



Compartment Review Presentation

Traverse City Forest Management Unit

Compartment 61160

Entry Year 2024

Acreage: 2,542

County Kalkaska

Management Area: Boardman Plains

Stand Examiner: Paul Roell

Legal Description:

T27N R08W Sections 20, 21, 28 and 29

Identified Planning Goals:

Vegetation management in the Boardman Plains management area will provide forest products; maintain or enhance wildlife habitat; protect areas of unique character including the Boardman River (a designated natural river) and the Sand Lakes Quiet Area (a designated high conservation value area), threatened, endangered and special concern species; and provide for forest-based recreational uses. Timber management objectives for this 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 challenges within this 10-year planning period include: increased recreational pressure; 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 oak sites to mixed pine/oak sites.

Soil and topography:

Soils range from Rubicon sand to Kalkaska Loamy Sand. Topography is rolling hills with some relatively steep slopes. Topography will present management challenges in some areas.

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

Most of the compartment is contiguous state ownership with private property in Sections 20, 21 and 28. There are some oil and gas facilities within Section 20.

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 some areas of Archeological concern 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. 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:

The local Land Type Association (LTA), a pitted outwash plain, shows a history of wildfires and less frequently, windfalls. Consequently, in the past a variety of forest types and age classes were found, including: the entire spectrum of conifer dominated forests, jack pine and oak/pine savannas, to northern hardwoods in "fire shadow" areas. Presently, this area supports a mixture of oak stands (with a strong component of white pine), red and jack pine plantations, scattered aspen stands, upland brush and grass types, as well as several lakes and wetlands situated in ice block depressions. There are several natural stands of red pine in this compartment that should be maintained as potential sources of genetic diversity as well as important mature pine habitat. Future management of the various pine stands here should consider incorporating small (2-5 acre) islands that are left relatively un-thinned within mature stands to provide winter roosting cover for turkeys. Deciduous species should be encouraged within conifer plantations for diversity. This area should continue to be managed to perpetuate a variety of forest types and successional stages related to a fire prone community. This type of habitat mosaic supports wildlife species such as black bear, white-tailed deer, wild turkeys, pine warblers, northern goshawks, and box turtles. Several upland brush types and grassy openings have been prescribed for burning to promote

existing native warm season grasses and additional seeding to native species as needed. Timber prescriptions should be designed to incorporate leave trees and snags, as well as some downed logs, to mimic fire disturbance.

The southeast portion of the compartment is situated on a flat, excessively well drained outwash plain. This LTA is also a fire driven landscape supporting a similar mosaic of forest types and wildlife species as described above. Cuts in this community type should also be designed to leave all standing dead timber and scattered leave trees/islands for a component of structural diversity in regenerating stands of timber. Several openings will be treated with prescribed burns to stimulate existing little blue stem and other native species.

Mineral Resource and Development Concerns and/or Restrictions

The State-owned Smith Lake sand & gravel pit is two miles northeast. There is good potential for sand and gravel within the compartment, but any surface mining would need to avoid oil & gas infrastructure. The compartment is within the Silurian reef trend and several successful wells have been drilled in and around the compartment. Nearly all the wells have been plugged or temporarily abandoned. There may be potential for additional reef discoveries beneath the compartment as well as potential for gas storage. There is no known metallic mineral potential in this part of the state. The state does not own all the mineral rights within the compartment. Because the mineral estate is the dominant estate, reasonable access to the surface must be provided to private owners if they choose to explore or develop their mineral rights.

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 within Sections 20 and 21.

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.

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:

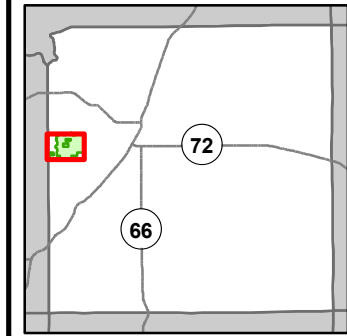
- Total Acres by Cover Type and Age Class**
- Cover Type by Harvest Method**
- Proposed Treatments – No Limiting Factors**
- Proposed Treatments – With Limiting Factors**
- Stand Details (Forested and Nonforested)**
- Dedicated and Proposed Special Conservation Areas**
- Site Condition Details**

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

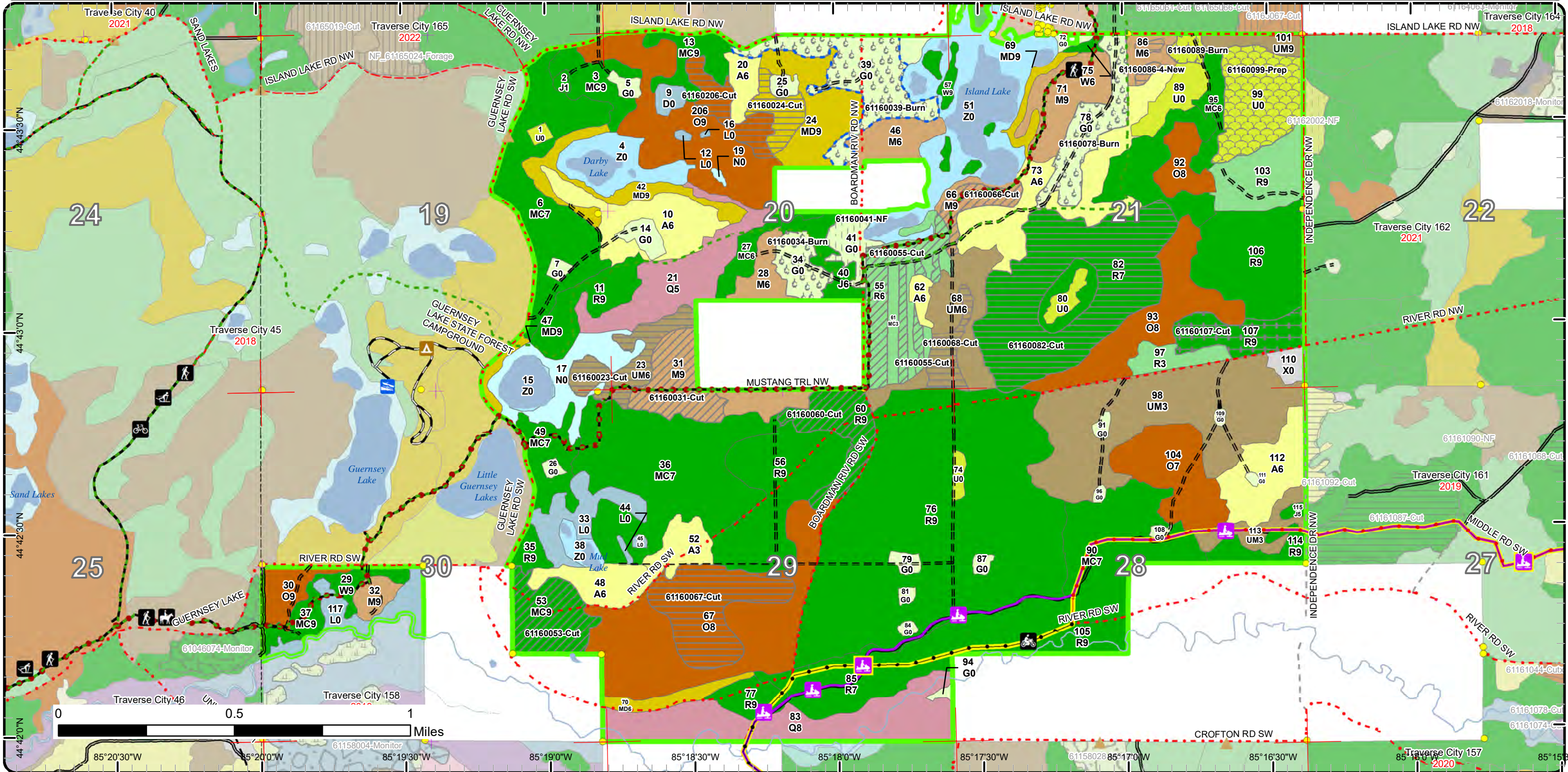
- Base feature information, stand boundaries, cover types, and numbers**
- Proposed treatments**
- Site condition boundaries**
- Details on the road access system**

Cover Type & Treatments Map

Compartment: 160
 T27N, R08W, Sec. 19-21, 28-30
 County: Kalkaska
 Unit: Traverse City
 Mgmt Area: Boardman Plains
 YOE: 2024
 Acres: 2541.6 GIS Calculated
 Examiner: Paul Roell
 Map Revised: 10/17/2022
 Map Phase: Post Review

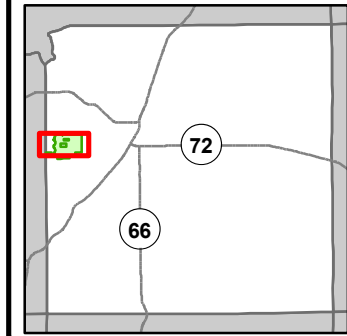


- Miris Corners
- + Remonumented Section Corners
- Survey Grade Corners
- Counties
- DNR - Primary Forest Road
- DNR - Secondary Forest Road
- DNR - Forest Access Route
- Federal / State - Dirt / Gravel Road
- County - Gravel Road
- County - Dirt Road (Seasonal)
- Private - Dirt / Gravel Road
- Hiking Trails
- Motorcycle Trails (SOS License)
- MCCCT Trails
- Snowmobile Trails
- Designated Hiking Trails
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- Designated Equestrian Trails
- Designated Ski Trails
- Designated Multi-Use Trails
- ORV License & Trail Permit
- Designated Snowmobile Trails
- Michigan Cross Country Cycle Trail (MCCCT)
- ▲ Berms
- Boating Access Site
- Culvert
- ▲ Campground
- Intermittent Stream
- Lake/Pond
- Perennial River
- Lakes and Rivers
- Compartment Boundary
- Treatments with Site Conditions
- Clearcut (w/Reserves)
- Harvest, Overstory Removal
- Prescribed Burn
- Thinning (Crown, Low, Systematic)
- Opening Maintenance
- 411 - Northern Hardwood
- 412 - Oak Types
- 413 - Aspen
- 419 - Mixed Upland Deciduous
- 421 - Planted Pines
- 422 - Natural Pines
- 430 - Upland Mixed Forest
- 612 - Lowland Coniferous Forest
- 110 - Low Intensity Urban
- 310 - Herbaceous Openland
- 330 - Low Density Trees
- 500 - Water
- 622 - Lowland Shrub
- 623 - Emergent Wetland

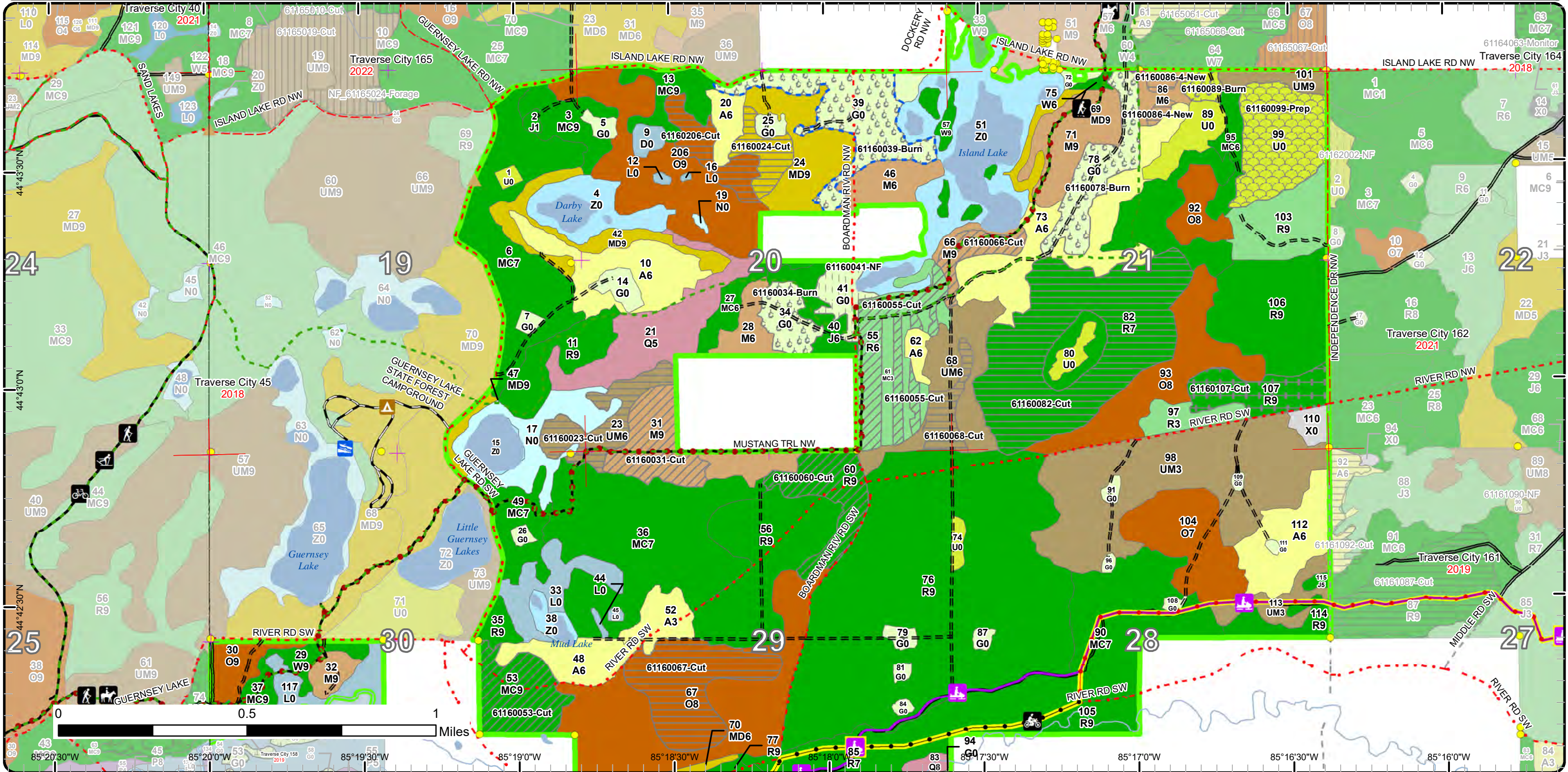


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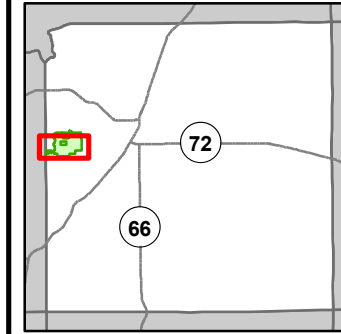


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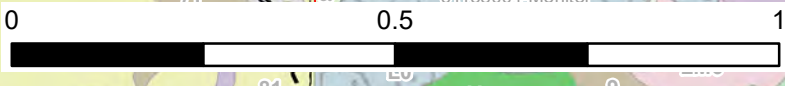
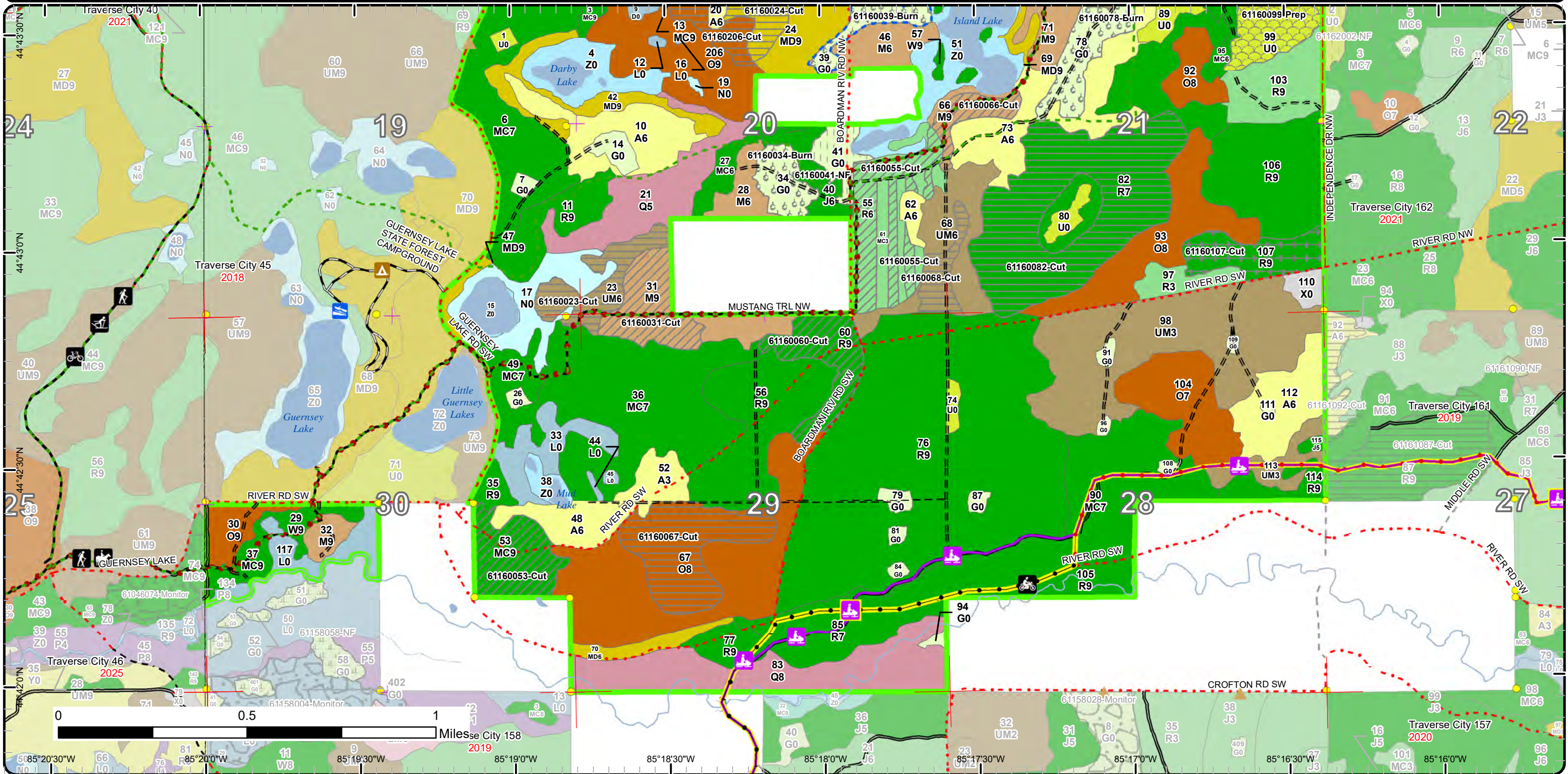


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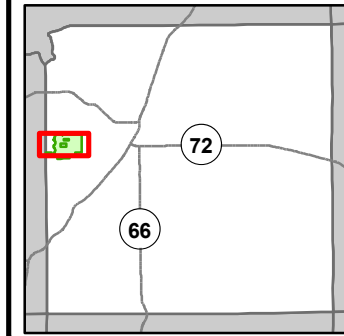
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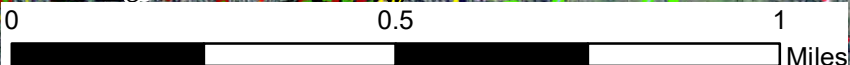
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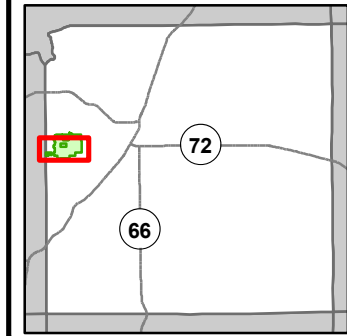


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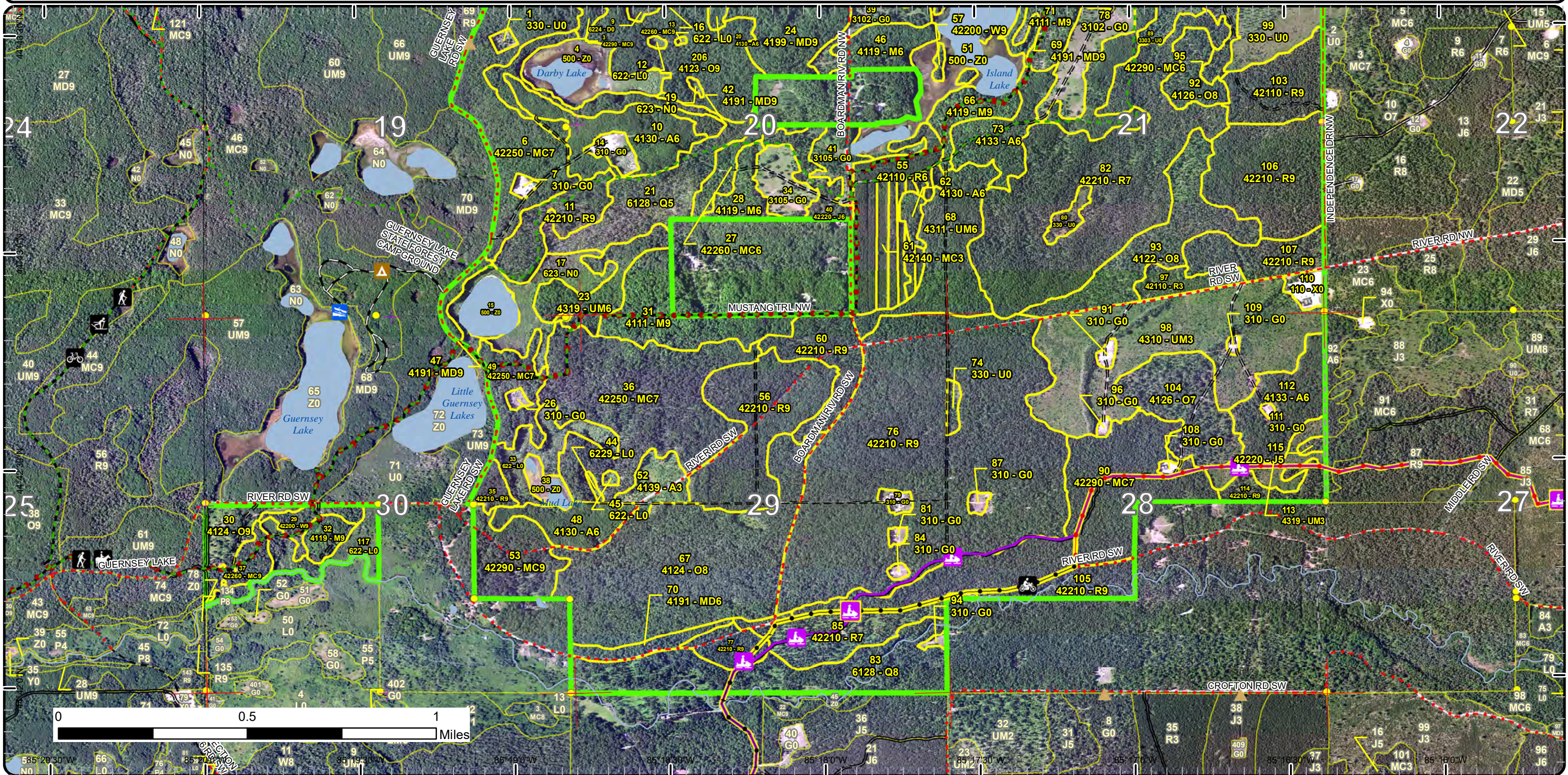


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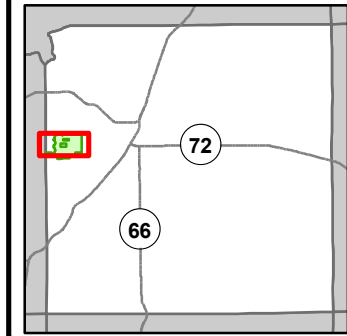


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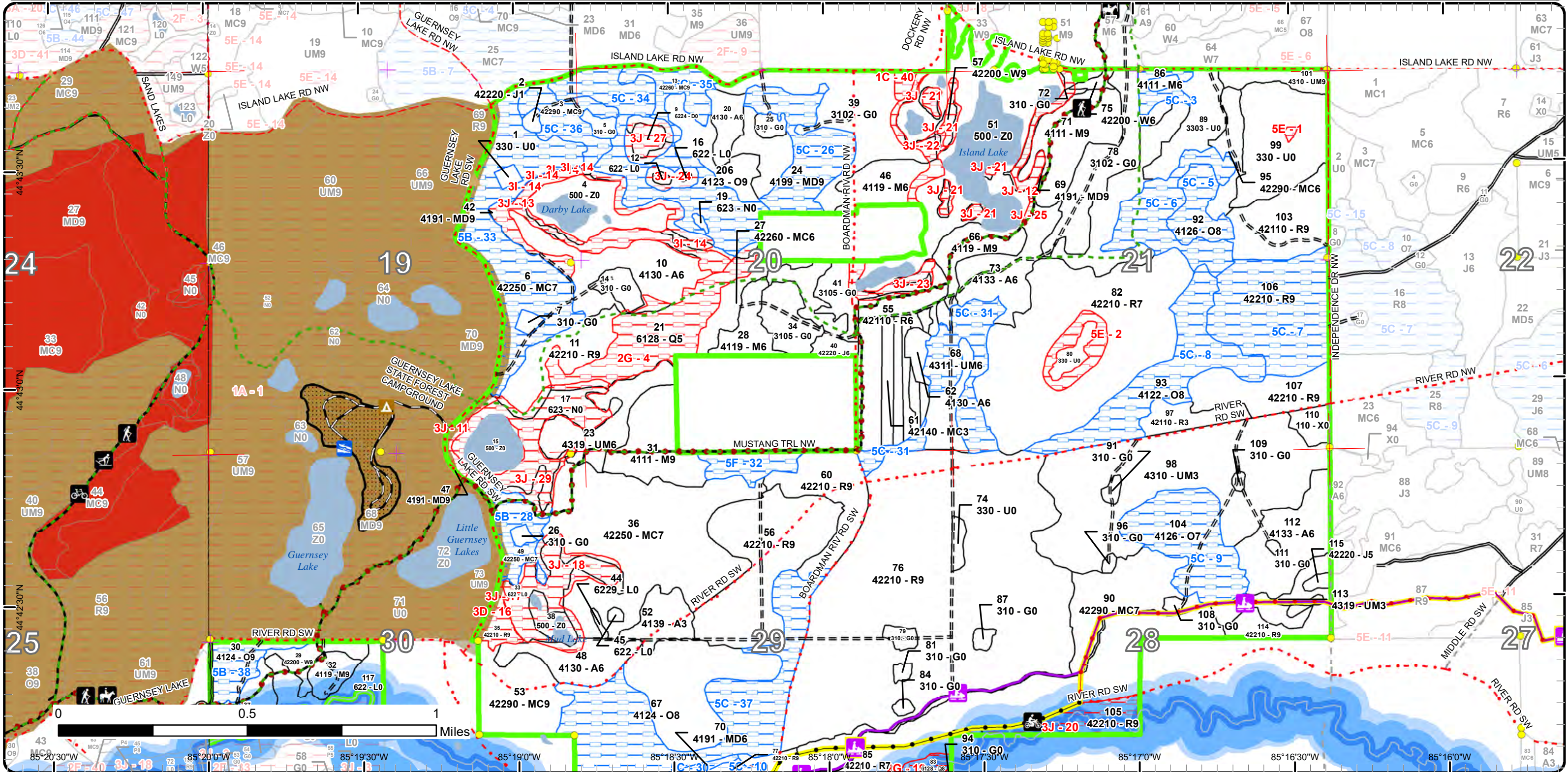


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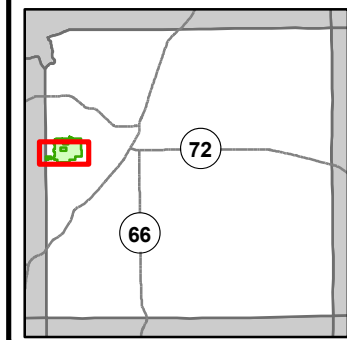


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- Compartment Boundary
- Available w/ Constraints
- 5B: Maintain for regeneration purposes
- 5C: Delay treatment for age/size class diversity or exceptional site quality
- Unavailable
- 1C: Other dept or div proc/practices
- 2G: Too wet (sensitive soils, does not include access issues)
- 3D: Recreational / Scenic values
- 3J: Water quality / BMPs (stream, river, or lake)
- 5E: Long-Term Retention
- Stand Boundaries
- SCA
- Ecological Reference Areas
- Natural Rivers Vegetative Buffer
- Natural Rivers Zoning District
- Forest Habitat Core Interior
- Dedicated Management Areas
- Cold Water Streams
- Cold Water Lakes
- High Priority Trout Stream Buffer
- State Forest Campground

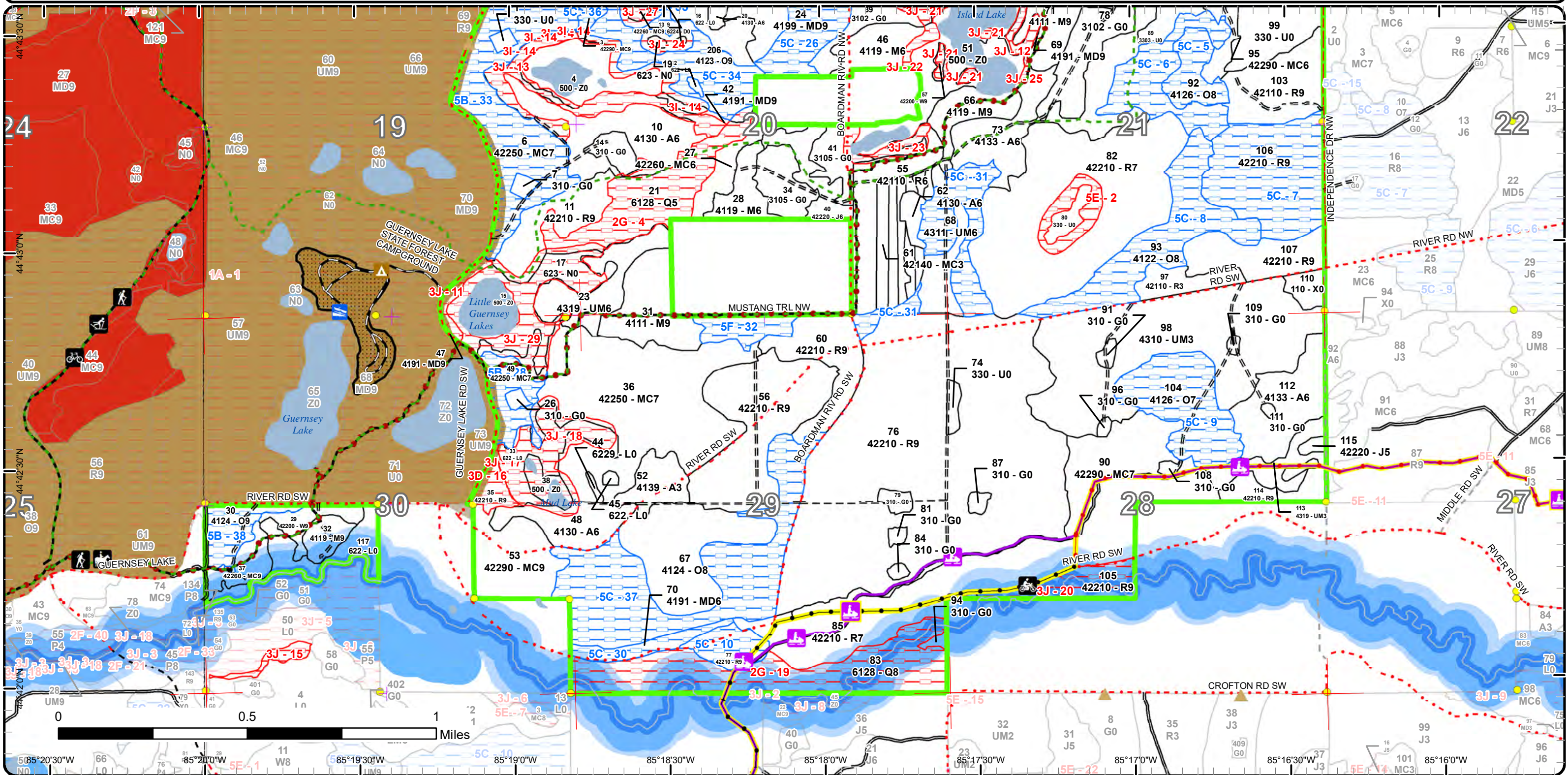


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Report 1 – Total Acres by Cover Type and Age Class



Age Class

	Non-Forest	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100-109	110-119	120-129	130-139	140-149	150+	Uneven-Aged	Total
Aspen	0	0	13	9	105	30	0	0	0	0	0	0	0	0	0	0	0	0	156
Herbaceous Openland	129	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	129
Jack Pine	0	0	2	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	17
Low-Density Trees	67	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	67
Lowland Conifers	0	0	0	0	0	0	0	66	41	0	0	0	0	0	0	0	0	0	107
Lowland Shrub	41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41
Marsh	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28
Mixed Upland Deciduous	0	0	0	0	0	0	0	0	0	58	25	0	0	0	0	0	0	0	83
Natural Mixed Pines	0	0	0	11	0	0	0	11	212	55	86	0	0	0	0	0	0	0	374
Northern Hardwood	0	0	0	0	0	0	0	0	25	100	0	0	0	0	0	0	0	0	125
Oak	0	0	0	0	0	0	0	0	0	299	13	0	0	0	0	0	0	0	312
Planted Mixed Pines	0	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14
Red Pine	0	0	0	10	0	0	0	36	462	204	23	0	0	0	0	0	0	0	734
Treed Bog	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Upland Mixed Forest	0	0	123	0	0	0	0	9	42	22	0	0	0	0	0	0	0	0	196
Urban	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
Water	129	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	129
White Pine	0	0	0	0	0	0	0	0	10	9	0	0	0	0	0	0	0	0	19
Total	404	0	138	44	105	45	0	122	792	747	147	0	0	0	0	0	0	0	2541



Report 2 – Treatment Summary

Traverse City Mgt. Unit
Year of Entry: 2024

Acres of Harvest

Compartment 160
Total Compartment Acres: 2,542

Commercial Harvest - 357
Harvests with Site Condition - 0
Next Step Harvest - 0
Habitat Cut - 3

Cover Type by Harvest Method

	Clearcut	Selection	Patch Clearcut	Seed Tree	Shelterwood	Thinning	Overstory Removal	Salvage	Other	Total Acres
Mixed Upland Deciduous	11	0	0	0	0	0	0	0	0	11
Natural Mixed Pines	0	0	0	0	29	0	0	0	0	29
Northern Hardwood	3	0	0	0	37	0	0	0	0	41
Oak	59	0	0	0	0	0	0	0	0	59
Red Pine	107	0	0	0	58	23	0	0	0	187
Upland Mixed Forest	33	0	0	0	0	0	0	0	0	33
Total	214	0	0	0	124	23	0	0	0	360

Proposed and Next Step Treatments by Method

	Harvest	Site Prep	Planting	Seeding	Burning	Pesticide	Monitoring	Other	Non-Forest Mgt.	Total Acres
Current	360	40	0	0	88	0	0	11	0	499
Next Step	0	213	253	0	11	146	400	88	0	1111
Total	360	253	253	0	99	146	400	99	0	1610



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

23	61160023-Cut	22.1	4319 - Mixed Upland Forest	Poetimber Well	86	111-140	Harvest	Clearcut with Retention	413 - Aspen	Even-Aged	No
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Prescription Specs: Cut all trees 2 inches and larger, leave scattered oaks and pine. Leave all cedar and hemlock. Standard area retention. Protect the hiking and horse trail during harvest. Limit harvest to winter time to protect any wet areas.

Next Step Treatments: Monitoring, Natural Regen (Intermediate)

Acceptable Regen: aspen, red maple, and mixed conifer

Other Comment:

Site Condition

Proposed Start Date: 10/1 /2023

24	61160024-Cut	11.4	4199 - Other Mixed Upland Deciduous	Sawtimber Well	82	81-110	Harvest	Clearcut with Retention	4122 - Oak, Pine	Even-Aged	No
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Prescription Specs: Cut all trees 4 inches and larger. Leave some scattered oaks and pine. Protect any advance oak and pine regen. Retention will be a portion of the stand that hasn't been harvested.

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

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

Other Comment:

Site Condition

Proposed Start Date: 10/1 /2023

31	61160031-Cut	26.4	4111 - S.Maple, Hard Mast Association	Sawtimber Well	86	111-140	Harvest	Crown Thinning	411 - Northern Hardwood	Even-Aged	No
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Prescription Specs: mark stand to a residual BA of approximately 80 sqft per acre. Protect recreation trails during harvest and limit harvest time to the winter months

Next Step Treatments:

Acceptable Regen:

Other Comment:

Site Condition

Proposed Start Date: 10/1 /2023



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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
34 61160034-Burn	13.7	3105 - Mixed Upland Herbaceous	Nonstocked		Immature	Burn	Opening	3105 - Mixed Upland Herbaceous		No
<p><u>Prescription</u> Burn on a rotational basis. The goal of prescribed burning is to restore and/or maintain a grassland/barrens ecosystem. The timing and frequency of the burns will be based on current needs of restoration such as reducing woody encroachment or promoting grasses versus forbs. Remove exotics as needed by herbiciding or other methods. Maintain as needed with mowing, seeding of native grasses and forbs, planting native mast bearing shrubs or trees, burning, or removal of woody encroachment.</p> <p><u>Specs:</u></p> <p><u>Next Step</u> NonForestMgt, Other - Specify</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 /2023</p>										
39 61160039-Burn	42.4	3102 - Grass	Nonstocked		Unspecified	Burn	Opening	3205 - Mixed Upland Shrub		No
<p><u>Prescription</u> Burn on a rotational basis. The goal of prescribed burning is to restore and/or maintain a grassland/barrens ecosystem. The timing and frequency of the burns will be based on current needs of restoration such as reducing woody encroachment or promoting grasses versus forbs. Remove exotics as needed by herbiciding or other methods. Maintain as needed with mowing, seeding of native grasses and forbs, planting native mast bearing shrubs or trees, burning, or removal of woody encroachment.</p> <p><u>Specs:</u></p> <p><u>Next Step</u> NonForestMgt, Other - Specify</p> <p><u>Treatments:</u></p> <p><u>Acceptable</u></p> <p><u>Regen:</u></p> <p><u>Other</u> WLD 5/9/22-very good grass component. I believe there is an old farmstead site in this stand.</p> <p><u>Comment:</u></p> <p><u>Site Condition</u> BMPs</p> <p><u>Proposed Start Date:</u> 10/1 /2023</p>										
41 61160041-NF	11.4	3105 - Mixed Upland Herbaceous	Nonstocked			NonForestMgt	Brush Cutting	3205 - Mixed Upland Shrub		No
<p><u>Prescription</u> Selectively remove 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> Burn, Opening</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 /2023</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
53 61160053-Cut	28.6	42290 - Natural Mixed Pine	Sawtimber Well	88	141-170	Harvest	Crown Thinning	429 - Mixed Upland Conifers	Even-Aged	No
<p><u>Prescription</u> Cut all aspen and red maple. Mark pine to a residual BA 100-120.</p> <p><u>Specs:</u> There will be areas to walk through with no pine to mark with mostly aspen to harvest. Probably will result in a new Aspen stand when inventory is updated.</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 /2023</p>										
55 61160055-Cut	32.6	42110 - Planted Red Pine	Poetimber Well	68	141-170	Harvest	Crown Thinning	4211 - Planted Red Pine	Even-Aged	No
<p><u>Prescription</u> mark stand to a residual BA of approximately 120 sqft per acre. Protect recreation trails during harvest and consider HRD specs if necessary.</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 /2023</p>										
60 61160060-Cut	25.4	42210 - Natural Red Pine	Sawtimber Well	70	141-170	Harvest	Crown Thinning	4221 - Natural Red Pine	Even-Aged	No
<p><u>Prescription</u> mark stand to a residual BA of approximately 100 sqft per acre. Protect recreation trails during harvest and consider HRD specs if necessary.</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 /2023</p>										
66 61160066-Cut	10.8	4119 - Mixed Northern Hardwoods	Sawtimber Well	75	111-140	Harvest	Crown Thinning	411 - Northern Hardwood	Even-Aged	No
<p><u>Prescription</u> mark stand to a residual BA of approximately 80 sqft per acre. Protect recreation trails during harvest and limit harvest time to the winter months</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 /2023</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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67	61160067-Cut	43.3	4124 - Red with White Oak	Sawtimber Medium	80	1-50	Harvest	Clearcut with Retention	4122 - Oak, Pine	Even-Aged	No
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Prescription Cut all trees 4 inches and larger. Leave some scattered oaks and pine. Protect any advance oak and pine regen. Retention will be a portion of the stand that hasn't been harvested.
Specs:

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

Acceptable oak, aspen, red maple, and mixed pine
Regen:

Other
Comment:

Site Condition

Proposed Start Date: 10/1 /2023

68	61160068-Cut	11.2	4311 - Pine, Aspen Mix	Poletimber Well	70	81-110	Harvest	Clearcut with Retention	4139 - Aspen, Mixed Deciduous	Even-Aged	No
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Prescription Cut all trees 2 inches and up, leave a few scattered oaks and pines. Retention needs to be identified when the sale is set up and identified in the site condition layer.
Specs:

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

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

Other
Comment:

Site Condition

Proposed Start Date: 10/1 /2023

78	61160078-Burn	27.0	3102 - Grass	Nonstocked			Burn	Opening	3105 - Mixed Upland Herbaceous		No
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Prescription Burn on a rotational basis. The goal of prescribed burning is to restore and/or maintain a grassland/barrens ecosystem. The timing and frequency of the burns will be based on current needs of restoration such as reducing woody encroachment or promoting grasses versus forbs. Remove exotics as needed by herbiciding or other methods. Maintain as needed with mowing, seeding of native grasses and forbs, planting native mast bearing shrubs or trees, burning, or removal of woody encroachment.
Specs:

Next Step NonForestMgt, Other - Specify
Treatments:

Acceptable
Regen:

Other Probably another old farm site. Be careful about any possible structural remnants.
Comment:

Site Condition

Proposed Start Date: 10/1 /2023



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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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82	61160082-Cut	106.5	42210 - Natural Red Pine	Sawtimber Poor	82	1-50	Harvest	Clearcut with Retention	4211 - Planted Red Pine	Even-Aged	No
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Prescription Cut all trees. Require low stumps and slash management, chipping preferred, to facilitate future planting operations.

Specs:

Retention has been mapped out in the middle of the stand around stand 80.

Next Step SitePrep, Roller Chopping; SitePrep, Trenching; Pesticide, Aerial - Site Prep; Planting, Initial Plant; Monitoring, Artificial Regen(1yr);

Treatments: Planting, Replant; Monitoring, Artificial Regen(3yr)

Acceptable fully stocked stand of planted red pine

Regen:

Other

Comment:

Site Condition

Proposed Start Date: 10/1 /2023

86	61160086-4-New	3.3	4111 - S.Maple, Hard Mast Association	Poletimber Well	85	111-140	Harvest	Clearcut	411 - Northern Hardwood	Even-Aged	Yes
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Prescription Cut all trees except oak. No retention so we can maximize regeneration.

Specs:

Next Step Monitoring, Natural Regen (Re-Inventory)

Treatments:

Acceptable red maple, sugar maple, oak, pine and aspen aspen.

Regen:

Other

Comment:

Site Condition

Proposed Start Date: 10/1 /2023

89	61160089-Burn	4.7	3303 - Mixed Low Density Trees	Nonstocked		Immature	Burn	Opening	31022 - Warm Season Grass		No
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Prescription Burn on a rotational basis. The goal of prescribed burning is to restore and/or maintain a grassland/barrens ecosystem. The timing and frequency of the burns will be based on current needs of restoration such as reducing woody encroachment or promoting grasses versus forbs. Remove exotics as needed by herbiciding or other methods. Maintain as needed with mowing, seeding of native grasses and forbs, planting native mast bearing shrubs or trees, burning, or removal of woody encroachment.

Specs:

Next Step NonForestMgt, Other - Specify

Treatments:

Acceptable

Regen:

Other

Comment:

Site Condition

Proposed Start Date: 10/1 /2023



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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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99	61160099-Prep	39.8	330 - Low-Density Trees	Nonstocked	0	Immature	SitePrep	Trenching	4211 - Planted Red Pine	Even-Aged	No
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Prescription Trench After Roller Chopping Stand

Specs:

Next Step ; Pesticide, Skidder - Site Prep; Planting, Initial Plant; Monitoring, Artificial Regen(1yr); Monitoring, Artificial Regen(3yr)

Treatments:

Acceptable Fully Stocked Red Pine stand that is Greater then 80% free to grow

Regen:

Other Percent to Treat = 100%

Comment:

Site Condition

Proposed Start Date: 10/1 /2021

107	61160107-Cut	22.7	42210 - Natural Red Pine	Sawtimber Well	91	81-110	Harvest	Overstory Removal	42260 - Natural Pine, Mixed Deciduous	Even-Aged	No
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Prescription Remove stand overstory protecting and releasing understory pine and oak. Mark some oak and pine to leave.

Specs:

Next Step

Treatments:

Acceptable

Regen:

Other

Comment:

Site Condition

Proposed Start Date: 10/1 /2023

206	61160206-Cut	15.8	4123 - Red Oak	Sawtimber Well	89	81-110	Harvest	Clearcut with Retention	4122 - Oak, Pine	Even-Aged	No
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Prescription Cut all trees 4 inches and larger. Leave some scattered oaks and pine. Protect any advance oak and pine regen. Retention will be a portion of the stand that hasn't been harvested.

Specs:

Next Step Monitoring, Natural Regen (Re-Inventory)

Treatments:

Acceptable oak, aspen, red maple and pine

Regen:

Other

Comment:

Site Condition

Proposed Start Date: 10/1 /2023

Total Treatment 499.1
Acres Proposed:

Report 4 – Site Conditions

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Compartment: 160

Year of Entry: 2024

Availability for Management

Total Acres	Acres Available	Acres Available With Condition	Acres Not Available
156	152	0	4
129	120	0	9
17	17	0	0
67	66	0	1
107	1	0	106
41	21	0	20
28	2	0	26
83	12	40	31
374	250	111	13
125	105	17	3
312	59	240	13
14	14	0	0
735	604	93	38
4	0	0	4
196	165	31	0
6	6	0	0
129	117	0	12
19	12	0	7
2,542	1,723	533	286
	68%	21%	11%

Dominant Site Conditions

	Dominant Site Conditions												
	5B	5C	5F	1C	2G	3D	3I	3J	5E				
Aspen					2			0	2				
Herbaceous Openland				2	0					7			
Jack Pine													
Low-Density Trees													1
Lowland Conifers					103		2	2					
Lowland Shrub										20			
Marsh										26			
Mixed Upland Deciduous	0	40			0		17	14					
Natural Mixed Pines	81	30					0	12					
Northern Hardwood		7	11					3					
Oak	13	227			1		6	6					
Planted Mixed Pines													
Red Pine		93				6		22	9				
Treed Bog								4					
Upland Mixed Forest		31			0			0					
Urban													
Water							1	11					
White Pine								7					
Total Forested Acres	94	428	11	2	106	6	27	135	10				
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	5E: Long-Term Retention	1	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
2	Unavailable	5E: Long-Term Retention	9	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							

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3	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	7	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
4	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	39	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
5	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	14	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Holding the remainder this stand to evaluate how effective the adjacent harvest is at producing regeneration							
6	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	29	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Holding the remainder of this stand to evaluate how effective the harvest is at producing regeneration							
7	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	53	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							

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8	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	45	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
9	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	38	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Holding the remainder this stand to evaluate how effective the adjacent harvest is at producing regeneration							
10	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	11	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
11	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	5	5E: Long-Term Retention	Unspecified	Unspecified	Unspecified
Comments:							
12	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	7	5E: Long-Term Retention	Unspecified	Unspecified	Unspecified
Comments:							
13	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	4	2F: Too steep	5E: Long-Term Retention	Unspecified	Unspecified
Comments:							

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14	Unavailable	(Inactive)3I: Historical / archeological (add locked comments)	27	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
15	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	4	5E: Long-Term Retention	Unspecified	Unspecified	Unspecified
Comments:							
16	Unavailable	3D: Recreational / Scenic values	6	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
17	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	1	5E: Long-Term Retention	Unspecified	Unspecified	Unspecified
Comments:							
18	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	31	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
19	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	66	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							

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20	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	17	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
21	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	8	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
22	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	8	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
23	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	7	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
24	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	5	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
25	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	1	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							

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26	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	31	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Holding the remainder of this stand to evaluate how effective the harvest is at producing regeneration							
27	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	9	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
28	Available	5B: Maintain for regeneration purposes	14	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
29	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	34	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
30	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	9	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
31	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	31	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							

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32	Available	5F: Evaluated for Forest Health Considerations	11	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
33	Available	5B: Maintain for regeneration purposes	67	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
34	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	48	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Holding the remainder of this stand to evaluate how effective the harvest is at producing regeneration							
35	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	13	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
36	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	17	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
37	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	81	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Holding the remainder this stand to evaluate how effective the adjacent harvest is at producing regeneration							

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38	Available	5B: Maintain for regeneration purposes	13	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
40	Unavailable	1C: Other dept or div proc/practices	2	Unspecified	Unspecified	Unspecified	Unspecified
Comments: See locked comments.							

Mgt. Unit

Compartment: #Type!

Year of Entry:



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

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

SCA Name	SCA Category	Detail Type	Recommendation	Acres
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Comments



Report 6 – EXISTING SPECIAL CONSERVATION AREA DETAILS

* This is a list of SCA's for this compartment along with a 1/4 mile buffer surrounding the compartment. Refer to the Special Conservation Area Map for locations of the below listed Conservation Areas.

ERA = Ecological Reference Area
 HCVA = High Conservation Value Area
 SCA = Special Conservation Area

Conservation Area	Type	Description
SCA	Cold Water 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	Dedicated Management Areas	Such areas are dedicated by the DNR Director for specific management uses through the promulgation of rules, as governed by Part 5, Department of Natural Resources, of the NREPA (MCL 324.502(2) and 324.504). Section 38 of the Administrative Procedures Act (MCL 24.238) provides for public requests for the promulgation of rules. This is an active program, with one proposed site currently under review by the DNR.
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.



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments																																													
1	330 - Low-Density Trees	Nonstocked	1.8			No	Stand is an old well site (plugged 1980) being encroached upon by low density conifer trees. Will probably have 25%+ cover next YOE and will therefore be typed as a forested stand at that point in time.																																													
2	42220 - Natural Jack Pine	Sapling Poor	1.6	16	Immature	N/A	small opening, old gas well (plugged 1975). filling in w/ jp volunteers.																																													
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Jack Pine	95	Sapling	3	16																																																
3	42290 - Natural Mixed Pine	Sawtimber Well	16.8	85	111-140	N/A	Red and white pine stand. Good quality, both pine species, growing well. Oak is of descent quality.																																													
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4	500 - Water	Nonstocked	24.8			No	Darby Lake.																																													
5	310 - Herbaceous Openland	Nonstocked	2.8				Active well site and storage tanks. USA State Kalkaska 3-20.																																													
6	42250 - Pine, Oak	Sawtimber Poor	66.7	97	1-50	N/A	Shelterwood cut fall 2016-spring 2017. Also cut all trees in county road R-O-W.																																													
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7	310 - Herbaceous Openland	Nonstocked	2.0				Active well site, multiple permit numbers.																																													
9	6224 - Treed Bog	Nonstocked	4.0			No																																														
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10	4130 - Aspen	Poletimber Well	33.4	35	51-80	N/A	nice stand of aspen																																													
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Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments																																																			
11	42210 - Natural Red Pine	Sawtimber Well	23.1	73	51-80	N/A	Stand was treated in 2008 as a species removal with some marked pine.																																																			
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12	622 - Lowland Shrub	Nonstocked	0.8			No	Small stand, emergent wetland in area of higher water table.																																																			
13	42260 - Natural Pine, Mixed Deciduous	Sawtimber Well	15.6	71	141-170	N/A	Mixed stand of red and white pine with oak throughout. Scattered hemlock present. Both pine species are variable in terms of size. Growing well. Some areas look like remnant plantations, most notably in central/eastern portion of stand.																																																			
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14	310 - Herbaceous Openland	Nonstocked	5.8				Well site, permit #30473. USA Kalkaska 1-20. Plugged well (1999) in SE part of stand.																																																			
15	500 - Water	Nonstocked	11.1			No	Main basin of lake, with seasonal connection to Little Guernsey Lake.																																																			
16	622 - Lowland Shrub	Nonstocked	0.3			No	Small lowland stand in area of higher water table.																																																			
17	623 - Emergent Wetland	Nonstocked	27.1			No	Areas of lowland shrubs with varying water depth.																																																			
19	623 - Emergent Wetland	Nonstocked	0.7			No	Small lowland/emergent wetland stand in area of higher water table.																																																			
20	4130 - Aspen	Poletimber Well	8.5	26	Immature	N/A	A3 stand with oak saplings present and pine throughout stand. Growing well overall, good quality.																																																			
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Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
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21 6128 - Lowland Coniferous, Mixed Deciduous Poletimber Medium 40.7 75 51-80 N/A

Lowland stand, boundary includes upland edges of larger red and white pine. Stand is a seep, draining towards Guernsey Lake. Central portion is mainly cedar with e-type species at edges. Some dense pockets of paper birch throughout.

Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Red Maple	5	Pole	8		Tag Alder	High	5 - 10 feet	Tall Shrub
White Pine	15	Log/Pole	14		Balsam Fir	Medium	5 - 10 feet	Sapling
Northern White Cedar	35	Pole/Log	9	75				
Red Pine	5	Log/Pole	12					
Paper Birch	20	Sapling/Pole	5					
Balsam Fir	10	Pole/Sapling	7					

23 4319 - Mixed Upland Forest Poletimber Well 22.1 86 111-140 N/A

Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Hemlock	5	Pole/Log	8		Tag Alder	High	5 - 10 feet	Tall Shrub
Red Pine	15	Log/Pole	12		Balsam Fir	Medium	5 - 10 feet	Sapling
Quaking Aspen	20	Pole/Log	8					
Paper Birch	5	Pole	8					
Balsam Fir	10	Pole/Sapling	7					
Northern White Cedar	5	Pole/Log	9	75				
White Pine	15	Log/Pole	13					
Red Maple	25	Pole	8	86				

24 4199 - Other Mixed Upland Deciduous Sawtimber Well 42.5 82 81-110 N/A

Mixed oak, sugar maple stand with each species more dominant in places. Stand was treated 20 years ago with a heavy thinning. Ironwood regen very common along with beach regen in places. Pockets of sugar maple regen present but not very thick. Some browse on seedlings/saplings although not very heavy overall. Stand line may not be perfect along southwestern edge where stand fazes into adjacent larger oak stand.

Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	30	Pole/Log	8		Ironwood	High	10 - 20 feet	Sapling
Basswood	10	Log/Pole	10		White Pine	Low	5 - 10 feet	Sapling
Red Oak	55	Log/Pole	12	82				
Red Maple	5	Pole/Log	8					

25 310 - Herbaceous Openland Nonstocked 3.0 No Small opening, old well site (plugged 1975).

26 310 - Herbaceous Openland Nonstocked 1.6 No Old well site? Stand is a pure grassy opening.



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
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27 42260 - Natural Pine, Mixed Deciduous Poletimber Well 10.5 65 81-110 N/A

Mixed pine stand, variable density and composition in places. Longer lived species are larger dbh, growing well. Aspen and Jack pine are ok in terms of quality, currently smaller dbh than other species present.

Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
White Pine	20	Log/Pole	10		Balsam Fir	Low	10 - 20 feet	Sapling
Red Pine	30	Log/Pole	10	65	White Pine	Low	10 - 20 feet	Sapling
Jack Pine	10	Pole	6		Beech	Low	< 5 feet	Sapling
Red Oak	5	Pole/Log	8					
Red Maple	5	Sapling/Pole	3					
Bigtooth Aspen	20	Pole	8					
Red Oak	10	Log/Pole	10					

28 4119 - Mixed Northern Hardwoods Poletimber Well 11.7 75 51-80 N/A

Hardwood stand with a decent amount of oak and scattered pockets of red maple concentrations. Scattered hemlock. Thinned to average residual BA of 82 sf/ac in winter 2016.

Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Red Pine	5	Pole/Log	8		Beech	High	< 5 feet	Sapling
Basswood	5	Log/Pole	10		Ironwood	Medium	5 - 10 feet	Sapling
Red Maple	25	Pole/Log	8					
Red Oak	15	Log/Pole	12					
Hemlock	3	Pole	8					
White Pine	5	Pole/Log	8					
Sugar Maple	42	Pole/Log/Sap	8	75				

29 42200 - Natural White Pine Sawtimber Well 8.3 71 51-80 N/A

Mixed stand, dominated by white pine in variable size classes. Aspen throughout, smaller diameter, mediocre quality. White and red oak present in low numbers. Eastern finger of stand is more uniform size and stocking.

Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Quaking Aspen	10	Pole	8		White Pine	Medium	5 - 10 feet	Sapling
White Pine	67	Log/Pole/XLog	10	71	Tag Alder	Low	< 5 feet	Tall Shrub
Red Maple	5	Pole	8					
Red Oak	5	Log/Pole	12					
White Oak	3	Log/Pole	10					
Paper Birch	5	Pole	8					
Red Pine	5	Pole	8					

30 4124 - Red with White Oak Sawtimber Well 13.4 90 1-50 N/A

Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
White Oak	45	Log/Pole	10		White Pine	Low	5 - 10 feet	Sapling
Red Oak	55	Log/Pole	10	90	Oak (spp.)	Low	5 - 10 feet	Sapling
					Red Maple	High	10 - 20 feet	Sapling
					Bigtooth Aspen	Medium	10 - 20 feet	Sapling



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments																																																						
31	4111 - S.Maple, Hard Mast Association	Sawtimber Well	37.1	86	111-140	N/A	Hardwood stand treated in 2006. Growing/responding pretty well. Beech regen is thick, remaining species are not regenerating or have a minimal presence in the understory. Stand includes a pocket of smaller, sap/pole sized trees in eastern finger near private boundary.																																																						
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32	4119 - Mixed Northern Hardwoods	Sawtimber Well	7.2	85	81-110	N/A	Small hardwood stand, pretty descent quality. Stand encompasses an area use for camping along river. Portion of stand lies within Natural River riparian zone.																																																						
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33	622 - Lowland Shrub	Nonstocked	20.0			No	Historic basin of mud lake, now should be considered more of an emergent wetland because of recent drying trends.																																																						
34	3105 - Mixed Upland Herbaceous	Nonstocked	13.7		Immature	No	Opening with a couple jack pine pockets throughout. NCT runs through center of stand.																																																						
35	42210 - Natural Red Pine	Sawtimber Well	6.0	81	51-80	N/A	Small stand of larger red pine, growing well. Beattie Sign Pine, 61-036-14-01. Cut 11/2017-6/2018. Average residual BA 78 sf/acre. North Country Trail runs through the stand																																																						
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36	42250 - Pine, Oak	Sawtimber Poor	100.9	72	1-50	N/A	Beattie Sign Pine, 61-036-14-01. Cut 11/2017-6/2018.																																																						
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37	42260 - Natural Pine, Mixed Deciduous	Sawtimber Well	9.7	88	81-110	N/A	Mixed red/white pine stand with oak throughout, along with scattered aspen and a few red maple. Stand provides a nice visual corridor along Boardman River. Horse Trail traverses stand.																																																			
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38	500 - Water	Nonstocked	6.2			No	Main portion of Mud Lake. Shallow water body, pockets of vegetation throughout.																																																			
39	3102 - Grass	Nonstocked	45.9		Unspecified	No	Grass opening. White pine, cherry, oak and scattered hdwds throughout. Occasional jack pine as well. WLD 5/9/22-very good grass component. I believe there is an old farm stead site in this stand.																																																			
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40	42220 - Natural Jack Pine	Poletimber Well	13.3	41	51-80	N/A																																																				
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41	3105 - Mixed Upland Herbaceous	Nonstocked	11.4			No	Relatively open stand with scattered trees throughout. Portions have pockets of lightly stocked hardwoods, most notably cherry. Scattered jack pine present as well. Seasonally wet area in Northwest corner of the stand.																																																			
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42	4191 - Mixed Upland Deciduous with Conifer	Sawtimber Well	20.5	97	81-110	N/A	Part of Stand 6 not treated due to steep slopes around Darby Lake																																																			
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Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
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44 6229 - Mixed lowland shrub Nonstocked 0.9 No Small, narrow grassy opening. Possible high water table.

45 622 - Lowland Shrub Nonstocked 0.9 No Small lowland pocket, lowland shrub/emergent wetland type.

46 4119 - Mixed Northern Hardwoods Poletimber Well 16.7 80 81-110 N/A Oak and sugar maple stand with other hardwood species mixed throughout. Most of stand treated in 2005. A portion of stand on the west side of Boardman River Rd. was not treated. Variable in terms of stocking and overall quality.

Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Red Maple	10	Pole	6		Red Maple	Medium	< 5 feet	Sapling
Basswood	10	Pole/Log	9		Beech	Medium	< 5 feet	Sapling
Red Oak	30	Log/Pole	12					
Bigtooth Aspen	10	Log/Pole	12					
Sugar Maple	40	Pole/Sap/Log	7	80				

47 4191 - Mixed Upland Deciduous with Conifer Sawtimber Well 4.4 97 81-110 N/A Part of stands 49 and 6 that was not treated should be kept as retention. Oak and pine stand, fair quality.

Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Red Pine	20	Log/Pole	12		Red Maple	Low	5 - 10 feet	Sapling
Jack Pine	2	Pole	8		White Pine	High	5 - 10 feet	Sapling
Red Oak	48	Log/Pole	12	97	Oak (spp.)	Low	5 - 10 feet	Sapling
White Oak	10	Log/Pole	10		Bigtooth Aspen	Low	5 - 10 feet	Sapling
White Pine	10	Log/Pole	10					
Bigtooth Aspen	5	Pole	8					
Red Maple	5	Pole/Sapling	7					

48 4130 - Aspen Poletimber Well 18.6 36 51-80 N/A

Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
White Oak	3	Pole	5		White Pine	Medium	5 - 10 feet	Sapling
Red Maple	5	Pole	5		Oak (spp.)	Low	5 - 10 feet	Sapling
Bigtooth Aspen	75	Pole	6	36				
Red Oak	2	Pole	5					
White Pine	15	Pole	5					

49 42250 - Pine, Oak Sawtimber Poor 19.3 97 1-50 N/A Stand was harvested as a seed tree shelter wood cut with a scattering of red pine, white pine and oaked left. Regeneration is heavy to aspen and red maple. Beattie Sign Pine, 61-036-14-01. Cut 11/2017-6/2018.

Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Red Oak	20	Log/Pole	12	97	Red Maple	Medium	5 - 10 feet	Sapling
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Red Maple	5	Pole/Sapling	7		Bigtooth Aspen	High	5 - 10 feet	Sapling



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
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51 500 - Water Nonstocked 86.7 No Island Lake. Currently the area is full of water

52 4139 - Aspen, Mixed Deciduous Sapling Well 12.7 14 Immature N/A Stand is a mixture resulting from final harvest area and is regenerating well.

Canopy Species	% Cover	Size Class	DBH	Age
Red Maple	30	Sapling	2	
White Oak	15	Sapling	2	
Bigtooth Aspen	45	Sapling	3	14
White Pine	5	Sapling	1	
Red Pine	5	Sapling	2	

53 42290 - Natural Mixed Pine Sawtimber Well 28.6 88 141-170 N/A

Canopy Species	% Cover	Size Class	DBH	Age
White Pine	30	Log/Pole	10	
Bigtooth Aspen	10	Pole/Log	8	
Red Pine	45	Log/Pole	12	88
White Oak	5	Log	10	
Red Oak	10	Log/XLog	14	

Sub-Canopy Species	Density	Avg. Height	Size
White Pine	High	10 - 20 feet	Sapling

55 42110 - Planted Red Pine Poletimber Well 35.5 68 141-170 N/A

Canopy Species	% Cover	Size Class	DBH	Age
Red Pine	100	Pole/Log	9	68

Sub-Canopy Species	Density	Avg. Height	Size
White Pine	Low	5 - 10 feet	Sapling
Oak (spp.)	Low	5 - 10 feet	Sapling
Jack Pine	Medium	5 - 10 feet	Sapling
Red Pine	Low	5 - 10 feet	Sapling

56 42210 - Natural Red Pine Sawtimber Well 58.2 72 81-110 N/A Cut ~2017.

Canopy Species	% Cover	Size Class	DBH	Age
Red Oak	10	Log/Pole	12	
White Pine	15	Pole/Log	8	
White Oak	5	Log/Pole	10	
Red Pine	70	Log/Pole	12	72

Sub-Canopy Species	Density	Avg. Height	Size
Red Maple	Medium	Variable	Sapling
Oak (spp.)	Low	5 - 10 feet	Sapling
Quaking Aspen	Low	5 - 10 feet	Sapling



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments	
57	42200 - Natural White Pine	Sawtimber Well	8.6	88	81-110	N/A	Multi polygon stand, made up of islands within historic Island Lake basin. Stands contain of mixture of conifers including white pine, red pine and hemlock, along with some deciduous species including red maple and paper birch. Nice isolated stands, some jack pine regen on edges of stand.	
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species		
Paper Birch		5	Pole	6		Balsam Fir		
Northern White Cedar		5	Pole/Log	9		White Pine		
White Pine		66	Log	16	88	Red Maple		
Red Pine		4	Log	10				
Jack Pine		5	Pole/Sapling	5				
Hemlock		10	Pole/Log	10				
Red Maple		5	Pole	8				
60	42210 - Natural Red Pine	Sawtimber Well	25.4	70	141-170	N/A	Stand was treated in 2008 as a species removal with some marked pine. Stand is responding well in terms of regeneration. White pine and oak is somewhat dense in spots, scattered red pine regen present also.	
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species		
Red Pine		98	Log/Pole	12	70	Red Maple		
White Pine		2	Log/Pole	10		White Oak		
						Bigtooth Aspen		
61	42140 - Planted Mixed Pine	Sapling Well	14.4	22	Immature	N/A	Young red pine plantation, growing ok however heavy volunteer regeneration of jack pine, white pine, cherry and aspen in places is leading to some inconsistent red pine stocking throughout, along with more of a mixed stand in places.	
Canopy Species		% Cover	Size Class	DBH	Age			
Black Cherry		5	Sapling	2				
Quaking Aspen		2	Sapling	2				
White Pine		3	Sapling	2				
Red Pine		50	Sapling	3	22			
Jack Pine		40	Sapling	4				
62	4130 - Aspen	Poletimber Well	4.3	32	51-80	N/A		
Canopy Species		% Cover	Size Class	DBH	Age			
Bigtooth Aspen		85	Pole	6	32			
Red Oak		10	Pole/Sapling	6				
Red Maple		5	Pole/Sapling	5				
66	4119 - Mixed Northern Hardwoods	Sawtimber Well	13.7	75	111-140	N/A	Hardwood stand, descent quality.	
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species		
Red Maple		10	Pole/Log	8		Sugar Maple		
Sugar Maple		65	Log/Pole	10	75	Ironwood		
Basswood		5	Pole/Log	9				
Red Oak		5	Log/Pole	10				
White Pine		10	Log/Pole	10				
Paper Birch		5	Pole/Log	8				



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments		
67	4124 - Red with White Oak	Sawtimber Medium	124.5	80	1-50	N/A	Stand was thinned 2006-2008 all jack pine, aspen and red maple were removed along with marked oak and pine. Mixed stand of oak/pine. Some areas heavier to pine, overall seems like stand is oak dominated but red pine and occasional white pine are definitely a major component. White pine regeneration is thick, some pockets seem to be in the process of converting to conifer dominated stand. Northwest corner of stand has a higher concentration of red pine.		
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density		Avg. Height	Size
Red Oak	40	Log/Pole	10		Oak (spp.)	Medium		5 - 10 feet	Sapling
Red Pine	18	Log/Pole	10		Quaking Aspen	Low		5 - 10 feet	Sapling
White Oak	42	Log/Pole	10	80	White Pine	Medium		5 - 10 feet	Sapling
					Red Maple	Medium	5 - 10 feet	Sapling	
68	4311 - Pine, Aspen Mix	Poletimber Well	42.1	70	81-110	N/A	Mixed stand with white pine dominant overall. Aspen and red maple prevalent throughout, smaller size classes. Some pockets, most notably where stand shares boundary with stand to the east, red pine becomes more of a component.		
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density		Avg. Height	Size
Bigtooth Aspen	20	Pole	8		White Pine	Medium		5 - 10 feet	Sapling
Red Oak	5	Log/Pole	10		Oak (spp.)	Low		< 5 feet	Sapling
Red Maple	20	Pole/Sapling	7						
White Pine	35	Log/Pole	12	70					
Red Pine	20	Log/Pole	10						
69	4191 - Mixed Upland Deciduous with Conifer	Sawtimber Well	6.9	84	51-80	N/A	Fair amount of damage from August 2015 windstorm. Wet swale fills up southern part of stand.		
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density		Avg. Height	Size
Bigtooth Aspen	35	Log/Pole	10	70	Beech	Low		5 - 10 feet	Sapling
Red Pine	5	Pole/Log	8		White Pine	Low		< 5 feet	Sapling
Red Oak	40	Log/Pole	12	84					
White Pine	20	Pole/Log	8						
70	4191 - Mixed Upland Deciduous with Conifer	Poletimber Well	8.9	87	81-110	N/A	Oak, pine stand on south facing slope along south river rd. Was left as retention, a buffer when large oak stand to the north was harvested. Stand is mediocre quality, some variability in terms of stocking, species composition and overall quality.		
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density		Avg. Height	Size
Red Pine	20	Log/Pole	10		Oak (spp.)	Low		5 - 10 feet	Sapling
White Pine	15	Pole/Log	9		White Pine	Medium		5 - 10 feet	Sapling
Jack Pine	5	Pole/Sapling	6						
Quaking Aspen	5	Pole	8						
White Oak	15	Pole/Log	9						
71	4111 - S.Maple, Hard Mast Association	Sawtimber Well	28.5	80	51-80	N/A	Hardwood stand with sugar maple dominant in multiple size classes. Red oak a major component throughout-large diameter, fair quality. Thinned to average residual BA of 68 sf/ac in winter 2016. More aspen in western finger along lake. Fair amount of damaged from August 2015 windstorm.		
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density		Avg. Height	Size
Basswood	10	Log/Pole	10		Beech	Medium		< 5 feet	Sapling
Red Oak	25	Log	14		White Pine	Low		< 5 feet	Sapling
Paper Birch	3	Pole	8		Ironwood	High		5 - 10 feet	Sapling
Sugar Maple	52	Pole/Log	8	80					
Red Maple	10	Pole/Sapling	7						
72	310 - Herbaceous Openland	Nonstocked	2.1			No	Small grassy opening, upland adjacent to island lake basin.		



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments																																															
73	4133 - Aspen, Mixed Pine	Poletimber Well	48.6	35	51-80	N/A	Younger aspen (A3/A4) stand, growing fairly well. Some pockets of merchantable aspen. Included buffer along island lake where this stand borders adjacent lake basin. Scattered red and white pine throughout. Left as residual during past harvest. Some patchy spots where pine is dominant, mostly along edges of stand where it blends into adjacent areas. New stand added.																																															
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74	330 - Low-Density Trees	Nonstocked	2.9			No	Small opening, conifer species encroaching throughout, stand close to having 25% coverage and therefore being classified as a forested stand.																																															
75	42200 - Natural White Pine	Poletimber Well	2.0	75	51-80	N/A	Natural white pine stand, mixture of pole and some logs, occasional pockets of saplings.																																															
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76	42210 - Natural Red Pine	Sawtimber Well	256.3	74	141-170	N/A	Mixed pine stand, removal carried out on stand 15-20 years ago.																																															
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77	42210 - Natural Red Pine	Sawtimber Well	11.4	79	81-110	N/A	Nice red pine stand with scattered white pine. Stand is adjacent to Boardman River corridor and has a high water table in places.																																															
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78	3102 - Grass	Nonstocked	27.0			No	Long/narrow opening, grasses are full coverage with scattered u-type saplings.																																															
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79	310 - Herbaceous Openland	Nonstocked	2.8				Well site, storage basin.																																															
80	330 - Low-Density Trees	Nonstocked	4.9			No	Small narrow opening in shallow valley with jack pine barren type cover throughout. Nice breakup to larger pine stand surrounding this area.																																															



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments																																																												
81	310 - Herbaceous Openland	Nonstocked	1.3			No	Old well sites (plugged 1974 & 1989), north/south trail running directly through stand.																																																												
82	42210 - Natural Red Pine	Sawtimber Poor	144.5	82	1-50	N/A	Stand was thinned in Fall of 2017 'Differential Advantage' 61-004-14-01. Removed the jack pine and aspen then thinned through the red and white pine areas. Residual BA is a bit variable. The NCT runs through the northern part of this stand. We found some monitoring wells in the SE portion of the stand.																																																												
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83	6128 - Lowland Coniferous, Mixed Deciduous	Sawtimber Medium	66.3	65	81-110	N/A	Mixed stand of cedar/spruce/fir and other conifers including white and red pine. Aspen and red maple also make up major components of the stand. Stand includes some small grassy openings at rivers edge. Typed stand as lowland but portions of stand include river bank which technically is upland. These areas are where higher concentrations of larger red and white pine are found.																																																												
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84	310 - Herbaceous Openland	Nonstocked	1.2			No	Old well site, plugged 1973.																																																												
85	42210 - Natural Red Pine	Sawtimber Poor	31.4	74	1-50	N/A	Red pine stand, treated last yoe left all red and white pine. Lots of white pine regen, along with some jack pine coming back.																																																												
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87	310 - Herbaceous Openland	Nonstocked	1.8			No	Small opening, old well site (plugged 1986). Conifer species volunteering along eastern edge.																																																												



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments																																									
89	3303 - Mixed Low Density Trees	Nonstocked	17.5		Immature	No	Small grass stand with white pine, jack pine and red maple																																									
90	42290 - Natural Mixed Pine	Sawtimber Poor	95.0	76	1-50	N/A	Mixed pine/oak stand with aspen scattered throughout. Stand is in good shape, some variability in terms of species composition but overall pretty consistent. Visual Vortex Mix, 61-044-14-01. Cut 2018. SW/seed tree. Hoping to release WP understory.																																									
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91	310 - Herbaceous Openland	Nonstocked	1.7				Well site/facility, retention strip borders western edge.																																									
92	4126 - White, Black, N. Pin Oak	Sawtimber Medium	13.9	80	1-50	N/A	White oak stand, treated last yoe by shelterwood/thinning method. Regen is responding OK, lots of browse on red maple and oak, white pine regen doing fairly well. Stands were thinned in 08/09																																									
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93	4122 - Oak, Pine	Sawtimber Medium	45.4	85	51-80	N/A	White oak, red oak and red/white pine stand, treated last yoe. Regen/understory is thick in places, diverse in terms of species. Stand/overstory is variable in spots, pockets of more pure red pine in places and also areas of pure oak. Stands were thinned in 08/09																																									
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94	310 - Herbaceous Openland	Nonstocked	1.2			No	small opening, looks to have been maintained by private-mowing, brushing?																																									
95	42290 - Natural Mixed Pine	Poletimber Well	10.7	25	1-50	N/A	Mixed pine stand. When stand was harvested overstory red and white pine were left, about 10 ba or less in most places. Jack pine and white pine regeneration dominates the canopy. Stand is two aged, found jack pine regeneration to be dominant.																																									
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Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments																																																
97	42110 - Planted Red Pine	Sapling Well	10.4	25	1-50	N/A	Young red pine (R3) stand with jack pine and white pine component.																																																
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98	4310 - Pine, Oak Mix	Sapling Well	109.4	14	Immature	N/A	Jack pine plantation with dense oak and red maple regen throughout. Stand includes two retention/visual vortices.																																																
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99	330 - Low-Density Trees	Nonstocked	39.8	0	Immature	4211 - Planted Red Pine	2022 - Stand was Roller Chopped 6/26/2022 Stand final harvested 2020. Stand has scattered small jack pine, cherry and some small red pine in it. Replant to fully socked stand of red pine. On POW to chop and trench in 2022 Seed tree cut in November 2014. Residual BA ~26 sf/ac in north half and ~ 13 sf/ac in south half. Mostly pine with a little oak.																																																
101	4310 - Pine, Oak Mix	Sawtimber Well	8.7	65	51-80	N/A	Mixed oak pine stand, treated last yoe, growing well. Stand has a oak wilt pesticide treatment pocket within it.																																																
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103	42110 - Planted Red Pine	Sawtimber Well	28.8	71	111-140	N/A	Descent quality overall, Some white pine and oak regen along with jack pine in more open areas. Scattered oak in overstory.																																																
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104	4126 - White, Black, N. Pin Oak	Sawtimber Poor	38.1	88	1-50	N/A	Oak stand that was thinned or shelterwood harvested. Overstory growing well, understory responding very well. Diverse regen of oak, red maple and conifers.																																																
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Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments																																																				
105	42210 - Natural Red Pine	Sawtimber Well	16.3	76	111-140	N/A	Red pine/conifer stand along Boardman River, Includes Natural Rivers corridor. Stand includes lowland/rivers edge which has cedar and fir, occasional aspen throughout.																																																				
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106	42210 - Natural Red Pine	Sawtimber Well	53.4	83	81-110	N/A																																																					
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108	310 - Herbaceous Openland	Nonstocked	1.4				Well site, grassy opening otherwise. Some seedlings at southern edge.																																																				
109	310 - Herbaceous Openland	Nonstocked	0.9				Well site. Intersection of two roads creating an opening.																																																				
110	110 - Low Intensity Urban	Nonstocked	5.6				Gas well/compression station.																																																				
111	310 - Herbaceous Openland	Nonstocked	0.7			No	Well site (plugged 1999).																																																				



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments																																						
112	4133 - Aspen, Mixed Pine	Poletimber Well	29.8	41	81-110	N/A	Mixed stand of aspen with red pine and oak log sized trees. Stand resulting from an aspen and jack pine removal where red pine and oak were left as residual.																																						
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113	4319 - Mixed Upland Forest	Sapling Well	13.7	15	Immature	N/A	jp plantation w/ deciduous species thick throughout resulting from stump sprouts when harvested.																																						
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114	42210 - Natural Red Pine	Sawtimber Well	11.5	75	81-110	N/A	Red pine stand, continuation of stand to the west, however no jack present and overall density is lower and more variable throughout. New stand added.																																						
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115	42220 - Natural Jack Pine	Poletimber Medium	1.7	46	1-50	N/A	Small jack pine stand with cherry throughout. Low quality, overall low density. Possible retention area for stand to south.																																						
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117	622 - Lowland Shrub	Nonstocked	18.3		Immature	No	lowland stand w/ some trees scattered around on hummocks and higher areas. stand contains boardman river corridor which may have some higher/upland banks included.																																						
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Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
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206	4123 - Red Oak	Sawtimber Well	76.9	89	81-110	N/A	Oak and pine stand, fair quality. Oak is declining slightly, red and white pine are growing well throughout. White pine is regenerating heavily in places, portions of stand are in the process of converting to a more white pine dominated system. Some scattered oak regeneration. Aspen clones and some red pine pockets, most along Guernsey Lake road. Jack pine present in some of the areas more heavily dominated by red pine. Split stand after closing treatment on western part. Original survey date 2/8/2012.		
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density		Avg. Height	Size
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