



Compartment Review Presentation

Grayling Forest Management Unit

Compartment 72169

Entry Year 2020

Acreage: 1,264

County Crawford

Management Area: Grayling Outwash

Revision Date: 2018-07-11

Stand Examiner: Joan Charlebois

Legal Description:

T28N R4W Sections 5 & 6
Frederic Township

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.

Soil and topography:

The terrain is flat to gently-rolling except for a steep ridge that extends across section 5. Rubicon, Kalkaska and Croswell sands are the most common upland soil types, and organic soils such as Tawas, Leafriver, Lupton and AuSable-Bowstring mucks predominate in the lowlands.

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

The compartment encompasses two sections of intact State ownership. The adjacent private property to the north and east have a mix of developed and dispersed recreational use.

Unique Natural Features:

Lost Lake and the Upper Manistee, a designated Natural River, are within the compartment. There is the potential for rare bird and reptile species to occur along the riparian corridors.

Archeological, Historical, and Cultural Features:

Old railroad grades cross through the compartment and large pine stumps from turn-of-the century logging are common.

Special Management Designations or Considerations:

That part of the compartment lying west of Manistee River Road is within the Deward Area, a designated Special Conservation Area (SCA). The Upper Manistee, a designated Natural River, is a High Conservation Value Area (HCVA). That portion of the compartment lying west of Manistee River Road and east of the cleared pipeline corridor is part of the Deward Eastern Massasauga Rattlesnake (EMR) Managed Land, a Dedicated Habitat Area and High Conservation Value Area.

Watershed and Fisheries Considerations:

The Upper Manistee, a designated Natural River, is a quality trout stream. The Lost Lake Outlet, flowing from the south end of Lost Lake into the Upper Manistee, is part of the Natural River designation. A sand trap (Sediment Basin #2) is maintained on the River. Lost Lake is a shallow, warm-water lake popular for pan fishing.

Wildlife Habitat Considerations:

The compartment's mosaic of aspen, pine, cedar and lowland & upland brush provide habitat for a variety of game and non-game wildlife species, including deer, grouse, hare, turkey and opening-dependent songbirds.

Mineral Resource and Development Concerns and/or Restrictions

An active sand/gravel pit is located two miles to the southeast, and sand & gravel potential appears to be very good within the compartment. The entire compartment is currently leased and partially developed for Antrim Shale gas and Guelph (Niagaran) reefs. No known metallic mineral potential exists in this part of the state.

Vehicle Access:

Manistee River Road is the only county road within the compartment. Additional access is provided by two-tracks and gas well pipeline easement roads. By Director's Order, Deward Area roads are closed to motor vehicle traffic unless posted as open. In addition, snowmobiles cannot be operated within the Deward Area except on those posted-open roads. Within this compartment's portion of the Deward Area, there are only two open roads: the Lost Lake access road and part of the sand trap access road. Through the Public Act 288 planning process, both those roads have been posted closed to ORVs.

Survey Needs:

None needed at this time.

Recreational Facilities and Opportunities:

There are no designated trails or facilities within the compartment. Fly fishing is popular along the Upper Manistee River. Waterfowl hunting, fishing and dispersed camping are popular at Lost Lake. The Upper Manistee's Natural River Plan prohibits camping with 175 feet of the mainstream. Upland game hunting opportunities are abundant in the compartment's east half.

Fire Protection:

The compartment is dominated by upland deciduous and lowland types. Gas wells and buried pipelines occur within the compartment, although none were identified as hydrogen sulfide hazards. Lost Lake and the Upper Manistee River are potential water sources.

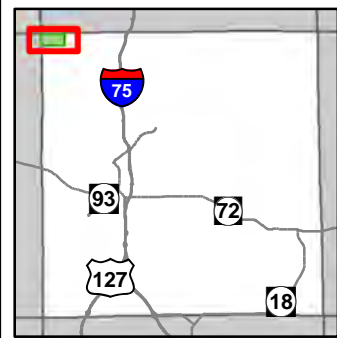
Additional Compartment Information:**The following reports from the Inventory are attached:**

- 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:

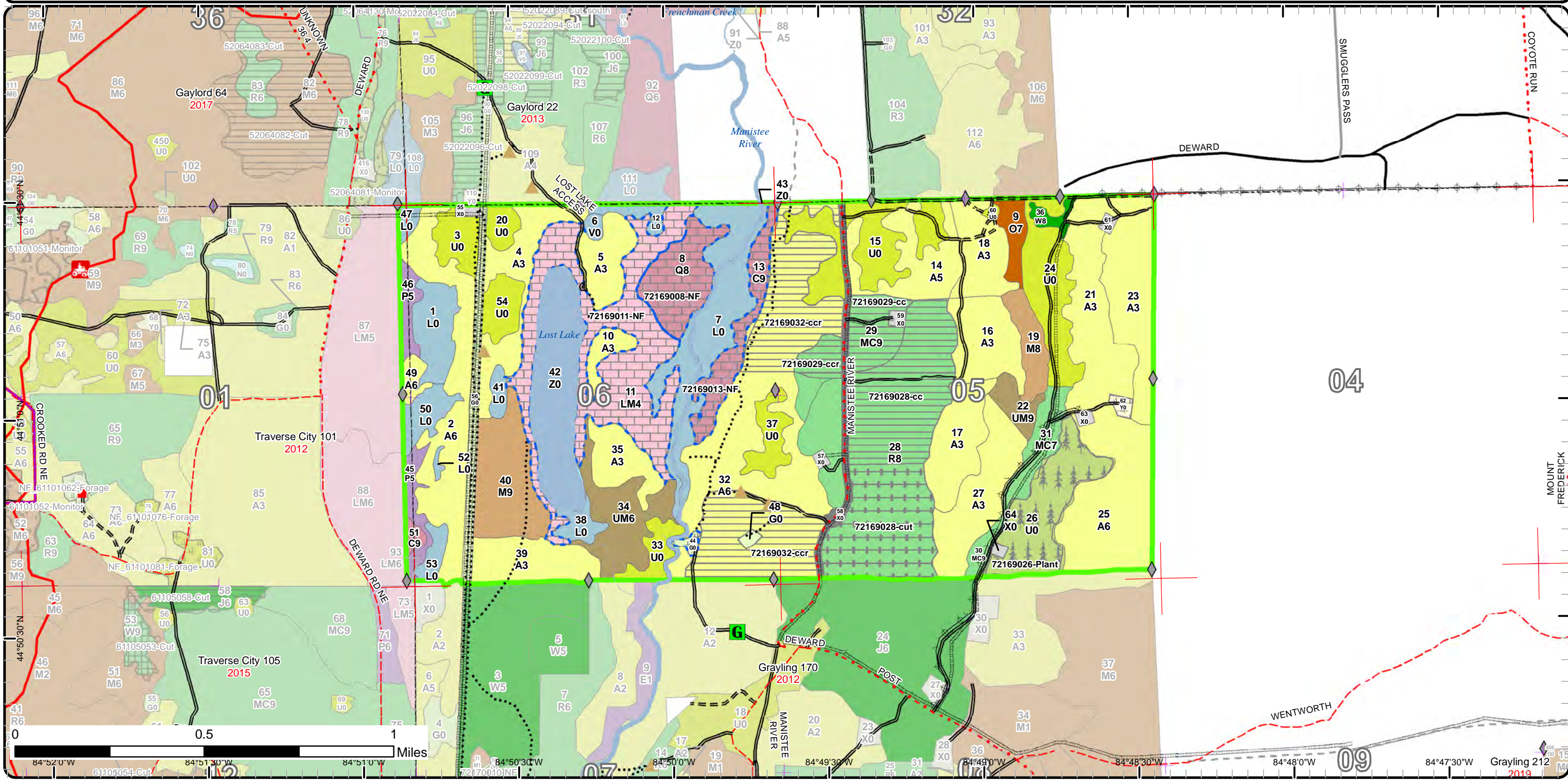
- Base feature information, stand boundaries, cover types, and numbers**
- Proposed treatments**
- Site condition boundaries**
- Details on the road access system**

Cover Type & Treatments Map



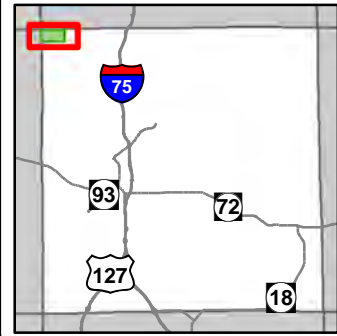
Compartment: 169
 T28N, R04W, Sec. 5, 6
 County: Crawford
 Unit: Grayling
 Mgmt Area: Grayling Outwash
 YOE: 2020
 Acres: 1,264 GIS Calculated
 Examiner: Joan Charlebois
 Map Revised: 1/28/2019 Map
 Phase: Post-Review

- Miris Corners
- Remonumented Section Corners
- ◆ Field Grade Corners
- Counties
- DNR - Secondary Forest Road
- == DNR - Forest Access Route
- Federal / State / County - Paved Road
- - - County - Gravel Road
- - - County - Dirt Road (Seasonal)
- Private - Paved Road
- - - Private - Dirt / Gravel Road
- ... DNR - Management Access (NLP)
- ORV Trails
- Designated ATV Trails
- Designated ORV Route
- Designated Snowmobile Trails
- ▲ Berms
- G Gate
- ▲ Structures
- Intermittent Stream
- Lake/Pond
- Perennial River
- Lakes and Rivers All
- Pipeline
- Powerline
- Compartment Boundary
- Treatments with Site Conditions
- Other Treatment - See Comments
- Planting (tree species)
- Clearcut (w/Reserves)
- Harvest, Overstory Removal
- Habitat Structures
- 411 - Northern Hardwood
- 412 - Oak Types
- 413 - Aspen Types
- 421 - Planted Pines
- 422 - Natural Pines
- 430 - Upland Mixed Forest
- 611 - Lowland Deciduous Forest
- 612 - Lowland Coniferous Forest
- 613 - Lowland Mixed Forest
- 110 - Low Intensity Urban
- 122 - Roads/Parking Lot
- 310 - Herbaceous Openland
- 320 - Upland Shrub
- 330 - Low Density Trees
- 500 - Water
- 622 - Lowland Shrub
- 710 - Sand/Soil
- Lakes

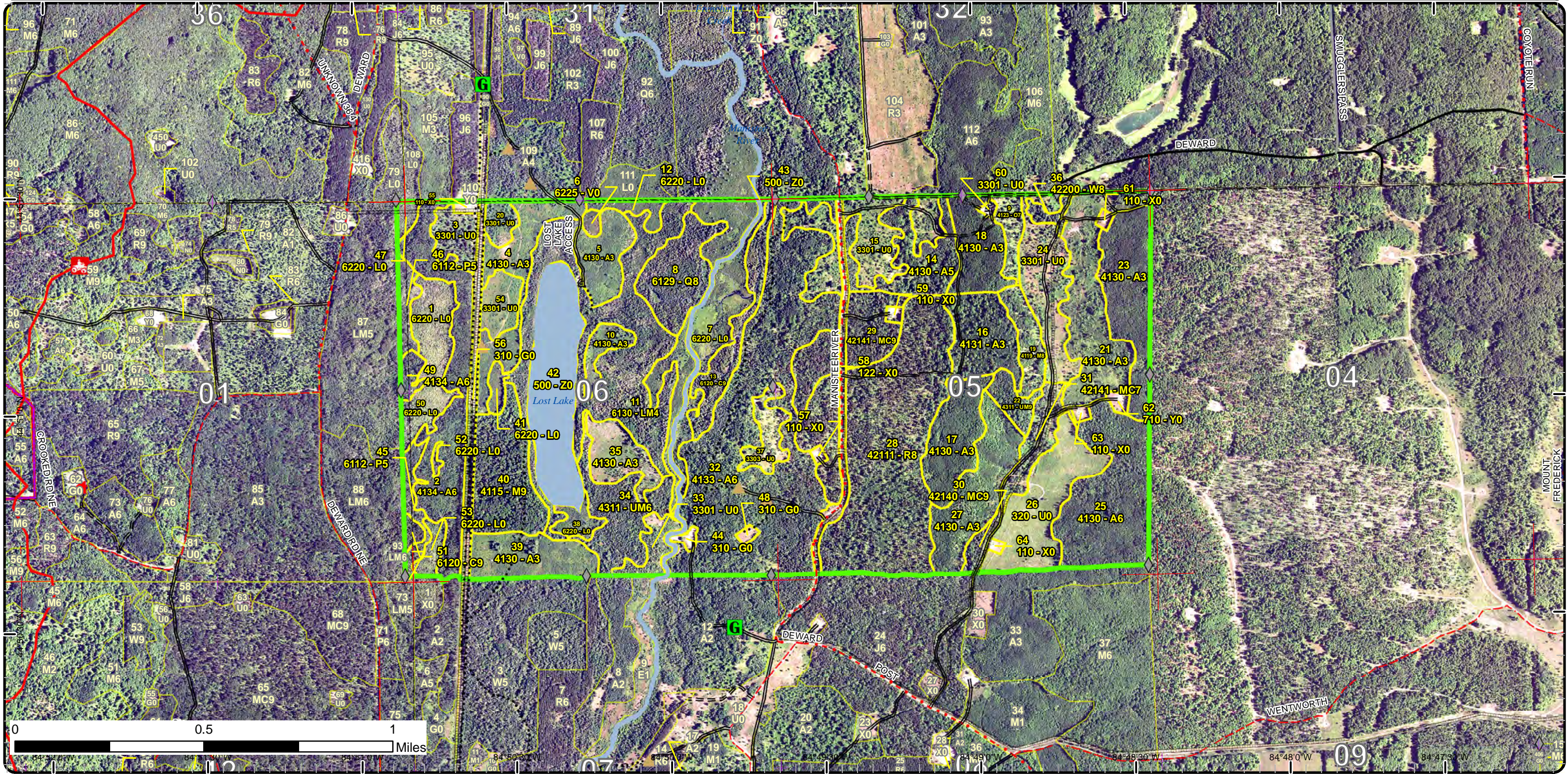


Stand Boundary Map

Compartment: 169
 T28N, R04W, Sec. 5, 6
 County: Crawford
 Unit: Grayling
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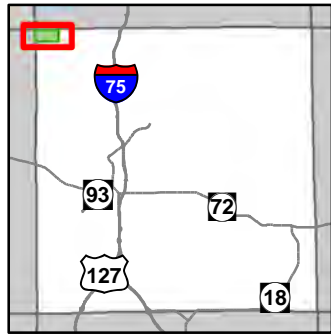


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- Private - Dirt / Gravel Road
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Special Conservation Areas & Site Conditions Map

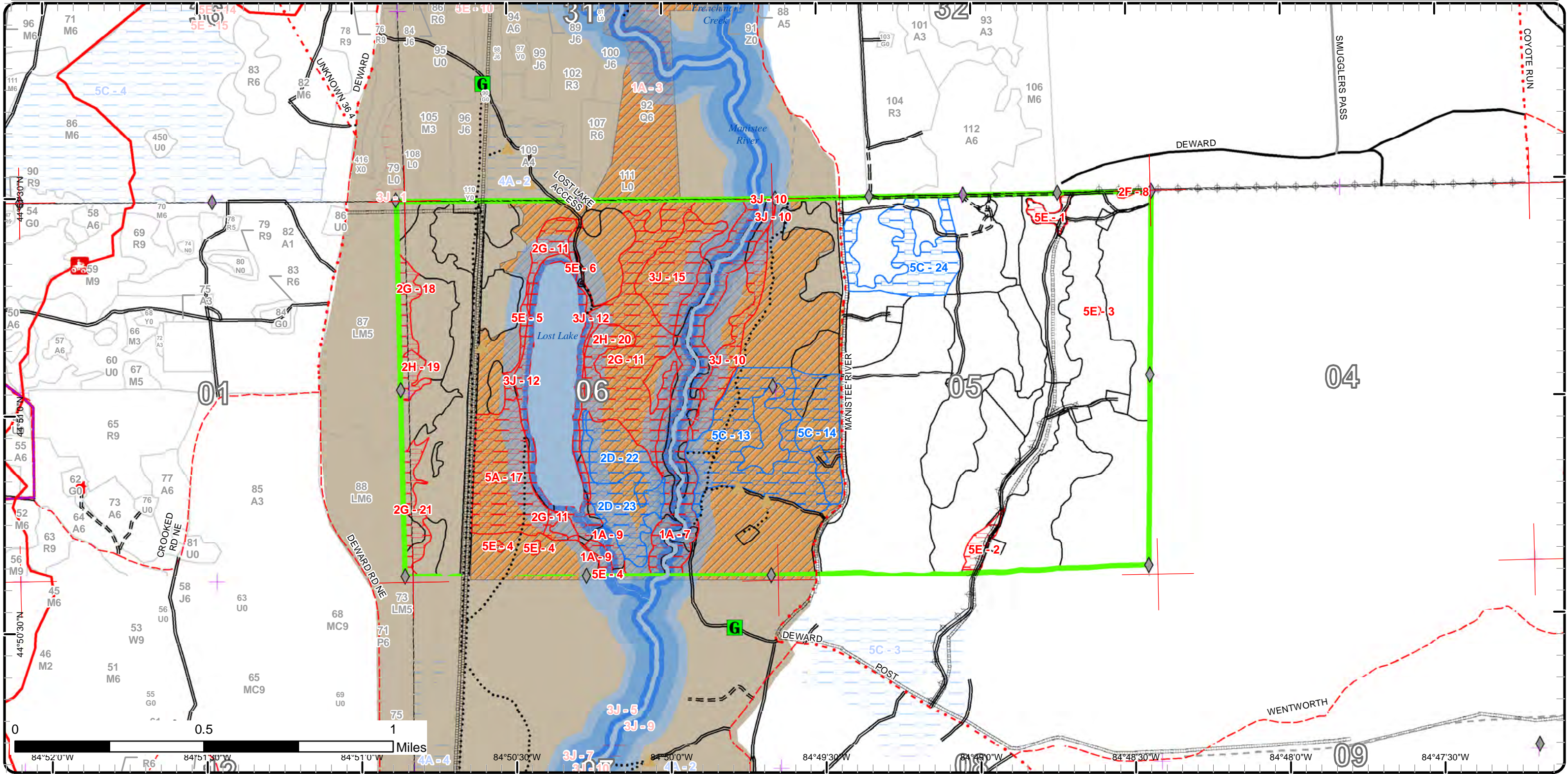
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- G Gate
- 🏠 Structures
- Intermittent Stream
- Lake/Pond
- Perennial River
- Lakes and Rivers All
- Pipeline
- ⊕ Powerline
- Compartment Boundary
- Available w/ Constraints
- Unavailable

2D: Portable Bridge Needed (Dept. bridge will be adequate)
 5C: Delay treatment for age/size class diversity or exceptional site quality
 1A: Federal/State/Local Law
 2F: Too steep
 2G: Too wet (sensitive soils, does not include access issues)
 2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)
 3J: Water quality / BMPs (stream, river, or lake)
 5A: Not able to obtain desirable regeneration
 5E: Long-Term Retention

- Natural Rivers Vegetative Buffer
- Natural Rivers Zoning District
- Eastern Massasauga Managed Land
- Dedicated Management Areas
- Cold Water Streams
- Cold Water Lakes
- High Priority Trout Stream Buffer



Report 1 – Total Acres by Cover Type and Age Class

Grayling Mgt. Unit

Compartment 169 Year of Entry 2020

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 | 133 | 32 | 102 | 105 | 0 | 163 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 535 |
| Bog | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Cedar | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 21 |
| Herbaceous Openland | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 |
| Low-Density Trees | 108 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 108 |
| Lowland Aspen/Balsam Poplar | 0 | 0 | 0 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| Lowland Conifers | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 25 |
| Lowland Mixed Forest | 0 | 0 | 0 | 0 | 0 | 0 | 83 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 83 |
| Lowland Shrub | 95 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 95 |
| Northern Hardwood | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 46 |
| Oak | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| Planted Mixed Pines | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 44 |
| Red Pine | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 120 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 120 |
| Sand, Soil | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Upland Mixed Forest | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 |
| Upland Shrub | 37 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37 |
| Urban | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| Water | 52 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 51 |
| White Pine | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Total | 332 | 133 | 32 | 102 | 119 | 0 | 246 | 30 | 172 | 10 | 34 | 31 | 25 | 0 | 0 | 0 | 0 | 0 | 1263 |



Report 2 – Treatment Summary

Grayling Mgt. Unit

Year of Entry: 2020

Acres of Harvest

Compartment 169

Total Compartment Acres: 1,264

Commercial Harvest - 211
 Harvests with Site Condition - 0
 Next Step Harvest - 0
 Habitat Cut - 0

Cover Type by Harvest Method

| | Clearcut | Selection | Patch Clearcut | Seed Tree | Shelterwood | Thinning | Overstory Removal | Salvage | Other | Total Acres |
|---------------------|------------|-----------|----------------|-----------|-------------|-----------|-------------------|----------|----------|-------------|
| Aspen | 84 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 84 |
| Planted Mixed Pines | 23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 |
| Red Pine | 55 | 0 | 0 | 0 | 0 | 48 | 0 | 0 | 0 | 104 |
| Total | 163 | 0 | 0 | 0 | 0 | 48 | 0 | 0 | 0 | 211 |

Proposed and Next Step Treatments by Method

| | Harvest | Site Prep | Planting | Seeding | Burning | Pesticide | Monitoring | Other | Non-Forest Mgt. | Total Acres |
|--------------|------------|------------|------------|----------|----------|------------|------------|----------|-----------------|-------------|
| Current | 211 | 0 | 34 | 0 | 0 | 0 | 3 | 127 | 0 | 375 |
| Next Step | 0 | 143 | 105 | 0 | 0 | 177 | 350 | 0 | 0 | 775 |
| Total | 211 | 143 | 139 | 0 | 0 | 177 | 350 | 3 | 127 | 1150 |



| S t a n d | Treatment Name | Acres | Stand CoverType | Size Density | Stand Age | BA Range | Treatment Type | Treatment Method | Cover Type Objective | Age Structure | Approval Status |
|-----------------------|-------------------|-------|--|---------------------|--------------|-------------|-------------------|------------------------------------|--|------------------|-------------------------|
| 8 | 72169008-NF | 24.9 | 6129 - Mixed Coniferous Lowland Forest | Sawtimber Medium | 118 | 111- 140 | NonForestMgt | Brushpile/Woody Debris Creation | 6129 - Mixed Coniferous Lowland Forest | Even-Aged | Draft Field Boundary |

Habitat Cut: No

Site Condition: BMPs

Prescription WLD will create horizontal cover for snowshoe hare within this stand by hinge cutting and dropping conifer species(primarily black spruce and balsam fir) except cedar. This horizontal cover work will be focused primarily along the stand's edge and around canopy gaps. No more than 5 trees/acre are to be felled within 175 feet of the Upper Manistee, a designated Natural River, and no trees are to be cut within 50 feet of it.

Next Step
Treatments:

Acceptable
Regen:

Other
Comment:

Proposed Start Date: 10/1 /2019

| | | | | | | | | | | | |
|----|-------------|------|-----------------------------|--------------------|----|------|--------------|------------------------------------|-------------------------------|-----------|-------------------------|
| 11 | 72169011-NF | 83.1 | 6130 - Fir, Aspen, Maple | Poletimber Poor | 58 | 1-50 | NonForestMgt | Brushpile/Woody Debris Creation | 613 - Lowland Mixed Forest | Even-Aged | Draft Field Boundary |
|----|-------------|------|-----------------------------|--------------------|----|------|--------------|------------------------------------|-------------------------------|-----------|-------------------------|

Habitat Cut: No

Site Condition: Too Wet

Prescription WLD will create horizontal cover for snowshoe hare within this stand by hinge cutting and dropping conifer species(primarily black spruce and balsam fir) except cedar. This horizontal cover work will be focused primarily along the stand's edge and around canopy gaps. No more than 5 trees/acre are to be felled within 175 feet of the Upper Manistee, a designated Natural River, or within 100 feet of Lost Lake, and no trees are to be cut within 50 feet of either water body.

Next Step
Treatments:

Acceptable
Regen:

Other
Comment:

Proposed Start Date: 10/1 /2019

| | | | | | | | | | | | |
|----|-------------|------|-------------------------|-------------------|-----|-------------|--------------|------------------------------------|-------------------------|-----------|-------------------------|
| 13 | 72169013-NF | 19.0 | 6120 - Lowland Cedar | Sawtimber Well | 106 | 141- 170 | NonForestMgt | Brushpile/Woody Debris Creation | 6120 - Lowland Cedar | Even-Aged | Draft Field Boundary |
|----|-------------|------|-------------------------|-------------------|-----|-------------|--------------|------------------------------------|-------------------------|-----------|-------------------------|

Habitat Cut: No

Site Condition: BMPs

Prescription WLD will create horizontal cover for snowshoe hare within this stand by hinge cutting and dropping conifer species(primarily black spruce and balsam fir) except cedar. This horizontal cover work will be focused primarily along the stand's edge and around canopy gaps. No more than 5 trees/acre are to be felled within 175 feet of the Upper Manistee, a designated Natural River, and no trees are to be cut within 50 feet of it.

Next Step
Treatments:

Acceptable
Regen:

Other
Comment:

Proposed Start Date: 10/1 /2019

| | | | | | | | | | | | | |
|----|--------------------|------|--------------------|------------|--|--|-----------------|----------|---------|----------------------------|-----------|-------------------------|
| 26 | 72169026- Plant | 33.9 | 320 - Upland Shrub | Nonstocked | | | Unspec ified | Planting | Replant | 4211 - Planted Red Pine | Even-Aged | Draft Field Boundary |
|----|--------------------|------|--------------------|------------|--|--|-----------------|----------|---------|----------------------------|-----------|-------------------------|

Habitat Cut: No

Site Condition:

Prescription supplemental plant

Specs:

Next Step Monitoring, Artificial Regen(1yr); Pesticide, Skidder - Release; Planting, Replant; Monitoring, Artificial Regen(3yr)

Treatments:

Acceptable Fully stocked red pine.

Regen:

Other Percent to Treat = 100%

Comment:

Proposed Start Date: 10/1 /2018



| Stand | Treatment Name | Acres | Stand CoverType | Size Density | Stand Age | BA Range | Treatment Type | Treatment Method | Cover Type Objective | Age Structure | Approval Status |
|-------|----------------|-------|---|---------------------|-----------|----------|----------------|------------------|----------------------------|---------------|-------------------------|
| 28 | 72169028-cc | 55.4 | 42111 - Planted Red Pine, Mixed Deciduous | Sawtimber Medium | 79 | 51-80 | Harvest | Clearcut | 4211 - Planted Red Pine | Even-Aged | Draft Field Boundary |

Habitat Cut: No

Site Condition:

Prescription Final harvest 1"+ DBH in preparation for planting RP. No retention in this half of stand 28. Follow up with site prep as needed, which may include herbicide application, to support the planted RP establishment.

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

Acceptable Full stocking in planted RP.
Regen:

Other
Comment:

Proposed Start Date: 10/1 /2019

| | | | | | | | | | | | |
|----|--------------|------|---|---------------------|----|-------|---------|----------------------|---|-----------|-------------------------|
| 28 | 72169028-cut | 48.4 | 42111 - Planted Red Pine, Mixed Deciduous | Sawtimber Medium | 79 | 51-80 | Harvest | Overstory Removal | 4191 - Mixed Upland Deciduous with Conifer | Even-Aged | Draft Field Boundary |
|----|--------------|------|---|---------------------|----|-------|---------|----------------------|---|-----------|-------------------------|

Habitat Cut: No

Site Condition:

Prescription Final harvest merch stems except the xlog oak and island retention.

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

Acceptable The harvest is intended to release the existing advanced A-JP-O-RM-RP-WP regen.
Regen:

Other
Comment:

Proposed Start Date: 6 /29/2018

| | | | | | | | | | | | |
|----|-------------|------|---|-------------------|----|-------|---------|----------|----------------------------|-----------|-------------------------|
| 29 | 72169029-cc | 15.9 | 42141 - Planted Mixed Pine, Mixed Deciduous | Sawtimber Well | 78 | 51-80 | Harvest | Clearcut | 4211 - Planted Red Pine | Even-Aged | Draft Field Boundary |
|----|-------------|------|---|-------------------|----|-------|---------|----------|----------------------------|-----------|-------------------------|

Habitat Cut: No

Site Condition:

Prescription Final harvest 1"+ DBH in preparation for planting RP. No retention in this half of stand 29. Follow up with site prep as needed, which may include herbicide application, to support the planted RP establishment.

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

Acceptable Full stocking in planted RP.
Regen:

Other
Comment:

Proposed Start Date: 10/1 /2019

| | | | | | | | | | | | |
|----|--------------|-----|---|-------------------|----|-------|---------|----------------------------|--------------------------------|-----------|-------------------------|
| 29 | 72169029-ccr | 7.1 | 42141 - Planted Mixed Pine, Mixed Deciduous | Sawtimber Well | 78 | 51-80 | Harvest | Clearcut with Retention | 4136 - Aspen, Mixed Conifer | Even-Aged | Draft Field Boundary |
|----|--------------|-----|---|-------------------|----|-------|---------|----------------------------|--------------------------------|-----------|-------------------------|

Habitat Cut: No

Site Condition:

Prescription Final harvest stems 2"+ DBH except the xlog oak and island retention.

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

Acceptable Moderate stocking in aspen with a conifer component.
Regen:

Other Within the Deward Road EMR CCA: refer to the EMR guidelines for forest management.
Comment:

Proposed Start Date: 6 /29/2018



| S t a n d | Treatment Name | Acres | Stand CoverType | Size Density | Stand Age | BA Range | Treatment Type | Treatment Method | Cover Type Objective | Age Structure | Approval Status |
|-----------------------|-------------------|-------|-----------------------------|--------------------|--------------|-------------|-------------------|----------------------------|--------------------------------|------------------|-------------------------|
| 32 | 72169032-ccr | 84.3 | 4133 - Aspen, Mixed Pine | Poletimber Well | 50 | 51-80 | Harvest | Clearcut with Retention | 4136 - Aspen, Mixed Conifer | Even-Aged | Draft Field Boundary |

Habitat Cut: No

Site Condition:

Prescription Final harvest stems 2"+ DBH except the xlog oak, RP legacy trees, and island retention. Exclude as retention the 175' Natural Rivers buffer, the
Specs: 100' intermittent stream RMZ and focus some of the additional needed retention along the open two-track, parking lot and walking trail to the river.

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

Acceptable Moderate stocking in aspen with fir-WP components. LDT-U inclusions are expected and accepted within areas that were sparse pre-harvest.
Regen:

Other Within the Deward Road EMR CCA: refer to the EMR guidelines for forest management. Protect survey corner witness trees. Apply hare spec
Comment: as indicated by the Wildlife Biologist.

Proposed Start Date: 10/1 /2019

| | | | | | | | | | | | |
|----|-------------|-----|------------------------------|------------|--|-----------------|-------|-------|---------------------------------|--|-------------------------|
| 44 | 72169044-FD | 1.5 | 310 - Herbaceous Openland | Nonstocked | | Unspec ified | Other | Other | 310 - Herbaceous Openland | | Draft Field Boundary |
|----|-------------|-----|------------------------------|------------|--|-----------------|-------|-------|---------------------------------|--|-------------------------|

Habitat Cut: No

Site Condition: Federal/State/Local Law

Prescription Maintain the UMR Sediment Basin #2 work pad and spoils disposal site, leveling the spoils and removing excess material to a remote DNR-
Specs: designated location. If dredging is discontinued, stabilize and re-vegetate the site using FRD-approved planting mix.

Next Step
Treatments:

Acceptable
Regen:

Other New FTP and DEQ permits needed for continued maintenance of the sand trap.
Comment:

Proposed Start Date: 10/1 /2019

| | | | | | | | | | | | |
|----|-------------|-----|------------------|------------|--|-----------------|-------|-------|---------------------------------|--|-------------------------|
| 62 | 72169062-FD | 1.8 | 710 - Sand, Soil | Nonstocked | | Unspec ified | Other | Other | 310 - Herbaceous Openland | | Draft Field Boundary |
|----|-------------|-----|------------------|------------|--|-----------------|-------|-------|---------------------------------|--|-------------------------|

Habitat Cut: No

Site Condition:

Prescription Designated remote location for excess spoils from the UMR Sediment Basin #2. Spoils shall be leveled.. If dredging is discontinued, the site will
Specs: be re-vegetated using FRD-approved plant mixes.

Next Step
Treatments:

Acceptable
Regen:

Other
Comment:

Proposed Start Date: 10/1 /2019

**Total Treatment
 Acreage Proposed: 375.3**

Report 4 – Site Conditions

Grayling Mgt. Unit
Joan Charlebois : Examiner

Compartment: 169
Year of Entry: 2020

Availability for Management

| Total Acres | Acres Available | Acres Avail | | Acres Not Available | Dominant Site Conditions | Dominant Site Conditions | | | | | | | | | |
|----------------|--------------------|----------------|--|------------------------|-----------------------------|--------------------------|----------|-----------|----|----|----|----|----|----|----|
| | | With Condition | | | | 2D | 4A | 5C | 1A | 2F | 2G | 2H | 3J | 5A | 5E |
| 537 | 429 | 87 | | 20 | Aspen | 16 | 0 | 71 | 6 | 1 | 0 | 11 | 0 | 0 | 2 |
| 2 | 2 | 0 | | 0 | Bog | | | | | | | | | | 0 |
| 21 | 0 | 0 | | 21 | Cedar | | | 0 | 4 | | 2 | | 15 | | |
| 17 | 15 | 0 | | 1 | Herbaceous Openland | | | | 1 | | | | | | |
| 107 | 102 | 0 | | 5 | Low-Density Trees | 0 | 0 | 0 | 5 | | | | | | 0 |
| 14 | 0 | 0 | | 14 | Lowland Aspen/Balsam Poplar | | | | | | 14 | | | | |
| 25 | 0 | 0 | | 25 | Lowland Conifers | | | | 4 | | 0 | | 21 | | |
| 83 | 0 | 0 | | 83 | Lowland Mixed Forest | 0 | | | 3 | | 59 | 0 | 16 | 0 | 4 |
| 95 | 65 | 0 | | 30 | Lowland Shrub | | | 0 | 29 | | 0 | 0 | 1 | 0 | 0 |
| 46 | 12 | 0 | | 34 | Northern Hardwood | | | | | | 0 | | 0 | 33 | 1 |
| 8 | 8 | 0 | | 0 | Oak | | | | | | | | | | |
| 44 | 37 | 3 | | 4 | Planted Mixed Pines | | | 3 | | | | | | | 4 |
| 120 | 104 | 16 | | 0 | Red Pine | | | 16 | | | | | | | |
| 2 | 2 | 0 | | 0 | Sand, Soil | | | | | | | | | | |
| 34 | 7 | 18 | | 9 | Upland Mixed Forest | 18 | | | 5 | | 0 | | 1 | | 2 |
| 37 | 36 | 0 | | 0 | Upland Shrub | | | | | | | | | | 0 |
| 19 | 18 | 0 | | 0 | Urban | | | 0 | | | | | | | 0 |
| 51 | 45 | 0 | | 7 | Water | | | | 7 | | | | 0 | | 0 |
| 3 | 0 | 0 | | 3 | White Pine | | | | | | | | | | 3 |
| 1,264 | 883 | 125 | | 256 | Total Forested Acres | 34 | 0 | 91 | 64 | 1 | 76 | 11 | 54 | 33 | 17 |
| | 70% | 10% | | 20% | 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 | 4 | Unspecified | Unspecified | Unspecified | Unspecified |
| Comments: Designated retention left when stand 21 was harvested in 2014. | | | | | | | |
| 2 | Unavailable | 5E: Long-Term Retention | 4 | Unspecified | Unspecified | Unspecified | Unspecified |
| Comments: | | | | | | | |

Report 4 – Site Conditions

Grayling Mgt. Unit
Joan Charlebois : Examiner

Compartment: 169
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| | | | | | | | |
|---|-------------|--------------------------------|----|---|-------------|-------------|-------------|
| 3 | Unavailable | 5E: Long-Term Retention | 0 | Unspecified | Unspecified | Unspecified | Unspecified |
| Comments: | | | | | | | |
| 4 | Unavailable | 5E: Long-Term Retention | 3 | 3J: Water quality / BMPs (stream, river, or lake) | Unspecified | Unspecified | Unspecified |
| Comments: Designated retention left when stand 39 was final harvested in 2012. The east poly along the Lost Lake Outlet carries the 3J Site Condition as it also served as the Natural Rivers buffer. | | | | | | | |
| 5 | Unavailable | 5E: Long-Term Retention | 3 | Unspecified | Unspecified | Unspecified | Unspecified |
| Comments: Designated retention from when stands 7 & 120 were final harvested in 2011, excluding the sideslope down to stand 5 and a peninsula cut off by a low swale. | | | | | | | |
| 6 | Unavailable | 5E: Long-Term Retention | 3 | 3J: Water quality / BMPs (stream, river, or lake) | Unspecified | Unspecified | Unspecified |
| Comments: Designated retention left when original stand 4 was cut in 2011. Encompasses hillside down to swamp and lake RMZ. | | | | | | | |
| 7 | Unavailable | 1A: Federal/State/Local Law | 57 | 3J: Water quality / BMPs (stream, river, or lake) | Unspecified | Unspecified | Unspecified |
| Comments: The Upper Manistee River 175' Natural Rivers restricted cutting zone. | | | | | | | |
| 8 | Unavailable | 2F: Too steep | 1 | Unspecified | Unspecified | Unspecified | Unspecified |
| Comments: Narrow strip left uncut in #026-10, on a steep hilltop and hemmed in by an overhead powerline. Was not designated retention. | | | | | | | |

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| | | | | | | | |
|---|--------------------|---|----|---|-------------|-------------|-------------|
| 9 | Unavailable | 1A: Federal/State/Local Law | 8 | 3J: Water quality / BMPs (stream, river, or lake) | Unspecified | Unspecified | Unspecified |
| Comments: The Lost Lake Outlet stream 175' Natural Rivers restricted cutting zone under the Upper Manistee's designation. | | | | | | | |
| 10 | Unavailable | 3J: Water quality / BMPs (stream, river, or lake) | 15 | Unspecified | Unspecified | Unspecified | Unspecified |
| Comments: A backwater slough runs the length of the stand, with several cross-drainages out to the Upper Manistee. | | | | | | | |
| 11 | Unavailable | 2G: Too wet (sensitive soils, does not include access issues) | 60 | Unspecified | Unspecified | Unspecified | Unspecified |
| Comments: Beyond the transition ground edge, large portions of the stand are on saturated soils with sparser tree cover. | | | | | | | |
| 12 | Unavailable | 3J: Water quality / BMPs (stream, river, or lake) | 18 | Unspecified | Unspecified | Unspecified | Unspecified |
| Comments: Lost Lake RMZ | | | | | | | |
| 13 | Available | 5C: Delay treatment for age/size class diversity or exceptional site quality | 46 | Unspecified | Unspecified | Unspecified | Unspecified |
| Comments: Treat this portion north of the Deward open road, parking lot and river access walking trail next YOE. | | | | | | | |
| 14 | Available | 5C: Delay treatment for age/size class diversity or exceptional site quality | 19 | Unspecified | Unspecified | Unspecified | Unspecified |
| Comments: Consider treating next YOE. | | | | | | | |

Report 4 – Site Conditions

Grayling Mgt. Unit

Joan Charlebois : Examiner

Compartment: 169

Year of Entry: 2020

| | | | | | | | |
|---|--------------------|---|----|---|-------------|-------------|-------------|
| 15 | Unavailable | 3J: Water quality / BMPs (stream, river, or lake) | 21 | 5A: Not able to obtain desirable regeneration | Unspecified | Unspecified | Unspecified |
| Comments: Streams cross through the stand's south half. Access from the west is limited by very saturated ground. | | | | | | | |
| 17 | Unavailable | 5A: Not able to obtain desirable regeneration | 33 | Unspecified | Unspecified | Unspecified | Unspecified |
| Comments: Hemlock health poorest in the thinned areas. Allow the hemlock time to adjust. | | | | | | | |
| 18 | Unavailable | 2G: Too wet (sensitive soils, does not include access issues) | 7 | Unspecified | Unspecified | Unspecified | Unspecified |
| Comments: Currently flooded. Site Condition could resolve itself if the beaver activity decreases. | | | | | | | |
| 19 | Unavailable | 2H: Blocked by physical obstacle (e.g. upland stand in a lowland area) | 4 | Unspecified | Unspecified | Unspecified | Unspecified |
| Comments: Was accessed from the east. Currently cut off by beaver flooding. | | | | | | | |
| 20 | Unavailable | 2H: Blocked by physical obstacle (e.g. upland stand in a lowland area) | 7 | Unspecified | Unspecified | Unspecified | Unspecified |
| Comments: The stand was regenerated through a non-commercial WLD treatment in which the aspen was chainsaw-felled and left on the ground. | | | | | | | |
| 21 | Unavailable | 2G: Too wet (sensitive soils, does not include access issues) | 10 | Unspecified | Unspecified | Unspecified | Unspecified |
| Comments: Currently flooded. Site Condition could resolve itself if the beaver activity decreases. | | | | | | | |

Report 4 – Site Conditions

Grayling Mgt. Unit

Joan Charlebois : Examiner

Compartment: 169

Year of Entry: 2020

| | | | | | | | |
|---|------------------|---|----|-------------|-------------|-------------|-------------|
| 22 | Available | 2D: Portable Bridge Needed (Dept. bridge will be adequate) | 16 | Unspecified | Unspecified | Unspecified | Unspecified |
| <p>Comments: The stand was regenerated through a non-commercial WLD treatment in which the aspen was chainsaw-felled and left on the ground. Access from the north is cut off by low ground. Access from the south is limited by the Lost Lake Outlet stream, part of the Upper Manistee's Natural River designation. Because of beaver activity, the stream channel is dry much of the year.</p> | | | | | | | |
| 23 | Available | 2D: Portable Bridge Needed (Dept. bridge will be adequate) | 18 | Unspecified | Unspecified | Unspecified | Unspecified |
| <p>Comments: Access from the north is cut off by low ground. Access from the south is limited by the Lost Lake Outlet stream, part of the Upper Manistee's Natural River designation. Because of beaver activity, the stream channel is dry much of the year.</p> | | | | | | | |
| 24 | Available | 5C: Delay treatment for age/size class diversity or exceptional site quality | 25 | Unspecified | Unspecified | Unspecified | Unspecified |
| <p>Comments: Consider treating next YOE.</p> | | | | | | | |

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 |
|----------|--------------|-------------|----------------|-------|
|----------|--------------|-------------|----------------|-------|

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. To view specific Zoning Districts and Vegetative Buffers for each Natural River see the table located on the I:\Documentation\GDSE data folder. |



| Stand | Level 4 Cover Type | Size Density | Acres | Stand Age | BA Range | General Comments: |
|-------|--|------------------|-------|-----------|----------|--|
| 2 | 4134 - Aspen, Spruce/Fir | Poletimber Well | 48.8 | 37 | 51-80 | The stand's north half was K-G bladed in 1959 and then the entire stand was part of a large area cut in 1982 through a non-commercial WLD FTP (W71-148, for a D-7 with tree-cutter blade) that also extended into similar cover in Kalkaska County. Excluded from the cutting was an acre near the wellsite and a narrow strip along the length of the cleared pipeline corridor. Those exclusions have mature aspen cover, along with WP saw flanking the south half of the pipeline interface. The treated area regenerated to aspen with a significant balsam fir component. Hypoxylon and black canker prevalence varies widely by clone. Heavily-affected clones run 4-5" DBH. Healthier clones run 6-7" DBH. Stand picks up low ground along the L-types, with beaver cutting and flooding along that edge. |
| 4 | 4130 - Aspen | Sapling Well | 26.2 | 8 | Immature | Marginal aspen stand (established through KG-blading) was final harvested in 2011 (#038-10), cutting stems 2"+ DBH except hemlock, cedar and boundary-excluded retention (Lost Lake RMZ). Regenerated well to aspen with BC & RM, with small U/G openings that were sparse pre-harvest. Occasional residual RM and oak above. Picks up some low ground edge by the the swamp. Regen passed to M.O. at time of sale closure in 2013. |
| 5 | 4130 - Aspen | Sapling Well | 16.7 | 8 | Immature | Marginal aspen stand (established through KG-blading) was final harvested in 2011 (#038-10), cutting stems 2"+ DBH except hemlock, cedar and boundary-excluded retention (portion west of Lost Lake access two-track). Cutting also left widely-scattered pole-saw oak. Regenerated well to aspen with BC and fir. Stand picks up some lowland edge and inclusions. Regen passed to M.O. at time of sale closure in 2013. |
| 8 | 6129 - Mixed Coniferous Lowland Forest | Sawtimber Medium | 24.9 | 118 | 111-140 | The canopy alternates between dense pockets of cedar and sparser tamarack, fir and spruce cover. The stand's center has a couple acres of windthrow from the 1980's where most of the cedar root-tipped. There are scattered NWC seedlings within that area, but the canopy is now dominated by paper birch and balsam fir. Two streams run through the stand's south half and drain into the Upper Manistee. |
| 9 | 4123 - Red Oak | Sawtimber Poor | 7.8 | 81 | 1-50 | Originally part of stand 19's 2015 shelterwood harvest (#026-10), spec'd to cut all stems except oak, pine, beech and widely-scattered xlog sugar maple. Harvest restrictions and equipment limitations prevented completion of cutting on the steepest portions of the slope. The north half stand 9 has shallower terrain, and harvesting was completed on all but the steep upper slope in the SW. Canopy closure drifts off either end of 25%, with 100% cover on the steepest ground. Dominant residual species was RO, with beech and scattered HM. Inaccessible slopes have residual RM & BTA mixed in. Heavy IW regen where residual canopy was sparsest. Some RM stump sprouts, beech & HM seedlings. Natural regen survey failed to species other than ironwood or cherry, but given the slope limitations, follow-up cultivation work is not recommended. Current condition was accepted at Comp Review Nov 2018. |
| 10 | 4130 - Aspen | Sapling Well | 7.1 | 4 | Immature | Was cut in winter 2015 through a non-commercial WLD habitat FTP (W72-769). All trees were left as felled (mostly aspen & fir). Regenerated to dense aspen cover with RM and BC. Scattered residual fir, WP, BC & RM. |



| | Level 4 Cover Type | Size Density | Acres | Stand Age | BA Range | General Comments: |
|----|------------------------------------|----------------------|-------|--------------|-------------|--|
| 11 | 6130 - Fir, Aspen, Maple | Poletimber Poor | 83.1 | 58 | 1-50 | Stand is a mosaic of Q/P/C/E patches separated by lowland shrub cover. The dryer transition ground has full canopy cover in A-RM-F (some resulting from the 1959 K-G cutting), but the canopy closure drops quickly on the core saturated ground. Beaver activity has raised the lake levels and is flood-killing cedar and hemlock along the shore. NWC cored were hollow so 2nd age estimate drawn from stand 8. |
| 13 | 6120 - Lowland Cedar | Sawtimber Well | 19.0 | 106 | 141-170 | Dense cedar cover, with patches of balsam fir closer to the river. RM and PB flank the uplands. A backwater slough runs the length of the stand, with several cross-drainages out to the Upper Manistee. Beaver have most of those streams dammed up, flood-killing cedar and fir. |
| 14 | 4130 - Aspen | Poletimber Medium | 25.4 | 50 | 51-80 | RP-JP were planted in the south edge in 1941. The original stand's scattered aspen pockets were K-G bladed in 1969 (FTP G-59). Stand occupies the outwash plain, with small aspen clones separated by U/G inclusions and scattered open-grown WP, RP & xlog BRO. East side has the best-developed aspen. Moving west, stocking, growth and quality decrease. Because the original stand was sparse and the aspen clones have been slowly expanding since the 1969 K-G blading, the aspen ages land on a spectrum between 49 years old and a few years old. |
| 16 | 4131 - Aspen, Oak | Sapling Well | 24.1 | 28 | 1-50 | Was shelterwood harvested in 1991 (#039-90), cutting stems 2"+ DBH except oak (~30 BA, unevenly distributed, with a couple acres of O9 in the SW). Regen from the cut is the featured canopy, made up of aspen with RM and oak stump sprouts. Stand occupies a steep hillside (west aspect) and extends onto the flats. |
| 17 | 4130 - Aspen | Sapling Well | 24.1 | 28 | 1-50 | Was final harvested in 1991 (#039-90), cutting stems 2"+ DBH. Aspen regen still transitioning into the pole class, on relatively steep hillside (west aspect) and extending onto the flats. Proportion in stump sprout RM & RO increases moving upslope. RO vigorous and generally weeding down to 3 or fewer stems per clump. |
| 18 | 4130 - Aspen | Sapling Well | 20.4 | 28 | 1-50 | Was final harvested in 1991 (#039-90), cutting stems 2"+ DBH. Aspen regen transitioning into the pole class on relatively steep hillside (west aspect), and extending onto the flats. Vigorous oak, RM and paper birch stump sprout components increase on the upper slope. Scattered residual RM poles and oak saw. |
| 19 | 4119 - Mixed Northern Hardwoods | Sawtimber Medium | 11.8 | 104 | 51-80 | This sidehill stand was within a 2015 shelterwood harvest (#026-10), spec'd to cut all stems except oak, pine, beech and widely-scattered xlog sugar maple. Harvest restrictions and equipment limitations prevented completion of cutting on the steepest portions of the slope. Canopy closures range from LDT to 100% cover, with similarly variable BAs. Species distribution varies across the stand. RM (large, multiple stem clumps) occurs throughout. RO & BTA increase moving upslope. The beech, HM & pine increase to the south. Mortality in the larger beech. Natural regen survey failed to species other than ironwood or beech, but given the slope limitations, follow-up cultivation work is not recommended. Current condition was accepted at Comp Review Nov 2018. |



| | Level 4 Cover Type | Size Density | Acres | Stand Age | BA Range | General Comments: |
|----|---|------------------|-------|--------------|-------------|--|
| 21 | 4130 - Aspen | Sapling Well | 44.3 | 5 | Immature | Most of this A-MD stand was final harvested in 2014 (#026-10), spec'd to cut stems 2"+ DBH except oak, sub-acre interior retention islands and a boundary-excluded island in the NW. A sub-acre strip of mature aspen was also left uncut along the stand's NE edge, atop a steep hill and hemmed in by an overhead powerline. The stand regenerated well to aspen with small U/G inclusions where the cover was sparse pre-harvest. Main canopy is regen from the cut, with a variable layer of sub-merch maple, mature oak, serviceberry & cherry scattered above. |
| 22 | 4311 - Pine, Aspen Mix | Sawtimber Well | 7.4 | 79 | 111-140 | RP-WP-JP were planted across the stand in 1940, with significant deciduous competition. This mixed stand's pine, RM, aspen & oak was excluded mainly due to steep terrain when the adjacent stands were cut. Terrain shallows in the west end. Previous SI on the RM was 1924-58. |
| 23 | 4130 - Aspen | Sapling Well | 33.8 | 28 | 1-50 | Was final harvested in 1991 (#039-90), cutting stems 2"+ DBH. Regenerated to aspen with a significant component of maple-ironwood-cherry. Small U/G inclusions. On west-facing hillside dissected with valleys. |
| 25 | 4130 - Aspen | Poletimber Well | 52.4 | 34 | 81-110 | Was final harvested in 1985 (#277-83), spec'd to cut merch stems. Remnants of the 1940 RP-WP-JP planting were left, along with scattered (now saw-sized) A-RM-HM. Good site for aspen, minor good quality RO and poor quality HM components. |
| 27 | 4130 - Aspen | Sapling Well | 32.3 | 18 | Immature | Was final harvested in 2001 (#003-00), cutting stems 2"+ DBH. Aspen regen with RM and vigorous oak stump sprouts, and pine seeding in. Sub-acre patch of mature aspen left on the steepest ground on the stand's center-west edge. |
| 28 | 42111 - Planted Red Pine, Mixed Deciduous | Sawtimber Medium | 119.6 | 79 | 51-80 | RP-WP-JP were planted in 1940. Most of the stand was thinned in 2001 (#003-00), cutting merch JP-WP-A-RM, excluding the SW couple acres. The species removal left widely variable stocking in RP saw, with open-grown xlog oak, and now pole-sized A-JP-WP. Canopy closure swings off either end of the 50-75% category. The understory has moderate to full stocking in a mix of JP-A-O-RM-WP-RP, with poorer stocking below the pockets of denser RP cover. The typical RP is deep-crowned & heavy-limbed. |
| 29 | 42141 - Planted Mixed Pine, Mixed Deciduous | Sawtimber Well | 26.6 | 78 | 51-80 | RP-JP-WP were planted in spring of 1941. The aspen was K-G bladed in 1969 (FTP G-59). Stand has open-grown RP saw with lesser amounts of JP, WP, xlog oak, and small pockets of poor quality aspen with hypoxylon, FTF & black canker present. Two-aged canopy of planted pine over the mix of aspen & pine that filled in post-K-G cutting. |
| 30 | 42140 - Planted Mixed Pine | Sawtimber Well | 4.5 | 79 | 81-110 | RP-WP-JP were planted in fall of 1940. There is also younger naturally-established JP-A-RM. WP has poor form. The planted JP is dying out. This portion of original stand 26 was left as long term retention for harvest #026-11. |
| 31 | 42141 - Planted Mixed Pine, Mixed Deciduous | Sawtimber Poor | 13.3 | 79 | 1-50 | RP-WP-JP were planted across the stand in 1940, with poor survivorship. Cover is patchy and open-grown, not much above LDT status. The JP has more in naturally-established younger poles than surviving planted stock; set second age to younger. In a valley with road, buried electric and pipelines running through it. |



| | Level 4 Cover Type | Size Density | Acres | Stand Age | BA Range | General Comments: |
|----|-------------------------------|----------------------|-------|--------------|-------------|--|
| 32 | 4133 - Aspen, Mixed Pine | Poletimber Well | 138.2 | 50 | 51-80 | RP-WP-JP were planted in the east side in 1940. The original stand's sparse aspen was K-G bladed in 1969 (FTP G-59). Regenerated to aspen and a significant mixed conifer component. Because the original stand was sparse and the aspen clones have been slowly expanding since the 1969 K-G blading, the aspen ages land on a spectrum between 49 years old and a few years old. Aspen clone health and growth varies widely across the stand; from pole-sapling QA with black canker & hypoxylon, to pole-log BTA. Scattered open-grown xlog BRO. Naturally-established WP and balsam fir is heaviest along the river corridor. Beaver cutting there has removed most of the aspen. WP healthy; no branch flagging seen. |
| 34 | 4311 - Pine, Aspen Mix | Poletimber Well | 27.1 | 60 | 51-80 | Was part of a large area K-G bladed in 1959. The poor-quality, sparse aspen cover that regenerated has been supplanted by WP as the dominant cover. The WP seeded in from scattered supercanopy xlog trees. WP branch flagging common. Black canker present in the QA. Balsam poplar is concentrated along the Lost Lake Outlet's dry streambed. Small U/G inclusions throughout. A row of RP were planted along the Upper Manistee River bank. A portion of this stand (now stand 35) was cut in 2015 through a non-commercial WLD FTP (W72-769). |
| 35 | 4130 - Aspen | Sapling Well | 15.8 | 4 | Immature | This portion of stand 34 was cut in winter 2015 through a non-commercial WLD habitat FTP (W72-769). All trees were left as felled (mostly aspen, WP & fir). Regenerated well to aspen with RM-BC. Scattered residual BF-WP-BC-NWC. |
| 36 | 42200 - Natural White Pine | Sawtimber Medium | 3.3 | 61 | 81-110 | Was originally part of stand 21, left as long term retention for timber sale 72-026-10-01. Dense patches of WP seeded in from a few supercanopy trees. Sparser aspen in the east side. |
| 39 | 4130 - Aspen | Sapling Well | 23.2 | 7 | Immature | Marginal A-RM-WP stand (established through KG-blading) was final harvested in 2012 (#038-10), cutting stems 2"+ DBH except hemlock, cedar, two interior retention islands, and boundary-excluded retention (Lost Lake Outlet's RMZ). A few top-dying hemlock along the north side. Regenerated well to aspen with high stem-density BC and RM cover in between clones. |
| 40 | 4115 - Y.Birch, Hemlock NH | Sawtimber Well | 33.8 | 94 | 81-110 | Two-thirds of the stand was thinned by 2005 (#026-01), cutting orange-marked trees and merch aspen (cruised residual 70 sq. ft. RM & 26 sq. ft. hemlock). The excluded portions were two patches with more WP on the west side and 7 acres of mostly lake RMZ with dense hemlock & RM-PB-YB. The residual is mostly large cull RM, hemlock poles & WP saw. Cherry, RM & beech regen. Top mortality in the smaller hemlock is common within the thinned area; also in the RM where the canopy was opened up to more shelterwood levels. Hemlock looking good in the unthinned portions. |
| 45 | 6112 - Lowland Aspen | Poletimber Medium | 7.5 | 37 | 51-80 | Was part of a large area cut in 1982 through a non-commercial WLD FTP (W71-148, for a D-7 with tree-cutter blade) that also extended into similar cover in Kalkaska County. Regenerated to quaking aspen with balsam fir and balsam poplar on saturated ground. Traces of elm & NWC. Mosaic of standing water from neighboring beaver activity. Prolonged flooding in the south half is killing the aspen. |

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Grayling Mgt. Unit

Report 7 – Forested Stands

Compartment: 169
Year of Entry: 2020

| | Level 4 Cover Type | Size Density | Acres | Stand Age | BA Range | General Comments: |
|-----------|-----------------------------|----------------------|-------|--------------|-------------|---|
| 46 | 6112 - Lowland Aspen | Poletimber Medium | 6.6 | 37 | 51-80 | Was part of a large area cut in 1982 through a non-commercial WLD FTP (W71-148, for a D-7 with tree-cutter blade) that also extended into similar cover in Kalkaska County. Beaver have the stand flooded. The south half is completely submerged. The north half still has some emergent ground vegetation. The prolonged flooding is killing the aspen. The stand's middle is sparsest, with paper birch and traces of NWC. |
| 49 | 4134 - Aspen, Spruce/Fir | Poletimber Well | 4.2 | 37 | 81-110 | Was part of a large area cut in 1982 through a non-commercial WLD FTP (W71-148, for a D-7 with tree-cutter blade) that also extended into similar cover in Kalkaska County. Regenerated to aspen with a significant balsam fir component. Beaver activity has extended floodwater into the edge of the stand. |
| 51 | 6120 - Lowland Cedar | Sawtimber Well | 2.3 | 89 | 111-140 | NWC with balsam fir and aspen mixed in. Ground flooded by adjacent beaver activity, slowly killing the cedar. |



| Stand | Cover Type | Acres | Managed Site | General Comments: |
|-------|-----------------------------------|-------|--------------|---|
| 1 | 6220 - Alder/willow | 16.2 | No | Flooded salix shrub cover behind active beaver dam. Some tag alder and perimeter red-osier dogwood and alder leaved buckhorn. |
| 3 | 3301 - Low Density Deciduous Tree | 10.3 | No | Opening that was part of a larger area K-G bladed in 1959. Mostly cull cherry, with wild raisin, rubus, serviceberry and patches of poor-quality aspen. |
| 6 | 6225 - Bog | 1.9 | No | Sphagnum wetland with aronia, wild raisin, blueberry and minor leatherleaf cover. Colonizing pine, spruce and fir. |
| 7 | 6220 - Alder/willow | 46.4 | No | Floodplain along the Manistee River. Tag alder with some salix and marsh inclusions. Areas of beaver cutting by the river. Several seeps and drains cross through. Slightly drier transition ground has wild raisin, black cherry, choke cherry, and scattered balsam fir, balsam poplar and tamarack. |
| 12 | 6220 - Alder/willow | 5.3 | No | Tag alder with small patches of aspen & fir. Transition ground edge picks up viburnum, aronia and cherry. |
| 15 | 3301 - Low Density Deciduous Tree | 33.7 | No | Openings on the outwash plain that were within a larger area K-G bladed in 1969 (FTP G-59). Cherry, serviceberry & viburnum, with scattered open-grown WP, RP, xlog BRO, and colonizing aspen. Part west of the county road has scattered balsam fir. |
| 20 | 3301 - Low Density Deciduous Tree | 5.6 | No | Opening that was part of a larger area K-G bladed in 1959. Mostly cull cherry, a few large clumps of stump-origin RM and scattered poor-quality aspen. Rubus in more open areas, some serviceberry and wild raisin. |
| 24 | 3301 - Low Density Deciduous Tree | 29.2 | No | Valley opening with bluestem, BC, serviceberry, rubus, sub-acre aspen clones, and open-grown RP-WP. Former RR grades run the length of the stand. |
| 26 | 320 - Upland Shrub | 36.6 | | RP-WP-JP planted in 1940 was final harvested in 2015 (#026-10), cutting stems 2"+ DBH except oak and boundary-excluded retention (portion west of the pipeline). Was roller-chopped in 2015 (C72-776), herbicided (by variance approved in 2016) and trenched in 2016, then planted to RP in May 2017. Furrows sedging over. Random 100th-acre plots 600-900 tpa; most of that drop from first growing season mortality, with some snow-load breakage this spring. Minor amount of BC & aspen re-sprouted. Rubus & mullen increasing. Year 1 regen survey in June 2018 found 636 RP & 1,703 M-C-A tpa, indicating need for supplemental planting and herbicide. |
| 33 | 3301 - Low Density Deciduous Tree | 7.9 | No | Was within a large area K-G bladed in 1959. Mostly BC and choke cherry, with willow, serviceberry, hawthorn, and colonizing aspen, WP and fir. Tag alder & lowland salix flanking the river. Beaver cutting. |
| 37 | 3303 - Mixed Low Density Trees | 10.1 | No | Opening on the outwash plain that was within a larger area K-G bladed in 1969 (FTP G-59). Cherry and serviceberry with scattered open-grown WP, RP, JP, xlog BRO and colonizing aspen. |
| 38 | 6220 - Alder/willow | 5.5 | No | Salix with alder-leaved buckthorn and red-osier dogwood. Balsam poplar filling in. Recent beaver activity. The Lost Lake Outlet stream crosses through the stand, but the channel was dry by the time it exited the south end. |



| Stand | Cover Type | Acres | Managed Site | General Comments: |
|-------|-----------------------------------|-------|--------------|---|
| 41 | 6220 - Alder/willow | 3.5 | No | Flooded tag alder and salix wetland. Drains east to the lake |
| 42 | 500 - Water | 45.0 | No | Lost Lake, within the Deward SCA. An open road (street legal vehicles only) leads to an informal boating access site on the northeast end of the lake. |
| 43 | 500 - Water | 6.5 | No | The Upper Manistee, a designated Natural River. In-stream sand trap (Sediment Basin #2) is located near stand 44. |
| 44 | 310 - Herbaceous Openland | 1.5 | No | Sand trap maintenance work pad and temporary dredge stockpiling site for the Upper Manistee River Sediment Basin #2 (FTP F72-533, expired). Grass with knapweed and some exposed sand on the hill. Black locust saplings along NW edge. |
| 47 | 6220 - Alder/willow | 2.9 | No | Flooded shrub wetland. Tag alder with salix, some red-osier dogwood and alder-leaved buckthorn. |
| 48 | 310 - Herbaceous Openland | 1.1 | No | Was noted as a former wellsite, with grass, knapweed & colonizing aspen. |
| 50 | 6220 - Alder/willow | 9.2 | No | Tag alder, with salix, red osier dogwood and alder leaved buckhorn. Flooded by beaver activity. Couple-acre inclusion of sparse NWC and aspen on the west side is being flood-killed. Balsam fir along stand 1's beaver dam at the north end. |
| 52 | 6220 - Alder/willow | 0.9 | No | Flooded tag alder swale with perimeter aspen. |
| 53 | 6220 - Alder/willow | 4.8 | No | Flooded tag alder wetland with salix and red-osier dogwood. Beaver cutting the scattered aspen. |
| 54 | 3301 - Low Density Deciduous Tree | 9.7 | No | LDT type (BC, cull RM stump clumps, patches of aspen) was final harvested in 2011 (#038-10). Passed to regen M.O. at time of sale closure in 2013. BC with encroaching aspen, scattered RM stump sprouts, serviceberry. |
| 55 | 110 - Low Intensity Urban | 1.5 | No | South part of Jordan Development, State Frederic wellsite 1-6A CPF (most of the infrastructure is in Otsego County). Also a fenced MichCon valve station. |
| 56 | 310 - Herbaceous Openland | 14.1 | No | Cleared corridor with buried pipelines. Grass and encroaching aspen and JP regen. Two low areas with salix. |
| 57 | 110 - Low Intensity Urban | 0.9 | No | Linn Operating, State Frederic XI wellsite C1-5 with grass and knapweed. |
| 58 | 122 - Road/Parking Lot | 12.0 | No | Manistee River Road and cleared pipeline corridor, with a narrow treed strip in between. The wide spot in the corridor contained a former well site. |
| 59 | 110 - Low Intensity Urban | 1.1 | No | Linn Operating, State Frederic XI wellsite B 2-5 with grass and knapweed. |



| Stand | Cover Type | Acres | Managed Site | General Comments: |
|-------|-----------------------------------|-------|--------------|---|
| 60 | 3301 - Low Density Deciduous Tree | 0.9 | No | Former well site on ridgetop overlooking the Manistee River valley. Four steep trail road spurs access the site. Stand boundary picks up some sparse tree cover on east side. |
| 61 | 110 - Low Intensity Urban | 1.0 | No | Linn Operating, State Frederic XI wellsite A4-5 with grass and knapweed. |
| 62 | 710 - Sand, Soil | 1.8 | No | Former wellsite used for stockpiling sand dredged from Fisheries Division's Manistee River sand trap. Knapweed, grass, sand piles & encroaching pine & aspen. |
| 63 | 110 - Low Intensity Urban | 1.1 | No | Linn Operating, State Frederic XI wellsite C4-5 with grass, knapweed & encroaching pine. |
| 64 | 110 - Low Intensity Urban | 0.9 | No | Linn Operating, State Frederic XI wellsite D3-5 with grass, knapweed. & scattered JP saps |