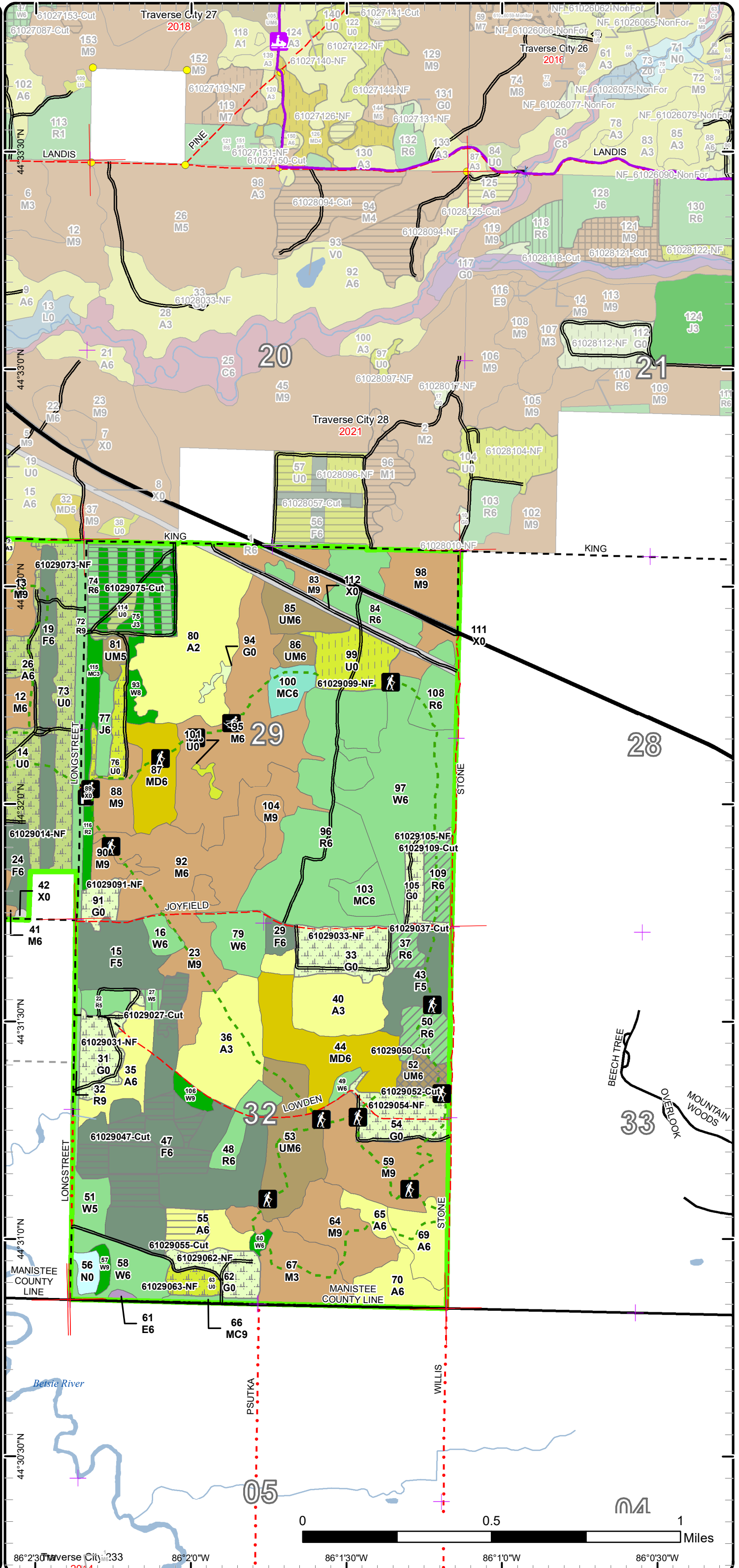


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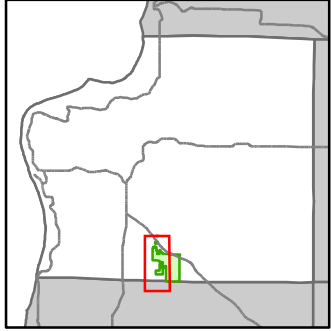
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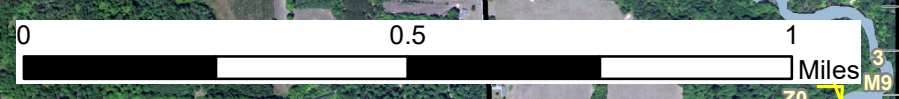
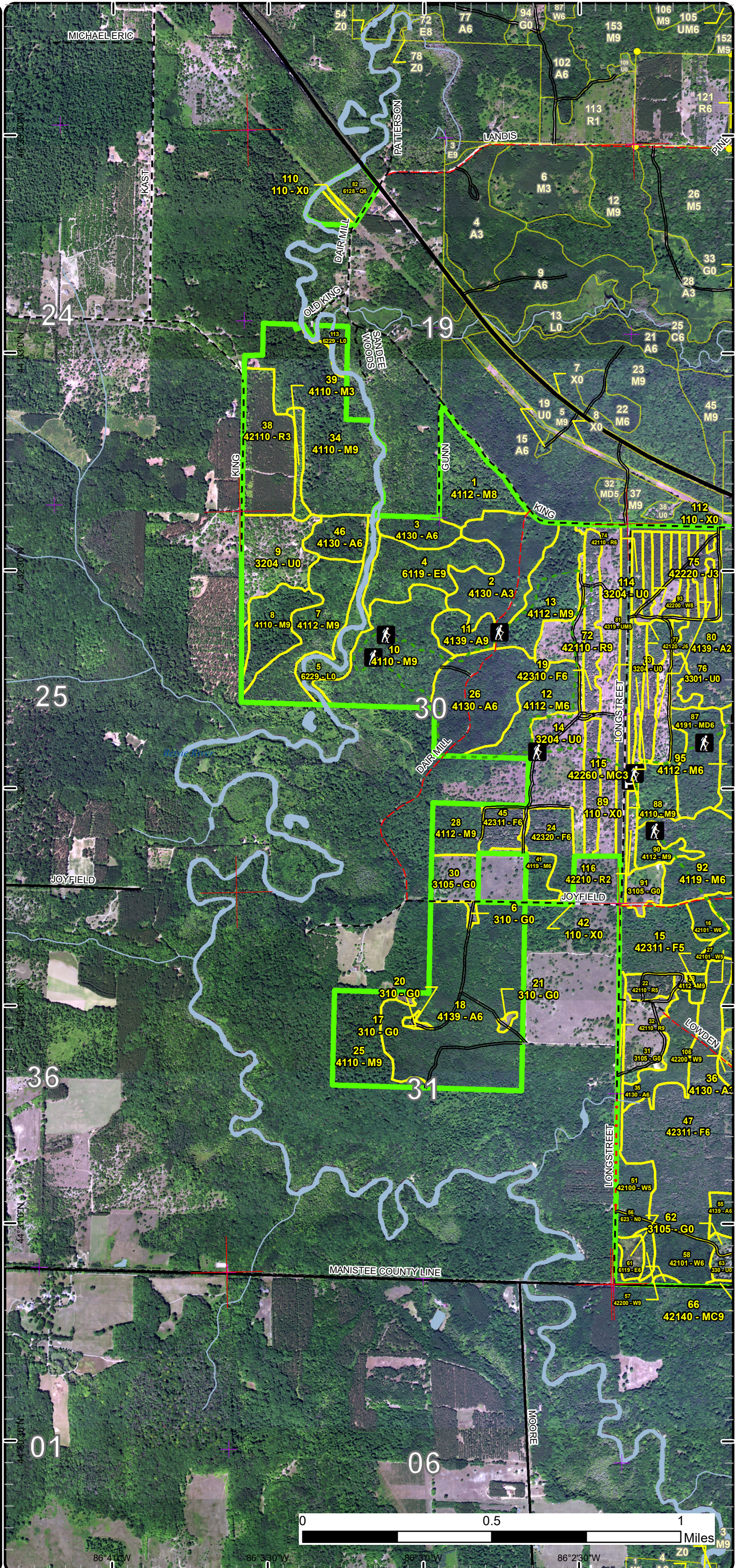
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Stand Boundary Map

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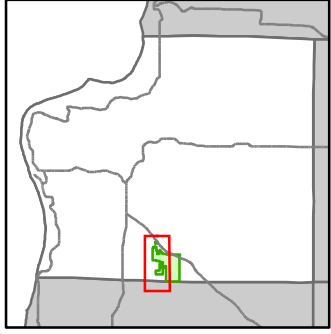
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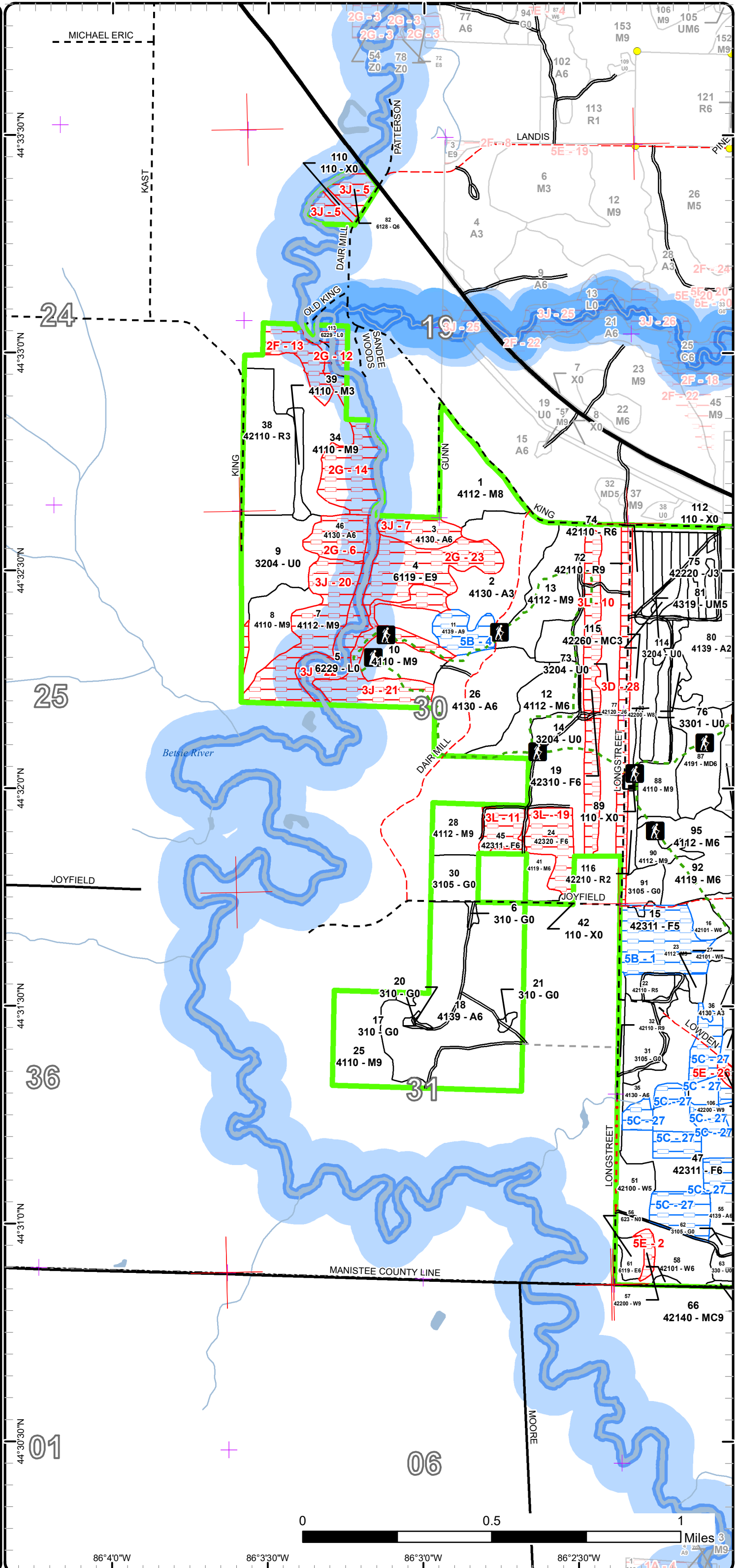
86° 4' 30" W 86° 3' 30" W 86° 2' 30" W 86° 1' 30" W

Special Conservation Areas

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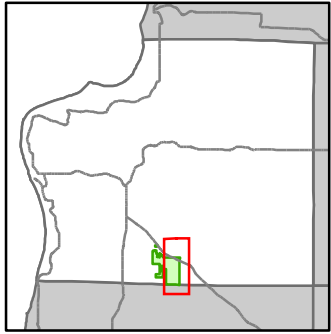
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- Compartment Boundary
- Available w/ Constraints
- Unavailable
- 5B: Maintain for regeneration purposes
- 5C: Delay treatment for age/size class diversity or exceptional site quality
- 2F: Too steep
- 2G: Too wet (sensitive soils, does not include access issues)
- 3D: Recreational / Scenic values
- 3J: Water quality / BMPs (stream, river, or lake)
- 3L: Other wildlife concerns
- 5E: Long-Term Retention
- Stand Boundaries
- Natural Rivers Vegetative Buffer
- Natural Rivers Zoning District
- Cold Water Streams
- Cold Water Lakes
- High Priority Trout Stream Buffer



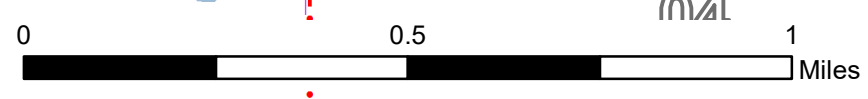
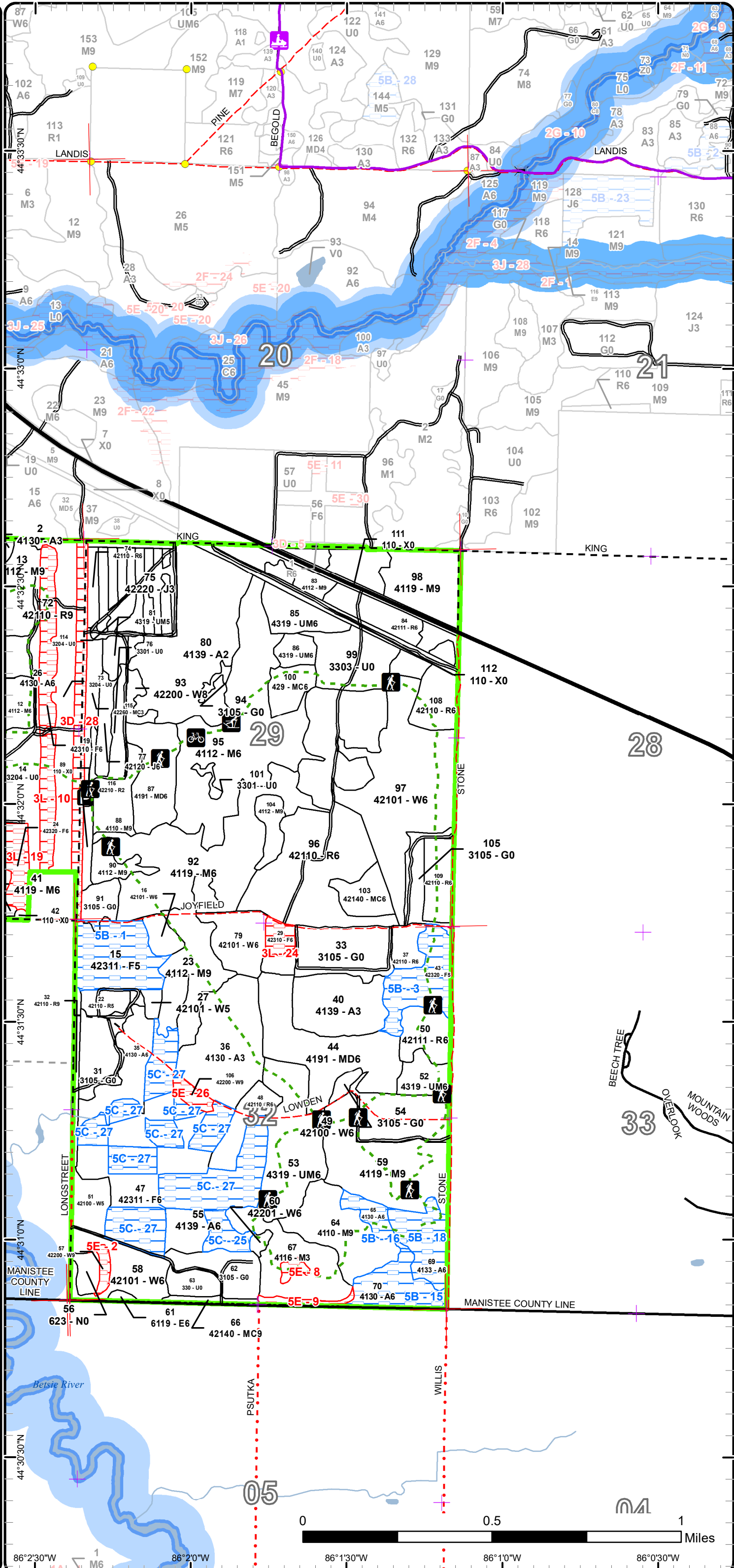
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 44°33'00"N 44°32'30"N 44°32'00"N 44°31'30"N 44°31'00"N 44°30'30"N

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	63	0	49	150	38	54	26	0	0	0	0	0	0	0	0	0	0	380
Herbaceous Openland	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100
Jack Pine	0	0	0	17	0	0	0	6	0	0	0	0	0	0	0	0	0	0	23
Low-Density Trees	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36
Lowland Conifers	0	0	0	0	0	0	0	0	0	0	11	0	0	0	0	0	0	0	11
Lowland Deciduous	0	0	0	0	0	0	0	0	26	0	0	0	0	0	0	0	0	0	26
Lowland Shrub	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21
Marsh	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Mixed Upland Deciduous	0	0	0	38	0	0	0	20	0	0	0	0	0	0	0	0	0	0	58
Natural Mixed Pines	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
Northern Hardwood	0	29	0	0	5	0	39	0	115	156	160	24	17	0	0	0	0	24	569
Planted Mixed Pines	0	0	0	0	0	0	9	0	0	0	3	0	0	0	0	0	0	0	12
Red Pine	0	0	0	34	0	0	150	24	20	0	5	0	0	0	0	0	0	0	232
Upland Conifers	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	8
Upland Mixed Forest	0	0	0	0	0	0	28	0	34	0	0	0	0	0	0	0	0	0	62
Upland Shrub	96	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	96
Upland Spruce/Fir	0	0	0	0	0	0	161	29	0	0	0	0	0	0	0	0	0	0	189
Urban	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22
White Pine	0	0	0	0	0	0	97	18	6	0	0	2	0	0	0	0	0	0	123
Total	279	92	0	145	155	38	546	123	201	156	179	26	17	0	0	0	0	24	1979



Report 2 – Treatment Summary

Traverse City Mgt. Unit
Year of Entry: 2022

Acres of Harvest

Compartment 29
Total Compartment Acres: 1,980

Commercial Harvest - 117
Harvests with Site Condition - 0
Next Step Harvest - 0
Habitat Cut - 0

Cover Type by Harvest Method

	Clearcut	Selection	Patch Clearcut	Seed Tree	Shelterwood	Thinning	Overstory Removal	Salvage	Other	Total Acres
Aspen	8	0	0	0	0	0	0	0	0	8
Jack Pine	37	0	0	0	0	0	0	0	0	37
Red Pine	0	0	0	0	0	28	0	0	0	28
Upland Mixed Forest	0	8	0	0	0	0	0	0	0	8
Upland Spruce/Fir	34	0	0	0	0	0	0	0	0	34
White Pine	0	0	0	0	2	0	0	0	0	2
Total	79	8	0	0	2	28	0	0	0	117

Proposed and Next Step Treatments by Method

	Harvest	Site Prep	Planting	Seeding	Burning	Pesticide	Monitoring	Other	Non-Forest Mgt.	Total Acres
Current	117	10	0	0	0	0	0	0	211	338
Next Step	0	37	47	0	0	0	89	0	0	173
Total	117	47	47	0	0	0	89	0	211	511



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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Proposed Treatments:

9	61029009-NF	24.4	3204 - Mast Producing Shrub	Nonstocked		Unspec ified	NonForestMgt	Brush Cutting	3204 - Mast Producing Shrub		No
<p><u>Prescription</u> Selectively hand fell woody encroachment to maintain upland brush/grassland community. Leave scattered mast producing trees and shrubs and/or conifers for wildlife food and cover. Could plant site appropriate native shrubs and/or mast producing trees for wildlife food and cover. Fertilize plantings and protect with wire cages or tubex.</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><u>Proposed Start Date:</u> 10/1 /2021</p>											
14	61029014-NF	38.3	3204 - Mast Producing Shrub	Nonstocked		Unspec ified	NonForestMgt	Fruit Tree/Shrub Planting	222 - Orchards/Vineyards/Nursery		No
<p><u>Prescription</u> Prune remnant apple trees. Replace some of the dead apple trees with apple, crabapple, or other native fruiting shrub spp. Selectively hand fell woody encroachment to maintain upland brush/grassland community. Leave scattered mast producing trees and shrubs and/or conifers for wildlife food and cover.</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><u>Proposed Start Date:</u> 10/1 /2021</p>											
27	61029027-Cut	2.1	42101 - Planted White Pine, Mixed Deciduous	Poletimber Medium	56	81-110	Harvest	Shelterwood	4210 - Planted White Pine	Even-Aged	No
<p><u>Prescription</u> Lightly select mark stand for thinning. Harvest poor form/health trees including weevil damaged. Leave BA approx. 60-70 overall or higher in spots.</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> white pine, aspen, maple</p> <p><u>Other Comment:</u></p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2021</p>											



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Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
30 61029030-Prep	9.8	3105 - Mixed Upland Herbaceous	Nonstocked		Unspec ified	SitePrep	Trenching	4211 - Planted Red Pine	Even-Aged	No
<p><u>Prescription</u> trench and plant area to red pine <u>Specs:</u> <u>Next Step</u> Planting, Initial Plant <u>Treatments:</u> <u>Acceptable</u> red pine <u>Regen:</u> <u>Other</u> <u>Comment:</u> <u>Site Condition</u> <u>Proposed Start Date:</u> 10/1 /2021</p>										
31 61029031-NF	15.4	3105 - Mixed Upland Herbaceous	Nonstocked		Unspec ified	NonForestMgt	Fruit Tree/Shrub Planting	3105 - Mixed Upland Herbaceous		No
<p><u>Prescription</u> Selectively hand fell woody encroachment to maintain upland brush/grassland community. Leave scattered mast producing trees and shrubs and/or conifers for wildlife food and cover. Could plant site appropriate native shrubs and/or mast producing trees for wildlife food and cover. Could work around some of the existing beneficial vegetation to create a wildlife food plot of appropriate herbaceous species suited to site and soil conditions, with fertilization. Maintain as needed with mowing, seeding of native grasses and forbs, fertilizing, burning, or removal of woody encroachment. <u>Specs:</u> <u>Next Step</u> <u>Treatments:</u> <u>Acceptable</u> <u>Regen:</u> <u>Other</u> <u>Comment:</u> <u>Site Condition</u> <u>Proposed Start Date:</u> 10/1 /2021</p>										
33 61029033-NF	21.5	3105 - Mixed Upland Herbaceous	Nonstocked		Unspec ified	NonForestMgt	Fruit Tree/Shrub Planting	3105 - Mixed Upland Herbaceous		No
<p><u>Prescription</u> Selectively hand fell woody encroachment to maintain upland brush/grassland community. Leave scattered mast producing trees and shrubs and/or conifers for wildlife food and cover. Could plant site appropriate native shrubs and/or mast producing trees for wildlife food and cover. Could work around some of the existing beneficial vegetation to create a wildlife food plot of appropriate herbaceous species suited to site and soil conditions, with fertilization. Maintain as needed with mowing, seeding of native grasses and forbs, fertilizing, burning, or removal of woody encroachment. <u>Specs:</u> <u>Next Step</u> <u>Treatments:</u> <u>Acceptable</u> <u>Regen:</u> <u>Other</u> <u>Comment:</u> <u>Site Condition</u> <u>Proposed Start Date:</u> 10/1 /2021</p>										



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Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
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37	61029037-Cut	5.9	42110 - Planted Red Pine	Poletimber Well	58	141- 170	Harvest	Crown Thinning	4211 - Planted Red Pine	Even-Aged	No
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Prescription Thin stand by select marking individual trees to harvest approximately 1/3 of trees. Primarily focus on marking poor form, suppressed, defect trees then mark others allowing for approximately 1/3 of volume removal with even spacing throughout plantation as much as possible. Spacing of stand is quite variable...try to keep residual BA to around 120.

Specs:
Next Step
Treatments:

Acceptable
Regen:

Other
Comment:

Site Condition

Proposed Start Date: 10/1 /2021

47	61029047-Cut	33.7	42311 - Planted Spruce, Mixed Deciduous	Poletimber Well	58	51-80	Harvest	Clearcut with Retention	4139 - Aspen, Mixed Deciduous	Even-Aged	No
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Prescription Harvest all hardwoods and spruce to regenerate and expand aspen. However, a mix species stand is desirable. Leave some large DBH hardwoods as retention. Also, leave any white pine, elm, and birch. Try to protect any young spruce seedlings along harvest boundaries. Add drumming log spec.

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

Acceptable aspen, maple, cherry, basswood, elm, spruce, white pine
Regen:

Other
Comment:

Site Condition

Proposed Start Date: 10/1 /2021

50	61029050-Cut	11.0	42111 - Planted Red Pine, Mixed Deciduous	Poletimber Well	58	171- 200	Harvest	Crown Thinning	4211 - Planted Red Pine	Even-Aged	No
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Prescription Thin stand by select marking individual trees to harvest approximately 1/3 of trees. Primarily focus on marking poor form, suppressed, defect trees then mark others allowing for approximately 1/3 of volume removal with even spacing throughout plantation as much as possible. Can also mark any hardwood trees to cut as needed for ease of logging activities.

Next Step
Treatments:

Acceptable
Regen:

Other
Comment:

Site Condition

Proposed Start Date: 10/1 /2021



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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
52 61029052-Cut	8.2	4319 - Mixed Upland Forest	Poletimber Well	56	81-110	Harvest	Group Selection	4319 - Mixed Upland Forest	Uneven-Aged	No
<p><u>Prescription</u> Manage for mix- species stand. Harvest by opening up areas where aspen is located to expand and regenerate aspen, lightly select thin other areas to remove poor health/form trees. harvest this stand along with adjacent stand to north and use opening to the south for landing. Leaving some trees along pathway edges as possible.</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, basswood, spruce, 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 /2021</p>										
54 61029054-NF	19.8	3105 - Mixed Upland Herbaceous	Nonstocked		Unspec ified	NonForestMgt	Fruit Tree/Shrub Planting	3105 - Mixed Upland Herbaceous		No
<p><u>Prescription</u> Selectively hand fell woody encroachment to maintain upland brush/grassland community. Leave scattered mast producing trees and shrubs and/or conifers for wildlife food and cover. Could plant site appropriate native shrubs and/or mast producing trees for wildlife food and cover. Could work around some of the existing beneficial vegetation to create a wildlife food plot of appropriate herbaceous species suited to site and soil conditions, with fertilization. Maintain as needed with mowing, seeding of native grasses and forbs, fertilizing, burning, or removal of woody encroachment.</p> <p><u>Specs:</u></p> <p><u>Next Step</u></p> <p><u>Treatments:</u></p> <p><u>Acceptable</u></p> <p><u>Regen:</u></p> <p><u>Other</u></p> <p><u>Comment:</u></p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2021</p>										
55 61029055-Cut	7.7	4139 - Aspen, Mixed Deciduous	Poletimber Well	56	51-80	Harvest	Clearcut with Retention	413 - Aspen	Even-Aged	No
<p><u>Prescription</u> Harvest all hardwood species with main goal to regenerate and expand aspen component. A mix of species including any volunteers of pine and spruce regen is acceptable. Leave any retention in small islands and possible unique individual trees. Add drumming log spec.</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, cherry, basswood, spruce, pine</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> 3 /16/2020</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 61029062-NF	12.8	3105 - Mixed Upland Herbaceous	Nonstocked		Unspecified	NonForestMgt	Fruit Tree/Shrub Planting	3105 - Mixed Upland Herbaceous		No
<p><u>Prescription</u> Selectively hand fell woody encroachment to maintain upland brush/grassland community. Leave scattered mast producing trees and shrubs and/or conifers for wildlife food and cover. Could plant site appropriate native shrubs and/or mast producing trees for wildlife food and cover. Could work around some of the existing beneficial vegetation to create a wildlife food plot of appropriate herbaceous species suited to site and soil conditions, with fertilization. Maintain as needed with mowing, seeding of native grasses and forbs, fertilizing, burning, or removal of woody encroachment.</p> <p><u>Specs:</u></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></p> <p><u>Proposed Start Date:</u> 10/1 /2021</p>										
63 61029063-NF	6.2	330 - Low-Density Trees	Nonstocked		Unspecified	NonForestMgt	Fruit Tree/Shrub Planting	3105 - Mixed Upland Herbaceous		No
<p><u>Prescription</u> Selectively hand fell woody encroachment to maintain upland brush/grassland community. Leave scattered mast producing trees and shrubs and/or conifers for wildlife food and cover. Could plant site appropriate native shrubs and/or mast producing trees for wildlife food and cover. Could work around some of the existing beneficial vegetation to create a wildlife food plot of appropriate herbaceous species suited to site and soil conditions, with fertilization. Maintain as needed with mowing, seeding of native grasses and forbs, fertilizing, burning, or removal of woody encroachment.</p> <p><u>Specs:</u></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></p> <p><u>Proposed Start Date:</u> 10/1 /2021</p>										
73 61029073-NF	29.4	3204 - Mast Producing Shrub	Nonstocked		Unspecified	NonForestMgt	Fruit Tree/Shrub Planting	222 - Orchards/Vineyards/Nursery		No
<p><u>Prescription</u> Prune remnant apple trees. Replace some of the dead apple trees with apple, crabapple, or other native fruiting shrub spp. Selectively hand fell woody encroachment to maintain upland brush/grassland community. Leave scattered mast producing trees and shrubs and/or conifers for wildlife food and cover.</p> <p><u>Specs:</u></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></p> <p><u>Proposed Start Date:</u> 10/1 /2021</p>										



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Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
75 61029075-Cut	37.3	42220 - Natural Jack Pine	Sapling Well	27	Unspec ified	Harvest	Clearcut	42110 - Planted Red Pine	Even-Aged	No
<p><u>Prescription</u> Clearcut all trees on this old mixed-jack pine red pine plantation site. Except leave all the old large sugar maple trees along edge of the county roads. Replant entire area to red pine. May need some site prep of the area depending on how clean the site after harvest. Trench and plant red pine.</p> <p><u>Specs:</u></p> <p><u>Next Step</u> SitePrep, Trenching; Planting, Replant; Monitoring, Artificial Regen(1yr)</p> <p><u>Treatments:</u></p> <p><u>Acceptable</u> red pine</p> <p><u>Regen:</u></p> <p><u>Other</u></p> <p><u>Comment:</u></p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2021</p>										
76 61029076-NF	8.3	3301 - Low Density Deciduous Trees	Nonstocked		Unspec ified	NonForestMgt	Fruit Tree/Shrub Planting	3204 - Mast Producing Shrub		No
<p><u>Prescription</u> Prune remnant apple trees. Replace some of the dead apple trees with apple, crabapple, or other native fruiting shrub spp. Selectively hand fell woody encroachment to maintain upland brush/grassland community. Leave scattered mast producing trees and shrubs and/or conifers for wildlife food and cover.</p> <p><u>Specs:</u></p> <p><u>Next Step</u></p> <p><u>Treatments:</u></p> <p><u>Acceptable</u></p> <p><u>Regen:</u></p> <p><u>Other</u></p> <p><u>Comment:</u></p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2021</p>										
91 61029091-NF	6.6	3105 - Mixed Upland Herbaceous	Nonstocked		Unspec ified	NonForestMgt	Fruit Tree/Shrub Planting	3105 - Mixed Upland Herbaceous		No
<p><u>Prescription</u></p> <p><u>Specs:</u> Selectively hand fell woody encroachment to maintain upland brush/grassland community. 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. Couldwork around some of the existing beneficial vegetation to create a wildlife food plot of appropriate herbaceous species suited to site and soil conditions, with fertilization. Maintain as needed with mowing, seeding of native grasses and forbs, fertilizing, burning, or removal of woody encroachment.</p> <p><u>Next Step</u></p> <p><u>Treatments:</u></p> <p><u>Acceptable</u></p> <p><u>Regen:</u></p> <p><u>Other</u></p> <p><u>Comment:</u></p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2021</p>										



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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
99 61029099-NF	19.6	3303 - Mixed Low Density Trees	Nonstocked		Unspec ified	NonForestMgt	Herbaceous/Crop /Grass Planting	31022 - Warm Season Grass		No
<p><u>Prescription</u> Selectively hand fell woody encroachment to maintain upland brush/grassland community. Leave scattered mast producing trees and shrubs and/or conifers for wildlife food and cover. Could plant site appropriate native shrubs and/or mast producing trees for wildlife food and cover. Work around some of the existing beneficial vegetation to convert the wildlife food plot over to a native grass and forb seed mix. Maintain as needed with mowing, seeding of native grasses and forbs, burning, or removal of woody encroachment.</p> <p><u>Specs:</u></p> <p><u>Next Step</u> <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></p> <p>Proposed Start Date: 10/1 /2021</p>										
105 61029105-NF	8.9	3105 - Mixed Upland Herbaceous	Nonstocked		Unspec ified	NonForestMgt	Fruit Tree/Shrub Planting	3205 - Mixed Upland Shrub		No
<p><u>Prescription</u> Selectively hand fell woody encroachment to maintain upland brush/grassland community. Leave scattered mast producing trees and shrubs and/or conifers for wildlife food and cover. Could plant site appropriate native shrubs and/or mast producing trees for wildlife food and cover. Fertilize plantings and protect with wire cages or tubex.</p> <p><u>Specs:</u></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></p> <p>Proposed Start Date: 10/1 /2021</p>										
109 61029109-Cut	10.8	42110 - Planted Red Pine	Poletimber Well	58	171-200	Harvest	Crown Thinning	4211 - Planted Red Pine	Even-Aged	No
<p><u>Prescription</u> Thin stand by select marking individual trees to harvest approximately 1/3 of trees. Primarily focus on marking poor form, suppressed, defect trees then mark others allowing for approximately 1/3 of volume removal with even spacing throughout plantation as much as possible</p> <p><u>Specs:</u></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></p> <p>Proposed Start Date: 10/1 /2021</p>										

Total Treatment 337.7
Acreage Proposed:

Report 4 – Site Conditions

Traverse City Mgt. Unit
 Craig Allen : Examiner

Compartment: 29
 Year of Entry: 2022

Availability for Management

Total Acres	Acres Available	Acres Avail		Dominant Site Conditions	Dominant Site Conditions								
		With Condition	Not Available		5B	5C	2F	2G	3D	3J	3L	5E	
378	306	52	20	Aspen	46	6		11		9			
100	100	0	0	Herbaceous Openland	0								
23	23	0	0	Jack Pine									
36	36	0	0	Low-Density Trees									
11	0	0	11	Lowland Conifers						11			
26	1	0	25	Lowland Deciduous				25					
21	0	0	21	Lowland Shrub			0	5		16			
4	4	0	0	Marsh									
58	58	0	0	Mixed Upland Deciduous									
7	7	0	0	Natural Mixed Pines									
570	477	0	94	Northern Hardwood		0	11	22		56			5
12	12	0	0	Planted Mixed Pines									
232	214	0	18	Red Pine					18				
8	8	0	0	Upland Conifers									
62	62	0	0	Upland Mixed Forest									
96	96	0	0	Upland Shrub									
190	34	109	47	Upland Spruce/Fir	44	65						47	
22	22	0	0	Urban									
123	117	0	6	White Pine		0							6
1,980	1,577	161	242	Total Forested Acres	90	71	11	63	18	92	47		11
	80%	8%	12%	Relative Percent									

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

Site No.	Dominant Site Cond Availability	Dominant Site Condition	Acres	Other Site Condition	Other Site Condition	Other Site Condition	Other Site Condition
1	Available	5B: Maintain for regeneration purposes	25	Unspecified	Unspecified	Unspecified	Unspecified
<p>Comments: managing for mix of species and for understory species age class...allow spruce to die off over time. (just there for wildlife cover)</p>							

Report 4 – Site Conditions

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2	Unavailable	5E: Long-Term Retention	2	3D: Recreational / Scenic values	Unspecified	Unspecified	Unspecified
Comments:							
3	Available	5B: Maintain for regeneration purposes	19	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
4	Available	5B: Maintain for regeneration purposes	10	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Let the aspen die off naturally, releasing hardwoods (sugar maple) to take over the site.							
5	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	11	2G: Too wet (sensitive soils, does not include access issues)	3D: Recreational / Scenic values	Unspecified	Unspecified
Comments:							
6	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	11	3D: Recreational / Scenic values	5B: Maintain for regeneration purposes	Unspecified	Unspecified
Comments:							
7	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	9	2G: Too wet (sensitive soils, does not include access issues)	5B: Maintain for regeneration purposes	3D: Recreational / Scenic values	Unspecified
Comments:							

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8	Unavailable	5E: Long-Term Retention	2	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
9	Unavailable	5E: Long-Term Retention	3	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
10	Unavailable	3L: Other wildlife concerns	22	3D: Recreational / Scenic values	Unspecified	Unspecified	Unspecified
Comments: Some nice small natural openings. Betsie pathway goes thru stand in a few spots. Manage for recreation and wildlife cover use...allow spruce grow on longer as it is doing ok for now.							
11	Unavailable	3L: Other wildlife concerns	8	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
12	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	8	1A: Federal/State/Local Law	Unspecified	Unspecified	Unspecified
Comments: betsie river floodplain, natural river							
13	Unavailable	2F: Too steep	11	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							

Report 4 – Site Conditions

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14	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	19	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
15	Available	5B: Maintain for regeneration purposes	15	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
16	Available	5B: Maintain for regeneration purposes	6	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
18	Available	5B: Maintain for regeneration purposes	15	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
19	Unavailable	3L: Other wildlife concerns	13	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
20	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	31	2F: Too steep	Unspecified	Unspecified	Unspecified
Comments:							

Report 4 – Site Conditions

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21	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	25	2G: Too wet (sensitive soils, does not include access issues)	Unspecified	Unspecified	Unspecified
Comments:							
22	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	16	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Betsie River and floodplain							
23	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	25	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
24	Unavailable	3L: Other wildlife concerns	4	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
25	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	6	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
26	Unavailable	5E: Long-Term Retention	3	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							

Report 4 – Site Conditions

Traverse City Mgt. Unit

Craig Allen : Examiner

Compartment: 29

Year of Entry: 2022

27	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	65	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
28	Unavailable	3D: Recreational / Scenic values	18	5E: Long-Term Retention	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	Riparian Area	A transitional area between aquatic and terrestrial ecosystems in which the terrestrial ecosystem influences the aquatic ecosystem and vice-versa. Because of the unique conditions adjacent to lakes, streams and open water wetlands, riparian areas harbor a high diversity of plants and wildlife. Riparian communities are ecologically and socially significant in their effects on water quality and quantity, as well as aesthetics, habitat, bank stability, timber production, and their contribution to overall biodiversity.
HCVA	Natural Rivers	There are two Natural Rivers datasets which are derived from spatial buffers set from an established and approved distance from the river centerlines. The Natural Rivers Zoning District is a 400 foot buffer for most Natural Rivers. The Vegetative Buffer ranges from 25 to 100 feet. To view specific Zoning Districts and Vegetative Buffers for each Natural River see the table located on the I:\Documentation\GDSE data folder.



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments			
1	4112 - Maple, Beech, Cherry Association	Sawtimber Medium	23.9	101	51-80	N/A	Contains springs & ravines....feeding into Betsie River Humicky ground--high water table. Scattered hemlock and a few yellow birch and ash.			
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species		Density	Avg. Height	Size
Sugar Maple		50	Log/Pole	12	101	Sugar Maple		Medium	Variable	Sapling
Red Maple		40	Log/Pole	12		Red Maple		Medium	Variable	Sapling
Bigtooth Aspen		5	Log/Pole	10	72	Beech		Low	Variable	Sapling
2	4130 - Aspen	Sapling Well	32.8	21	Unspecified	N/A				
Canopy Species		% Cover	Size Class	DBH	Age					
Red Maple		15	Sapling	2	21					
Quaking Aspen		40	Sapling	2	21					
Bigtooth Aspen		35	Sapling	3	21					
Black Cherry		10	Sapling	2	21					
3	4130 - Aspen	Poletimber Well	9.2	53	51-80	N/A	Mostly upland, some wet areas and creeks/springs feeding into Betsie River.			
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species		Density	Avg. Height	Size
Sugar Maple		30	Pole/Log	8		Sugar Maple		High	Variable	Sapling
Quaking Aspen		70	Pole/Log	8	53	Hemlock		Medium	>20 feet	Pole
						Ironwood		High	Variable	Sapling
4	6119 - Mixed Lowland Deciduous Forest	Sawtimber Well	25.3	75	1-50	N/A				
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species		Density	Avg. Height	Size
Sugar Maple		25	Log/Pole	10		Sugar Maple		High	Variable	Sapling
Red Maple		25	Log/Pole	12	75	Sugar Maple		High	Variable	Pole
Yellow Birch		5	Pole/Log	9		Hemlock		High	>20 feet	Pole
Basswood		15	Log/Pole	11		Ironwood		High	Variable	Sapling
Bigtooth Aspen		25	Log/Pole	10						
Hemlock		5	Log/Pole	12						
5	6229 - Mixed lowland shrub	Nonstocked	16.4		Unspecified	No	Lowland shrub along edges Betsie River.			
6	310 - Herbaceous Openland	Nonstocked	1.0		Unspecified	No				



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
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7 4112 - Maple, Beech, Cherry Association Sawtimber Well 30.9 94 81-110 N/A

Canopy Species	% Cover	Size Class	DBH	Age
Sugar Maple	25	Log/Pole	13	94
Red Maple	30	Log/Pole	13	94
Yellow Birch	5	Log/Pole	11	
Beech	5	Log/Pole	13	
Northern White Cedar	5	Pole/Log	9	
Hemlock	10	Pole/Log	9	
Black Cherry	20	Log/Pole	13	

Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	Medium	Variable	Sapling
Beech	Medium	Variable	Sapling
Hemlock	High	Variable	Sapling
Hemlock	High	Variable	Pole
Ironwood	Medium	Variable	Sapling

8 4110 - Sugar Maple Association Sawtimber Well 17.3 116 81-110 N/A

Canopy Species	% Cover	Size Class	DBH	Age
Sugar Maple	70	Log/Pole	13	116
Red Maple	10	Log/Pole	13	
Black Cherry	20	Log/Pole	13	

Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	Low	Variable	Sapling
Sugar Maple	Low	Variable	Pole
Ironwood	Low	Variable	Sapling

9 3204 - Mast Producing Shrub Nonstocked 24.4 Unspecified No

Sub-Canopy Species	Density	Avg. Height	Size
Mixed Grasses	Low		Non-Wood
St. Johns Wort	Low		Non-Wood
Cladonia (Reindeer moss)	Low		Non-Wood
Sugar Maple	Low		Pole
Sheep Sorrel	Low		Non-Wood
Black Cherry	Low		Pole
Spotted Knapweed	Low		Non-Wood
Serviceberry (Juneberry)	Low		
Apple (spp.)	Trace		Pole
Poverty Grass	Medium		Non-Wood

Ragweed, strawberry, bracken, rubus, qa poles, juniper, honeysuckle, hawkweed, lycopodium around some trees, Lombardy poplar along road. Also some black walnut and chestnut near north end.

10 4110 - Sugar Maple Association Sawtimber Well 44.1 89 81-110 N/A

Canopy Species	% Cover	Size Class	DBH	Age
Sugar Maple	55	Log/Pole	14	89
Red Maple	10	Log/Pole	13	
Yellow Birch	5	Pole/Log	9	
Basswood	20	Log/Pole	13	
Black Cherry	10	Log/Pole	12	

Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	High	Variable	Sapling
Hemlock	Low	Variable	Pole
Black Cherry	Medium	5 - 10 feet	Sapling
Ironwood	Medium	Variable	Sapling

Several springs that feed into Betsie River. Lots of ground, indicator plants. Also has occasional elm, paper birch, beech.



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments																																													
11	4139 - Aspen, Mixed Deciduous	Sawtimber Well	9.5	67	51-80	N/A	Lots of ground floramost fragile soils..especially west.Lots of wet areas draining into a spring & creek that flows to Betsie River.																																													
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12	4112 - Maple, Beech, Cherry Association	Poletimber Well	19.0	89	81-110	N/A	Betsie River pathway runs through stand and along many edges of stand.																																													
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13	4112 - Maple, Beech, Cherry Association	Sawtimber Well	24.0	89	51-80	N/A	Was thinned in Spring of 2011. Select marked.Betsie River Pathway goes through middle of stand.Also contains some yellow birch & cherry.																																													
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14	3204 - Mast Producing Shrub	Nonstocked	38.3		Unspecified	No	Old orchards.																																													
15	42311 - Planted Spruce, Mixed Deciduous	Poletimber Medium	24.5	61	51-80	N/A	Most of hardwood overstory component was cut for regeneration in spring of 2002.																																													
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16	42101 - Planted White Pine, Mixed Deciduous	Poletimber Well	5.1	58	111-140	N/A																																														
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17	310 - Herbaceous Openland	Nonstocked	0.9		Unspecified	No																																														



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
18	4139 - Aspen, Mixed Deciduous	Poletimber Well	91.6	37	Unspecified	N/A	
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	
Sugar Maple		10	Pole/Sapling	6	37	Black Cherry	
American Elm		5	Pole/Sapling	6	37	Ironwood	
Red Maple		15	Pole/Sapling	6	37		
Quaking Aspen		25	Pole/Sapling	6	37		
Bigtooth Aspen		25	Pole/Sapling	6	37		
Black Cherry		20	Pole/Sapling	6	37		
Sub-Canopy Species		Density	Avg. Height	Size			
Black Cherry		Medium	< 5 feet	Sapling			
Ironwood		Medium	< 5 feet	Sapling			
19	42310 - Planted Spruce	Poletimber Well	21.9	59	51-80	N/A	Betsie vally Pathway goes thru stand in a couple locations.
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	
White Spruce		95	Pole	9	59	Red Maple	
Black Cherry		5	Pole	7		Beech	
						White Spruce	
Sub-Canopy Species		Density	Avg. Height	Size			
Red Maple		Low	5 - 10 feet	Sapling			
Beech		Low	5 - 10 feet	Sapling			
White Spruce		Low	5 - 10 feet	Sapling			
20	310 - Herbaceous Openland	Nonstocked	1.0		Unspecified	No	
21	310 - Herbaceous Openland	Nonstocked	0.9		Unspecified	No	
22	42110 - Planted Red Pine	Poletimber Medium	5.2	56	51-80	N/A	
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	
Red Pine		90	Log/Pole	10	56	Beech	
Black Cherry		10	Log/Pole	10	56	Red Pine	
Sub-Canopy Species		Density	Avg. Height	Size			
Beech		Low	< 5 feet	Sapling			
Red Pine		Medium	< 5 feet	Sapling			
23	4112 - Maple, Beech, Cherry Association	Sawtimber Well	22.7	71	81-110	N/A	Betsie River Pathway goes through stand.
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	
Sugar Maple		40	Log/Pole	10	71	Sugar Maple	
Red Maple		37	Log/Pole	10	71	Red Maple	
Basswood		10	Log/Pole	10	71	Ironwood	
Bigtooth Aspen		3	Log/Pole	11		Witch Hazel	
Black Cherry		10	Log/Pole	10	71		
Sub-Canopy Species		Density	Avg. Height	Size			
Sugar Maple		High	Variable	Sapling			
Red Maple		Medium	Variable	Sapling			
Ironwood		Low	Variable	Sapling			
Witch Hazel		Low	Variable	Tall Shrub			
24	42320 - Upland Spruce	Poletimber Well	13.3	58	81-110	N/A	Diverse mix of species and canopy levels...looking good. Spruce was planted in 1963 between existing hardwoods.
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	
Sugar Maple		10	Log/Pole	10		White Spruce	
Red Maple		10	Pole/Log	9	91		
Basswood		10	Log/Pole	11			
White Spruce		60	Pole	7	58		
Black Cherry		10	Pole/Log	9			
Sub-Canopy Species		Density	Avg. Height	Size			
White Spruce		High	Variable	Sapling			



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
25	4110 - Sugar Maple Association	Sawtimber Well	23.9	91	81-110	N/A	
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	
Sugar Maple		70	Log/Pole	14	91	Sugar Maple	
Red Maple		5	Log/Pole	12		Medium	
Basswood		15	Log/Pole	12		Variable	
Beech		5	Log/Pole	14		Sapling	
Black Cherry		5	Log/Pole	12		High	
						< 5 feet	
						Sapling	
26	4130 - Aspen	Poletimber Well	37.5	47	Unspecified	N/A	
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	
Red Maple		10	Pole	8		Sugar Maple	
Quaking Aspen		35	Pole	8	47	Medium	
Bigtooth Aspen		30	Pole	9	47	Variable	
Black Cherry		25	Pole	8		Sapling	
						Medium	
						Variable	
						Sapling	
27	42101 - Planted White Pine, Mixed Deciduous	Poletimber Medium	2.1	56	81-110	N/A	
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	
Red Maple		10	Pole	7		Ironwood	
Basswood		10	Log/Pole	16		High	
White Pine		80	Pole	9	56	Variable	
						Sapling	
						Medium	
						5 - 10 feet	
						Tall Shrub	
28	4112 - Maple, Beech, Cherry Association	Sawtimber Well	11.3	91	51-80	N/A	
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	
Sugar Maple		50	Log/Pole	11	91	Sugar Maple	
Red Maple		25	Log/Pole	11	91	Medium	
Basswood		15	Log/Pole	11		High	
Bigtooth Aspen		5	Pole/Log	8		Variable	
Black Cherry		5	Log/Pole	11		Sapling	
29	42310 - Planted Spruce	Poletimber Well	4.3	61	81-110	N/A	
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	
Bigtooth Aspen		5	Log/Pole	11		Witch Hazel	
White Spruce		85	Pole	8	61	Low	
Black Cherry		10	Log/Pole	12		5 - 10 feet	
						Tall Shrub	
30	3105 - Mixed Upland Herbaceous	Nonstocked	9.8		Unspecified	No	
31	3105 - Mixed Upland Herbaceous	Nonstocked	15.4		Unspecified	No	Scattered old apple trees.



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments		
32	42110 - Planted Red Pine	Sawtimber Well	4.5	90	111-140	N/A			
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
White Pine		20	Log/Pole	11		Black Cherry	Low	< 5 feet	Sapling
Red Pine		70	Log/Pole	11	90				
Jack Pine		10	Pole	8					
33	3105 - Mixed Upland Herbaceous	Nonstocked	21.5		Unspecified	No	Contains some old orchard trees scattered throughout opening.		
34	4110 - Sugar Maple Association	Sawtimber Well	59.5	92	81-110	N/A	Thinning completed March of 2012 in the west central portion of the stand. North 18 acres of this stand were added by acquisition later in 2012. Some of that new area was thinned by previous owner prior to State acquisition.		
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple		65	Log/Pole	13	92	Sugar Maple	Medium	Variable	Sapling
Red Maple		10	Log/Pole	13		Sugar Maple	Medium	Variable	Pole
Basswood		15	Log/Pole	13		Hemlock	Medium	Variable	Pole
Black Cherry		5	Log/Pole	13					
Hemlock		5	Pole/Log	9					
35	4130 - Aspen	Poletimber Well	15.9	28	Unspecified	N/A			
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Quaking Aspen		100	Pole/Sapling	5	28	Black Cherry	Medium	< 5 feet	Sapling
36	4130 - Aspen	Sapling Well	35.6	5	1-50	N/A	also contains some scattered sugar maple and elm. Stand was harvested in April, 2016		
Canopy Species		% Cover	Size Class	DBH	Age				
White Pine		10	Log/Pole	11	76				
Bigtooth Aspen		60	Sapling	1	5				
Red Maple		30	Sapling	1	5				
37	42110 - Planted Red Pine	Poletimber Well	5.9	58	141-170	N/A			
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Red Pine		100	Pole/Log	9	58	Ironwood	Low	Variable	Sapling
						Witch Hazel	Low	Variable	Tall Shrub
38	42110 - Planted Red Pine	Sapling Well	29.7	26	1-50	N/A			
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Red Pine		60	Sapling/Pole	4	26	Jack Pine	Medium	Variable	Sapling
Jack Pine		25	Sapling/Pole	4	26	Black Cherry	Medium	Variable	Sapling
Black Cherry		15	Sapling/Pole	3	26				
39	4110 - Sugar Maple Association	Sapling Well	4.6	32	Immature	N/A			
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple		90	Sapling	3	32	Sugar Maple	High	Variable	Sapling
Beech		10	Sapling	3	32				



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments																																									
40	4139 - Aspen, Mixed Deciduous	Sapling Well	26.8	7	Immature	N/A	Harvested march of 2014. Many scattered mature leave trees of sugar maple and mix of other species were left uncut.																																									
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Ironwood	5	Sapling	1																																													
41	4119 - Mixed Northern Hardwoods	Poletimber Well	5.9	91	81-110	N/A	Elm regen & many pole size trees present too.																																									
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42	110 - Low Intensity Urban	Nonstocked	1.0		Unspecified	No	This is basically Joyfield Rd and very small opening adjacent to road.																																									
43	42320 - Upland Spruce	Poletimber Medium	19.4	58	51-80	N/A	Betsie River pathway runs through center of stand.																																									
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44	4191 - Mixed Upland Deciduous with Conifer	Poletimber Well	37.8	28	51-80	N/A																																										
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45	42311 - Planted Spruce, Mixed Deciduous	Poletimber Well	7.6	58	51-80	N/A	Many scattered old apple orchard trees. Many nice natural openings.																																									
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46	4130 - Aspen	Poletimber Well	10.7	66	Unspecified	N/A	This area had old homesteading site of some sort--had orchard trees, some old clearings, a couple old walnut trees.. Also, where an old bridge use to cross Betsie River.	
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species		
Sugar Maple		10	Pole/Log	9		Sugar Maple		
Red Maple		15	Pole/Log	9		White Ash		
Bigtooth Aspen		60	Pole/Log	9	66	Beech		
Hemlock		5	Pole	5		Black Cherry		
Black Cherry		10	Pole/Log	9		Ironwood		
						Density		
						Avg. Height		
						Size		
47	42311 - Planted Spruce, Mixed Deciduous	Poletimber Well	99.1	58	51-80	N/A	In addition, the stand contains scattered large diameter red maple, white pine, sugar maple, cherry, basswood. Also has some scattered smaller diameter birch and elm.	
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species		
Quaking Aspen		20	Pole/Sapling	6	29	White Spruce		
White Spruce		60	Pole/Log	8	58	Witch Hazel		
Black Cherry		10	Pole/Sap/Log	6				
Basswood		5	Pole/Sap/Log	6				
						Density		
						Avg. Height		
						Size		
48	42110 - Planted Red Pine	Poletimber Well	10.3	61	111-140	N/A		
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species		
White Pine		10	Pole	6		Beech		
Red Pine		85	Pole/Log	9	61	Witch Hazel		
Black Cherry		5	Log/Pole	11				
						Density		
						Avg. Height		
						Size		
49	42100 - Planted White Pine	Poletimber Well	2.3	71	81-110	N/A		
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species		
White Pine		100	Log/Pole	10	71	Sugar Maple		
						Black Cherry		
						Ironwood		
						Density		
						Avg. Height		
						Size		
50	42111 - Planted Red Pine, Mixed Deciduous	Poletimber Well	11.0	58	171-200	N/A		
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species		
Basswood		5	Log/Pole	13		Sugar Maple		
Red Pine		80	Pole/Log	9	58	Witch Hazel		
Black Cherry		10	Log/Pole	13				
Quaking Aspen		5	Log/Pole	12				
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Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments																																														
51	42100 - Planted White Pine	Poletimber Medium	9.0	58	81-110	N/A																																															
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52	4319 - Mixed Upland Forest	Poletimber Well	8.2	56	81-110	N/A																																															
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54	3105 - Mixed Upland Herbaceous	Nonstocked	19.8		Unspecified	No	Betsie River Pathway runs across many locations of this opening. Some old apple orchard trees scattered about.																																														
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56	623 - Emergent Wetland	Nonstocked	4.3		Unspecified	No																																															
57	42200 - Natural White Pine	Sawtimber Well	2.4	108	81-110	N/A																																															
<table border="1"> <thead> <tr> <th>Canopy Species</th> <th>% Cover</th> <th>Size Class</th> <th>DBH</th> <th>Age</th> </tr> </thead> <tbody> <tr> <td>Red Maple</td> <td>15</td> <td>Pole</td> <td>8</td> <td></td> </tr> <tr> <td>White Pine</td> <td>85</td> <td>Log/Pole</td> <td>18</td> <td>108</td> </tr> </tbody> </table>		Canopy Species	% Cover	Size Class	DBH	Age	Red Maple	15	Pole	8		White Pine	85	Log/Pole	18	108	<table border="1"> <thead> <tr> <th>Sub-Canopy Species</th> <th>Density</th> <th>Avg. Height</th> <th>Size</th> </tr> </thead> <tbody> <tr> <td>Red Maple</td> <td>Medium</td> <td>Variable</td> <td>Sapling</td> </tr> </tbody> </table>		Sub-Canopy Species	Density	Avg. Height	Size	Red Maple	Medium	Variable	Sapling																											
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Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
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58 42101 - Planted White Pine, Mixed Deciduous Poletimber Well 17.6 61 81-110 N/A two ages....Hardwoods were cut in 1980. Pine was not harvested at that time...so pine is older

Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Red Maple	15	Pole	8	41	Black Cherry	Low	Variable	Sapling
Quaking Aspen	20	Pole	8	41	Witch Hazel	Low	Variable	Tall Shrub
White Pine	65	Pole/Log	9	61				

59 4119 - Mixed Northern Hardwoods Sawtimber Well 39.4 56 81-110 N/A Betsie Valley Trail passes through stand in many locations.

Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	20	Log/Pole	11		White Spruce	Low	Variable	Sapling
Red Maple	20	Log/Pole	11		Ironwood	Medium	Variable	Pole
Basswood	20	Log/Pole	13	91	Ironwood	High	Variable	Sapling
Bigtooth Aspen	5	Pole/Log	8		Witch Hazel	Low	Variable	Tall Shrub
White Spruce	30	Pole	8	56				
Black Cherry	5	Log/Pole	10					

60 42201 - Natural White Pine, Mixed Deciduous Poletimber Well 1.6 56 81-110 N/A

Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Red Maple	15	Pole/Log	9		Red Maple	Low	Variable	Sapling
Quaking Aspen	25	Pole	8		Ironwood	Low	Variable	Sapling
White Pine	60	Pole	9	56	Witch Hazel	Low	Variable	Tall Shrub

61 6119 - Mixed Lowland Deciduous Forest Poletimber Well 1.1 71 Unspecified N/A

Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
American Elm	40	Pole	5	71	Black Ash	Medium	Variable	Sapling
Red Maple	40	Pole	5	71	Alder	Medium	Variable	Tall Shrub
Black Ash	20	Pole	4					

62 3105 - Mixed Upland Herbaceous Nonstocked 12.8 Unspecified No Opening used for logging landings in the past and will be used for this purpose in future.

63 330 - Low-Density Trees Nonstocked 6.2 Unspecified No Old farm field slowly filling-in with white pine.



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
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64	4110 - Sugar Maple Association	Sawtimber Well	24.6	91	51-80	N/A	
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Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	50	Log/Pole	14	91	Beech	Low	Variable	Sapling
Red Maple	10	Log/Pole	14	91	Ironwood	Medium	Variable	Pole
Basswood	31	Log/Pole	12	91	Ironwood	High	Variable	Sapling
Beech	3	Log/Pole	12	91				
Bigtooth Aspen	3	Log/Pole	10	91				
Black Cherry	3	Log/Pole	12					

65	4130 - Aspen	Poletimber Well	5.6	61	Unspecified	N/A	
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Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	10	Log/Pole	11		Sugar Maple	High	Variable	Sapling
Basswood	20	Log/Pole	11		Ironwood	Medium	Variable	Pole
Quaking Aspen	70	Pole/Log	9	61	Ironwood	High	Variable	Sapling

66	42140 - Planted Mixed Pine	Sawtimber Well	2.6	90	51-80	N/A	
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Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
White Pine	50	Log/Pole	14	90	Sugar Maple	Low	Variable	Sapling
Red Pine	50	Log/Pole	14	90	White Pine	Low	Variable	Sapling

67	4116 - Mixed N. Hardwood - Aspen	Sapling Well	29.1	6	1-50	N/A	
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Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	25	Sapling	1	6	Witch Hazel	Low	Variable	Tall Shrub
Red Maple	20	Sapling	1	6				
Basswood	30	Sapling	1	6				
Quaking Aspen	25	Sapling	1					

69	4133 - Aspen, Mixed Pine	Poletimber Well	15.2	56	81-110	N/A	Betsie River trail and connector to Crystal mountain trail goes through stand.
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Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	10	Log/Pole	11		Ironwood	Medium	Variable	Sapling
Red Maple	7	Log/Pole	11		Witch Hazel	Low	Variable	Tall Shrub
Quaking Aspen	40	Pole/Log	9	56	Sugar Maple	High	Variable	Sapling
White Pine	40	Pole/Log	8	56	Beech	Low	Variable	Sapling
Basswood	3	Log/Pole	11					

70	4130 - Aspen	Poletimber Well	15.4	56	Unspecified	N/A	
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Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	5	Pole	7		Sugar Maple	Medium	Variable	Sapling
Basswood	15	Log/Pole	12		Ironwood	Medium	Variable	Sapling
Quaking Aspen	75	Pole/Log	8	56	Witch Hazel	High	Variable	Tall Shrub
Black Cherry	5	Pole	7		American Elm	Low	Variable	Sapling



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments		
72	42110 - Planted Red Pine	Sawtimber Well	20.0	74	201+	N/A			
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
White Pine		15	Pole/Log	8	74	Sugar Maple	Low	Variable	Sapling
Red Pine		85	Log/Pole	12	74	White Pine	Low	Variable	Sapling
73	3204 - Mast Producing Shrub	Nonstocked	29.4		Unspecified	No	Old orchards.		
74	42110 - Planted Red Pine	Poletimber Well	14.0	68	141-170	N/A			
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Red Pine		100	Log/Pole	12	68	Sugar Maple	Medium	Variable	Sapling
						Beech	Medium	Variable	Sapling
75	42220 - Natural Jack Pine	Sapling Well	16.9	27	Unspecified	N/A	some scattered old apple trees.		
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Jack Pine		85	Sapling	3	27	Sugar Maple	Low	Variable	Sapling
Black Cherry		15	Sapling	3		Beech	Low	Variable	Sapling
						Black Cherry	Low	Variable	Sapling
76	3301 - Low Density Deciduous Trees	Nonstocked	8.3		Unspecified	No			
77	42120 - Planted Jack Pine	Poletimber Well	6.4	67	81-110	N/A			
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Jack Pine		100	Pole	7	67	Sugar Maple	Low	Variable	Sapling
						Beech	Low	Variable	Sapling
						White Pine	Medium	Variable	Sapling
						Red Pine	Low	Variable	Sapling
79	42101 - Planted White Pine, Mixed Deciduous	Poletimber Well	14.4	58	81-110	N/A	also contains some scattered sugar maple and elm.		
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Red Maple		5	Log/Pole	13	76	Ironwood	Medium	Variable	Sapling
Basswood		15	Log/Pole	12	76	Witch Hazel	Medium	Variable	Tall Shrub
Quaking Aspen		10	Pole	9					
White Pine		60	Pole/Log	9	58				
Black Cherry		10	Log/Pole	12	76				



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
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80	4139 - Aspen, Mixed Deciduous	Sapling Medium	58.2	31	Unspecified	N/A	
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Canopy Species	% Cover	Size Class	DBH	Age
Red Maple	15	Sapling/Pole	4	31
Quaking Aspen	25	Sapling/Pole	4	31
Bigtooth Aspen	30	Sapling/Pole	4	31
Black Cherry	20	Sapling/Pole	4	31
Ironwood	10	Sapling	3	31

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

Also contains some sugar maple.

81	4319 - Mixed Upland Forest	Poletimber Medium	4.1	58	1-50	N/A	
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Canopy Species	% Cover	Size Class	DBH	Age
Sugar Maple	5	Log/Pole	11	
Basswood	10	Log/Pole	11	
Quaking Aspen	20	Pole/Sapling	7	
White Pine	45	Pole/Sapling	7	58
Black Cherry	20	Log/Pole	10	

Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	High	Variable	Sapling
White Pine	Medium	Variable	Sapling
Ironwood	High	Variable	Sapling

82	6128 - Lowland Coniferous, Mixed Deciduous	Poletimber Well	10.7	99	1-50	N/A	Used for fishing access to Betsie River = recreational use.
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Canopy Species	% Cover	Size Class	DBH	Age
Red Maple	30	Log/Pole	13	
Northern White Cedar	35	Log/Pole	10	99
Hemlock	25	Log/Pole	10	
Quaking Aspen	10	Pole	8	

Sub-Canopy Species	Density	Avg. Height	Size
Northern White Cedar	Medium	>20 feet	Pole
Black Ash	Medium	Variable	Sapling

83	4112 - Maple, Beech, Cherry Association	Sawtimber Well	10.7	76	81-110	N/A	South side of M-22 has scattered red pine from failed plantation area...retain this for species diversity.
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Canopy Species	% Cover	Size Class	DBH	Age
Sugar Maple	60	Log/Pole	11	76
Red Maple	20	Log/Pole	11	
Basswood	5	Log/Pole	11	
White Ash	5	Log/Pole	10	
Red Pine	10	Pole/Sapling	8	

Sub-Canopy Species	Density	Avg. Height	Size
Ironwood	Medium	>20 feet	Pole
Ironwood	High	Variable	Sapling
Sugar Maple	Low	Variable	Pole

84	42111 - Planted Red Pine, Mixed Deciduous	Poletimber Well	21.8	58	111-140	N/A	
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Canopy Species	% Cover	Size Class	DBH	Age
Quaking Aspen	15	Pole	8	
Red Pine	80	Log/Pole	10	58
Black Cherry	5	Pole/Log	9	

Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	Medium	>20 feet	Pole
Sugar Maple	High	Variable	Sapling
Ironwood	Medium	Variable	Sapling



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
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85 4319 - Mixed Upland Forest Poletimber Well 11.2 58 51-80 N/A White pine was planted among and under existing hardwoods.

Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	15	Log/Pole	11	84	Sugar Maple	High	Variable	Sapling
Red Maple	5	Log/Pole	11		Ironwood	Medium	Variable	Sapling
Basswood	5	Log/Pole	11		Ironwood	Medium	Variable	Pole
Quaking Aspen	5	Pole/Log	8					
White Pine	50	Pole/Log	8	58				
Black Cherry	15	Log/Pole	10					
American Elm	5	Pole/Log	8					

86 4319 - Mixed Upland Forest Poletimber Well 5.2 58 81-110 N/A Much of lower branches of spruce are dead or in process of self pruning due to minimal sunlight.

Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	5	Log/Pole	11		Red Maple	Medium	Variable	Pole
Red Maple	15	Log/Pole	11		Red Maple	High	Variable	Sapling
Basswood	10	Log/Pole	11		White Spruce	Medium	Variable	Sapling
White Spruce	50	Pole	7	58	White Spruce	Medium	Variable	Pole
Black Cherry	15	Log/Pole	11					
American Elm	5	Pole	8					

87 4191 - Mixed Upland Deciduous with Conifer Poletimber Well 20.0 66 81-110 N/A

Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Red Maple	15	Log/Pole	11		Sugar Maple	High	Variable	Sapling
Basswood	5	Log/Pole	10		Red Maple	Low	Variable	Sapling
American Elm	5	Pole/Log	9		Ironwood	High	Variable	Sapling
Quaking Aspen	10	Pole/Log	8		Witch Hazel	Medium	10 - 20 feet	Tall Shrub
White Pine	35	Log/Pole	10	66				
Black Cherry	15	Log/Pole	10					
Sugar Maple	15	Log/Pole	11	91				

88 4110 - Sugar Maple Association Sawtimber Well 11.9 79 51-80 N/A

Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	70	Log/Pole	11	79	Sugar Maple	Low	>20 feet	Pole
Red Maple	5	Log/Pole	11		Ironwood	Medium	Variable	Pole
Basswood	15	Log/Pole	12		Ironwood	Full	Variable	Sapling
White Ash	5	Log/Pole	10		Serviceberry (Juneberry)	Medium	>20 feet	Tall Shrub
Black Cherry	5	Pole	8		Sugar Maple	Medium	Variable	Sapling

89 110 - Low Intensity Urban Nonstocked 0.9 Unspecified No Trailhead parking area for the Betsie River Pathway.



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
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90	4112 - Maple, Beech, Cherry Association	Sawtimber Well	6.6	87	81-110	N/A	
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Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	35	Pole/Log	9		Red Maple	Medium	Variable	Pole
Red Maple	40	Log/Pole	12	87	Ironwood	Medium	Variable	Pole
Basswood	5	Log/Pole	12		Ironwood	High	Variable	Sapling
Quaking Aspen	5	Pole/Log	9		Witch Hazel	Low	Variable	Tall Shrub
Black Cherry	15	Log/Pole	12					

91	3105 - Mixed Upland Herbaceous	Nonstocked	6.6		Unspecified	No	
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92	4119 - Mixed Northern Hardwoods	Poletimber Well	56.4	87	81-110	N/A	
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Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	5	Pole/Log	9		Red Maple	Medium	>20 feet	Pole
Red Maple	40	Log/Pole	12	87	Red Maple	High	Variable	Sapling
Basswood	5	Log/Pole	12		White Spruce	Medium	Variable	Pole
American Elm	5	Pole/Log	8		Ironwood	High	Variable	Sapling
Quaking Aspen	5	Pole/Log	9		Witch Hazel	High	Variable	Tall Shrub
White Spruce	30	Pole	8	59				
Black Cherry	10	Log/Pole	11					

Spruce was planted among and under hardwoods in old openings. Spruce still healthy although there are some spots that have broke-off spruce that is providing horizontal structure. Some small seedlings of spruce scattered.
Mix of species and canopy heights.

93	42200 - Natural White Pine	Sawtimber Medium	5.1	54	1-50	N/A	
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Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
White Pine	100	Log/Pole	11	54	Sugar Maple	Medium	Variable	Sapling
					Quaking Aspen	Medium	Variable	Sapling
					Black Cherry	Medium	Variable	Sapling
					Ironwood	Medium	Variable	Sapling

This stand was a part of the adjacent aspen harvest to the east...they just left all natural white pine in this area.

94	3105 - Mixed Upland Herbaceous	Nonstocked	1.5		Unspecified	No	
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Sub-Canopy Species	Density	Avg. Height	Size
Bracken Fern	Trace		Non-Wood
Poverty Grass	Medium		Non-Wood
Choke Cherry	Trace		
Pin Cherry	Low		
Blackberry/Raspberry	Low		Tall Shrub
Black Cherry	Low		Sapling
St. Johns Wort	Trace		Non-Wood
Unlisted - See Comments	Medium		
Spotted Knapweed	Low		Non-Wood

Unlisted species is goldenrod. Second unlisted species is ironwood saplings. hawkweed, straeberry, goats beard, shruby browsed IW, occ hawthorn seedling, occ sm pole/log, dogbane. Occ sedge pocket.



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
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95 4112 - Maple, Beech, Cherry Association Poletimber Well 69.7 79 51-80 N/A Some scattered natural openings

Canopy Species	% Cover	Size Class	DBH	Age
Sugar Maple	25	Log/Pole	10	
Red Maple	30	Pole/Log	9	79
Basswood	5	Log/Pole	10	
American Elm	5	Pole/Log	9	
Quaking Aspen	5	Pole	8	
Black Cherry	30	Pole/Log	9	

Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	High	Variable	Sapling
Red Maple	Medium	>20 feet	Pole
Ironwood	High	>20 feet	Pole
Ironwood	Full	Variable	Sapling
Witch Hazel	Low	5 - 10 feet	Tall Shrub

96 42110 - Planted Red Pine Poletimber Well 82.7 58 141-170 N/A Scattered cherry.

Canopy Species	% Cover	Size Class	DBH	Age
Red Pine	100	Pole	8	58

Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	High	Variable	Sapling
Ironwood	High	Variable	Sapling
Witch Hazel	Medium	10 - 20 feet	Tall Shrub
Beech	Medium	< 5 feet	Sapling

97 42101 - Planted White Pine, Mixed Deciduous Poletimber Well 59.5 58 111-140 N/A Most of hardwoods were cut or girdled in 1970's as a part of a TSI operation. Many of the cherry resprouted.

Canopy Species	% Cover	Size Class	DBH	Age
American Elm	5	Pole/Log	9	
Basswood	10	Log/Pole	12	
Quaking Aspen	5	Pole	8	
Bigtooth Aspen	10	Pole	8	
White Pine	60	Pole/Log	9	58
Black Cherry	10	Log/Pole	11	

Sub-Canopy Species	Density	Avg. Height	Size
Ironwood	High	Variable	Sapling
Ironwood	High	Variable	Pole
Witch Hazel	High	Variable	Tall Shrub

98 4119 - Mixed Northern Hardwoods Sawtimber Well 28.2 94 51-80 N/A

Canopy Species	% Cover	Size Class	DBH	Age
Sugar Maple	35	Log/Pole	13	94
Red Maple	30	Log/Pole	12	94
Basswood	20	Log/Pole	13	
Bigtooth Aspen	5	Log/Pole	11	
Black Cherry	10	Log/Pole	11	

Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	Medium	>20 feet	Pole
Sugar Maple	Medium	Variable	Sapling
Ironwood	Medium	>20 feet	Pole
Ironwood	Full	Variable	Sapling



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
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99	3303 - Mixed Low Density Trees	Nonstocked	19.6		Unspecified	No	Unlisted species is hoary alyssum. CSG, poverty grass, mullin, rp saps, rice grass, rubus, occ shrubby pine, occ rm pole/log. Small patches of bracken. A small patch of LBS. Occ choke cherry. Badger excavation.																																												
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Sheep Sorrel	Low		Non-Wood																																																
Unlisted - See Comments	Low																																																		

100	429 - Mixed Upland Conifers	Poletimber Well	8.2	58	51-80	N/A																																																																																		
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101	3301 - Low Density Deciduous Trees	Nonstocked	1.4		Unspecified	No	Unlisted species is goldenrod. Second unlisted species is ironwood. Hawkweed, mint sp, rose sp, moss, seedlings, occ elm pole, strawberry. Nice juneberries! Bear damaged juneberries.																																								
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103	42140 - Planted Mixed Pine	Poletimber Well	9.3	58	81-110	N/A																																																									
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104	4112 - Maple, Beech, Cherry Association	Sawtimber Well	6.5	87	81-110	N/A																																																									
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105	3105 - Mixed Upland Herbaceous	Nonstocked	8.9		Unspecified	No	Some cherry and juneberry.																																																								
106	42200 - Natural White Pine	Sawtimber Well	3.4	71	81-110	N/A																																																									
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108	42110 - Planted Red Pine	Poletimber Well	12.8	58	111-140	N/A																																																									
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109	42110 - Planted Red Pine	Poletimber Well	10.8	58	171-200	N/A	Betsie River Pathway runs through middle of stand.																																																								
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110	110 - Low Intensity Urban	Nonstocked	1.3		Unspecified	No	Utility ROW through lowland conifer stand.																																																								
111	110 - Low Intensity Urban	Nonstocked	7.7		Unspecified	No	M-115 highway																																																								



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments					
112	110 - Low Intensity Urban	Nonstocked	10.6		Unspecified	No	This is a powerline clearing. Unlisted species is hoary alyssum. Second unlisted species is golden rod.					
								Sub-Canopy Species	Density	Avg. Height	Size	
								Mixed Grasses	Low		Non-Wood	
								Spotted Knapweed	Low		Non-Wood	
								Poverty Grass	Low		Non-Wood	
								Bracken Fern	Medium		Non-Wood	
Unlisted - See Comments	Trace											
113	6229 - Mixed lowland shrub	Nonstocked	5.0			No	Lowland shrub along Betsie River.					
114	3204 - Mast Producing Shrub	Nonstocked	4.2		Unspecified	No	Old apple orchard with grass.					
115	42260 - Natural Pine, Mixed Deciduous	Sapling Well	7.3	26	Immature	N/A	Nice diverse mix of natural regen moving into this old opening.					
								Canopy Species	% Cover	Size Class	DBH	Age
								Red Pine	40	Sapling/Pole	4	26
								Jack Pine	30	Pole/Sapling	7	
								Black Cherry	20	Sapling/Pole	4	
Sugar Maple	10	Sapling/Pole	4									
116	42210 - Natural Red Pine	Sapling Medium	3.5	26	Immature	N/A	Nice diverse mix of natural regen moving into this old opening.					
								Canopy Species	% Cover	Size Class	DBH	Age
								Red Pine	65	Sapling/Pole	4	26
								Sugar Maple	10	Pole/Sapling	6	
								Black Cherry	5	Sapling/Pole	4	
								Jack Pine	5	Sapling/Pole	3	
White Pine	15	Sapling/Pole	4									