Compartment Review Presentation

Grayling Forest Management Unit

Compartment 72281
Entry Year 2018
Acreage: 1,732
County Crawford
Management Area: AuSable Outwash

Revision Date: 2016-08-25

Stand Examiner: Joan Charlebois

Legal Description:

T26N R01W Sections 4 & 9
T27N R01W Sections 32 & 33

Identified Planning Goals:

To maintain forest health, productivity, sustainability, species diversification, and structural diversity throughout the compartment while providing for multiple use and visual management. And additionally, on the long term Military lease lands in section 32, to provide an area that allows for National Guard training. Conner's Marsh Flooding Master Plan concepts will be incorporated, where appropriate, along with the compartment-wide goals of enhancing wildlife habitat and providing for hunting and wildlife viewing opportunities.

Soil and topography:

Grayling sand underlays most of the compartment's jack pine types on level outwash plains. Graylcalm-Grayling sands on gently-rolling terrain support much of the upland oak, aspen and red pine. Organic soils surround the Conners Marsh Flooding and flank the AuSable River. Tawas, Leafriver, Lupton, and AuSable-Bowstring mucks are the typical organic soils there. Minor amounts of Kellog, AuGres and Croswell sands make up the small islands of dry ground around the flooding.

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

Sections 32 and 33 are entirely State-owned, but border private property on the north and northeast edges. Section 32 except the N1/SE is under long term lease to the Military, where military training takes precedence over resource management activities. The DNR will coordinate all prescribed activities with the National Guard to ensure compatibility with their training needs. Sections 4 and 9 have significant private property interface, with several seasonal cabins being accessed across State land.

Unique Natural Features:

There are known occurrences of rare species within the compartment, as well as the potential for other special plants and animals to be associated with the compartment's swamps, riparian corridors and upland pine barrens types.

Archeological, Historical, and Cultural Features:

There are known concerns within the compartment. All proposed management activities have taken these concerns into consideration.

Special Management Designations or Considerations:

Section 32 except the N1/2SE is part of the Military Special Conservation Area (SCA). Section 33 and the northeast quarter of Section 4 lie within the Conner's Marsh Flooding State Wildlife Management Area (SWMA) which is a designated Wildlife Management SCA. The primary goal of the SWMA is the restoration and management of wild birds and mammals and provision for the public use of those wildlife resources. The AuSable River corridor is a High Conservation Value Area (HCVA) and a designated Natural River.

Watershed and Fisheries Considerations:

The Conner’s Marsh Flooding - maintained by a water control structure built in 1955 - is drained by the Conners Marsh Creek. The creek empties into the AuSable, a designated Natural River and high priority cold water trout stream. The compartment borders two segments of the AuSable River.

Wildlife Habitat Considerations:

Conner’s Marsh Flooding Master Plan concepts include: considering longer rotations for coniferous forest types that border the impoundment, snag retention or creation, clear-cutting aspen, oak and jack pine to maintain a mix of forest types, applying prescribed fire to simulate historic occurrences, and maintaining the current level of public access while discouraging new trail roads (see Master Plan in blue folder). Waterfowl, Eagles, Osprey and various fur-bearing mammals use the marsh and associated beaver ponds. Snowshoe hare specifications should be maximized in aspen stands that are

scheduled for harvest. Winter deer cuts, initiated through Forest Treatment Proposals, can be made in and along the swamp conifer types that constitute major deer yards.

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 200 and 400 feet. Beneath the glacial drift are the Coldwater Shale and Marshall Sandstone. The Marshall was previously used as a building stone. A gravel pit is located one mile to the southeast and there should be potential. Part of the Compartment is leased for oil and gas and is partly in the Conner's

Vehicle Access:

County roads include Conners Flat Road and Dyer Truck Trail. Access is good within the compartment on the network forest trail roads. Trail roads north and south of Conners Flat Road are being used to access several seasonal residences.

Survey Needs:

Three corners controlling the property boundary in the SWSW of section 4 could not be located.

Recreational Facilities and Opportunities:

Dispersed recreation in the form of hunting, trapping, fishing, canoeing and wildlife viewing is common throughout the compartment but is concentrated around the Conner's Marsh Flooding and the AuSable River. The Conners Flat Canoe Access site is maintained by Parks and Recreation Division in Section 9.

Fire Protection:

The compartment's jack pine stands are small to moderate-sized, with good access to the largest blocks. Section 32's poorer-quality oak stands have a considerable amount of downed wood that adds to the fuel loading and could hinder equipment operation. The Conners Flat Canoe Access site is a potential water source within the compartment.

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**

Report 1 – Total Acres by Cover Type and Age Class

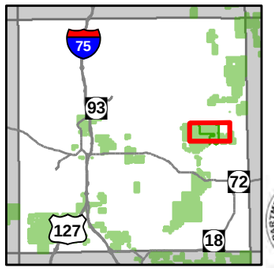
Grayling Mgt. Unit **Compartment 281 Year of Entry 2018**

Joan Charlebois : Examiner

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	55	44	165	0	0	0	0	0	0	0	0	0	0	0	0	0	**264**
Bog	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**12**
Cedar	0	0	0	0	0	0	0	0	0	0	0	0	52	19	0	0	0	0	**71**
Herbaceous Openland	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**3**
Jack Pine	0	0	58	10	0	56	0	98	0	122	0	0	0	0	0	0	0	0	**344**
Low-Density Trees	117	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**116**
Lowland Conifers	0	0	0	0	0	0	0	7	0	0	0	0	2	0	0	0	0	0	**9**
Lowland Shrub	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**26**
Lowland Spruce/Fir	0	0	0	0	19	0	0	44	0	0	0	0	0	0	0	0	0	0	**63**
Marsh	122	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**122**
Mixed Upland Deciduous	0	0	0	0	7	0	36	0	0	0	23	0	0	0	0	0	0	0	**66**
Natural Mixed Pines	0	0	0	11	0	35	7	0	0	0	0	0	0	0	0	0	0	0	**52**
Oak	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	**3**
Red Pine	0	0	23	0	0	0	22	126	0	0	0	0	0	0	0	0	0	0	**171**
Tamarack	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0	0	0	**8**
Treed Bog	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**46**
Upland Conifers	0	0	0	0	3	18	24	0	0	0	0	0	0	0	0	0	0	0	**45**
Upland Mixed Forest	0	34	0	19	0	0	0	35	7	77	36	0	0	0	0	0	0	0	**207**
Upland Shrub	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**2**
Urban	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**6**
Water	89	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**89**
White Pine	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	**7**
Total	**423**	**34**	**136**	**84**	**194**	**116**	**89**	**310**	**7**	**199**	**70**	**0**	**54**	**19**	**0**	**0**	**0**	**0**	**1732**

Cover Type & Treatments Map



N

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T26N R01W 4, 9 n\ T27N R01W
32-33
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Unit: Grayling
Mgmt Area: AuSable Outwash
YOE: 2018
Acres: 1732 GIS Calculated
Examiner: Joan Charlebois
Map Revised: 3/9/2017
Map Phase: Post-Review

- Miris Corners
- Remonumented Section Corners
- Field Grade GPS Corners
- Berms
- OFS Human Impact
- OFS Hydro
- OFS Other-Specify
- Designated Hiking Trails
- County Paved Roads
- County Gravel Roads
- County Poor Dirt Roads
- Poor Dirt Roads
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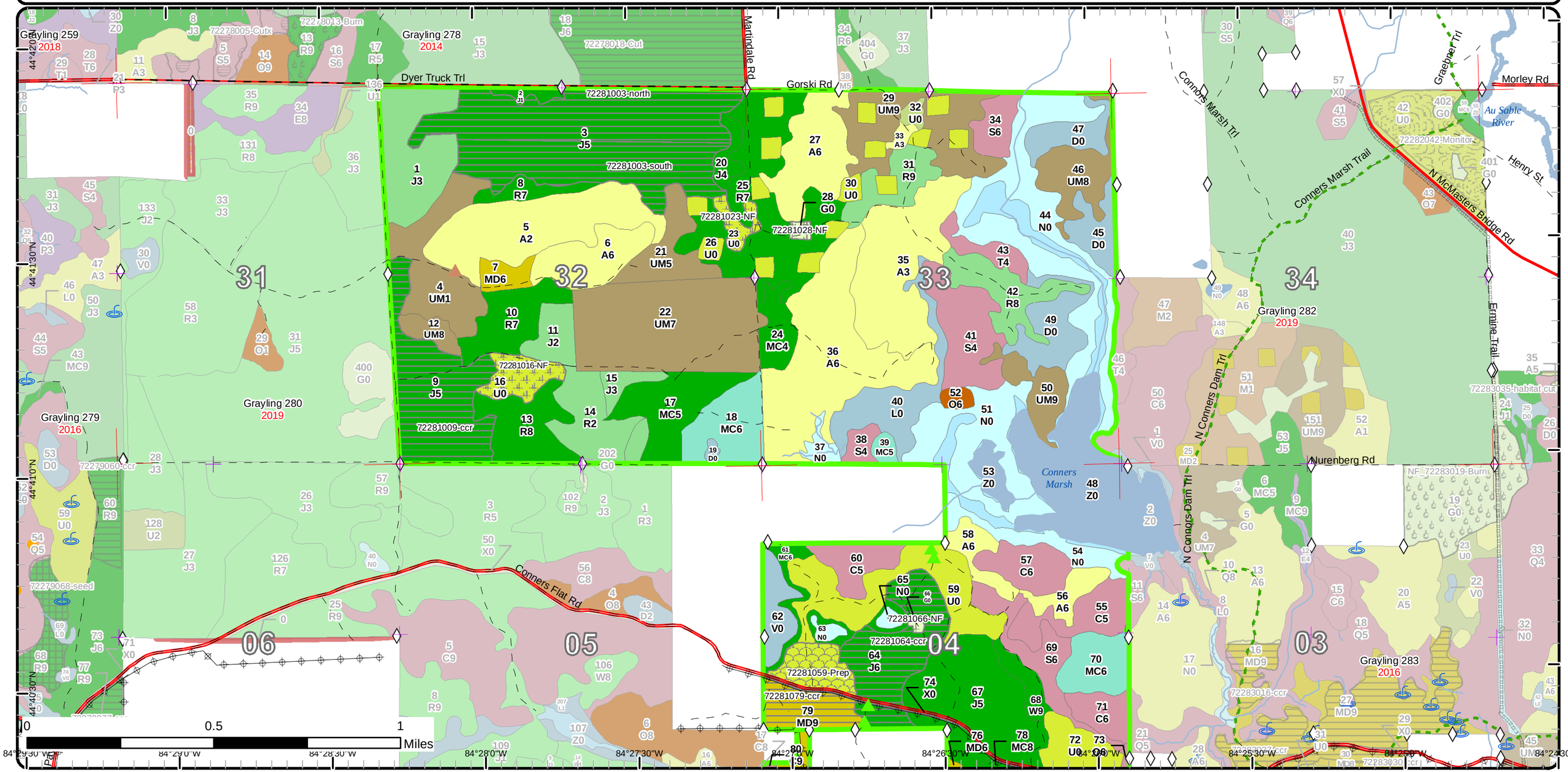
- Lakes and Rivers All
- Pipeline
- Powerline
- Compartment Boundary
- Site Prep
- Clearcut (w/Reserves)
- Other Treatment - See Comments
- 412 - Oak Types
- 413 - Aspen Types
- 419 - Mixed Upland Deciduous
- 421 - Planted Pines
- 422 - Natural Pines
- 429 - Mixed Upland Conifers
- 430 - Upland Mixed Forest
- 612 - Lowland Coniferous Forest
- 122 - Roads/Parking Lot
- 310 - Herbaceous Openland
- 320 - Upland Shrub
- 330 - Low Density Trees
- 500 - Water
- 622 - Lowland Shrub
- 623 - Emergent Wetland
- Lakes



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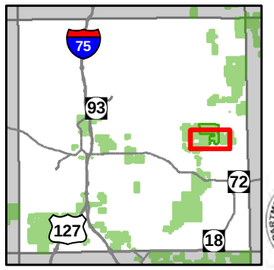

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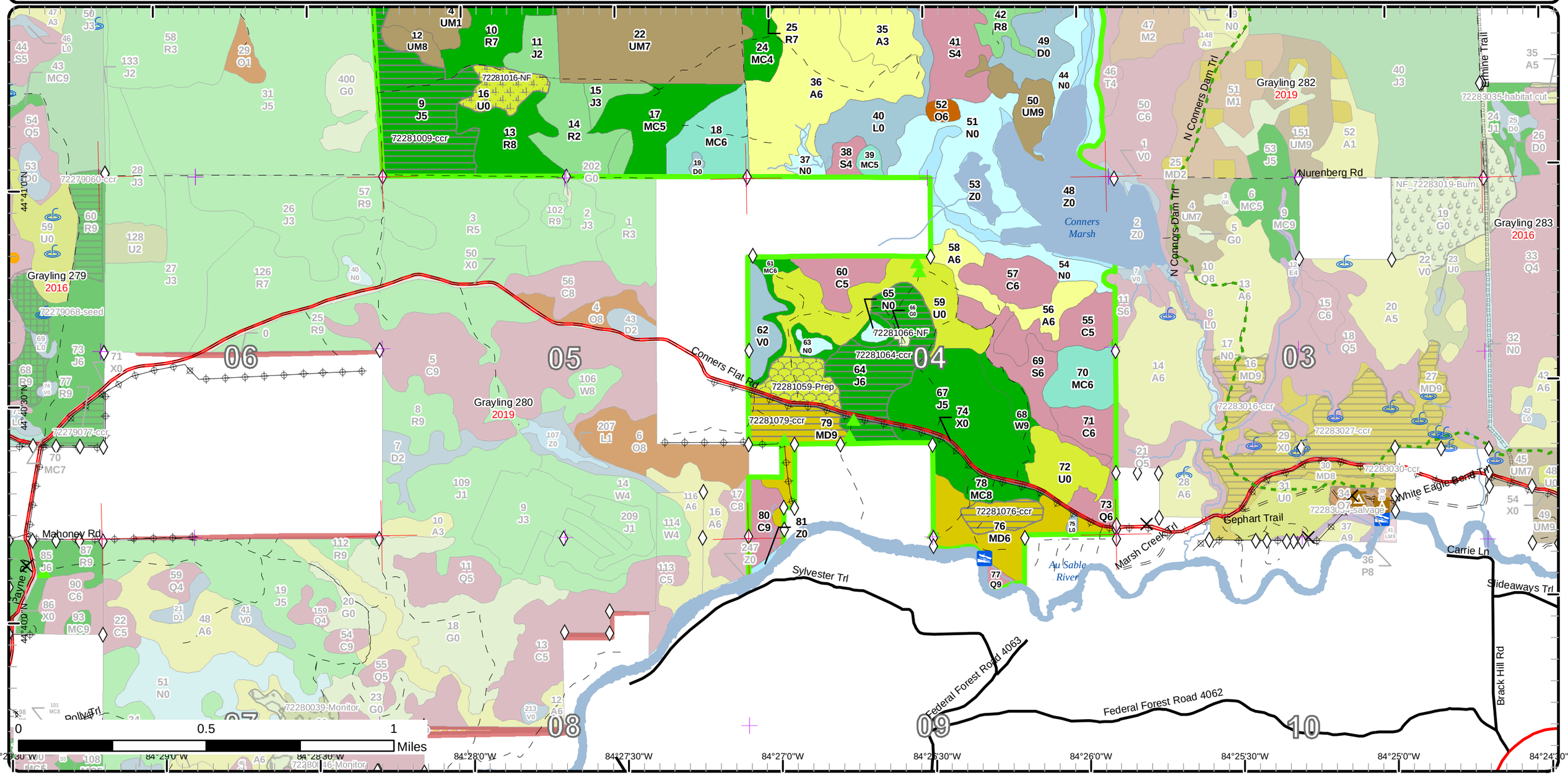
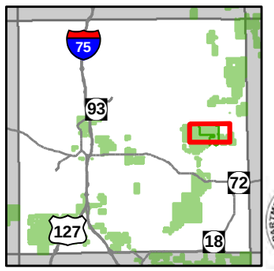


Stand Boundary Map



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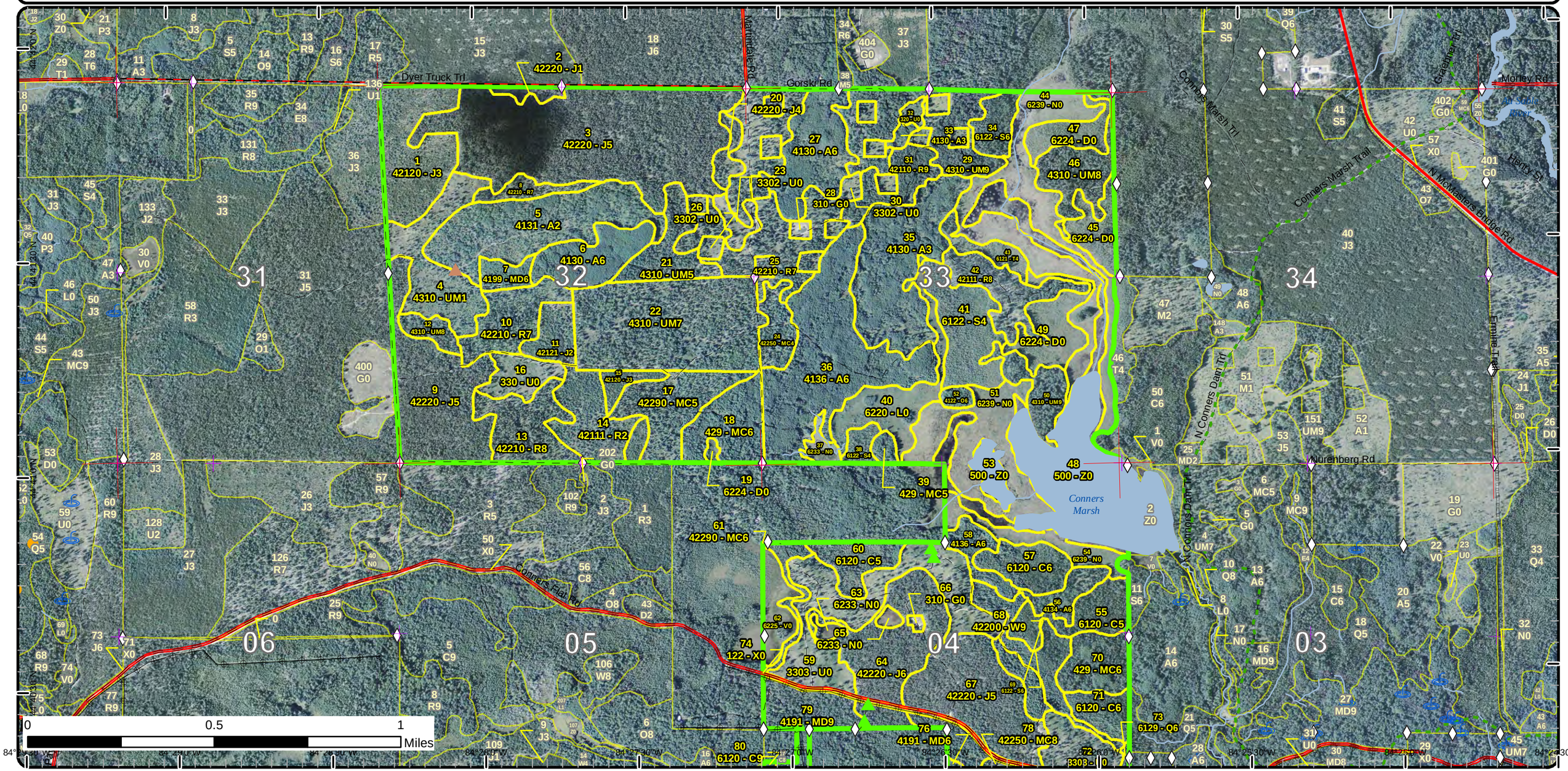

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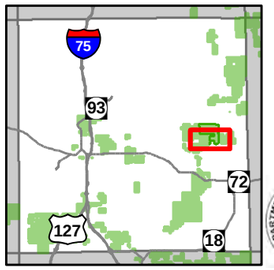

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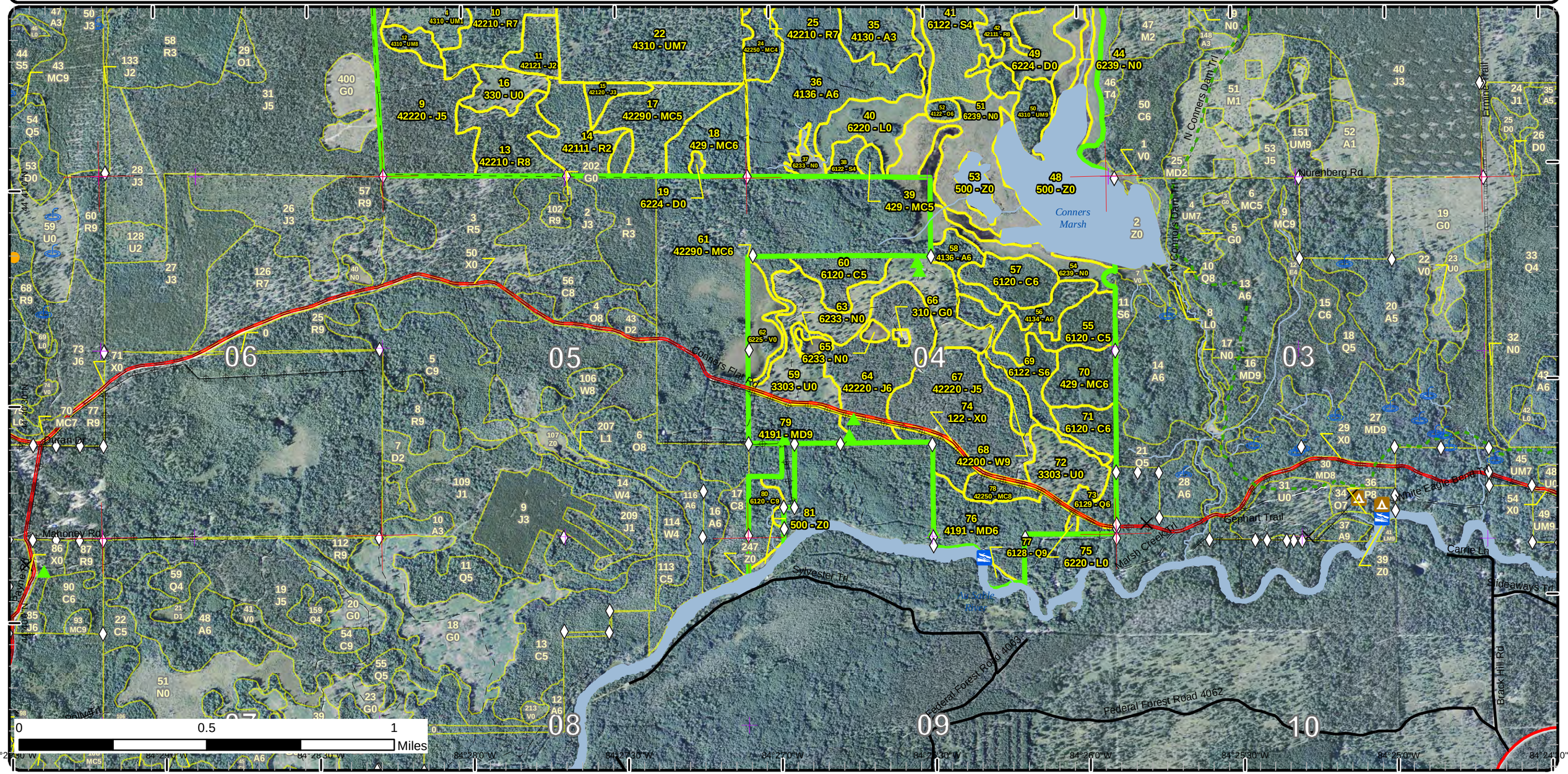
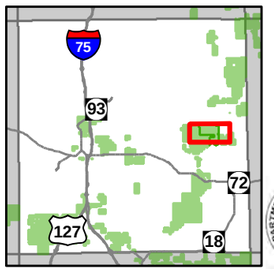


Special Conservation Areas & Site Conditions Map



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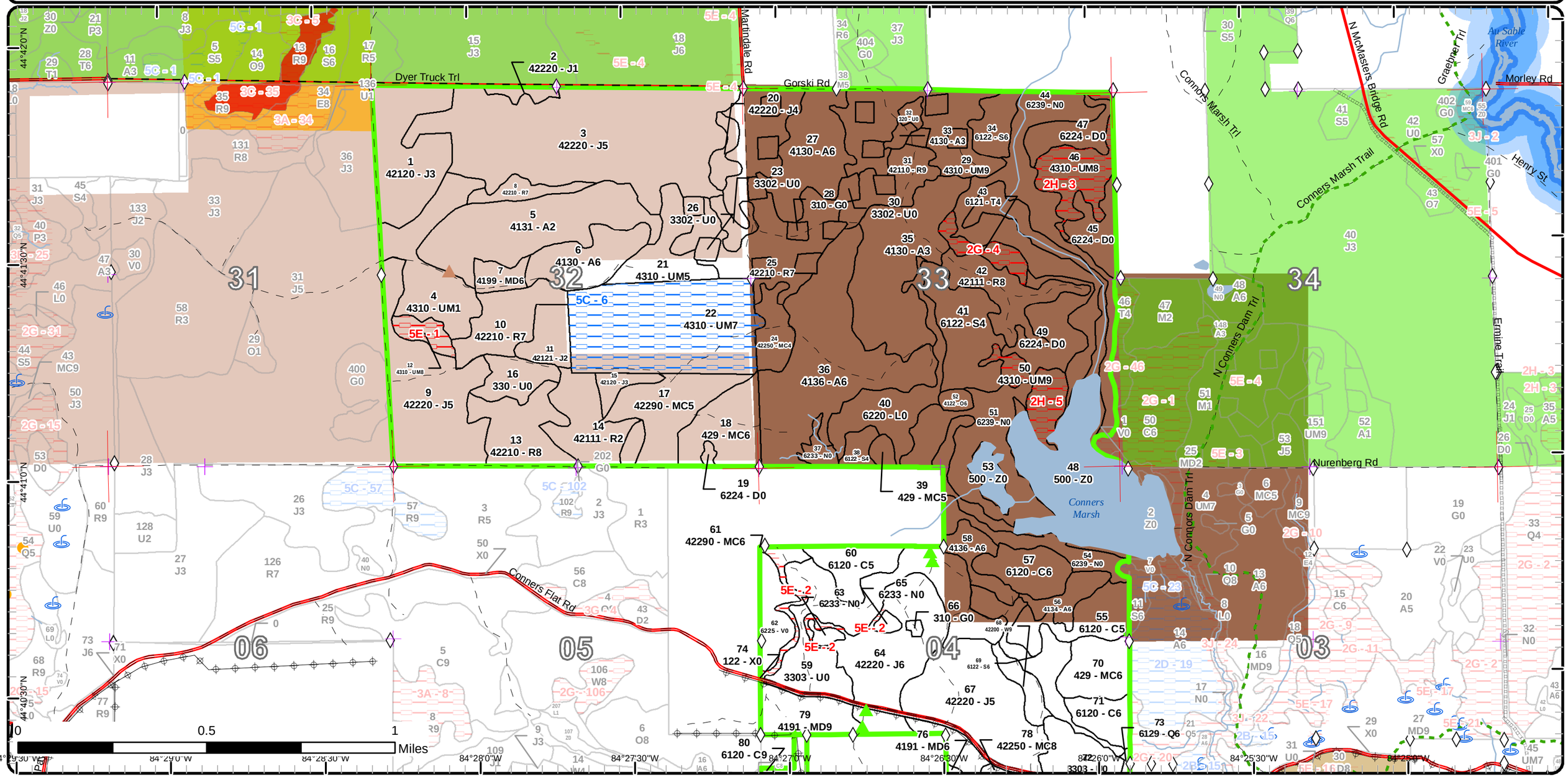
- Available w/ Constraints
- Unavailable
- 5C: Delay treatment for age/size class diversity or exceptional site quality
- 2G: Too wet (sensitive soils, does not include access issues)
- 2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)
- 5E: Long-Term Retention
- Stand Boundaries
- Ecological Reference Areas
- Natural Rivers Vegetative Buffer
- Natural Rivers Zoning District
- Kirtland Warbler Habitat
- Cold Water Lakes
- Non-Dedicated Natural Areas and National Natural Landmarks
- High Priority Trout Stream Buffer
- Wildlife Management Areas
- Research, Development, and Military Lands
- Possible Type 1 Old Growth



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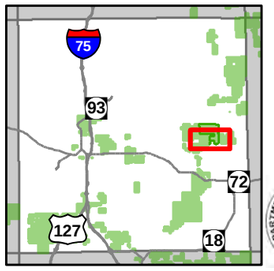

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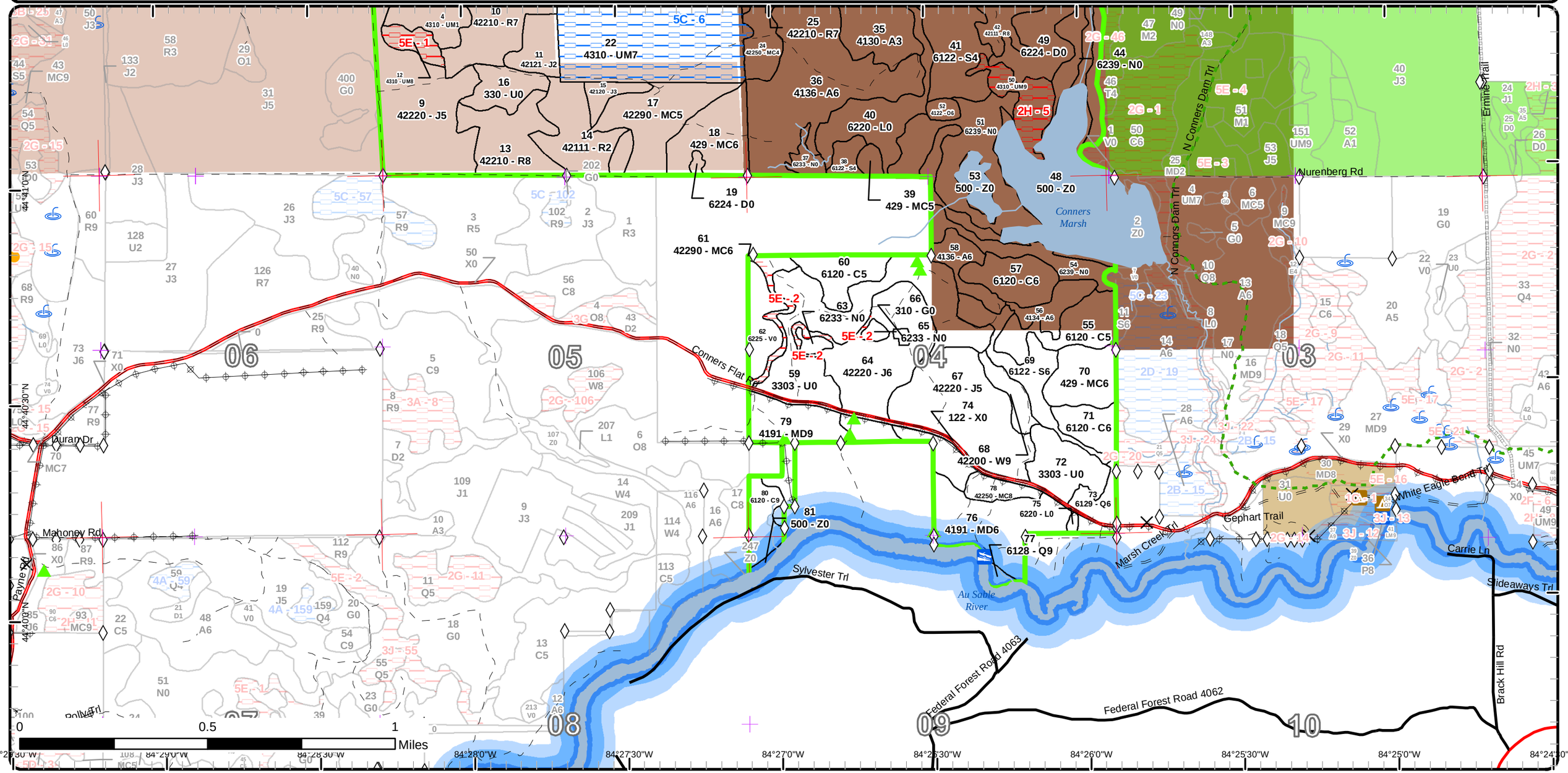
State Forest Campground



Report 2 – Treatment Summary

Grayling Mgt. Unit

Year of Entry: 2018

Acres of Harvest

Compartment 281

Total Compartment Acres: 1,732

Commercial Harvest - 243

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
Jack Pine		216	0	0	0	0	0	0	0	0	**216**
Mixed Upland Deciduous		27	0	0	0	0	0	0	0	0	**27**
	Total	**243**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**243**

Proposed and Next Step Treatments by Method

		Harvest	Site Prep	Planting	Seeding	Burning	Pesticide	Monitoring	Other	Non-Forest Mgt.	Total Acres
Current		243	14	0	0	0	0	0	0	20	**277**
Next Step		0	67	81	0	0	67	337	0	0	**552**
	Total	**243**	**81**	**81**	**0**	**0**	**67**	**337**	**0**	**20**	**828**

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
3	72281003-north	67.1	42220 - Natural Jack Pine	Poletimber Medium	80	51-80	Harvest	Clearcut	42110 - Planted Red Pine	Even-Aged	Draft Field Boundary

Habitat Cut: No **Site Condition:**

Prescription Specs: Final harvest 2"+ DBH. Retention will be in the south half of the stand where there is a treatment with a natural regen goal.

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

Acceptable Regen: Full stocking in planted RP.

Other Comment: Potential green-up concern with adjacent KW sale to the north. Follow up with site prep as needed, including herbicide, to secure RP establishment.

Proposed Start Date: 10/01/2017

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
3	72281003-south	55.0	42220 - Natural Jack Pine	Poletimber Medium	80	51-80	Harvest	Clearcut with Retention	4310 - Pine, Oak Mix	Even-Aged	Draft Field Boundary

Habitat Cut: No **Site Condition:**

Prescription Specs: Final harvest 2"+ DBH except protect oak and pine regen. Apply standard retention for the whole of stand 3 (120 acres). Focus the retention away from aspen. Consider leaving WO & some RP for additional seed source. Design specs to achieve scarification through harvest operations.

Next Step Treatments: Monitoring, Natural Regen (Intermediate)

Acceptable Regen: a mix of pine-O-RM-A at moderate stocking. If natural regen fails, supplemental plant RP in poorly-stocked areas.

Other Comment: If natural regen fails, supplemental plant RP in poorly-stocked areas, with site prep, including herbicide, as needed to establish the regen.

Proposed Start Date: 10/01/2017

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
9	72281009-ccr	53.3	42220 - Natural Jack Pine	Poletimber Medium	69	51-80	Harvest	Clearcut with Retention	4310 - Pine, Oak Mix	Even-Aged	Draft Field Boundary

Habitat Cut: No **Site Condition:**

Prescription Specs: Final harvest 2"+ DBH except protect oak and pine regen. Apply standard retention. Consider leaving WO & some RP for additional seed source. Design specs to achieve scarification through harvest operations.

Next Step Treatments: Monitoring, Natural Regen (Intermediate)

Acceptable Regen: A mix of pine and oak at moderate stocking. If natural regen fails, supplemental plant JP.

Other Comment:

Proposed Start Date: 10/01/2017

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
16	72281016-NF	12.1	330 - Low-Density Trees	Nonstocked		Unspecified	NonForestMgt	Other - Specify	310 - Herbaceous Openland		Draft Field Boundary

Habitat Cut: No **Site Condition:**

Prescription Specs: Periodic opening maintenance, as needed, that may include disking, fertilizing, liming, food plot seeding, no-till prairie grass seeding, mowing, brushing, burning, herbicide application, and planting of mast producing tree and shrubs along opening edges.

Next Step Treatments:

Acceptable Regen:

Other Comment:

Proposed Start Date: 01/01/2017

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
23	72281023-NF	5.4	3302 - Low Density Conifer Trees	Nonstocked		Unspecified	NonForestMgt	Other - Specify	310 - Herbaceous Openland		Draft Field Boundary

Habitat Cut: No **Site Condition:**

Prescription Specs: Periodic opening maintenance, as needed, that may include disking, fertilizing, liming, food plot seeding, no-till prairie grass seeding, mowing, brushing, burning, herbicide application, and planting of mast producing tree and shrubs along opening edges.

Next Step Treatments:

Acceptable Regen:

Other Comment:

Proposed Start Date: 01/01/2017

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
28	72281028-NF	1.7	310 - Herbaceous Openland	Nonstocked		Unspecified	NonForestMgt	Other - Specify	310 - Herbaceous Openland		Draft Field Boundary

Habitat Cut: No **Site Condition:**

Prescription Specs: Periodic opening maintenance, as needed, that may include disking, fertilizing, liming, food plot seeding, no-till prairie grass seeding, mowing, brushing, burning, herbicide application, and planting of mast producing tree and shrubs along opening edges.

Next Step Treatments:

Acceptable Regen:

Other Comment:

Proposed Start Date: 01/01/2017

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
59	72281059-Prep	13.6	3303 - Mixed Low Density Trees	Nonstocked		Unspecified	SitePrep	Trenching	4211 - Planted Red Pine	Even-Aged	Draft Field Boundary

Habitat Cut: No **Site Condition:**

Prescription Specs: Supplemental plant RP where natural regen is sparse.

Next Step Treatments: Planting, Initial Plant; Monitoring, Artificial Regen(1yr); Monitoring, Artificial Regen(3yr)

Acceptable Regen: Planted RP and naturally established A-O-JP

Other Comment:

Proposed Start Date: 10/01/2017

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
64	72281064-ccr	40.3	42220 - Natural Jack Pine	Poletimber Well	63	51-80	Harvest	Clearcut with Retention	4310 - Pine, Oak Mix	Even-Aged	Draft Field Boundary

Habitat Cut: No **Site Condition:**

Prescription Specs: Final harvest 2"+ DBH except protect oak and pine regen. Apply standard retention. Buffer the marshes. Consider leaving WO, WP & some RP for additional seed source. Design specs to achieve scarification through harvest operations.

Next Step Treatments: Monitoring, Natural Regen (Intermediate)

Acceptable Regen: A mix of pine and oak at moderate stocking. If natural regen fails, supplemental plant pine.

Other Comment: Green-up concern with adjacent stand 59 that has not been successfully regenerated.

Proposed Start Date: 10/01/2017

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
66	72281066-NF	1.0	310 - Herbaceous Openland	Nonstocked		Unspecified	NonForestMgt	Other - Specify	310 - Herbaceous Openland		Draft Field Boundary

Habitat Cut: No **Site Condition:**

Prescription Specs: Periodic opening maintenance, as needed, that may include disking, fertilizing, liming, food plot seeding, no-till prairie grass seeding, mowing, brushing, burning, herbicide application, and planting of mast producing tree and shrubs along opening edges.

Next Step Treatments:

Acceptable Regen:

Other Comment:

Proposed Start Date: 01/01/2017

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
76	72281076-ccr	9.7	4191 - Mixed Upland Deciduous with Conifer	Poletimber Well	55	81-110	Harvest	Clearcut with Retention	4139 - Aspen, Mixed Deciduous	Even-Aged	Draft Field Boundary

Habitat Cut: No **Site Condition:**

Prescription Specs: Final harvest a portion of the stand on the hilltop, focusing on the upland aspen and excluding wetland inclusions. Winter harvest only.

Next Step Treatments: Monitoring, Natural Regen (Intermediate)

Acceptable Regen: A mix of aspen, red maple, oak and conifers.

Other Comment: Protect and maintain existing roads, one of which is the road to the Conners Flat Canoe Access site. Post logging caution signs on the access site road.

Proposed Start Date: 10/01/2017

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
79	72281079-ccr	17.3	4191 - Mixed Upland Deciduous with Conifer	Sawtimber Well	99	81-110	Harvest	Clearcut with Retention	4121 - Oak, Aspen	Even-Aged	Draft Field Boundary

Habitat Cut: No **Site Condition:**

Prescription Specs: Final harvest 2"+ DBH except protect oak and pine regen. Apply standard retention. Consider excluding the south peninsula: it's only 3 chains wide, with an overhead powerline running the length of it. Consider leaving WP, WO & RP for additional seed source.

Next Step Treatments: Monitoring, Natural Regen (Intermediate)

Acceptable Regen: A moderately-stocked mix of oak, aspen & pine.

Other Comment:

Proposed Start Date: 10/01/2017

Total Treatment Acreage Proposed: 276.5

Report 4 – Site Conditions

Grayling Mgt. Unit

Joan Charlebois : Examiner

Compartment: 281

Year of Entry: 2018

Availability for Management

Total Acres	Acres Available	*Acres Avail With Condition*	Acres Not Available		Dominant Site Conditions *5C*	2G	2H	5E
263	263	***0***	0	**Aspen**				
12	12	***0***	0	**Bog**				
71	70	***0***	0	**Cedar**		0		
3	3	***0***	0	**Herbaceous Openland**				
344	342	***0***	2	**Jack Pine**				2
116	116	***0***	0	**Low-Density Trees**				
9	9	***0***	0	**Lowland Conifers**		0		
26	26	***0***	0	**Lowland Shrub**				
63	63	***0***	0	**Lowland Spruce/Fir**				
122	122	***0***	0	**Marsh**				
65	65	***0***	0	**Mixed Upland Deciduous**				
53	48	***0***	5	**Natural Mixed Pines**				5
3	3	***0***	0	**Oak**				
170	170	***0***	0	**Red Pine**				
8	0	***0***	8	**Tamarack**		8		
46	46	***0***	0	**Treed Bog**				
45	45	***0***	0	**Upland Conifers**				
206	87	***77***	42	**Upland Mixed Forest**	***77***		36	7
2	2	***0***	0	**Upland Shrub**				
6	6	***0***	0	**Urban**				
89	89	***0***	0	**Water**				
7	7	***0***	0	**White Pine**				
1,732	1,598	***77***	57	Total Forested Acres	***77***	8	36	13
	92%	***4%***	3%	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	Dominant Site Condition	Acres	Other Site Condition	Other Site Condition	Other Site Condition	Other Site Condition
1	**Unavailable**	**5E: Long-Term Retention**	7	Unspecified	Unspecified	Unspecified	Unspecified

Comments:

Designated retention for harvest #13-08.

2	**Unavailable**	**5E: Long-Term Retention**	7	3J: Water quality / BMPs (stream, river, or lake)	Unspecified	Unspecified	Unspecified

Comments:
Retention for 2011 harvest #22-08.

3	**Unavailable**	**2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)**	21	2B: Unknown if access through adjacent landowner(s) is possible	Unspecified	Unspecified	Unspecified

Comments:
The stand occupies a handful of dry islands separated by flooded ground. Access would require adjacent landowner permission and crossing lowland swales.

4	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	8	Unspecified	Unspecified	Unspecified	Unspecified

Comments:
Aside from an acre of denser pole cover in the north end, the stand is on flooded ground with sparser pole-sapling cover.

5	**Unavailable**	**2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)**	15	Unspecified	Unspecified	Unspecified	Unspecified

Comments:
The stand occupies a handful of dry islands separated by flooded ground. Access would require crossing lowland swales.

6	**Available**	**5C: Delay treatment for age/size class diversity or exceptional site quality**	77	Unspecified	Unspecified	Unspecified	Unspecified

Comments:
Allow the regen to grow another ten years before considering removing the sparse overstory.

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
	Potential Old Growth		**SCA Removal**	1

Comments

This area no longer meets the criteria to be classified as a Special Conservation Area.

	Potential Old Growth		**SCA Removal**	14

Comments

This area no longer meets the criteria to be classified as a Special Conservation Area.

	Potential Old Growth		**SCA Removal**	27

Comments

This area no longer meets the criteria to be classified as a Special Conservation Area.

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	Non-Dedicated Natural Areas and National Natural Landmarks	This category is comprised of those Natural, Wilderness and Wild Areas that have been nominated or proposed for legal dedication, but for which legal dedication by legislature has not occurred. The nomination process is defined by Part 351, Wilderness and Natural Areas, of the Natural Resources and Environmental Protection Act, 1994 PA 451. The program is administered by the DNR. Nominations require the submittal of a Natural Areas Nomination Packet to the DNR. This is an active program, with proposed sites in various stages of review. Final dedication of nominated Natural, Wilderness and Wild Areas is accomplished through legislative action.
SCA	Research and Military Areas	These areas provide facilities and lands specifically dedicated for research, or other purposes. They include the 5,847 acre Forest Fire Experiment Station, the 12,000 acre Houghton Lake Wildlife Research Area, the Beaver Islands Archipelago Wildlife Research Area (that includes most of Garden Island, all of High and Hog Islands, all state owned land on Beaver, South Fox and North Fox Islands), the Cusino Wildlife Research Area, the 3,000 acre Hunt Creek Fisheries Research Station, the 125 acre Wyman Nursery, and over 144,000 acres of Military Lands.
SCA	Riparian Area	A transitional area between aquatic and terrestrial ecosystems in which the terrestrial ecosystem influences the aquatic ecosystem and vice-versa. Because of the unique conditions adjacent to lakes, streams and open water wetlands, riparian areas harbor a high diversity of plants and wildlife. Riparian communities are ecologically and socially significant in their effects on water quality and quantity, as well as aesthetics, habitat, bank stability, timber production, and their contribution to overall biodiversity.
HCVA	Designated Critical Habitat	Critical habitat areas are established via a consultative and cooperative process between the DNR and the U.S. Fish and Wildlife service for the recovery of threatened and endangered species, as governed by Part 365, Endangered Species Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, and the Federal Endangered Species Act of 1973. This is an active program, with proposed species plans in various stages of review. As of now only two exist, Kirtland Warbler Habitat and Piping Plover Habitat.
HCVA	Legally dedicated Natural Areas, Wilderness or Wild Areas	The nomination process is defined by Part 351, Wilderness and Natural Areas, of the Natural Resources and Environmental Protection Act, 1994 PA 451. The program is administered by the DNR. Nominations require the submittal of a Natural Areas Nomination Packet to the DNR. This is an active program, with proposed sites in various stages of review. Final dedication of nominated Natural, Wilderness and Wild Areas is accomplished through legislative action.
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.

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
ERA	Ecological Reference Areas	Ecological Reference Areas (ERAs) are high quality examples of natural communities that have been identified as Element Occurrences (EOs) by the Michigan Natural Features Inventory (MNFI) within the context of their natural community classification system. Element Occurrences with viability ranks of A (Excellent) or B (Good) and a Global (G) or State (S) element (rarity) ranking of endangered (1), threatened (2), or rare (3) serve as an initial base of ERAs. They may be located upon any ownership in the State. The system is comprised of individual or associations of natural community types that are managed for restoration and maintenance of natural ecological processes and values. The public may submit recommendations for lands as ERAs using the DNR Conservation Area Recommendation Form.

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
1	42120 - Planted Jack Pine	Sapling Well	38.0	17	Immature	Was final harvested in 1999 (#011-98), spec'd to cut all stems 2"+ DBH. Was trenched in 1999 and planted to JP in 2000 (FTP# C72-422). Planted JP w/ vigorous NPO stump-sprouts well above. Traces of RP & WP volunteers. Plantation is studded with small gaps from seedling mortality that give the cover a KW habitat feel. Crunchy PVCd.
2	42220 - Natural Jack Pine	Sapling Poor	3.6	29	Immature	A removal harvest was carried out in 1988 (#027-88), spec'd to cut hardwoods 2"+ DBH, JP 5"+ DBH, and RP 10"+ DBH. Barely makes the forested benchmark.Open-grown JP (a mix of regen & residual from the cut), BC & NPO stump-sprouts, & a few residual RP. JP seedlings filling in slowly.
3	42220 - Natural Jack Pine	Poletimber Medium	122.2	80	51-80	Low-volume select cutting of marked RP occurred in 1967 (#8-37) and 1979 (#4-79A). Dominant cover is mature to overmature JP, with significant RP and minor NPO components. The JP is two-aged, with the overmature cohort around 80 years old and the mature cohort averaging 59 years old. Could not list the two JP age classes separately due to a MiFI rule, but did not average the ages; the overmature component is listed as the dominant age. The stand second age is on the RP component, but it also reflects the younger JP class. DWD is building as the JP and NPO continue to break up. The multiple size classes of RP are distributed unevenly across the stand, from zero canopy representation to 75% of the cover. Regen is also variable, from trace to O3. Five acres off the north end of stand 4 and an acre off the north end of stand 20 were part of a 1988 removal harvest (#027-88) but are now inclusions in stand 3. PVCd
4	4310 - Pine, Oak Mix	Sapling Poor	33.8	7	Immature	South half of the stand was fuelwood salvaged in 2002 (#27-01-02), cutting dead oak except leaving at least two oak snags per acre. The remaining overstory (mostly NPO-JP) was salvaged by 2010 (#13-08), cutting merch stems except WO-RP-WP. Residual was sparse across this portion of the harvest, so the regen is the featured canopy here, with residual RP-WP-WO scattered above. Regen stocking and species distribution varies widely. RM & oak stump sprouts from the cut have recruited & there is an oak seedling layer with good potential. Seedling-sapling JP-RP are filling in. There are a few patches of BTA. Residual RP age estimate is the current RP age from the parent stand 10.
5	4131 - Aspen, Oak	Sapling Medium	54.8	18	Immature	Was thinned in 1999 (#12-98), cutting the A-RM-JP 2"+ DBH and leaving all oak and RP. The species-removal cut resulted in thick aspen & RM regen. Aside from hybridized oak along the margins, the stand on the high ground had fair-to-good quality RO. That residual overstory was removed in 2010 (#13-08), cutting merch stems except WO-RP-WP (ave cruised residual of 7 sq. ft.). The regen is the featured canopy, with 17 year-old BTA-RM and 6 year old RM-O, and scattered residual WO-RP-WP above it. A minority of the oak stumps either didn't sprout or were browsed to death; but most of the stump sprouts are vigorous and recruited. Species distribution & canopy closure varies across the stand.
6	4130 - Aspen	Poletimber Well	22.3	39	81-110	Was final harvested in 1978 (#014-78A), cutting merch stems. BTA with RM, minor amount of stump-origin oak, and scattered RP-WP. Small sparse valley opening in center. Mature residual along south of stand.

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
7	4199 - Other Mixed Upland Deciduous	Poletimber Well	6.6	39	81-110	Was final harvested in 1978 (#014-78A), cutting merch stems. Stump-origin RM with vigorous dominant to co-dominant oak stump sprouts, BTA along the north edge, and scattered RP & WP.
8	42210 - Natural Red Pine	Sawtimber Poor	7.3	61	1-50	Was final harvested in 2010 (#13-08), cutting merch stems except WO-RP-WP. Cover had been deteriorating NPO & overmature JP, with RP of varying size classes distributed unevenly across the stand. This portion of the original stand had enough residual (mostly RP, some WO & WP) to feature it as the canopy. Subcanopy has oak stump sprouts from the cut, a single-stem oak layer <3' tall with potential to recruit, and seed-sapling RP-JP filling in. PVCd site. RP cored 55-65 yrs, ave 60.
9	42220 - Natural Jack Pine	Poletimber Medium	53.3	69	51-80	Thirty acres of the stand in the SWSW had JP 12"+ DBH cut in 1969 (#95-68). Cover is mature to overmature JP with pockets of younger small poles, multiple size-classes of RP, deteriorating NPO, and traces of WP-WO. The RP is unevenly distributed across the stand, increasing to the E & S. The oak increases to the E & NW. DWD is building as the JP & NPO breaks up. There are pockets of good oak and pine regen, but it is not consistent across the stand. JP cored 60-76 years, ave 68.
10	42210 - Natural Red Pine	Sawtimber Poor	21.8	62	1-50	Was fuelwood salvaged in 2002 (#27-01-02), cutting dead oak except leaving at least two oak snags per acre. The remaining oversrory was then salvaged by 2010 (#13-08), cutting merch stems except WO-RP-WP. Cover had been deteriorating NPO & overmature JP, with RP of varying size classes distributed unevenly across the stand. This portion of the original stand had enough residual (mostly RP, some WO, WP & RM) to feature it as the canopy. The cover varies from LDT to R9, but averages within the 25-50% closure category. Subcanopy has RM & oak stump sprouts from the cut, a single-stem oak layer <3' tall with potential to recruit, and seed-sapling RP-WP-JP filling in.
11	42121 - Planted Jack Pine, Mixed Deciduous	Sapling Medium	11.1	17	Immature	Was final harvested in 1999 (#011-98), spec'd to cut all stems 2"+ DBH. Most of it was trenched in 1999 and planted to JP in 2000 (FTP# C72-422). The original larger harvest area was supposed to be planted to RP but the cultivation crew ran out of RP seedlings after completing stand 14, and these polygon was planted to JP instead.The west half has the more intact JP plantation, with minor but vigorous NPO & RM stump-origin components. The east half went largely unplanted; it has more RM & NPO stump sprouts than JP volunteers, and a more open canopy. Form is generally poor in the JP.
12	4310 - Pine, Oak Mix	Sawtimber Medium	6.5	79	51-80	Was fuelwood salvaged in 2002 (#27-01-02), cutting dead oak except leaving at least two oak snags per acre. This portion of the original stand 10 was excluded from the subsequent 2010 harvest and left as retention. There is considerable DWD from the overmature NPO and JP breaking up. The RP & WO are maintaining.

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
13	42210 - Natural Red Pine	Sawtimber Medium	25.2	61	51-80	Was firewood salvaged by 2005 (#17-03-02), cutting dead oak. The remaining declining overmature NPO-JP was removed by 2010 (#13-08), cutting merch stems except RP-WP-WO. The original stand 13 had an ave cruise residual of 45 sq. ft. This portion of the harvest was split out due to the concentrated pine residual. Pole-to-supercanopy RP residual is unevenly distributed across the stand, ranging from LDT to R9, ave R8. There is little regen where the canopy is intact, but RP seedlings are becoming established within canopy gaps. Oak stump sprouts are growing best where not overtopped. Single-stem oak being browsed. Median RP cored 56-66 yrs.
14	42111 - Planted Red Pine, Mixed Deciduous	Sapling Medium	23.1	17	Immature	Was final harvested in 1999 (#011-98), spec'd to cut all stems 2"+ DBH. Was trenched in 1999 and planted to RP in 2000 (FTP# C72-422). There is uneven stocking in planted RP (ranging from R3 to LDT, ave R2), with vigorous NPO stump sprouts and JP volunteers. The plantation is sparser in the south half; without the natural regen's contribution, that area would fall into the non-forested category. PVCd. See notes
15	42120 - Planted Jack Pine	Sapling Well	8.8	17	Immature	Was final harvested in 1999 (#011-98), spec'd to cut all stems 2"+ DBH. Was trenched in 1999 and planted to JP in 2000 (FTP# C72-422). The original larger harvest area was supposed to be planted to RP but the cultivation crew ran out of RP seedlings after completing stand 14, and these polygons were planted to JP instead. JP with vigorous oak stump sprouts & some residual RP. JP stocking variable, as is the quality.
17	42290 - Natural Mixed Pine	Poletimber Medium	28.2	48	51-80	Most of the stand was fuelwood salvaged by 2005 (#41-04-02), cutting dead oak except for leaving one snag per acre. The remaining rapidly-declining NPO & overmature JP was then salvage cut in 2010 (#13-08), removing merch stems except for leaving the WP-RP-WO. The residual pole-log WP and RP cover is unevenly distributed across the stand, with a minor WO component. The log-pole RP is mostly in the NW peninsula. The south peninsula has a more open canopy, with shorter WP & most of the WO. WP branch flagging is increasing across the stand. The RM & NPO regen from the cut was browsed heavier here than in any of the other 2010 harvests within the section, possibly because it is closest to the swamp. Median WP poles cored 45-48 yrs; median RP saw 47-55 yrs.
18	429 - Mixed Upland Conifers	Poletimber Well	23.8	54	51-80	Most of the stand was final harvested by 1989 (#026-88), cutting 2"+ DBH except for a small amount of marked-to-leave pine. Two acres of pine had been select cut in 1979 (#15-79). Stand is an upland/lowland mosaic with islands and ridges of higher ground, mucky lower slopes, and flooded tag alder swales. The lowest ground in the center (patch of black spruce swamp) and southeast (former black ash swale) were excluded from the harvest. The aspen regen from the cut is densest on the perimeter and mixes into the core WP cover. The overstory WP has more residual than regen from the cut. See notes
20	42220 - Natural Jack Pine	Poletimber Poor	6.0	29	1-50	A removal harvest was carried out in 1988 (#027-88), spec'd to cut hardwoods 2"+ DBH, JP 5"+ DBH, and RP 10"+ DBH. Short, open-grown RP residual from the cut is unevenly distributed above the pole-sapling JP & stump-origin NPO regen from the cut. The JP also includes a minor amount of older pole residual. The canopy closure drifts off either end of the 25-50% canopy.

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
21	4310 - Pine, Oak Mix	Poletimber Medium	18.6	29	51-80	A removal harvest was carried out in 1988 (#027-88), spec'd to cut hardwoods 2"+ DBH, JP 5"+ DBH, and RP 10"+ DBH. Stocky RP saw residual is unevenly distributed above the pole-sapling regen from the cut: 0-JP-RM-A. Species distribution of that regen is variable, and the canopy closure drifts off either end of the 50-75% category. The JP also includes slightly larger poles that were residual from the cut.
22	4310 - Pine, Oak Mix	Sawtimber Poor	76.6	87	1-50	Former private eighty acquired by land exchange in 2002. In the decades prior to acquisition, removals of RP saw, oak & BTA occurred across portions of the parcel. The residual canopy is patchy and open, with variable distribution in NPO, RP, RM, WP, WO & JP. The NPO & older JP has been breaking up. The RP is relatively young & maintaining. Regen stocking & species distribution is also variable, but taken as a whole, it averages out to a moderately-stocked mix of site-appropriate species. Fair amount of DWD from oak & JP deadfalls. Branch flagging starting in the WP component.
24	42250 - Pine, Oak	Poletimber Poor	11.4	29	51-80	A removal harvest was carried out across most of the stand in 1988 (#027-88), cutting hardwoods 2"+ DBH, JP 5"+ DBH, and RP 10"+ DBH. The stand has two inclusions: in the southwest corner there is a 1.5-acre patch cut (2001, #033-98), and in the southeast corner there is an uncut acre of RP-WP saw and large cull RM.
25	42210 - Natural Red Pine	Sawtimber Poor	55.5	64	1-50	Low-volume select cutting of marked RP occurred in sec 32 in 1979 (#4-79A). Most of the stand was seed tree harvested in 2011 (#21-08), cutting merch stems except marked oak & all RP-WP. The residual RP-NPO-WO-WP is unevenly distributed across the stand, and canopy closure drifts off either end of the 25-50% category. The RP ranges from pole to supercanopy in size, with median small saw cored 62-63 yrs. The NPO was mature and declining previous YOE, and marked-to-leave stems continue to drop out of the canopy, heavily galleried by TLCB. The oak that stump-sprouted were heavily browsed. RP-JP-WP seedlings have been establishing in the last 5 years, at uneven stocking and species distribution.
27	4130 - Aspen	Poletimber Well	31.8	29	51-80	Was final harvested in 1988 (#23-88), cutting all stems 2"+ DBH. Aspen clones with RM, stump-origin NPO & scattered open-grown RP. The QA & RM are only partially transitioned into the pole class, with some areas still solidly A3 or Mr3. The BTA is further along. A seasonally wet swale crosses through the north end. Former landings are U/G inclusions.
29	4310 - Pine, Oak Mix	Sawtimber Well	34.6	63	81-110	Dry pine-oak type. Decline & mortality common in the overmature NPO & JP, increasing the proportion in RP & WP. Branch flagging starting in the WP. Marshy swale (with pocket of tag alder at the west end) cuts across the stand's northeast corner & ties into the swamp. RM & WP increase to west on better ground; oak mortality also increases there. Diffuse boundary between adjacent RP plantation stand & this pine-oak stand; planted rows wander into this stand. OMJP increases to SE, with the JP regen concentrated near the flooding. Small clumps of mostly overmature QA & BTA are scattered across the stand.

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
31	42110 - Planted Red Pine	Sawtimber Well	15.5	63	141-170	RP, Scotch pine and some Norway spruce were planted around residual NPO & JP before acquisition by the State. Row direction, spacing and RP-SP distribution are all variable. The most intact rows are in the middle of the stand. Beyond there, rows become increasingly sketchy. A fire burned in the SE, opening up canopy gaps that have SP filling in. RP SI 61
33	4130 - Aspen	Sapling Well	2.1	29	Immature	Was final harvested in 1988 (#23-88), cutting all stems 2"+ DBH. Most of the sale area north of the 2-track (stand 36) converted to U-type. QA not fully transitioned into the pole class. Black canker reducing growth on the stand margins.
34	6122 - Black Spruce	Poletimber Well	10.3	64	81-110	Two-aged BS with NWC (majority on east & north ends), tamarack, balsam fir, QA, & paper birch. Aside from west transition ground edge, the ground is very wet, with either tussock sedge or sphagnum hammocks and standing water/black muck in the troughs. Diffuse overland flow through the cedar. Some top mortality on the east edge from increased beaver flooding. Fir showing some SBW defoliation.
35	4130 - Aspen	Sapling Well	55.0	37	1-50	Was final harvested in 1980 (#20-79A), cutting merch stems except scattered marked-to-leave pine. Upland-lowland mosaic with shallow rolling terrain. Dry ground alternates with tag alder swales, hillside wet meadows, black spruce swamp pockets, and P-Type. The QA is struggling to break out of the sapling class. A minority of clones have made the transition. Black canker appears to be one factor holding clones back.
36	4136 - Aspen, Mixed Conifer	Poletimber Well	78.1	37	51-80	Was final harvested in 1980 (#20-79A), cutting merch stems except scattered marked-to-leave pine. QA clones with RM, WP, BF, NPO & Norway spruce. The balsam fir is largely subcanopy. On a mosaic of shallowly-upland terrain dissected by seasonally flooded swales. Former landings are U/G inclusions now. 1.5 acres were uncut south of the stream in the south end (large cull RM there).
38	6122 - Black Spruce	Poletimber Poor	5.0	64	1-50	Sparse overstory cover in black spruce with NWC-RM-PB over tag alder/marsh/standing water. Access to stand limited by beaver flooding & streams.
39	429 - Mixed Upland Conifers	Poletimber Medium	3.1	37	51-80	Merch stems were cut in 1980 (#20-79A). Access for the harvest was across the adjacent private property. Stand occupies a high knob surrounded by N/Q & private property. Cover is pole-sapling balsam fir interspersed with clumps of aspen regen. Mature residual NPO-RP-WP are scattered across. Black spruce and some large RM rim the low ground edge. U/G inclusions on hilltop from beaver cutting.
41	6122 - Black Spruce	Poletimber Poor	28.8	67	1-50	Spindly spruce & tamarack pole-sapling cover over tag alder, sphagnum moss and leatherleaf. Proportion in tamarack increases to S. Is a relatively open stand slowly colonizing the adjacent bogs and lowland shrub stands. Likely multiple age classes but did not core enough to call beyond two-aged.

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
42	42111 - Planted Red Pine, Mixed Deciduous	Sawtimber Medium	21.7	58	51-80	Most of the stand (except the marsh edge & NE & SE peninsulas) was thinned in 2011 (#21-08), cutting marked RP-WP-O, and all JP-A-Norway Spruce-Scotch Pine (ave cruise residual of 30 sq. ft. RP, less than 3 sq. ft. WP, and 14 sq. ft. oak. High ground surrounded on three sides by marsh/flooding. Actively breaking up NPO (that is being picked at by firewood cutters) that had RP & a little scotts pine planted under & around it except for E & S peninsulas. There is also older, naturally-recruited RP scattered throughout along with JP. Species removal & continued NPO mortality has dropped the canopy into shelter wood range. Larger gaps have medium stocking in RP seedlings. Black spruce, WP, JP & Norway spruce rim the adjacent low ground edge.
43	6121 - Tamarack	Poletimber Poor	8.3	91	Unspecified	Except for a dense patch of larger spruce & tamarack poles at the northwest end, the stand is characterized by sparser tamarack small pole-large sapling material colonizing the leatherleaf bog/marsh margin around the flooding. Margins not much above treed bog. Top mortality common in the tamarack. Likely multiple age classes across the main species, but didn't core enough to call beyond two-aged.
46	4310 - Pine, Oak Mix	Sawtimber Medium	20.7	91	1-50	Remote call, carried forward previous YOE info. Stand boundary encompasses the central main island of high ground and jumps across lowland swales to pick up several small peripheral islands. Primary cover is overmature NPO-JP, with RP-WP associates on the high ground and black spruce-tamarack-balsam fir on the transition ground and lowland swale inclusions. Decline & mortality common in the NPO & JP.
50	4310 - Pine, Oak Mix	Sawtimber Well	14.9	92	81-110	Islands of high ground separated by low swales. East island has overmature NPO with varying age & size classes of RP-JP-WP. The middle island has overmature QA with RP-WP-JP, and the west island is predominantly pine. Canopy is opening up as the overmature components break up. Black spruce rims the lowland edges. Previous inventory oak age is from 2 YOE's ago.
52	4122 - Oak, Pine	Poletimber Well	3.0	92	81-110	Remote call; carried forward info from two YOE's ago: Island surrounded by marsh: NPO interior with thick WP saplings/poles around perimeter. A few RP & WP saw at edge.
55	6120 - Lowland Cedar	Poletimber Medium	19.1	120	51-80	Cedar with black spruce and tamarack associates growing on saturated ground. Surface water visible in holes in the shallow root mat. Understory cover varies from thick BF to tag alder. The drier transition ground supports healthier, larger-diameter cedar, but the core saturated ground has majority pole-sized cedar with top mortality common. Traces of RM & PB. Also some NPO & overmature JP on island of dry ground in NE corner.
56	4134 - Aspen, Spruce/Fir	Poletimber Well	9.3	35	51-80	Was final harvested by 1982 (#21-79A), cutting merch stems except cedar. Sub-merch residual was then proposed to be chainsaw felled (FTP W71-171). QA still transitioning into the pole class with significant BF component at the same stage, & scattered residual NPO & RM saw. Canopy opened up in the northeast by beaver-felling. Stand picks up low ground near swamps.

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
57	6120 - Lowland Cedar	Poletimber Well	16.1	116	81-110	NWC, black spruce & balsam fir, often thick cover below (tag alder or balsam fir) on spongy sphagnum/black muck root mat. Tamarack increases along the marsh edge. Cedar top-mortality increases near the marsh also. Diameters in both the black spruce & cedar decrease on the more saturated core ground. QA-Bam-PB-RM-WP mix in at low densities. Stand picks up transition ground edge and a dry island.
58	4136 - Aspen, Mixed Conifer	Poletimber Well	9.8	27	51-80	Most of the stand was final harvested by 1990 (#24-88), cutting stems 2"+ DBH. QA with some BTA and significant conifer component. Only partial cutting occurred in the NW by the marsh, leaving mature O-RM-WP scattered above the younger pole-log WP. Stand picks up low ground along swamp & marsh. Beaver cutting near the marsh shifted cover to majority WP-BF.
60	6120 - Lowland Cedar	Poletimber Medium	13.9	116	51-80	Cedar, with a significant black spruce component along the stand's border with the uplands. The RM & WP are also concentrated on that edge. A dry ground ridge cuts E-W across the south peninsula (with NPO-RM-WP). Cedar on the drier transition ground is healthier and larger diameter. On the core saturated ground, the cedar is majority pole-sized, with top-mortality common. Understory cover varies from thick balsam fir to tag alder. The illegally-grubbed trail noted in the previous inventory has grown-over.
61	42290 - Natural Mixed Pine	Poletimber Well	6.6	47	51-80	Salvage & improvement harvesting was completed in 1970 (#36-70, #43-70, #46-70, #49-70, #54-70), cutting JP 10"+ diam at the stump and some merch aspen. This portion (occupying the sideslopes down to the flanking bog and swamp) was left as retention when stand 59 was final harvested in 2011. Variable cover includes JP that established from the 1970 harvests, multiple size classes of WP-RP, declining NPO saw, a string of overmature JP along the bog edge, and traces of aspen.
64	42220 - Natural Jack Pine	Poletimber Well	45.2	63	51-80	Salvage & improvement harvesting was completed in 1970 (#43-70, #46-70, #49-70, #54-70), cutting JP 10"+ diam at the stump. That resulted in a 2+ aged JP stand, with now-mature residual from the cut and younger poles that regenerated post-harvest. The majority mature JP cored in the early 60's, and up to the early 80's in age. Declining NPO are scattered across the stand, with lesser amounts of RP-WP-WO & balsam fir. The WP & balsam fir increases south of Conners Flat Road.
67	42220 - Natural Jack Pine	Poletimber Medium	56.2	48	51-80	Most of the stand was within a salvage and improvement harvest in 1970 (#39-70, #43-70, #52-70), cutting JP 10"+ at the stump and some merch aspen. Most of the stand was then harvested in 1989 (#21-88), cutting merch JP-RP-WP and all hardwoods. Two-aged stand with more JP residual than regen from the cut, scattered RP residual, & NPO stump sprouts. Proportion in balsam fir & WP increases further south off Conners Flat Road.
68	42200 - Natural White Pine	Sawtimber Well	7.3	48	81-110	The stand was harvested in 1970 (#39-70 & #43-70), cutting JP 10"+ at the stump. Part of the stand was then within a 1989 harvest (#21-88), cutting merch JP-RP-WP and all hardwoods. Cover is small saw-large pole WP with JP-RP-BF, and oak stump sprouts & BTA from the 1989 harvest. Traces of older residual QA. Handful of super-canopy WP in the southeast corner.

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
69	6122 - Black Spruce	Poletimber Well	19.4	35	1-50	Was final harvested by 1982 (#21-79A), cutting merch stems except cedar. Sub-merch residual was then proposed to be chainsaw felled (FTP W71-171), but no record of that being done. Two-aged stand of regen & residual from the cut. Residual has shifted into the pole class; the regen is only partially transitioned, with wetter ground supporting majority sapling cover. Transition ground has the better-developed spruce pole cover. Set stand age to the harvest, but there is a range of ages, given the merch+ cutting spec and the progressive fill-in for a few years after the harvest (cored 29-65 years old, but could not list as two-aged due to MiFI error). Occasional NWC saw.
70	429 - Mixed Upland Conifers	Poletimber Well	17.8	48	51-80	Was harvested in 1969 (#24-69), cutting JP 10"+ diam at the stump and merch aspen, followed by a DRIP cut in 1972 to remove residual stems 2"+ DBH except larger RP-WP. The stand has small clones of BTA & QA with patches of JP & WP poles in between on the drier ground & black spruce-balsam fir the dominant cover on the lowland inclusions & transition ground edge. Supercanopy WP & RP are concentrated in the stand's southwest and widely-scattered elsewhere.
71	6120 - Lowland Cedar	Poletimber Well	10.8	114	51-80	The stand's SW was within a 1982 harvest (#21-79A), cutting merch stems except cedar. Sub-merch residual was then proposed to be chainsaw felled (FTP W71-171). The stand's core saturated ground has small-diam NWC on sphagnum/root mat lattice over black muck, scattered large pole/small saw tamarack & spruce, and thick balsam fir regen below. The 1982 harvest portion has immature black spruce with mature cedar scattered above (second age on spruce set to harvest). The transition ground edge and drier inclusions have larger-diam healthier cedar, but the majority saturated ground has spindly cedar with top mortality common.
73	6129 - Mixed Coniferous Lowland Forest	Poletimber Well	7.0	67	51-80	Variable cover on ground ranging from flooded, to seasonally wet, to upland transition. Younger pole BS-WP-BF-RM-A with mature to overmature RM-WP-BS-tam-NWC-PB-RP scattered above it. Sparse where the black ash died out.
76	4191 - Mixed Upland Deciduous with Conifer	Poletimber Well	35.6	55	81-110	The east half (SESE section 4) was within a 1970 harvest (#52-70), cutting JP 10"+ diam at the stump and merch aspen. Diverse stand on a mosaic of upland and PArVCo ground, liberally cut with lowland swale inclusions. In addition to the small marsh pockets, there are mucky hillside seeps, and old oxbow sloughs on the floodplain. Dominant cover is variably-distributed QA-RM-WP, with lesser amounts of oak, spruce & fir, and traces of BTA, balsam poplar, NWC & RP. Broadly 2-aged across the dominant species. There are also widely-scattered supercanopy WP that couldn't be recorded due to a MiFI error. Stand contains the Conners Flat Canoe Access Site and MSU white pine research plots (branch flagging).
77	6128 - Lowland Coniferous, Mixed Deciduous	Sawtimber Well	2.3	116	51-80	Island in the river, as seen from north bank: Large NWC, basswood & QA above pole-sapling balsam fir.
78	42250 - Pine, Oak	Sawtimber Medium	6.5	58	51-80	East & west ends of the stand were harvested in 1989 (#21-88), cutting merch JP-RP-WP and all hardwoods. Dry pine-oak stand with declining NPO, immature to mature RP-WP-JP, and small amounts of aspen regenerated from the cut. Canopy and understory cover increases further back from the county road. MSU WP branch flagging study plots flank the Conners Flat Canoe Access Site road.

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
79	4191 - Mixed Upland Deciduous with Conifer	Sawtimber Well	22.9	99	81-110	A salvage & improvement harvest was completed within section 4 in 1970 (#46-70), cutting JP 10"+ diam at the stump and merch aspen. The portion in section 9 was last managed during private ownership. Cover is a mosaic of NPO & RM with BTA & QA clones, & WP-JP-BF filling in. Occasional RP & WO. Dieback & mortality common in the NPO & overmature components. WP branch flagging. Stand picks up low ground along portions of the private boundaries (black spruce & trace NWC there). Windthrow patch in BTA extends from state to private property. Canopy closure increases near the swamps. Canopy drops below 75% closure where oak is dying out.
80	6120 - Lowland Cedar	Sawtimber Well	10.6	117	81-110	On land obtained from Consumers Power. Cedar and black spruce, with scattered large cull RM, supercanopy WP, and thick spruce-fir below. There are mucky hillside seeps and a larger drain that isolates a dry ridge. That upland inclusion has overmature BTA, RM & oak.

Stand	Cover Type	Acres	Managed Site	General Comments:
16	330 - Low-Density Trees	12.1	Yes	Was firewood salvaged by 2003 (#1-03-02), cutting dead oak. The remaining over-mature declining NPO-JP was removed by 2010 (#13-08), cutting merch stems except RP-WP-WO. This portion was split off because there is little of the overstory residual, and has grassy opening inclusions. Post-harvest cover includes scattered residual RP & WP, vigorous NPO stump-sprouts, JP & RP regen, but the combined regen & residual does not meet the forested benchmark. Areas that were sparse pre-harvest have big bluestem.
19	6224 - Treed Bog	1.3	No	Leatherleaf & tag alder with typha, encroaching black spruce, and off-site WP-RP. See notes.
23	3302 - Low Density Conifer Trees	5.4	No	Opening with Penn sedge, big bluestem & sweetfern, perimeter RP & oak, and encroaching JP & cherry brush.
26	3302 - Low Density Conifer Trees	14.5	No	Initial step in the "Five spot" patch cut regeneration system was carried out by 2001 (#033-98), cutting all stems 2"+ DBH in an array of 1.5 acre-sized patches. Heavy deer browse had killed most of the oak regen by the previous YOE, leaving few live stump clumps per patch, along with scattered short, open-grown RP & WP pole-log stems & JP saps. Dense Penn sedge sod layer appears to be inhibiting new seedling establishment.
28	310 - Herbaceous Openland	1.7	No	Former gas well site with grass, sweetfern, some spotted knapweed, and encroaching JP-RP.
30	3302 - Low Density Conifer Trees	12.5	No	Initial step in the "Five spot" patch cut regeneration system was carried out by 2001 (#033-98), cutting all stems 2"+ DBH in an array of 1.5 acre-sized patches. Heavy sedges groundcover may have impeded seedling establishment. Cover varies between patches, but the common theme is BC brush, scattered short & limby saw-pole RP & WP, and low-density sapling cover (JP-RP-WP- Norway spruce-Scotch pine).
32	320 - Upland Shrub	2.4	No	Was final harvested in 1988 (#23-88), cutting all stems 2"+ DBH, but it converted to U-type with cherry brush & perimeter pine volunteers. Seasonally wet ground at the north end.
37	6233 - Wet Meadow	4.3	No	Beaver meadow with significant draw-down. Small amount of open water left near the unmaintained dam. Two intermittent streams drain into it from the west & north.
40	6220 - Alder/willow	25.5	No	Tag alder over marsh grass, with encroaching black spruce and tamarack. South half has a couple higher ground islands with mixed conifers.
44	6239 - Mixed Emergent Wetland	60.4	No	Sedge marsh along the flooding, rimmed with leatherleaf, bog birch, sweet gale, bog rosemary, labrador tea, sphagnum moss, & tag alder. Tamarack colonizing margins. Includes a sub-acre pine island.
45	6224 - Treed Bog	12.9	No	Remote call; carried forward previous YOE info: Tamarack & spruce sapling-pole cover growing over tussock sedge, leatherleaf, tag alder & cattail. Occasional fading WP saw. Stand includes narrow strip of cover meeting the forested benchmark along the east edge, but did not split that out. Very wet, with small island of drier ground on the east edge. Significant mortality seen this YOE from across the flooding on the stand's southwest edge.

Stand	Cover Type	Acres	Managed Site	General Comments:
47	6224 - Treed Bog	12.1	No	Remote call; carried forward previous YOE info: Tamarack & spruce sapling-pole cover growing over sphagnum, tussock sedge, leatherleaf & tag alder. Stand includes narrow strip of cover meeting the forested benchmark along the transition ground edge, but did not split that out. Very wet ground. Significant mortality seen this YOE from across the flooding on the stand's west edge.
48	500 - Water	80.8	No	Conners Marsh Flooding: majority of the surface area resulting from a water control structure in comp 283, with additional flooding to the north behind beaver dams.
49	6224 - Treed Bog	19.7	No	Leatherleaf & bog birch over sphagnum moss & marsh grass, with colonizing tamarack & black spruce. Lowland shrub cover also includes Labrador tea, spiraea & willow.
51	6239 - Mixed Emergent Wetland	39.2	No	Sedge marsh along the flooding, with leatherleaf, sweet gale, bog birch and tag alder. Tamarack and black spruce colonizing the margins.
53	500 - Water	6.7	No	Open water surrounded by marsh.
54	6239 - Mixed Emergent Wetland	14.4	No	Sedge marsh along the flooding with leatherleaf, bog birch, sweet gale, tag alder and colonizing tamarack.
59	3303 - Mixed Low Density Trees	54.3		Salvage & improvement harvesting was completed in 1970 (#36-70, #43-70, #46-70, #49-70, #54-70), cutting JP 10"+ diam at the stump and some merch aspen. Was final harvested in 2011 (#22-08), cutting merch stems except WO-RP-marked NPO (ave 10 sq. ft. total). Primary cover removed was actively-declining NPO and mature to overmature JP. FTP C72-695 was submitted in 2012 to plant JP in poorly-stocked areas. The designated-leave RP distribution is variable, from widely-scattered stems to small pockets. The scattered marked-to-leave oak continues to break up. Regen is sparse with the exception of small BTA clones, patches of JP seedlings, and heavily-browsed oak stump sprouts. Five growing seasons in, and the oak is not above 3' tall. The old burn area in the SW has advanced JP sapling regen. The stand is mostly ridge & sideslope, with flats near the county road. New fence trespass in NE.
62	6225 - Bog	12.4	No	A mix of leatherleaf bog, treed bog, marsh & open water. Half-acre pine island inclusion.
63	6233 - Wet Meadow	2.2	No	Emergent marsh (sedge & grasses) rimmed with leatherleaf & encroaching JP.
65	6233 - Wet Meadow	1.8	No	Emergent marsh (sedge) rimmed with leatherleaf.
66	310 - Herbaceous Openland	1.0	No	Former well pad opening with grass, sweetfern, knapweed & colonizing JP.

Stand	Cover Type	Acres	Managed Site	General Comments:
72	3303 - Mixed Low Density Trees	17.7		Within a forty that was harvested in 1970 (#52-70), cutting JP 10"+ diam at the stump and merch aspen. Was seed tree cut in 2011 (#22-08), cutting merch stems except WO-BC-green marked (NPO-RP-WP-PB, ave 24 sq. ft.). Was an oak-pine stand with declining NPO. Does not meet forested benchmark: residual includes scattered mature oak with RP saw, large sap/small pole JP, & sap to saw WP. Regen includes patches of aspen, and variable distribution in conifer seedlings (JP-RP-WP-BS-BF), tending to be more concentrated on the perimeter & by low ground inclusions. RP & WP continue to seed in. Almost no surviving oak stump sprouts; the trace present is heavily browsed. Canopy NPO continues to die back & windthrow.
74	122 - Road/Parking Lot	6.2	No	Conners Flat Road
75	6220 - Alder/willow	0.9	No	Was an E-type last YOE but death of the black ash converted it to L3 (tag alder over marsh sedge with scattered RM-BF-WP).
81	500 - Water	1.9	No	AuSable River to centerline, and mudflat edge with emergent grasses & sedges.