



# Compartment Review Presentation

## Pigeon River Country Forest Management Unit

Compartment 53032

Entry Year 2023

Acreage: 1,861

County Otsego

Management Area: Pigeon River Country

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**Revision Date:** 2021-05-24

**Stand Examiner:** John St. Pierre

**Legal Description:**

T32N, R01W Sections 4, 5 & 6

**Identified Planning Goals:**

To provide for the protection, integrated management, and responsible use of a healthy, productive, and undiminished forest resource base for the social, recreational, environmental, and economic benefit of the State of Michigan.

**Soil and topography:**

The areas immediately adjacent to the Pigeon River as well as the northern portions of Section 4 and Section 5 all have rolling topography with some steep slopes present. The remainder of the compartment is generally flat.

The compartment offers a mixture of upland and lowland forested and non-forested covertypes. Upland soils are characterized primarily by sands and loamy sands. The highest percentages can be found in Lindquist sands, Rubicon sands, Leelanau loamy sands, Blue Lake loamy sands, and Mancelona loamy sands, respectively. Lowland soils are primarily Tawas and Lupton muck.

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

Solid State ownership within and adjacent to this compartment. Private ownership is located northwest of section 6.

**Unique Natural Features:**

Devil's Soup Bowl Lake and Section 4 Lake are both limestone sink hole lakes located within the compartment. Grass Lake is located in section 5 and is heavily recreated by the public. Pigeon River, a legally designated Natural River, travels through section 4.

**Archeological, Historical, and Cultural Features:**

An old lumber mill was once located in section 4, close to the southern portion of stands 80 and 83. What appears to be an old railroad grade travels east/west through the northern portions of sections 5 and 6.

**Special Management Designations or Considerations:**

Pigeon River travels through section 4 and is a legally designated Natural River. Vegetative (100ft on either side) and zoning (400ft) buffers are recognized along the river and its associated tributaries. A 'High Priority Trout Stream' buffer also exists along Pigeon River.

A Special Conservation Area (SCA) was proposed by the previous examiner and unit manager during 2018. The proposed SCA encompasses numerous upland and lowland stands surrounding the Pigeon River. The proposed SCA extends throughout several adjacent compartments. Formal approval, regarding this SCA, has not been decided upon.

**Watershed and Fisheries Considerations:**

As mentioned, the Pigeon River flows through Section 4 and is a popular 'fast-water' fishing destination. Grass Lake, in section 5, provides good pan fishing opportunities. Section 4 Lake is a special regulation Trout lake and is periodically stocked with trout.

**Wildlife Habitat Considerations:**

Please refer to Wildlife Biologist's comments.

**Mineral Resource and Development Concerns and/or Restrictions**

No known potential exists for commercial metallic mineral production in this part of the state. The nearest active sand/gravel operation is over six miles away. There might be some potential for sand & gravel on the upland areas within the compartment, but surface mining is not currently allowed. There has been no oil & gas production, past or present, within two miles of the compartment. There is potential for Antrim Shale gas beneath the compartment, but development within the PRC is not currently allowed.

There is no mineral leasing activity in the area, and most parcels within the compartment are currently classified as non-leasable.

**Vehicle Access:**

County roads and forest roads open to vehicle traffic generally provide good access to most portions of the compartment.

**Survey Needs:**

No survey work needed.

**Recreational Facilities and Opportunities:**

This compartment and surrounding area are heavily recreated. Elk Hill State Forest equestrian campground is situated in the southeast corner of section 4. Shingle Mill and Shore-to-Shore pathways pass through portions of section 4 and section 5. These pathways meander through various areas but tend to be concentrated near water features such as Grass Lake, Section 4 Lake, Devils Soup Bowl Lake and the Pigeon River corridor. A mixture of non-motorized traffic can be found on the differing segments of these pathways (hikers, bikers, horse-riders, skiers, and snowshoes(ers)). A scenic overlook is located in stand 48.

Seasonal hunting and recreational opportunities are abundant within the compartment. Elk shed and mushroom hunters frequent certain areas from late winter until early summer. During the summer months, dispersed camping is quite popular near Grass and Section 4 Lakes. And depending on the season, hunters and fisherman alike have a variety of locations to apply their trade.

**Fire Protection:**

Wildland fire protection for this compartment is provided by Michigan DNR resources from the Gaylord and Indian River field offices. Local VFD personnel and equipment are vitally important fire response resources that would provide suppression too. Access could be difficult in some areas, depending on where a start occurs. Grass Lake and its outflow area(s) would be the likely watering point(s).

**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

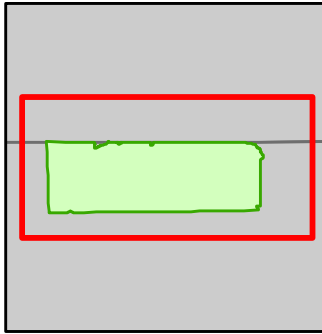


Age Class

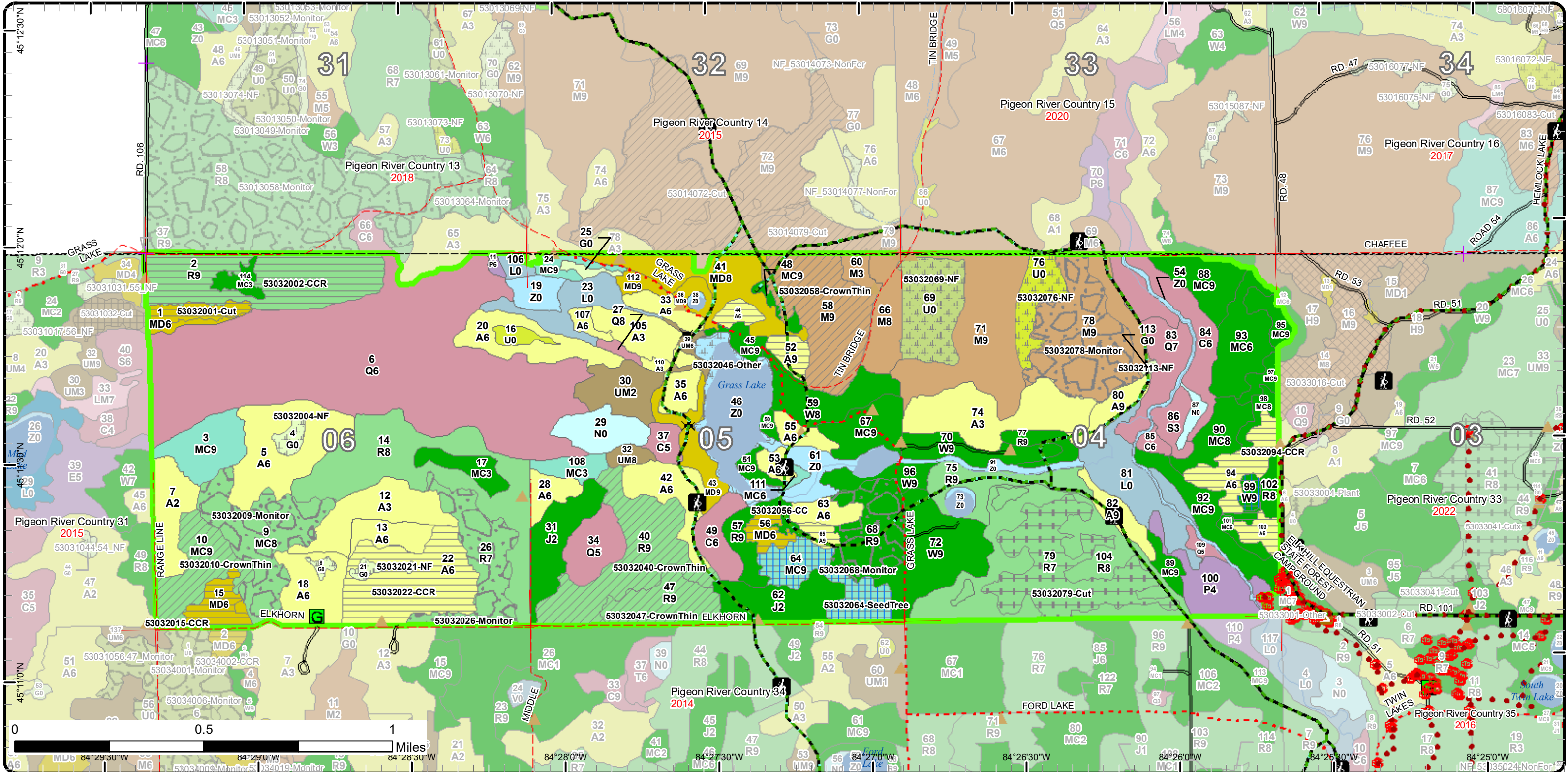
	Non-Forest	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100-109	110-119	120-129	130-139	140-149	150+	Uneven-Aged	Total
Aspen	0	50	17	0	122	99	20	0	8	0	0	8	0	0	0	0	0	0	324
Cedar	0	0	0	0	0	0	0	0	0	0	0	17	29	0	0	0	0	0	46
Herbaceous Openland	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11
Jack Pine	0	0	41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41
Low-Density Trees	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17
Lowland Aspen/Balsam Poplar	0	0	0	0	1	0	0	0	0	20	0	0	0	0	0	0	0	0	21
Lowland Conifers	0	0	0	0	0	0	0	15	0	220	3	0	0	0	0	0	0	17	253
Lowland Shrub	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	47
Lowland Spruce/Fir	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	7
Marsh	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17
Mixed Upland Deciduous	0	0	0	0	0	10	6	12	0	4	32	13	0	0	0	0	0	0	77
Natural Mixed Pines	0	0	0	13	21	4	0	13	0	38	41	3	0	0	0	0	0	0	133
Northern Hardwood	0	0	0	4	0	0	0	0	17	54	95	0	0	0	0	0	0	0	169
Planted Mixed Pines	0	0	0	0	0	0	0	0	0	0	62	0	0	0	0	0	0	0	62
Red Pine	0	0	0	0	0	0	0	0	0	29	345	0	0	0	0	0	0	0	374
Upland Conifers	0	0	0	0	8	0	18	0	0	5	23	0	0	0	0	0	0	0	54
Upland Mixed Forest	0	0	0	16	0	4	0	0	0	0	4	0	0	0	0	0	0	0	24
Upland Shrub	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27
Water	76	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	76
White Pine	0	0	0	0	0	0	0	0	0	0	81	0	0	0	0	0	0	0	81
<b>Total</b>	<b>195</b>	<b>50</b>	<b>58</b>	<b>33</b>	<b>159</b>	<b>117</b>	<b>44</b>	<b>25</b>	<b>40</b>	<b>150</b>	<b>903</b>	<b>44</b>	<b>29</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>17</b>	<b>1861</b>

# Cover Type & Treatments Map

Compartment: 32  
 T32N, R01W, Sec: 04, 05, 06  
 County: Otsego  
 Unit: Pigeon River Country  
 Mgmt Area: Pigeon River Country  
 YOE: 2023  
 Acres: 1860.9 GIS Calculated  
 Examiner: John St. Pierre  
 Map Revised: 6/23/2021  
 Map Phase: Pre-Review



- Miris Corners
- ⊕ Remonumented Section Corners
- Counties
- DNR - Secondary Forest Road
- Federal / State / County - Paved Road
- - - County - Gravel Road
- - - County - Dirt Road (Seasonal)
- 🚶 Hiking Trails
- 🚲 Bike Trails
- 🐎 Horse Trails
- 🏂 Ski Trails
- Designated Hiking Trails
- - - Designated Bicycle Trails
- Designated Equestrian Trails
- Designated Ski Trails
- Designated Multi-Use Trails
- 🏠 Berms
- 🏠 Bridges
- 🏠 Campground
- 🛑 Sign
- Intermittent Stream
- Lake/Pond
- Perennial River
- Lakes and Rivers
- 🟩 Compartment Boundary
- 🏠 Other Treatment - See Comments
- 🏠 Clearcut (w/Reserves)
- 🏠 Harvest, Overstory Removal
- 🏠 Seed Tree (w/Reserves)
- 🏠 Thinning (Crown, Low, Systematic)
- 🏠 Regeneration Survey
- 🏠 411 - Northern Hardwood
- 🏠 413 - Aspen
- 🏠 419 - Mixed Upland Deciduous
- 🏠 421 - Planted Pines
- 🏠 422 - Natural Pines
- 🏠 429 - Mixed Upland Conifers
- 🏠 430 - Upland Mixed Forest
- 🏠 611 - Lowland Deciduous Forest
- 🏠 612 - Lowland Coniferous Forest
- 🏠 310 - Herbaceous Openland
- 🏠 320 - Upland Shrub
- 🏠 330 - Low Density Trees
- 🏠 500 - Water
- 🏠 622 - Lowland Shrub
- 🏠 623 - Emergent Wetland

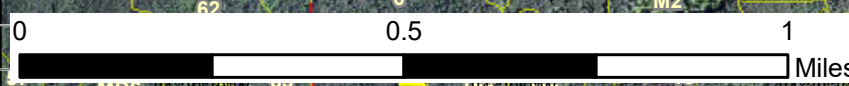
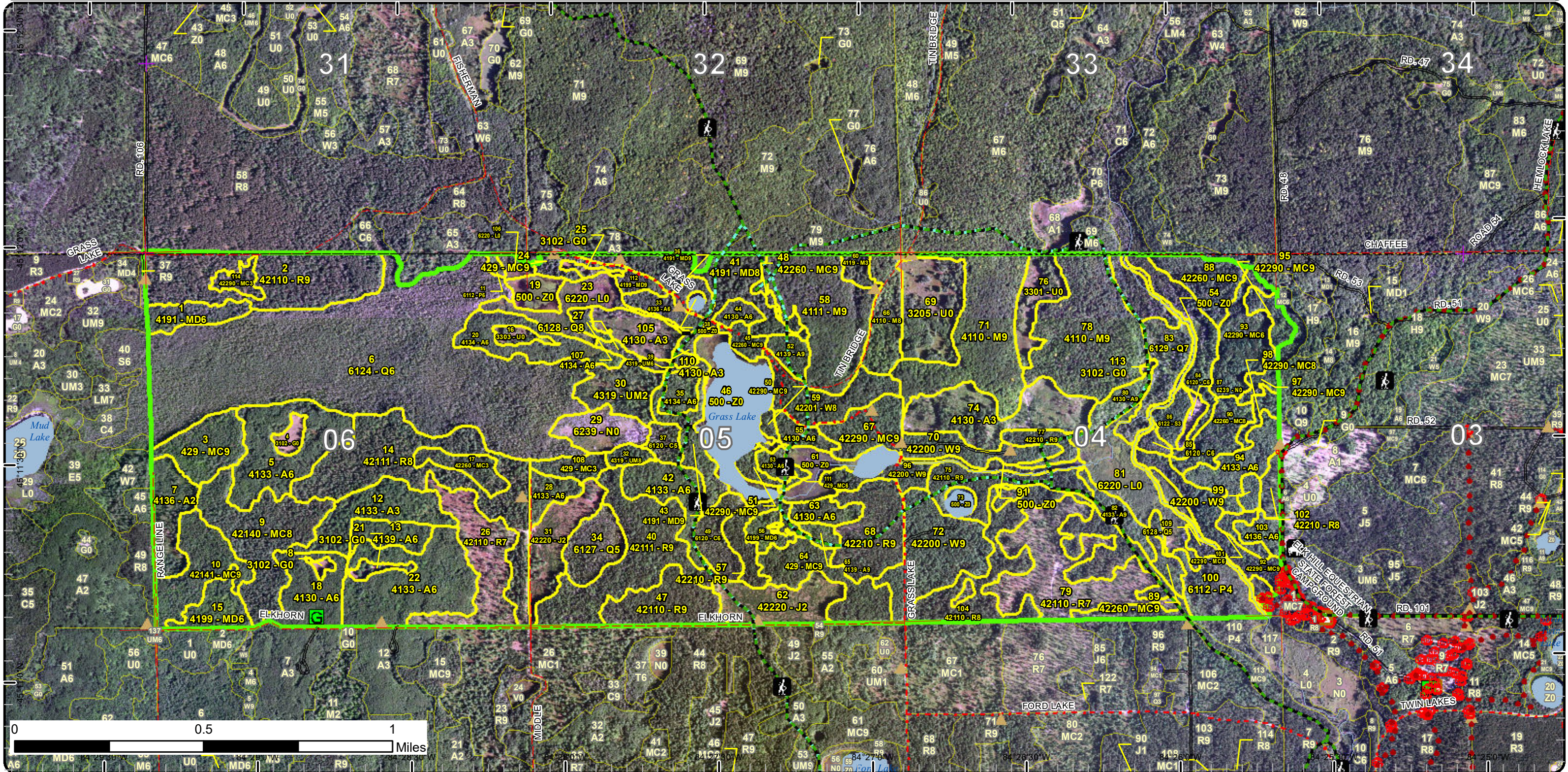


# Stand Boundary Map

Compartment: 32  
 T32N, R01W, Sec: 04, 05, 06  
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 Unit: Pigeon River Country  
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 Examiner: John St. Pierre  
 Map Revised: 6/17/2021  
 Map Phase: Review

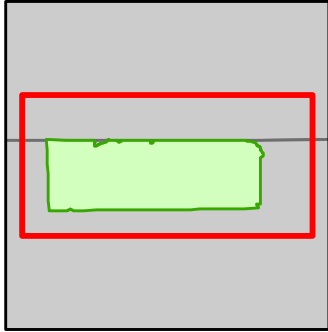


- Miris Corners
- + Remonumented Section Corners
- Counties
- DNR - Secondary Forest Road
- Federal / State / County - Paved Road
- County - Gravel Road
- County - Dirt Road (Seasonal)
- Hiking Trails
- Bike Trails
- Horse Trails
- Ski Trails
- Designated Hiking Trails
- Designated Bicycle Trails
- Designated Equestrian Trails
- Designated Ski Trails
- Designated Multi-Use Trails
- Berms
- Gate
- Bridges
- Campground
- Sign
- Intermittent Stream
- Lake/Pond
- Perennial River
- Lakes and Rivers
- Compartment Boundary
- Stand Boundaries
- 411 - Northern Hardwood
- 413 - Aspen
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- 500 - Water
- 622 - Lowland Shrub
- 623 - Emergent Wetland

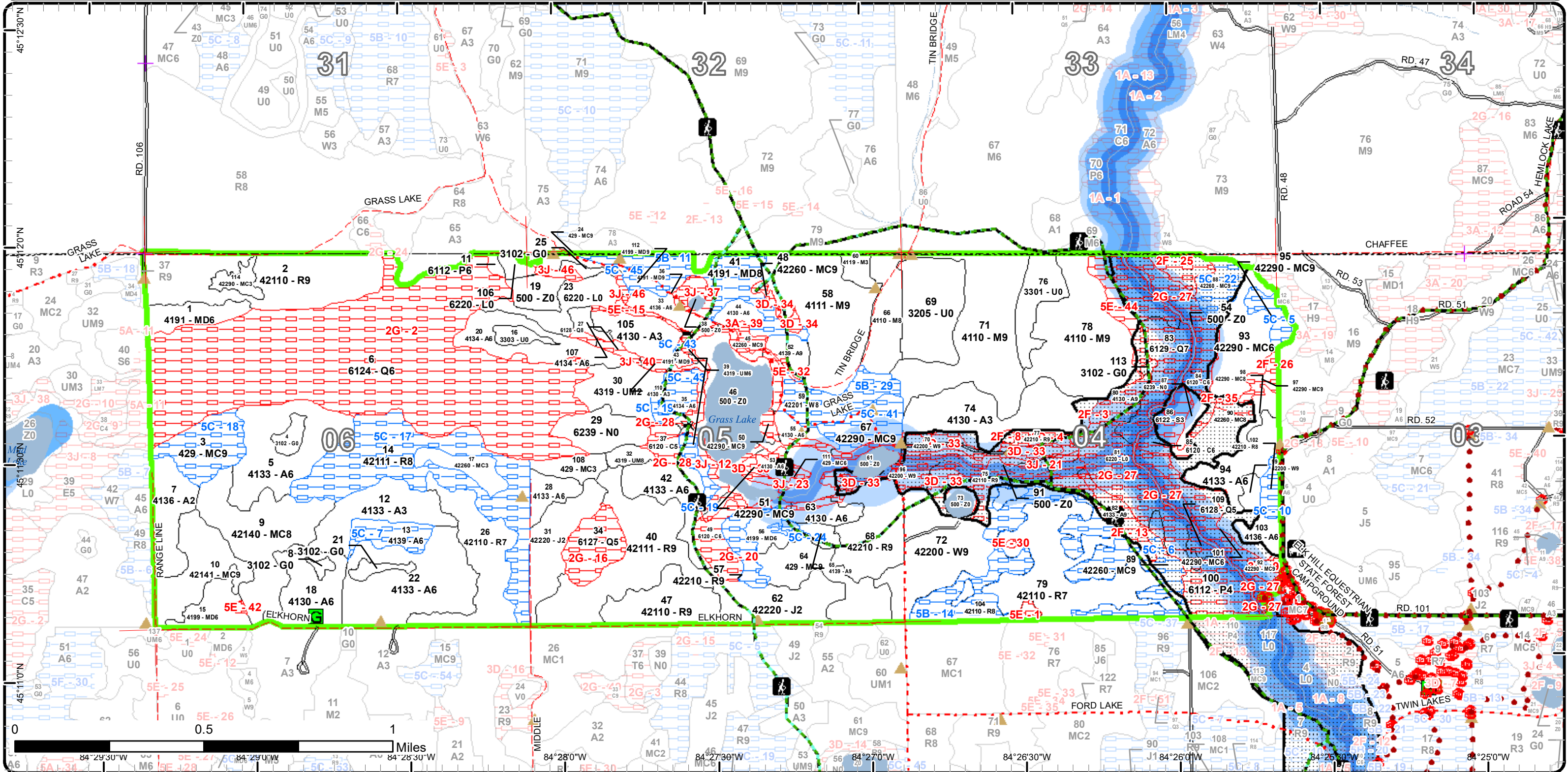


# Special Conservation Areas

Compartment: 32  
 T32N, R01W, Sec: 04, 05, 06  
 County: Otsego  
 Unit: Pigeon River Country  
 Mgmt Area: Pigeon River Country  
 YOE: 2023  
 Acres: 1860.9 GIS Calculated  
 Examiner: John St. Pierre  
 Map Revised: 6/24/2021  
 Map Phase: Review



- Miris Corners
- Remonumented Section Corners
- Counties
- DNR - Secondary Forest Road
- Federal / State / County - Paved Road
- County - Gravel Road
- County - Dirt Road (Seasonal)
- Hiking Trails
- Bike Trails
- Horse Trails
- Ski Trails
- Designated Hiking Trails
- Designated Bicycle Trails
- Designated Equestrian Trails
- Designated Ski Trails
- Designated Multi-Use Trails
- Berms
- Bridges
- Campground
- Sign
- Intermittent Stream
- Lake/Pond
- Perennial River
- Lakes and Rivers
- Compartment Boundary
- Available w/ Constraints
- Unavailable
- SCA
- Natural Rivers Vegetative Buffer
- Natural Rivers Zoning District
- Cold Water Streams
- Cold Water Lakes
- High Priority Trout Stream Buffer
- 5B: Maintain for regeneration purposes
- 5C: Delay treatment for age/size class diversity or exceptional site quality
- 2F: Too steep
- 2G: Too wet (sensitive soils, does not include access issues)
- 3A: Conservation Values incompatible with harvest at this time
- 3D: Recreational / Scenic values
- 3J: Water quality / BMPs (stream, river, or lake)
- 5E: Long-Term Retention
- Stand Boundaries





## Report 2 – Treatment Summary

### Acres of Harvest

Commercial Harvest - 357  
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	77	0	0	0	0	0	0	0	0	77
Mixed Upland Deciduous	25	0	0	0	0	0	0	0	0	25
Natural Mixed Pines	1	0	0	0	0	0	0	0	0	1
Northern Hardwood	0	0	0	0	0	44	0	0	0	44
Planted Mixed Pines	0	0	0	0	0	23	0	0	0	23
Red Pine	50	0	0	0	0	65	46	0	0	162
Upland Conifers	0	0	0	23	0	0	0	0	0	23
White Pine	0	0	0	3	0	0	0	0	0	3
<b>Total</b>	<b>153</b>	<b>0</b>	<b>0</b>	<b>26</b>	<b>0</b>	<b>132</b>	<b>46</b>	<b>0</b>	<b>0</b>	<b>357</b>

### Proposed and Next Step Treatments by Method

	Harvest	Site Prep	Planting	Seeding	Burning	Pesticide	Monitoring	Other	Non-Forest Mgt.	Total Acres
Current	357	0	0	0	0	0	138	36	49	580
Next Step	0	50	46	0	0	0	275	0	0	371
<b>Total</b>	<b>357</b>	<b>50</b>	<b>46</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>412</b>	<b>36</b>	<b>49</b>	<b>951</b>



Standard

Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
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**Proposed Treatments:**

<b>2</b>	<b>53032002-CCR</b>	49.9	42110 - Planted Red Pine	Sawtimber Well	91	81-110	Harvest	Clearcut with Retention	42260 - Natural Pine, Mixed Deciduous	Two-Aged	No
<p><u>Prescription</u> Clearcut w/Retention.  <u>Specs:</u>                      - Leave about 10BA of scattered and/or a clumped combination of red/white pine and some red oak as a seed source.                      - Protect oak from damage by leaving a few non-oak 'bumper trees' around the crown/bole of selected oak. Negates needing to use oak wilt specs.                      - Maximize retention to capture patches of desirable red/white pine regeneration                      - Harvest during snow-off/ground not frozen conditions                      - STRONGLY encourage the producer to scarify the harvest area during operations                      - A few legacy white pine present. Protect legacy trees in specs.                      - Use stringent specs to protect red/white pine and oak saplings                      - Include drumming log spec</p> <p><u>Next Step Treatments:</u> Monitoring, Natural Regen (Intermediate); SitePrep, Scarification; Monitoring, Natural Regen (Re-Inventory)</p> <p><u>Acceptable Regen:</u> Fully-stocked mixture of red/white pine, fir, red maple and oak. Pine species may take time to establish.</p> <p><u>Other Comment:</u> - Keep harvest operations out of Stand 114.                      - Assess how well the site was scarified upon harvest completion. If scarification appears insufficient, implement the 'scarify' next-step treatment.</p> <p><u>Site Condition</u>  <u>Proposed Start Date:</u> 10/1 /2022</p>											
<b>4</b>	<b>53032004-NF</b>	3.7	3102 - Grass	Nonstocked			Unspec NonForestMgt	Other - Specify	3102 - Grass		No
<p><u>Prescription</u> Mow, plant, brush, burn and/or herbicide to maintain openings. Plant hard or soft mast.  <u>Specs:</u>  <u>Next Step Treatments:</u>  <u>Acceptable Regen:</u>  <u>Other Comment:</u>  <u>Site Condition</u>  <u>Proposed Start Date:</u> 10/1 /2022</p>											
<b>8</b>	<b>53032008-NF</b>	1.4	3102 - Grass	Nonstocked	0		Unspec NonForestMgt	Other - Specify	3102 - Grass		No
<p><u>Prescription</u> Mow, plant, brush, burn and/or herbicide to maintain openings. Plant hard or soft mast.  <u>Specs:</u>  <u>Next Step Treatments:</u>  <u>Acceptable Regen:</u>  <u>Other Comment:</u>  <u>Site Condition</u>  <u>Proposed Start Date:</u> 10/1 /2022</p>											





Standard

Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
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<b>9</b>	<b>53032009-Monitor</b>	39.0	42140 - Planted Mixed Pine	Sawtimber Medium	93	81-110	Monitoring	Natural Regen (Re-Inventory)	42211 - Natural Red Pine, Mixed Deciduous	Two-Aged	No
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Prescription Natural regeneration survey during re-inventory in 2031.  
Specs:  
Next Step  
Treatments:  
Acceptable Regen: 2011 regen comment: Natural red pine establishment is the objective, but Red Pine with a mix of species will be acceptable in determining regeneration success.  
Other Comment: Regeneration survey conducted on 3/25/21. Natural pine regeneration hadn't yet responded to the shetlerwood harvest completed in 2019. More time is required. Refer to stand comments for details.  
Site Condition  
Proposed Start Date: 10/1 /2030

<b>10</b>	<b>53032010-CrownThin</b>	22.9	42141 - Planted Mixed Pine, Mixed Deciduous	Sawtimber Well	94	111-140	Harvest	Crown Thinning	42260 - Natural Pine, Mixed Deciduous	Two-Aged	No
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Prescription Crown Thin, target 90-100BA.  
Specs:  
 - Rx objective is to manage for current and future 'Big Tree' characteristics  
 - Some large trees already present, generally the planted red pine. Favor leaving larger trees throughout, both long and shorter lived species. Allow some of the shorter lived species will become future snags/CWD.  
 - A few legacy white pine present. Protect legacy trees in specs.  
 - Do not use any 'cut all' type specs  
 - Include drumming log spec. Beneficial for wildlife and as CWD/nurse logs.  
 - Use shortwood and bark slip specs  
Next Step  
Treatments:  
Acceptable Regen: Though not a regeneration harvest, expect release of white pine saplings in areas and some vegetative deciduous regen.  
Other Comment: Carbon measurement plot present in southern portion of treatment area (see OFS points). Does not need to be excluded/protected.  
Site Condition  
Proposed Start Date: 10/1 /2022

<b>15</b>	<b>53032015-CCR</b>	11.0	4199 - Other Mixed Upland Deciduous	Poletimber Well	60	81-110	Harvest	Clearcut with Retention	4139 - Aspen, Mixed Deciduous	Even-Aged	No
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Prescription Clearcut w/Retention.  
Specs:  
 - Boundary excluded retention identified in east. Approximates an area that appears to be seasonally wet (see OFS for exact location). Dry during spring '21.  
 - Leave the scattered super-canopy red/white pine and red oak 20" and greater.  
 - Include drumming log spec  
Next Step Monitoring, Natural Regen (Re-Inventory)  
Treatments:  
Acceptable Regen: Moderate or better stocking mixture of aspen, soft/hard maple, red oak, pine and birch.  
Other Comment: - Carbon measurement plot located close to treatment boundary in northwest (see OFS points). Does not need to be excluded/protected. - Include Stand 2, 53034 with this treatment.  
Site Condition  
Proposed Start Date: 10/1 /2022



Standard

Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
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21	53032021-NF	2.8	3102 - Grass	Nonstocked		Unspecified	NonForestMgt	Other - Specify	3102 - Grass	No
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Prescription Mow, plant, brush, burn and/or herbicide to maintain openings. Plant hard or soft mast.

Specs:

Next Step

Treatments:

Acceptable

Regen:

Other

Comment:

Site Condition

Proposed Start Date: 10/1 /2022

22	53032022-CCR	42.1	4133 - Aspen, Mixed Pine	Poletimber Well	48	81-110	Harvest	Clearcut with Retention	4139 - Aspen, Mixed Deciduous	Even-Aged	No
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Prescription Clearcut w/Retention.

Specs:

- Capture some pine/oak within two or more retention areas. Pine tended to reside near boundaries. Boundary exclusion could be used to capture some of these areas.
- Leave red oak 22" and greater, leave red/white pine 20" and greater. This will exclude super-canopy and legacy sized pine/oak from harvest.
- Protect legacy trees in specs
- Protect oak and pine saplings
- Include drumming log and oak wilt specs

Next Step Monitoring, Natural Regen (Re-Inventory)

Treatments:

Acceptable Moderate or better stocking of aspen with components of soft/hard maple, red oak, red/white pine and birch.

Regen:

Other

Aspen merchantability varies throughout the treatment area.

Comment:

Site Condition

Proposed Start Date: 10/1 /2022

26	53032026-Monitor	29.2	42110 - Planted Red Pine	Sawtimber Poor	84	1-50	Monitoring	Natural Regen (Re-Inventory)	4221 - Natural Red Pine	Two-Aged	No
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Prescription Natural regeneration survey during re-inventory in 2031.

Specs:

Next Step

Treatments:

Acceptable 2011 regen comment: Encourage scarification through the logging process to promote natural red pine regeneration. A mix of species will be acceptable for regeneration.

Regen:

Other Regeneration survey conducted on 3/29/21. Natural pine regeneration hadn't yet fully responded to the seed tree harvest completed in 2015.

Comment: More time is required. Refer to stand comments for details.

Site Condition

Proposed Start Date: 10/1 /2022



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Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
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<b>40</b>	<b>53032040-CrownThin</b>	44.4	42111 - Planted Red Pine, Mixed Deciduous	Sawtimber Well	92	111-140	Harvest	Crown Thinning	42111 - Planted Red Pine, Mixed Deciduous	Even-Aged	No
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Prescription Crown Thin, target 90BA.- Free thin to release selected crop trees- Focus on releasing/retaining some of the smaller log/larger pole  
Specs: RP/WP of better form with fuller/healthy live crowns- A few legacy white pine and relic red/white pine present. Protect legacy trees in specs, avoid marking relic pine.- Retain healthy/large crowned red oak- Shingle Mill Pathway briefly in southeast. Protect in specs. - Use shortwood and bark slip specs- Protect pine saplings

Next Step  
Treatments:

Acceptable Regen: Though not a regeneration harvest, expect release of white pine saplings in areas and some vegetative deciduous regen.

Other Comment: Some 'walk through' areas present.

Site Condition

Proposed Start Date: 10/1 /2022

<b>44</b>	<b>53032044-CC</b>	4.2	4130 - Aspen	Poletimber Well	48	81-110	Harvest	Clearcut	413 - Aspen	Even-Aged	No
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Prescription Clearcut, no retention.  
Specs: - Leave legacy red oak, at least one is present. Protect legacy oak from damage by marking a few non-oak 'bumper trees' around the crown/bole. Negates needing to use oak wilt specs.  
 - Leave white pine 20" and greater. This will exclude a few super-canopy and legacy pine.  
 - Protect Shingle Mill Pathway in specs. Located just west of the sale area  
 - Protect white pine saplings

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

Acceptable Regen: Moderate or better stocking of aspen with components of soft/hard maple, red oak, and red/white pine.

Other Comment: Heavy recreational use near the treatment area.

Site Condition

Proposed Start Date: 10/1 /2022

<b>47</b>	<b>53032047-CrownThin</b>	21.0	42110 - Planted Red Pine	Sawtimber Well	92	111-140	Harvest	Crown Thinning	42110 - Planted Red Pine	Even-Aged	No
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Prescription Crown Thin, target 90BA.- Free thin to release selected crop trees- Focus on releasing/retaining some of the smaller log/larger pole  
Specs: RP/WP of better form with fuller/healthy live crowns- A few legacy white pine and relic red/white pine present. Protect legacy trees in specs, avoid marking relic pine.- Retain healthy/large crowned red oak- Use shortwood and bark slip specs- Protect pine saplings

Next Step  
Treatments:

Acceptable Regen: Though not a regeneration harvest, expect release of white pine saplings in areas and some vegetative deciduous regen.

Other Comment:

Site Condition

Proposed Start Date: 10/1 /2022



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Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
52	53032052-CCR	5.3	4139 - Aspen, Mixed Deciduous	Sawtimber Well	48	111-140	Harvest	Clearcut with Retention	4139 - Aspen, Mixed Deciduous	Even-Aged	No
<p><u>Prescription</u> Clearcut w/Retention.  <u>Specs:</u> - Retention identified along Tin Bridge Rd. Capture a strip of xlog/one legacy white/red pine growing in a shallow ditch.                      - Leave incidental red/white pine 18" and greater                      - Leave 2-3 red oak. Protect oak from damage by leaving a few non-oak 'bumper trees' around the crown/bole of selected oak. Negates needing to use oak wilt specs.                      - Shingle Mill Pathway present in treatment area. Protect pathway in specs.                      - Protect oak and pine saplings</p> <p><u>Next Step</u> Monitoring, Natural Regen (Re-Inventory)  <u>Treatments:</u></p> <p><u>Acceptable Regen:</u> Moderate or better stocking of aspen with components of soft/hard maple, red oak and red/white pine.</p> <p><u>Other Comment:</u> Heavy recreational use in and around the treatment area. Keep harvest operations out of the dispersed campsites located in Stand 45.</p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2022</p>											
56	53032056-CC	5.7	4199 - Other Mixed Upland Deciduous	Poletimber Well	55	81-110	Harvest	Clearcut	4139 - Aspen, Mixed Deciduous	Even-Aged	No
<p><u>Prescription</u> Clearcut, no retention.  <u>Specs:</u> - Leave incidental white pine. Leave red pine/red oak 18" and greater.                      - At least two legacy white pine observed within the sale area. Protect legacy trees in specs.                      - Shingle Mill Pathway is the northeast boundary. Protect the pathway in specs.</p> <p><u>Next Step</u> Monitoring, Natural Regen (Re-Inventory)  <u>Treatments:</u></p> <p><u>Acceptable Regen:</u> Moderate or better stocking mixture of aspen, soft/hard maple, red oak, red/white pine, fir and birch.</p> <p><u>Other Comment:</u> Heavy recreational use near the treatment area.</p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2022</p>											
58	53032058-CrownThin	44.1	4111 - S.Maple, Hard Mast Association	Sawtimber Well	94	111-140	Harvest	Crown Thinning	4111 - S.Maple, Hard Mast Association	Even-Aged	No
<p><u>Prescription</u> Crown Thin, target 80BA.- Free thin to release selected crop trees - Retain obvious seed producers and large wolfy/den trees- Avoid marking underrepresented species including beech, aspen, red pine, paper birch, cherry, elm, white pine, etc.- Some steeper slopes west of Shingle Mill Pathway (in west). To minimize erosion hazards, avoid marking all the way 'up' the steepest slopes. Consider using pathway as the west boundary in that area.- It's acceptable to leave higher residual in the areas heavier to oak and white pine- Protect Shingle Mill Pathway in specs- Use shortwood and bark slip specs- Include legacy tree protection specs</p> <p><u>Next Step</u> Monitoring, Natural Regen (Re-Inventory)  <u>Treatments:</u></p> <p><u>Acceptable Regen:</u></p> <p><u>Other Comment:</u> Use oak wilt spec(s). To ease oak wilt timing restrictions on the producer, make the western/southern areas heavier to oak their own payment unit(s).</p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2022</p>											



Standard

Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
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<b>64</b>	<b>53032064-SeedTree</b>	23.0	429 - Mixed Upland Conifers	Sawtimber Well	97	111-140	Harvest	Seed Tree	4311 - Pine, Aspen Mix	Two-Aged	No
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Prescription Seed Tree, leave 5-10BA.  
Specs:  
 - Leave scattered and/or a clumped combination of white pine and some red oak as a seed source. Ok to leave a few shorter lived species, to become future snags/CWD.  
 - Protect oak seed trees from damage by leaving a few non-oak 'bumper trees' around the crown/bole of selected oak. Negates needing to use oak wilt specs.  
 - Protect some patches of desirable regeneration by leaving a few more seed trees in those areas.  
 - Require whole tree skidding during snow-off/ground not frozen conditions  
 - A few legacy red oak/white pine present. Protect legacy trees in specs.  
 - Shingle Mill Pathway briefly in north. Protect the pathway in specs.  
 - Include drumming log spec  
Next Step Monitoring, Natural Regen (Re-Inventory)  
Treatments:  
Acceptable Regen: Moderate or better stocking mixture of red/white/jack pine, aspen, red maple, spruce and fir. Pine species will likely take longer to regenerate. An additional survey may be required after initial regen check in '31.  
Other - Heavy recreational use near the treatment area.  
Comment: - Require producer to spread out their skidding routes, to promote uniform scarification.  
Site Condition  
Proposed Start Date: 10/1 /2022

<b>65</b>	<b>53032065-CC</b>	3.2	4139 - Aspen, Mixed Deciduous	Sawtimber Well	56	111-140	Harvest	Clearcut	4139 - Aspen, Mixed Deciduous	Even-Aged	No
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Prescription Clearcut, no retention.  
Specs:  
 - Legacy white pine on east boundary. Will be easily excludable during redline establishment.  
 - Leave incidental red oak (healthy and large)  
 - Shingle Mill Pathway travels through treatment area in south. Protect the pathway in specs.  
 - Include legacy tree protection specs  
Next Step Monitoring, Natural Regen (Re-Inventory)  
Treatments:  
Acceptable Regen: Moderate or better stocking of aspen with components of soft/hard maple, basswood, birch, red/white pine and oak.  
Other Heavy recreational use in and around the treatment area.  
Comment:  
Site Condition  
Proposed Start Date: 10/1 /2022

<b>68</b>	<b>53032068-Monitor</b>	24.9	42210 - Natural Red Pine	Sawtimber Well	97	81-110	Monitoring	Natural Regen (Re-Inventory)	4221 - Natural Red Pine	Uneven-Aged	No
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Prescription Natural regeneration survey during inventory in 2031.  
Specs:  
Next Step  
Treatments:  
Acceptable Regen: 2011 regen comment: Mix of pine and deciduous species.  
Other Regeneration survey conducted on 3/15/21. Natural pine regeneration hadn't yet fully responded to the selection harvest completed in 2015.  
Comment: More time is required. Refer to stand comments for details.  
Site Condition  
Proposed Start Date: 10/1 /2030



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Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
69 53032069-NF	27.1	3205 - Mixed Upland Shrub	Nonstocked		Unspecified	NonForestMgt	Other - Specify	3205 - Mixed Upland Shrub		No
<p><u>Prescription</u> Mow, plant, brush, burn and/or herbicide to maintain openings. Plant hard or soft mast.</p> <p><u>Specs:</u></p> <p><u>Next Step</u></p> <p><u>Treatments:</u></p> <p><u>Acceptable Regen:</u></p> <p><u>Other Comment:</u> Stand has historically been managed as a mosaic of both forested and non-forested covertypes.</p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2022</p>										
76 53032076-NF	13.6	3301 - Low Density Deciduous Trees	Nonstocked		Unspecified	NonForestMgt	Other - Specify	3205 - Mixed Upland Shrub		No
<p><u>Prescription</u> Mow, plant, brush, burn and/or herbicide to maintain openings. Plant hard or soft mast.</p> <p><u>Specs:</u></p> <p><u>Next Step</u></p> <p><u>Treatments:</u></p> <p><u>Acceptable Regen:</u></p> <p><u>Other Comment:</u> Stand has historically been managed as a mosaic of both forested and non-forested covertypes.</p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2022</p>										
79 53032079-Cut	46.3	42110 - Planted Red Pine	Sawtimber Poor	94	1-50	Harvest	Overstory Removal	42290 - Natural Mixed Pine	Even-Aged	No
<p><u>Prescription</u> Remove most overstory red pine from within the sale area. Mark to leave some red pine that is growing in/near pockets of dense, 10-20ft tall advanced pine regen. Leave all white pine and oak. Roundwood harvest only during the winter when there is at least 1 foot of snow on the ground. The reasoning for this is to protect the abundant red pine seedlings that are present throughout the sale area. Add stringent damage specs to protect all regeneration, both new seedlings and advanced regeneration. Protect Shingle Mill Pathway in specs.</p> <p><u>Specs:</u></p> <p><u>Next Step</u> Planting, Interplant; Monitoring, Natural Regen (Intermediate)</p> <p><u>Treatments:</u></p> <p><u>Acceptable Regen:</u> Natural mixed pine with minor inclusions of deciduous. See next steps regarding regeneration survey and oak planting.</p> <p><u>Other Comment:</u> Refresh red lines and retention boundaries.</p> <p>Do a regen survey one year after harvest to assess seedling survival following the harvest. If seedlings numbers have been reduced below acceptable stocking levels, then initiate a next step of handplanting red pine in the areas that need it.</p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2021</p>										



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Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
94	53032094-CCR	16.4	4133 - Aspen, Mixed Pine	Poletimber Well	59	81-110	Harvest	Clearcut with Retention	4136 - Aspen, Mixed Conifer	Even-Aged	No
<p><u>Prescription</u> Clearcut w/Retention.  <u>Specs:</u> - Focus some small retention around the 'clumpy' component of red pine                      - Sloped terrain along north and west boundary. Though not observed, be vigilant for any seeps in those areas.                      - Leave red/white pine 20" and greater. Leave white spruce 18" and greater.                      - Protect the Shore-to-Shore equestrian/hiking trail in specs                      - Protect pine and spruce saplings                      - Include drumming log spec</p> <p><u>Next Step</u> Monitoring, Natural Regen (Re-Inventory)  <u>Treatments:</u></p> <p><u>Acceptable Regen:</u> Moderate or better stocking of aspen with components of red maple, white/red/jack pine, spruce and fir.</p> <p><u>Other</u> - A small portion of Stand 101 has been prescribed to connect this harvest with the Rx occurring within Stand 103.  <u>Comment:</u> - Heavy recreational use near the treatment area.</p> <p><u>Site Condition</u>  <u>Proposed Start Date:</u> 10/1 /2022</p>											
99	53032099-SeedTree	3.0	42200 - Natural White Pine	Sawtimber Well	95	141-170	Harvest	Seed Tree	42201 - Natural White Pine, Mixed Deciduous	Two-Aged	No
<p><u>Prescription</u> Seed Tree, leave 10-20BA.  <u>Specs:</u> - Leave scattered and/or a clumped combination of white/red pine and some spruce as a seed source.                      - Leave a few scattered aspen to become future snag/CWD material                      - Encourage the producer to heavily scarify the site. To expose bare mineral soils for conifer seed establishment.                      - Protect the Shore-to-Shore equestrian/hiking trail in specs</p> <p><u>Next Step</u> Monitoring, Natural Regen (Re-Inventory)  <u>Treatments:</u></p> <p><u>Acceptable Regen:</u> Moderate or better stocking mixture of white/jack/red pine, aspen, red maple and spruce. Pine species will likely take longer to regenerate.                      An additional survey may be required after initial regen check in '31.</p> <p><u>Other</u> Heavy recreational use near the treatment area.  <u>Comment:</u></p> <p><u>Site Condition</u>  <u>Proposed Start Date:</u> 10/1 /2022</p>											
101	53032101-CC	1.2	42290 - Natural Mixed Pine	Poletimber Well	44	51-80	Harvest	Clearcut	4136 - Aspen, Mixed Conifer	Even-Aged	No
<p><u>Prescription</u> Clearcut, no retention.  <u>Specs:</u> - Protect the Shore-to-Shore equestrian/hiking trail in specs                      - Protect pine and spruce saplings</p> <p><u>Next Step</u> Monitoring, Natural Regen (Re-Inventory)  <u>Treatments:</u></p> <p><u>Acceptable Regen:</u> Moderate or better stocking mixture of aspen, jack/white/red pine, spruce, fir and red maple.</p> <p><u>Other</u> - Treatment created to connect and simplify harvest operations within Stands 94 and 103. Does hold an area of merchantable fir.  <u>Comment:</u> - Heavy recreational use near the treatment area.</p> <p><u>Site Condition</u>  <u>Proposed Start Date:</u> 10/1 /2022</p>											



Standard

Treatment ID	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
103	53032103-CC	5.6	4136 - Aspen, Mixed Conifer	Poletimber Well	46	81-110	Harvest	Clearcut	4136 - Aspen, Mixed Conifer	Even-Aged	No
<p><u>Prescription</u> Clearcut, no retention.  <u>Specs:</u> - The Shore-to-Shore equestrian/hiking trail is the east boundary. Protect the trail in specs.                      - Protect pine and spruce saplings                      - Include drumming log spec  <u>Next Step</u> Monitoring, Natural Regen (Re-Inventory)  <u>Treatments:</u>  <u>Acceptable Regen:</u> Moderate or better stocking of aspen with components of spruce, fir, white/red/jack pine and red maple.  <u>Other Comment:</u> - Heavy recreational use near the treatment area.                      - Quaking aspen is showing signs of decline, merchantability is variable.                      - A small portion of Stand 101 has been prescribed to connect this harvest with the Rx occurring within Stand 94.  <u>Site Condition</u>  <u>Proposed Start Date:</u> 10/1 /2022</p>											
113	53032113-NF	0.7	3102 - Grass	Nonstocked	0	Unspecified	NonForestMgt	Other - Specify	3102 - Grass		No
<p><u>Prescription</u> Mow, plant, brush, burn and/or herbicide to maintain openings. Plant hard or soft mast.  <u>Specs:</u>  <u>Next Step</u>  <u>Treatments:</u>  <u>Acceptable Regen:</u>  <u>Other Comment:</u>  <u>Site Condition</u>  <u>Proposed Start Date:</u> 10/1 /2022</p>											
2	53034002-CCR	4.2	4199 - Other Mixed Upland Deciduous	Poletimber Well	54	Unspecified	Harvest	Clearcut with Retention	4139 - Aspen, Mixed Deciduous	Even-Aged	No
<p><u>Prescription</u> Clearcut w/Retention  <u>Specs:</u> - Out-of-year of entry harvest. Set-up with Stand 15, 53032 during 2023 year-of-entry.                      - Boundary excluded retention identified in southwest. Captures an area heavy to white pine.                      - Leave incidental red oak. Leave red/white pine 18" and greater.                      - Include drumming log spec  <u>Next Step</u> Monitoring, Natural Regen (Re-Inventory)  <u>Treatments:</u>  <u>Acceptable Regen:</u> Moderate or better stocking of aspen with components of soft/hard maple, birch, pine and fir.  <u>Other Comment:</u>  <u>Site Condition</u>  <u>Proposed Start Date:</u> 10/1 /2022</p>											

**Approved Treatments:**

1	53032001-Cut	8.0	4191 - Mixed Upland Deciduous with Conifer	Poletimber Well	48	51-80	Harvest	Clearcut	4199 - Other Mixed Upland Deciduous	Even-Aged	No
<p><u>Prescription</u> Clearcut. Use previous prescription.  <u>Specs:</u> This stand is being re-setup and sold. It was initially a part of the sale Mud Lake Mix (#53-005-15) bought by Precision, but was dropped by them in 2020.  <u>Next Step</u> Monitoring, Natural Regen (Intermediate)  <u>Treatments:</u></p>											





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Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
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Acceptable Any mix of species resulting in a well-stocked stand will be acceptable in determining regeneration success.  
Regen:  
Other  
Comment:  
Site Condition  
Proposed Start Date: 5 /6 /2021

<b>46</b>	<b>53032046-Other</b>	35.6	500 - Water	Nonstocked		Unspecified	Other	Other	500 - Water	No
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Prescription Spray all non-native phragmites which is present in several pockets along the shoreline of Grass Lake. This treatment will stay open until the phragmites is eradicated. It is associated with FTP # W53-459 and is being done in conjunction with Huron Pines.  
Specs:  
Next Step  
Treatments:  
Acceptable  
Regen:  
Other  
Comment:  
Site Condition  
Proposed Start Date: 10/1 /2020

<b>78</b>	<b>53032078-Monitor</b>	44.4	4110 - Sugar Maple Association	Sawtimber Well	88	81-110	Monitoring	Natural Regen (Re-Inventory)	4110 - Sugar Maple Association	Uneven-Aged	No
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Prescription Regeneration survey during inventory in 2031.  
Specs:  
Next Step  
Treatments:  
Acceptable 2011 regen comment: Sugar Maple and White Ash would be preferred along with some beech to determine regeneration success.  
Regen:  
Other Regeneration survey conducted March '21. Northern hardwood regeneration hadn't yet fully responded to the selection harvest completed in  
Comment: 2015. More time is required. Refer to stand comments for details.  
Site Condition  
Proposed Start Date: 10/1 /2030

**Total Treatment** 583.9  
**Acres Proposed:**

**Availability for Management**

Total Acres **Acres Avail** Acres  
 Acres Available **With Condition** Not Available

**Dominant Site Conditions**

**5B 5C 2F 2G 3A 3D 3J 5E**

Total Acres	Acres Available	Acres Avail With Condition	Acres Not Available	Dominant Site Condition	5B	5C	2F	2G	3A	3D	3J	5E
325	283	17	25	Aspen		17	16	0		0	7	2
46	0	0	46	Cedar				42			4	
11	11	0	0	Herbaceous Openland				0				
41	41	0	0	Jack Pine								
17	17	0	0	Low-Density Trees								
21	1	0	20	Lowland Aspen/Balsam Poplar				20				
254	0	0	254	Lowland Conifers				252			2	
47	17	0	30	Lowland Shrub				28			2	0
7	0	0	7	Lowland Spruce/Fir				7				
17	17	0	0	Marsh								
76	27	37	12	Mixed Upland Deciduous	27	10					12	1
133	53	34	46	Natural Mixed Pines		34	13		20	4	9	
170	160	0	9	Northern Hardwood								9
62	62	0	0	Planted Mixed Pines								
373	218	127	28	Red Pine	51	76	1			17	9	2
55	33	18	3	Upland Conifers		18					3	
23	20	0	4	Upland Mixed Forest							4	
27	27	0	0	Upland Shrub								
76	76	0	0	Water							0	
80	38	17	25	White Pine	17	0	0			14	12	
1,861	1,101	250	510	Total Forested Acres	96	154	30	349	20	34	63	13
	59%	13%	27%	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	2	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							

## Report 4 – Site Conditions

Pigeon River Country Mgt. Unit

Compartment: 32

John St. Pierre : Examiner

Year of Entry: 2023

2	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	218	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
3	Unavailable	2F: Too steep	8	3D: Recreational / Scenic values	3J: Water quality / BMPs (stream, river, or lake)	Unspecified	Unspecified
<b>Comments:</b> Majority of stand located on a steep southeast facing slope. Shingle Mill Pathway at bottom of the slope. Lowland shrub Stand 81 at slope bottom too.							
4	Unavailable	3D: Recreational / Scenic values	4	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
5	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	6	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
6	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	5	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b> Some steeper slopes present yet not so steep it couldn't be harvested. Operations would likely increase the threat of erosion. The stands small acreage and proximity to a natural river and Shingle Mill pathway makes management a less viable option at this time.							
7	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	9	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b> Formally part of Stand 22. Site condition ~approximates an area of varying merchantability. Majority of aspen & soft maple present being sub and/or just barely merchantable. Recommend treating this stand with Stand 12 during future management activity.							

## Report 4 – Site Conditions

Pigeon River Country Mgt. Unit

Compartment: 32

John St. Pierre: Examiner

Year of Entry: 2023

8	<b>Unavailable</b>	<b>2F: Too steep</b>	1	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b> Large depression/pit within this stand. Looks man-made, slopes leading down into this pit likely 'too steep'.							
9	<b>Unavailable</b>	<b>3A: Conservation Values incompatible with harvest at this time</b>	18	2F: Too steep	3J: Water quality / BMPs (stream, river, or lake)	1A: Federal/State/Local Law	3D: Recreational / Scenic values
<b>Comments:</b> Combination of reasons why a timber harvest is incompatible at this time. Some locations were 'too steep', 100ft natural rivers buffer extends into areas and the stand contains an unofficial pathway that originates from the Horse Campground located in the south.							
10	<b>Available</b>	<b>5C: Delay treatment for age/size class diversity or exceptional site quality</b>	5	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b> Harvested in '05 (see stand comments). Age of this stand is causing it to 'meet' silvicultural criteria.							
11	<b>Available</b>	<b>5B: Maintain for regeneration purposes</b>	27	5C: Delay treatment for age/size class diversity or exceptional site quality	Unspecified	Unspecified	Unspecified
<b>Comments:</b> Removal harvest in '94, dense regeneration still recruiting below residuals.							
12	<b>Unavailable</b>	<b>3J: Water quality / BMPs (stream, river, or lake)</b>	24	3D: Recreational / Scenic values	Unspecified	Unspecified	Unspecified
<b>Comments:</b> One-hundred foot RMZ vegetative buffer along Grass Lake and two creeks that flow into the lake. Shingle Mill Pathway travels through areas of the condition too.							
13	<b>Unavailable</b>	<b>2F: Too steep</b>	8	3D: Recreational / Scenic values	Unspecified	Unspecified	Unspecified
<b>Comments:</b> Though not terribly steep, the quickness of the slopes and their 'stair-stepped' form appeared easily damageable by harvesting equipment (working from most directions). Room to turn once at the bottom on the slope was quite limited. Small acreage, Shingle Mill Pathway and somewhat close proximity to a natural river all make harvesting a less viable option.							

**Report 4 – Site Conditions**

Pigeon River Country Mgt. Unit

Compartment: 32

John St. Pierre : Examiner

Year of Entry: 2023

14	Available	5B: Maintain for regeneration purposes	51	Unspecified	Unspecified	Unspecified	Unspecified
<p><b>Comments:</b> This stand (104) is the result of excluding areas of heavy mixed pine regeneration while running the treatment boundary for sale 'Red Line Nightmare', 53-009-13-01. The excluded areas were meant to protect the advanced pine regeneration from harvesting damage. The harvested portions, Stands 76/C034 &amp; 79/C032, were cut in fall of 2014 by Biewer,</p>							
15	Unavailable	5E: Long-Term Retention	1	Unspecified	Unspecified	Unspecified	Unspecified
<p><b>Comments:</b></p>							
16	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	15	Unspecified	Unspecified	Unspecified	Unspecified
<p><b>Comments:</b> Standing water present when visited March '21. A lot of mortality due to high, likely seasonal, water levels.</p>							
17	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	61	5B: Maintain for regeneration purposes	Unspecified	Unspecified	Unspecified
<p><b>Comments:</b> Harvested '94-95, left all RP, WP, RO. Some areas have encouraging advanced regeneration that has established. Other areas haven't regenerated quite as well.</p>							
18	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	18	Unspecified	Unspecified	Unspecified	Unspecified
<p><b>Comments:</b> See stand and draft treatment comments.</p>							
19	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	7	Unspecified	Unspecified	Unspecified	Unspecified
<p><b>Comments:</b> Approximates the portion(s) of Stand 43 that feasible could be managed in the future, after deducting BMP buffers associated with water features present in/around the stand. Shingle Mill Pathway borders portions of this site condition.</p>							

## Report 4 – Site Conditions

Pigeon River Country Mgt. Unit

Compartment: 32

John St. Pierre : Examiner

Year of Entry: 2023

20	<b>Unavailable</b>	<b>2G: Too wet (sensitive soils, does not include access issues)</b>	10	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b> Vast majority of stand is 'Too wet'. Emergent stream present in north, flows into Grass Lake.							
21	<b>Unavailable</b>	<b>3J: Water quality / BMPs (stream, river, or lake)</b>	18	3D: Recreational / Scenic values	Unspecified	Unspecified	Unspecified
<b>Comments:</b> One-hundred foot RMZ buffer along Grass Lake and its overflow areas. Slightly more than 100ft in a few areas. Heavy recreational influence present along/near Grass Lake too.							
22	<b>Available</b>	<b>5C: Delay treatment for age/size class diversity or exceptional site quality</b>	10	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b> Difficult operational terrain in areas with difficult access.							
23	<b>Unavailable</b>	<b>3J: Water quality / BMPs (stream, river, or lake)</b>	6	3D: Recreational / Scenic values	Unspecified	Unspecified	Unspecified
<b>Comments:</b> One-hundred foot RMZ buffer along Grass Lake and its overflow areas. Heavy recreational use present along/around Grass Lake too.							
24	<b>Available</b>	<b>5C: Delay treatment for age/size class diversity or exceptional site quality</b>	10	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b> Stand primarily composed of fire origin/natural red/white pine. Current composition is quite diverse. Management isn't needed (at this time) to enhance species and structural diversity. See draft treatments note for other reasoning.							
25	<b>Unavailable</b>	<b>2F: Too steep</b>	6	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b> Site condition approximates the portion of this stand is likely too steep for harvest operations.							

**Report 4 – Site Conditions**

Pigeon River Country Mgt. Unit

Compartment: 32

John St. Pierre : Examiner

Year of Entry: 2023

26	Unavailable	2F: Too steep	4	Unspecified	Unspecified	Unspecified	Unspecified
<p><b>Comments:</b> Majority of stand was borderline 'too steep'. Northern portion had slopes that were more gradual.</p>							
27	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	103	3J: Water quality / BMPs (stream, river, or lake)	1A: Federal/State/Local Law	2F: Too steep	Unspecified
<p><b>Comments:</b> 'Too wet' is the dominant condition. Natural Rivers vegetative (100ft) and zoning (300ft) buffers apply along the Pigeon River. A few/minor areas were likely 'too steep'.</p>							
28	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	4	Unspecified	Unspecified	Unspecified	Unspecified
<p><b>Comments:</b> Areas of significant blowdown present within this small cedar stand.</p>							
29	Available	5B: Maintain for regeneration purposes	17	5C: Delay treatment for age/size class diversity or exceptional site quality	Unspecified	Unspecified	Unspecified
<p><b>Comments:</b> Removal harvest in '85, left all WP, RO, RP. Heavy layer of deciduous now regenerating in sub-canopy, variable stocking of residuals in canopy. Allow regeneration to continue to develop.</p>							
30	Unavailable	5E: Long-Term Retention	0	Unspecified	Unspecified	Unspecified	Unspecified
<p><b>Comments:</b></p>							
32	Unavailable	5E: Long-Term Retention	1	Unspecified	Unspecified	Unspecified	Unspecified
<p><b>Comments:</b> L.T.R captures a strip of xlog/one legacy white/red pine growing in a shallow ditch along Tin Bridge Rd.</p>							

## Report 4 – Site Conditions

Pigeon River Country Mgt. Unit

Compartment: 32

John St. Pierre: Examiner

Year of Entry: 2023

33	<b>Unavailable</b>	<b>3D: Recreational / Scenic values</b>	26	3A: Conservation Values incompatible with harvest at this time	Unspecified	Unspecified	Unspecified
<b>Comments:</b> McDonald '11: Part of the proposed Pigeon River Corridor SCA. High recreation use area.							
34	<b>Unavailable</b>	<b>3D: Recreational / Scenic values</b>	3	2F: Too steep	Unspecified	Unspecified	Unspecified
<b>Comments:</b> "Grass Lake Scenic Overlook" present in north end of this stand. Shingle Mill Pathway travels in-between the two polygons of this stand. Steep in some areas too							
35	<b>Unavailable</b>	<b>2F: Too steep</b>	2	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b> Approximates the steepest area observed within this stand. 'Too steep' for conventional harvest equipment.							
37	<b>Unavailable</b>	<b>3J: Water quality / BMPs (stream, river, or lake)</b>	4	3D: Recreational / Scenic values	Unspecified	Unspecified	Unspecified
<b>Comments:</b> A one-hundred foot RMZ buffer around Devil's Soup Bowl Lake removes most of this stand from any kind of final harvest treatment. Heavy recreational influence along this lake and the surrounding area.							
38	<b>Unavailable</b>	<b>3D: Recreational / Scenic values</b>	1	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b> Heavy recreational use present within this stand. Shingle Mill Pathway present in southeast.							
39	<b>Unavailable</b>	<b>3A: Conservation Values incompatible with harvest at this time</b>	3	3D: Recreational / Scenic values	Unspecified	Unspecified	Unspecified
<b>Comments:</b> Small stand of generally xlog, super-canopy and some legacy pine/oak. Heavy recreational influence within this stand and the surrounding area. This condition adjoins the 100ft RMZ buffer surrounding Grass Lake.							



## Report 4 – Site Conditions

Pigeon River Country Mgt. Unit

Compartment: 32

John St. Pierre: Examiner

Year of Entry: 2023

40	<b>Unavailable</b>	<b>3J: Water quality / BMPs (stream, river, or lake)</b>	9	2G: Too wet (sensitive soils, does not include access issues)	3D: Recreational / Scenic values	Unspecified	Unspecified
<b>Comments:</b> One-hundred foot RMZ buffer along Grass Lake shoreline. Stand and S.C. also capture two drainage/stream corridors, that seasonally drain into Grass Lake. 'Too wet' in several locations. Heavy recreational influence and Shingle Mill Pathway present too.							
41	<b>Available</b>	<b>5C: Delay treatment for age/size class diversity or exceptional site quality</b>	13	5B: Maintain for regeneration purposes	Unspecified	Unspecified	Unspecified
<b>Comments:</b> Removal harvest in '85, left all RP, WP, RO. Heavy layer of deciduous now regenerating in sub-canopy. Allow regen to develop further. Also, adjacent stands have been nominated for the 'Grass Lake SCA' (S.C. 3D-33), consider including this stand too.							
42	<b>Unavailable</b>	<b>5E: Long-Term Retention</b>	1	3J: Water quality / BMPs (stream, river, or lake)	Unspecified	Unspecified	Unspecified
<b>Comments:</b> Site condition approximates an area that appeared to be a small vernal pool complex (see OFS for exact location). The area was dry during visit on 3/25/21.							
43	<b>Available</b>	<b>5C: Delay treatment for age/size class diversity or exceptional site quality</b>	8	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b> Delay for now but consider managing during '33YOE. Seasonal watercourse (Stand 39) dissects this stand. Shingle Mill Pathway in east too.							
44	<b>Unavailable</b>	<b>5E: Long-Term Retention</b>	9	2F: Too steep	3D: Recreational / Scenic values	5A: Not able to obtain desirable regeneration	Unspecified
<b>Comments:</b> This portion of Stand 78 was excluded from the selection harvest that took place in '15. Combination of reasons why it was excluded. Some areas 'too steep', seeps/transitional ground present, Shingle Mill Pathway in east, large and legacy trees present, as are pockets of hemlock.							
45	<b>Available</b>	<b>5C: Delay treatment for age/size class diversity or exceptional site quality</b>	3	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							

**Report 4 – Site Conditions**

**Pigeon River Country Mgt. Unit**

**Compartment: 32**

**John St. Pierre: Examiner**

**Year of Entry: 2023**

46	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	3	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b> One-hundred foot RMZ vegetative buffer along open water portions of lowland Stands 19/23.							

Mgt. Unit

Compartment: #Type!

Year of Entry:



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

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

SCA Name	SCA Category	Detail Type	Recommendation	Acres
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Comments

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**Report 6 – EXISTING SPECIAL CONSERVATION AREA DETAILS**

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

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

Conservation Area	Type	Description
SCA	Cold Water Stream	A coldwater stream has temperature and dissolved oxygen conditions that allow naturally-reproduced or stocked trout populations and those of other coldwater fish species (e.g., slimy sculpin) to persist from year to year. Coldwater streams in Michigan typically provide these conditions due to substantial contributions of groundwater to their stream flows. Such streams are established by Director's action and designated as trout resources by Fisheries Order 210.
SCA	Riparian Area	A transitional area between aquatic and terrestrial ecosystems in which the terrestrial ecosystem influences the aquatic ecosystem and vice-versa. Because of the unique conditions adjacent to lakes, streams and open water wetlands, riparian areas harbor a high diversity of plants and wildlife. Riparian communities are ecologically and socially significant in their effects on water quality and quantity, as well as aesthetics, habitat, bank stability, timber production, and their contribution to overall biodiversity.
HCVA	Natural Rivers	There are two Natural Rivers datasets which are derived from spatial buffers set from an established and approved distance from the river centerlines. The Natural Rivers Zoning District is a 400 foot buffer for most Natural Rivers. The Vegetative Buffer ranges from 25 to 100 feet. To view specific Zoning Districts and Vegetative Buffers for each Natural River see the table located on the I:\Documentation\GDSE data folder.



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments																																																																					
1	4191 - Mixed Upland Deciduous with Conifer	Poletimber Well	10.2	48	51-80	N/A	2019 & 21 - Paint holding up fine/quite visible during visit on 4/20/21 (JSP). Stand was a part of the sale Mud Lake Mix, #53-005-15-01, purchased by Precision. No cutting ever took place and Precision dropped the sale. Lines will be refreshed and the sale will be re-bid at a later date. 2016 Due to the spruce budworm initiative this stand was deemed to be at high risk and was added as an amendment to the adjacent Mud Lake Mix sale to the west in Compartment 31. The stand went through the Chapter 7 variance procedure and was approved. JSP '21: East ~1/2 tended to have more pole sized BF, RM and QA. West 1/2 w/more log sizes. Could call the stand 'log' sized. Second age class of WP, scattered and in clumps of log/xlog/legacy (28", 29"). BF saps high to full, some QA saps still floating around. BF was healthy (except some natural/blowdown mortality). BA swings= 80,30,90,90 (72avg).																																																																					
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2	42110 - Planted Red Pine	Sawtimber Well	49.9	91	81-110	N/A	McDonald '11: Cut in '94, everything cut except WP, RP, RO. Pine BA is highly variable. JSP '21: Variable canopy stocking, and sub-canopy regen stocking/regen specie dominance. Canopy closure overall low-end of 75-100%. Brief areas in west where closure is 50-75%. RP of decent/ok quality, some a bit limby. WP is consistent with areas where it was a bit more prominent/clumpy. Legacy WP observed (30", 34"). RO generally healthy, but some are getting tired/on way out. Regen is very dense/swathes of it present in areas (high/full). Then areas where it didn't fully establish/is a bit sparse. WP the more prominent regen, full in areas, 10-20ft+ average with 5-10 footers in some swathes. RM, RP, BF all very common in the regen layer (mixing w/WP) and were sometimes high/full. RM saps 'high' in east 1/2. East and southern boundaries all slope (gradually) down into adjacent lowland stands. Trace BTA (pole). Elk sign common, especially in south along lowland interface.																																																																					
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3	429 - Mixed Upland Conifers	Sawtimber Well	18.3	58	111-140	N/A	Quite Variable.... East 1/2 heavier to WP mixed w/RP, generally more log sized there too. West 1/2 was heavier to pole sized mixture of many species, logs still present though. West had a 'deciduous removal' (except RO) look/feel to it, would've happened quite some time ago. Groves of xlog/legacy WP (30-40") present in west and center of stand, likely close to 20+ legacy trees throughout the stand (RP too, 29"). Observed some relic/legacy pine along lowland interface in north, some tightly sloped/steeper terrain along that interface. Center of stand likely holds/moves water during excessively wet periods of the year. Observed trace BW (L), HM (L/P), WhtSprc (P), NWC (L). BA swings= 190,110,100,140,80,130,110,130,80 (118avg)																																																																					
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4	3102 - Grass	Nonstocked	3.7		Unspecified	Managed Opening	A few scattered clumps of conifer present.																																																																					



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments		
5	4133 - Aspen, Mixed Pine	Poletimber Well	33.8	36	1-50	N/A	<p>Still a mix of P/S and S/P stems, but moving closer to overall pole size. Will likely get there by next rotation. Some areas where aspen stems were 'truly' pole sized. Clumps of pine domination. Northern ~1/4 close to Stand 6 was heavy to conifer, including a 'chunk' of fir w/pine NE of the opening. A few scattered residual/larger WP stems observed throughout. Some legacy WP along northern boundary. Trace WhtSprc (P). BA swings= 40,80,30,40,20,30 (40avg)</p>		
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density		Avg. Height	Size
Red Maple	4	Sapling/Pole	4		Red Pine	Medium		10 - 20 feet	Sapling
Bigtooth Aspen	48	Pole/Sapling	6	36	White Pine	High		10 - 20 feet	Sapling
Balsam Fir	4	Pole/Sapling	6		Black Cherry	Low		5 - 10 feet	Sapling
White Pine	18	Pole/Sap/Log	6		Balsam Fir	Low		Variable	Sapling
Red Pine	7	Sapling/Pole	4		White Pine	Medium		< 5 feet	Seeding
Jack Pine	5	Sapling/Pole	4		Red Oak	Trace		>20 feet	Sapling
Quaking Aspen	12	Pole/Sapling	5						
Black Spruce	2	Sapling/Pole	4						
6	6124 - Lowland Spruce-Fir	Poletimber Well	218.1	96	111-140	N/A	<p>Did not see all of this stand, what I did see was quite wet. Stand is definitely in a 'bowl', surrounding stands all slope down towards this stand. Some slopes quite extensive. Variable composition of species, cedar and spruce were the two more prominent types. Variety of sub-canopy species present. More tag, willow, ash in areas of old/new blowdown. Old railroad grade and/or ice road along portions of the northern boundary. Tended to be wider than grades I've witnessed in other compartments?</p>		
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density		Avg. Height	Size
Black Spruce	43	Pole/Sap/Log	7	96	Balsam Fir	Medium		Variable	Sapling
Northern White Cedar	22	Pole/Sap/Log	8	96	Black Spruce	Medium		5 - 10 feet	Sapling
Tamarack	8	Pole/Sap/Log	7		Tag Alder	Medium		5 - 10 feet	Tall Shrub
Red Maple	4	Pole/Sap/Log	7		Red Maple	Low		10 - 20 feet	Sapling
Paper Birch	3	Pole	8		Labrador Tea	Medium		< 5 feet	Tall Shrub
Balsam Fir	8	Pole/Sapling	6		Leatherleaf	Medium		< 5 feet	Tall Shrub
White Pine	4	Log/Pole/XLog	15		Paper Birch	Low		>20 feet	Sapling
Red Pine	2	Log/Pole/XLog	14		Black Ash	Medium		10 - 20 feet	Sapling
Balsam Poplar	3	Log/Pole	11		Balsam Poplar	Low		10 - 20 feet	Sapling
Quaking Aspen	3	Log/Pole	12		Willow spp.	Low		5 - 10 feet	Tall Shrub
7	4136 - Aspen, Mixed Conifer	Sapling Medium	17.4	15	1-50	N/A		<p>Harvested in '06. Yikes, easiest to describe by chunking up the stand into 3-parts. North 1/2 has primarily regenerated to QA, except for 1-2 chains along the east boundary. That area has patchy regen of conifer plus blk cherry. Clumps of residual BF (P/S) present in north 1/2, as are a few 'skipped' RM, aspen and some green painted RP (saw one log RO up there too). N1/2 of the south 1/2 is basically a RP seed-tree. There's a low stocking of regenerating RP, WP, BF and a clone of aspen present in the seed-treeish area. RM saps there too, they've been browsed to a height of 5ft or less. S1/2 of the S1/2 picks back up to QA regen mixed in/around residual conifer stems (BF, WP, RP). Though most wasn't recent (except for RM), majority of the deciduous regen has suffered browse damage. Seed-tree center area had a can-closure of saplings ranging 25-50%. Remaining areas ranged 50-100%. Overall average across the stand fell between 50-75%.</p>	
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height		Size
Red Maple	3	Pole	7		Red Maple	Low	< 5 feet		Sapling
Quaking Aspen	52	Sapling	3	15	Black Spruce	Low	5 - 10 feet		Sapling
Balsam Fir	15	Pole/Sap/Log	7	35	Red Pine	Low	5 - 10 feet		Sapling
White Pine	6	Sapling/Pole/Log	3						
Red Pine	10	XLog/Log	19	94					
Black Cherry	12	Sapling	2						
Bigtooth Aspen	1	Pole/Sapling	7						
Red Oak	1	Log	17						
8	3102 - Grass	Nonstocked	1.4	0	Unspecified	No	Some deciduous/conifer line perimeter areas, some creeping into the opening.		



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments				
9	42140 - Planted Mixed Pine	Sawtimber Medium	39.0	93	81-110	N/A	Shelterwood harvested in '18/19, no regen/monitor Rx created following completion of sale (addressed below). Areas of higher residual BA/lightly harvested to protect pockets of advanced regen (usually WP). Outside those areas BA ran ~50-80ish. RP/RO stems generally large log/xlog size. WP more variable DBH's, pole through legacy (40") present. Some legacy RP too (27"). Saplings sized species listed in sub-can were established prior to recent harvest. All recently cut/sprouting RM/BE I observed was browsed down to nearly ground level. Browse has reduced most deciduous regen to seedling height or less (5ft). Trace PB in extreme north and increased prevalence of other deciduous canopy species. Stand and pine/conifer regeneration hasn't had time to respond to the harvest. Appears that very little (if any) scarification occurred as a result of harvest (could see forwarder/processor trails, no signs of whole-tree skid ops). BA swings= 50,110,80,80,120,110 (91avg)				
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species		Density	Avg. Height	Size	
Red Oak		8	Log/XLog	17		Red Maple		Low	< 5 feet	Seeding	
White Pine		32	Log/Pole/XLog	14		Beech		Low	< 5 feet	Seeding	
Red Pine		54	Log/XLog/Pole	16	93	White Pine		Low	< 5 feet	Seeding	
Bigtooth Aspen		2	Pole/Log	8		Red Pine		Trace	< 5 feet	Seeding	
Red Maple		4	Pole/Sapling	7		White Pine		Medium	10 - 20 feet	Sapling	
						Balsam Fir		Medium	10 - 20 feet	Sapling	
						Red Pine		Low	>20 feet	Sapling	
						Red Maple		Low	>20 feet	Sapling	
10	42141 - Planted Mixed Pine, Mixed Deciduous	Sawtimber Well	22.9	94	111-140	N/A	RP is planted, the rest is natural. Removal harvest quite some time ago, appears to of missed some aspen/RM (mix of young/older RM/aspen present). Some large RP/WP stems. RP consistently large log/xlog, WP more variable across the DBH spectrum (legacy WP (34" and some 25"s), and older/nearly legacy RP). Sub-can isn't all that dense, but WP,BF,RM were generally consistent, WP was 'high' in areas. Carbon measurement plot present, near center of stand close to boundary w/Stand 15 (see OFS). BA range borderline between 111-140 & 141-170. Trace PB (L/P) and HM (P). BA swings= 150,90,160,130,170,130,150 (140avg)				
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species		Density	Avg. Height	Size	
Red Maple		15	Pole/Log	8	57	Red Maple		Medium	>20 feet	Sapling	
Quaking Aspen		7	Log/Pole/XLog	13		Beech		Low	5 - 10 feet	Sapling	
Red Oak		3	Log/XLog	13		White Pine		Medium	10 - 20 feet	Sapling	
White Pine		25	Log/Pole/XLog	14		Balsam Fir		Medium	Variable	Sapling	
Red Pine		45	Log/XLog/Pole	17	94	Red Pine		Low	>20 feet	Sapling	
Bigtooth Aspen		5	Log/Pole/XLog	14		Paper Birch		Trace	>20 feet	Sapling	
						Bigtooth Aspen		Low	>20 feet	Sapling	
11	6112 - Lowland Aspen	Poletimber Well	1.3	39	1-50	N/A	Inundated with water during visit, edge call from the north boundary. QA looked to mostly be converted to pole size, saps still present though. Healthy components of RM and BF. Could see one lone/large log/likely xlog WP off in distance. This WP in visible on imagery.				
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species		Density	Avg. Height	Size	
Quaking Aspen		60	Pole/Sapling	6	39	Tag Alder		Medium	5 - 10 feet	Tall Shrub	
Red Maple		15	Sapling/Pole	4							
Balsam Fir		25	Sapling/Pole	3							
12	4133 - Aspen, Mixed Pine	Sapling Well	23.3	36	51-80	N/A	Previous inventory had the residual oak (logs) as the featured stand/size class (O8). I decided to flip things around and now make the sap/pole regen the featured stand/size class. Both sizes end up being the 'dominant' canopy holder depending on location. Stand likely has 3-ages, pole size class of WP/RP that were likely non-merch/protected saplings at time of harvest. Saplings beginning to convert/have converted to poles in areas w/less residual oak/pine competition. Canopy-closure on lower end of 75-100% for the featured sap layer. Trace BlkSprc (sap). BA swings= 0,10,90,30,70,40 (40avg). Selected 51-80BA range given the prominence of residuals, depending on location.				
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species		Density	Avg. Height	Size	
Red Oak		20	Log/XLog	17	76	White Pine		Medium	5 - 10 feet	Sapling	
Bigtooth Aspen		44	Sapling/Pole	4	36	Red Pine		Medium	5 - 10 feet	Sapling	
Quaking Aspen		3	Sapling	3		Red Pine		Low	< 5 feet	Seeding	
White Pine		12	Pole/Sap/Log	5							
Red Pine		8	Sapling/Pole/Log	4							
Jack Pine		3	Sapling/Pole	4							
Red Maple		10	Sapling	3							



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments				
<b>13</b>	4139 - Aspen, Mixed Deciduous	Poletimber Well	9.3	48	51-80	N/A	Formally part of Stand 13, has the same Rx history; pine/oak left when harvested in '73. Heavier RO residual and more RM/WP regen in this area. Increased competition between regen and less available light from residual overtop has led to smaller/variable diameters and general lack of merchantability (at this time). Smaller pockets with some larger deciduous stems (~6-8") are present but not prevalent. Above stand data was extrapolated/adjusted from data collected in Stand 22. The take away: smaller/less merch regen, more RM/WP regen, more RO residual, needs more time to mature.				
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species		Density	Avg. Height	Size	
Red Maple		18	Sapling/Pole	4	48	Red Maple		High	>20 feet	Sapling	
Red Oak		15	Log/XLog/Pole	17	90	Balsam Fir		Low	10 - 20 feet	Sapling	
Bigtooth Aspen		40	Pole/Sapling	6	48	White Pine		High	10 - 20 feet	Sapling	
White Pine		12	Pole/Sap/Log	8		Red Oak		Low	>20 feet	Sapling	
Red Pine		6	Log/XLog/Pole	16	90	Sugar Maple		Low	>20 feet	Sapling	
Quaking Aspen		4	Pole/Sapling	6		Paper Birch		Trace	>20 feet	Sapling	
Sugar Maple		3	Sapling/Pole	4		Red Pine		Low	5 - 10 feet	Sapling	
Paper Birch		2	Pole	6		Beech		Low	5 - 10 feet	Sapling	
						Ironwood		Low	10 - 20 feet	Sapling	
<b>14</b>	42111 - Planted Red Pine, Mixed Deciduous	Sawtimber Medium	61.3	94	51-80	N/A		Harvested '94-95, left all pine/oak. Variable density/BA of residual, dependent upon each/every location. Most RP running med/larger log size, RO mainly large log/xlog and WP was variable. Stocking of regen, that resulted from harvest, was variable too. Some areas quite filthy w/regen, others somewhat devoid. Appeared dependent on amount of scarification equipment created. Where regen is present, usually a desirable mixture of pine/deciduous. WP regen is most consistent, RP/JP 'high' in areas, aspen in clonal pockets, then RM more/less throughout. Northern portion against Stand 6 was left untreated, some Legacy WP/Relic RP there. BA swings= 140,90,70,60,100,30,90,50 (78avg)			
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species			Density	Avg. Height	Size
Red Oak		10	Log/XLog/Pole	15		Red Maple			Medium	>20 feet	Sapling
White Pine		12	Log/Pole/XLog	12		Bigtooth Aspen			Medium	>20 feet	Sapling
Red Pine		65	Log/Pole/XLog	16	94	Balsam Fir			Low	Variable	Sapling
Paper Birch		2	Pole	7		White Pine			High	10 - 20 feet	Sapling
Quaking Aspen		2	Pole/Sapling	6		Red Pine			Medium	10 - 20 feet	Sapling
Bigtooth Aspen		3	Pole/Sapling	7		Jack Pine			Medium	>20 feet	Sapling
Red Maple		4	Pole/Sapling	7		Red Oak			Trace	>20 feet	Sapling
Balsam Fir		2	Pole/Sapling	6		Black Spruce			Low	Variable	Sapling
						White Pine			Medium	< 5 feet	Seeding
						Red Pine			Low	< 5 feet	Seeding
<b>15</b>	4199 - Other Mixed Upland Deciduous	Poletimber Well	11.7	60	81-110	N/A	Variable DBH's/sizes across aspen stems and WP to a lesser extent. Stand has fairly obvious signs of past deciduous removal, some aspen must of been skipped or 'non-merch' at that time, sizes now range P-Xlog. RM/HM sizes fairly consistent. WP running L/P and P/L with some scattered xlogs sprinkled in. RO was left when harvested last, most now quite large and still healthy. Split/merged 2-small pieces of Stand 10 into this stand (a SW & NE piece). Those small pieces tend to hold a higher component of WP/RP mixed w/deciduous. Possible small vernal pool complex near east boundary, OFS point taken. Dry/wasn't holding water during visit, exclude if stand if treated. BA swings= 90,110,130,110,90,70 (100avg)				
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species		Density	Avg. Height	Size	
Sugar Maple		5	Pole/Log	8		Sugar Maple		Low	>20 feet	Sapling	
Red Maple		28	Pole/Log	8	60	White Pine		Medium	10 - 20 feet	Sapling	
Beech		5	Pole	8		Red Maple		Medium	>20 feet	Sapling	
Red Oak		10	Log/XLog	17		Ironwood		Low	10 - 20 feet	Sapling	
Paper Birch		5	Pole/Log	8		Beech		Low	>20 feet	Sapling	
Bigtooth Aspen		14	Log/Pole/XLog	12		Balsam Fir		Medium	10 - 20 feet	Sapling	
White Pine		8	Log/Pole/XLog	10	90						
Quaking Aspen		16	Log/Pole/XLog	13							
Red Pine		5	Log/XLog	14							
Balsam Fir		4	Pole	7							





Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments																																																																																						
16	3303 - Mixed Low Density Trees	Nonstocked	3.6		Unspecified	No	McDonald '11: This opening was created with Tordon in 1973. Scattered Fir but mostly cherry. JSP '21: Mixture of most species that are present within Stand 20. Also includes some WP/RP sap/poles, a couple large log BF and an xlog WhtSprc. Black cherry sap/poles quite common.																																																																																						
17	42260 - Natural Pine, Mixed Deciduous	Sapling Well	8.4	27	1-50	N/A	Harvested same time as Stand 17. This stand does have a few residual WP/RP/RO, most poking in/out along perimeter. Broad mixture of aspen/pine w/components of soft maple. Aspen generally present in clone pockets w/some small pole sizes emerging. Then areas of JP and RP, some now pole sized. Variable stocking/can-closure throughout and some 'snowload' damage/mortality across some JP stems. No BA swings taken but would've picked up a few small pole sized stems.																																																																																						
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18	4130 - Aspen	Poletimber Well	20.0	36	51-80	N/A	Still very much in transition from sap to pole. Some areas further along than others. Enough pole sizes present to label them 'dominant' yet not 'well stocked' w/poles. Western boundary locations have pockets/veins of WP/some RP. Observed a few scattered log sized WP that were/are residual from previous harvest. Trace BE (pole). BA swings= 50,70,80,80 (70avg)																																																																																						
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19	500 - Water	Nonstocked	7.3		Unspecified	No	Northern boundary is an old railroad grade and/or ice/forest rd. Walked the grade in other stands, it tended to be wider than most 'narrow gauge' grades I've cross across. Perimeter in northeast (against Std.24) was lined w/alder and some willow. Recent and old beaver activity observed. East boundary is a beaver dam complex, unsure how active is/was at this time. Good bet more dams are located in other perimeter locations. Waterfowl present during visit.																																																																																						
20	4134 - Aspen, Spruce/Fir	Poletimber Well	18.7	35	81-110	N/A	West portion of Std.27 and all of Std.107 were previously part of this stand (same Rx history). Upland w/a fairly significant amount of 'low', at least seasonally. Opening in middle of stand was created on the highest available ground. Low ground, w/likely watercourses/prob vernal pool complexes, is most common in eastern areas of the stand (SE/East of opening). These areas had standing water during my visit. One of the few stands I've inventoried that had a fairly consistent component of BAM. Old and recent beaver activity/dams along perimeter of Stand 23. Old access road present, travels east out of opening, then across Stand 23 (LO) into Stand 107. Now grown-over with tag/beavers built a dam against it in Stand 23. Trace AmElm (P), WhtSpr (P/L). 1.8ac inclusion of MD9 in extreme east, some large NHWD/RO stems present (the 2% species listed above plus large BAM,RM,IW,NWC). BA swings= 110(inclusion),100,70,130,20,100,80 (87avg)																																																																																						
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21	3102 - Grass	Nonstocked	2.8		Unspecified	Managed Opening	Scattered large red oak present within the opening. Closed forest road that leads south from the opening is grown over, no longer passable by conventional vehicles.																																																																																						



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments				
<b>22</b>	4133 - Aspen, Mixed Pine	Poletimber Well	42.1	48	81-110	N/A	Pine/oak left when harvested in '73. Aspen DBH's vary throughout based upon proximity to residuals, more so north of opening Stand 21. Aspen tended to average 6-8", some logs have emerged. More RO residual in north and increased competition from RM/WP regen (smaller sized regen stems up there). WP/RP residual is generally found in veins/larger clumps, scattered examples too. RO resids scattered but consistent (especially in north), those I observed were generally large/healthy. Most RP large/xlog, WP sizes more variable with legacy present (27"), legacy RO present (29") and some relic/super-canopy RP (23",24"). Scattered, very large charred stumps present. BA swings= 90,90,100,90,120,60,120,90,110 (93avg)				
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species		Density	Avg. Height	Size	
Red Maple		8	Pole/Sapling	6	48	Red Maple		High	>20 feet	Sapling	
Red Oak		12	Log/XLog/Pole	17	90	Balsam Fir		Low	10 - 20 feet	Sapling	
Bigtooth Aspen		55	Pole/Sap/Log	7	48	White Pine		Medium	10 - 20 feet	Sapling	
White Pine		12	Log/Pole/XLog	14		Red Oak		Low	>20 feet	Sapling	
Red Pine		8	Log/XLog/Pole	16	90	Sugar Maple		Low	>20 feet	Sapling	
Quaking Aspen		2	Pole/Sapling	7		Paper Birch		Trace	>20 feet	Sapling	
Sugar Maple		2	Pole/Sapling	7		Red Pine		Trace	5 - 10 feet	Sapling	
Paper Birch		1	Pole	7		Beech		Low	5 - 10 feet	Sapling	
						Ironwood		Low	10 - 20 feet	Sapling	
<b>23</b>	6220 - Alder/willow	Nonstocked	16.0		Unspecified	No		Observed on edge locations from Stands 20, 27, 107, 33, 112, 25 and 24. Open water in northeast, waterfowl utilizing. Two out-flow drainage corridors, seasonal in nature. both travel east through adjacent stands. Appear to eventually empty into Grass Lake during periods of excessive snow-melt/precip events. Both drainages had flowing water (but not all the way to Grass Lake) during field observations in April '21. Numerous beaver dams present, not all of which were active. Alder and willow shrubs common. Mixture of conifer and deciduous, sap through log, observed at variable density depending on location.			
<b>24</b>	429 - Mixed Upland Conifers	Sawtimber Well	5.3	83	81-110	N/A	Based on '98's/field observation, western/southern areas of this stand were 'removal harvested' w/Std.75/C014. I merged a western 'chunk' of this stand into Std.75. N1/2 (of this stand) more dominant to larger/clumpy stocking of RP and a variety of other species (BF, PB, RM, some WP/RO, etc). South 1/2 closer to water is heavier to larger P/L and L/P BF and some WP, RM, BAM, QA. Some deciduous is 2-aged depending on whether or not is was harvested ~35yrs ago. Legacy WP (26",38") and RP (28",27") present. Canopy is 'closed' at the low-end of 75-100%, but RP/WP are stratified/distinctly taller than most other species. BF advanced regen is 'full' in areas. More QA, BlkChrry and the lower % deciduous species present along/near perimeter of opening (Std.25). Trace HM (log), AmElm (pole) and a fair amount of JP snags present. BA swings= 70,60,80,130 (85avg)				
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species		Density	Avg. Height	Size	
Red Maple		6	Pole/Log/XLog	8		Red Maple		Medium	>20 feet	Sapling	
Red Oak		4	Log/Pole	12		Balsam Fir		High	>20 feet	Sapling	
Paper Birch		4	Log/Pole	10		White Pine		Low	10 - 20 feet	Sapling	
Balsam Fir		32	Pole/Sap/Log	8		Black Spruce		Low	10 - 20 feet	Sapling	
White Pine		5	XLog/Log/Pole	20		Black Cherry		Medium	10 - 20 feet	Sapling	
Red Pine		32	XLog/Log/Pole	20	83	Beech		Medium	10 - 20 feet	Sapling	
Quaking Aspen		10	Log/Pole/XLog	13	35	Ironwood		Medium	10 - 20 feet	Sapling	
Balsam Poplar		3	Log/Pole	10		Red Oak		Low	>20 feet	Sapling	
Bigtooth Aspen		2	Log	12		Jack Pine		Trace	10 - 20 feet	Sapling	
Black Cherry		1	Pole	7		Tag Alder		Low	10 - 20 feet	Tall Shrub	
Beech		1	Pole	8							
<b>25</b>	3102 - Grass	Nonstocked	2.0		Unspecified	No	Following species observed within this grassy/low-density mixed tree specie opening: black cherry (S/P/L: med/high), WP (S/P/L: low/med), JP (S/P: trc/low), BF (S/P: low/med), QA (P/L: along perimeter), tag alder (on/along south boundary). Conifer is slowly reclaiming areas. Old railroad grade and/or ice/forest road travels unassumingly through stand, east/west. Recent and old beaver activity observed.				



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments		
<b>26</b>	42110 - Planted Red Pine	Sawtimber Poor	29.2	84	1-50	N/A	Seed-Tree harvested in '15, residuals observed appeared healthy. Scattering of saplings present that equipment worked around during harvest. Those saplings averaged low to trace (WP variable height, 5-20ft+). Second age class of WP/RP seedling regen spurred on by harvest was nearly 3ft tall (or less). Overall medium density of those two species with areas of higher/lower seedling establishment. Too soon to call 'free to grow' because of average height being less than 3ft. Any deciduous that tried regenerating off the stump has been browsed to seedling height (or less). BA swings= 20,50,20,20,20 (26avg)		
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density		Avg. Height	Size
White Pine	6	XLog/Log/Pole	20		Red Maple	Low		>20 feet	Sapling
Red Pine	85	Log/XLog	17	84	Bracken Fern	High		< 5 feet	Non-Wood
Red Oak	6	XLog/Log	20		Balsam Fir	Trace		>20 feet	Sapling
Red Maple	3	Pole/Sapling	6		White Pine	Low		Variable	Sapling
					Red Pine	Low		5 - 10 feet	Sapling
					Beech	Trace		5 - 10 feet	Sapling
					Red Oak	Trace		10 - 20 feet	Sapling
					Red Maple	Medium		< 5 feet	Seeding
					Balsam Fir	Trace		< 5 feet	Seeding
					Red Pine	Medium		< 5 feet	Seeding
					White Pine	Medium		< 5 feet	Seeding
<b>27</b>	6128 - Lowland Coniferous, Mixed Deciduous	Sawtimber Medium	2.0	94	111-140	N/A		Flowing water course that appears mostly seasonal. Beaver dam on/is west boundary (appeared older but ~probably historical active/then inactive at times). Flowing water present during visit, flows east and likely continues through Stands 110/39 when excessively wet. East 2/3rds is a mix of generally large NWC and pole/sap BF then larger BAM, RM, BW, PB sprinkled in. West 1/3rd is P/S BAM, QA that used to connect stands 20/107 (all three have same harvest history). Water-course is littered w/blowdown, BF/some NWC saps, P/S aspen regen and has reduced canopy-closure in east. Canopy of stand is closed but stratified with 2-age classes. Calling the large but generally lower stocked logs 'dominant' at the higher-end of 50-75% closure. BA swings= 130,150,150 (143).	
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height		Size
Northern White Cedar	40	Log/XLog/Pole	12	94	Balsam Fir	High	10 - 20 feet		Sapling
Balsam Fir	20	Pole/Sapling	7		Red Maple	Low	10 - 20 feet		Sapling
Red Maple	14	Log/Pole/XLog	12		Northern White Cedar	Low	10 - 20 feet		Sapling
Paper Birch	5	Pole/Log	9		Tag Alder	Medium	5 - 10 feet		Tall Shrub
Balsam Poplar	10	Pole/Log/Sap	7	35					
Quaking Aspen	6	Pole/Sapling	7						
<b>28</b>	4133 - Aspen, Mixed Pine	Poletimber Well	7.1	36	51-80	N/A	Harvested mid-80's along w/Stand 108 (previous cycle: the two were one stand). Lumpy/clumpy stocking and a variety of specie dominance dependent on location. Clonal pockets of aspen, then JP areas mixed w/WP,RP,BF and some aspen. Some locations a mix of everything. Still quite a few stems waiting to convert to pole size, yet overall that size is most prevalent. Scattered second/older age class of WP/RP observed. Clonal BTA pockets close to Middle Trail Rd tended to have larger DBH stems. BA swings= 60,90,70,80 (75avg)		
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density		Avg. Height	Size
Bigtooth Aspen	50	Pole/Sap/Log	7	36	Balsam Fir	Medium		10 - 20 feet	Sapling
Balsam Fir	6	Sapling/Pole/Log	4		White Pine	Medium		10 - 20 feet	Sapling
Quaking Aspen	5	Pole/Sapling	5		Red Pine	Medium		10 - 20 feet	Sapling
Red Maple	5	Sapling/Pole	3		Jack Pine	Medium		10 - 20 feet	Sapling
White Pine	10	Pole/Sap/Log	5		Black Cherry	Low		5 - 10 feet	Sapling
Red Pine	6	Sapling/Pole/Log	4		Red Maple	Medium		10 - 20 feet	Sapling
Jack Pine	18	Pole/Sapling	6		Black Spruce	Low		10 - 20 feet	Sapling



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
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**29**      6239 - Mixed Emergent Wetland      Nonstocked      13.6      0      Unspecified      No

Sub-Canopy Species	Density	Avg. Height	Size
Tag Alder	Medium	Variable	Tall Shrub

McDonald '11: This stand is mostly dead. Most likely, due to higher water levels.  
JSP '21: Mixture of some living, but mostly standing dead NWC/conifer. Living stems include:  
- NWC P/L, scattered clumps/pockets, 'Low Density'  
- BlkSpruce P/S, scattered clumps/pockets, 'Low/Med density'  
- BF S/P, mixed throughout, 'Low/Med'  
- Larch S/P, scattered clumps/pockets, 'Low/Med'  
From Stand 32, I was able to walk nearly to center of this stand, on a old/flat grown-over segment of beaver dam. Interior area had a large swath of standing dead NWC. Watercourse present that flows east, goes through stands 37/43 before ending up in Grass Lake. Shingle Mill Pathway bridge goes over this creek in Stand 43. Pockets of spruce/mixed NWC along perimeter, generally pole/sap, some log sizes. Observed larch regen (10-20ft+) to west of where I was. The old beaver dam I walked out on was locking in water, mostly in western 2/3rds of stand. Areas appeared quite walkable during dry times of the year, were grassy.

**30**      4319 - Mixed Upland Forest      Sapling Medium      16.2      26      1-50      N/A

Canopy Species	% Cover	Size Class	DBH	Age
Red Maple	8	Sapling/Pole	3	26
Red Oak	4	XLog/Log	18	90
Quaking Aspen	35	Sapling/Pole	4	26
Balsam Fir	15	Sapling/Pole/Log	4	
White Pine	15	Sapling	4	26
Red Pine	4	Sapling/Pole/Log	4	
Black Spruce	4	Sapling/Pole	3	
Black Cherry	4	Sapling/Pole	3	
Jack Pine	2	Sapling/Pole	3	
White Pine	2	XLog	24	
Balsam Poplar	4	Sapling/Pole	4	
Tamarack	3	Sapling/Pole	3	

Sub-Canopy Species	Density	Avg. Height	Size
Willow spp.	Low	5 - 10 feet	Tall Shrub
Tag Alder	Low	5 - 10 feet	Tall Shrub

Vast array of species and stocking density. Primarily QA, WP, BF then decent components of the rest (wish I had more than 100% to work with, to show higher prevalence of all species listed above). Stand is in midst of transition to poles, some QA ~have converted, so have other conifer/deciduous stems. At time of visit, close to 50% of stems had converted (to pole). Erratic stocking/canopy-closure. Swathes of 75-100% closure, then open/patchy/nearly non-forested areas. Scattered residual, mostly xlog RO, then some xlog/legacy WP (30",30") and a few xlog/log RP/Hem. MiFI wouldn't allow showing WP regen as sap/pole, WP regen is sap/pole. Lowland influence on nearly all sides. Harvest 'dipped' into portions of Stands 6/29 in south, those areas regenerated heavily to conifer. No BA swings taken.



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments																																																																								
<b>31</b>	42220 - Natural Jack Pine	Sapling Medium	19.6	16	1-50	N/A	Natural regen survey required during '20 inventory. Survey stated minimum stocking goal of 600TPA natural JP. Put in ten (10), 1/100th acre plots, overall natural JP for this stand is ~650TPA. TPA per plot= 700,1100,100,700,300,0,200,1200,1800,400= (6,500/10= 650TPA).  Lowest TPA's generally occurred in ~east 1/2 of stand ('18IR shows JP stocking and RO residual quite well). Passed '20 regen survey, though east portions of stand have failed to regenerate in areas. Regardless of pass/fail, stand provides a desirable (my opinion) mixture of forested/non-forested, developing vertical structure and available hard mast from residual red oak (in east/west ends). West areas, including sub-can positions underneath log/xlog RO near Middle Trail Rd, have regenerated to a moderate or better stocking on JP (though poorly stocked in areas too). Persistent browse has essentially removed all deciduous regen, except for a few struggling BlkChrry saps. Most JP is shrubby form, hasn't had much 'vertical training' due to general lack of closely spaced competition. JP growing near/underneath the log/xlog residual red oak in west, close to Middle Trail Rd, was straighter/much better form (it has to grow up, not out).																																																																								
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<b>32</b>	4319 - Mixed Upland Forest	Sawtimber Medium	3.7	97	51-80	N/A	Two-aged, second age suggests a removal harvest passed through in late-70's (likely when Std42 was cut). Calling the residual RO,WP,RP the 'featured' stand/size class. Could very much call the regenerating sap/pole, pole/sap layer 'dominant'. Residual stems occupy ~50-75% of the canopy (varies in areas). Regen from 70's cut does 'closes-up' the canopy, especially in northern 1/2-1/3rd of stand. This area is located on a north facing slope that bottoms out in Stand 29. Dense BF regen on that slope, scattered residuals there too. Stand a bit more open/patchy in west. RO usually quite large/appeared healthy. WP saps 'high' in east. BA swings= 60,80,30,40 (52avg)																																																																								
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<b>33</b>	4136 - Aspen, Mixed Conifer	Poletimber Well	7.0	45	81-110	N/A	RO,RP,WP left when last harvested. RO residual is most prevalent, most large xlog, legacy common (29",35",36"). RP (xlog) scattered around and a few legacy/xlog WP in west near lowland Std.23 (30", 32"). Easterly flowing/seasonal drainage (Stds.23/39) present along southern boundary. Portions of this stand along that area appeared to be overflow areas when conditions are excessively wet. QA doing fairly well on this site, BF consistent but increases in southern areas along lowland/wet interface. Western 1/2 had a higher RM component, most being smaller DBH/less merch. Similar story for some of aspen stems in that area too. Trace HM (S/P). BA swings= 120,90,130,60,60 (92avg)																																																																								
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<b>34</b>	6127 - Lowland Pine	Poletimber Medium	14.7	70	1-50	N/A	McDonald '11: Treed Bog JSP '21: Saw from edges, was flooded/had standing water when visited. Borderline forested vs. treed bog. A lot of mortality/dieback in areas I observed, especially in eastern locations. Most mortality appeared to be dead JP. Western areas appeared to be doing better, were alive. Looked like there were two stratified ages present. Used McDonalds previously estimated ages. MiFI asked for a BA range, I estimated 1-50. Actually range might be higher.																																																																													
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<b>35</b>	4134 - Aspen, Spruce/Fir	Poletimber Well	8.2	48	81-110	N/A	Shingle Mill Pathway present in east, then cuts through north end. All the signs of previous removal harvest, large RO residuals and stmp-sprt RM. Aspen fairly consistently pole sized, then a few logs. Most BF is running near, at, or somewhat larger pole. RM saps (and a few poles) off the stump very common, increase as you move south. RO residual is generally consistent, perhaps more prevalent in south. Can-closure averages low-end of 75-100% overall. Prominently patchy/lower-stocked areas are present throughout. Stand is interrupted in north by a vein of BF/mixing with P/S aspen. Believe this to be the 'downstream' continuation of the seasonal watercourse located west of this stand. Trace HM (P/S). BA swings= 100,80,70,40,90 (76avg)																																																																													
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<b>36</b>	4191 - Mixed Upland Deciduous with Conifer	Sawtimber Well	4.2	88	81-110	N/A	Mainly unharvested area surrounding Devil's Soup (sink hole) Lake. Removal harvest of RM, HM, BE appears to of taken place, would've been quite some time ago. Primarily RO, then mixing w/some pine/aspen. Shingle Mill Pathway along east boundary, on a sliver of flat ground. Steep (usually) decent down to the lake, gradual area in north. More conifer saps on the slopes leading down to the lake (most BF saps found on east slope). Stand briefly crosses Grass Lake Rd, to include some super-canopy RO. BA swings= 130,80,40 (83avg)																																																																													
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<b>37</b>	6120 - Lowland Cedar	Poletimber Medium	5.4	106	81-110	N/A	Creek, that originates from Stand 29, flows east through north portion of this stand, then through Stand 43 before emptying into Grass Lake. Shingle Mill Pathway skirts SE corner of this stand, then continue through Stand 43. Log sized NWC residing on low w/some minor upland. Majority of other species present were log size too (Legacy WP/NWC present). The lowest/wettest areas have suffered significant windthrow events, perhaps 1/3rd of the stand has blown down (not all appeared recent/some did). Calling overall can-closure between 50-75% because of blowdown, areas not affected were 75-100% closure. Found a ~37" NWC, still barely alive, fire-scarred, hollow/cavities and looked like some kind of giant cactus. Makes its neighbor, a 28" WP, look small. A few of the non-blowdown locations had brief upland ground. Perimeter mixing w/adjacent covertypes. BA swings= 160,150,150 (153avg).																																																																													
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Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
38	500 - Water	Nonstocked	1.1		Unspecified	No	Devil's Soup Bowl Lake. Mixture of conifer/deciduous species, sap through log, line the slopes leading down into this small sink hole lake. Heavy recreational influence along this lake and the surrounding area.

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
39	4319 - Mixed Upland Forest	Poletimber Well	3.5	48	81-110	N/A	Created stand to capture/reflect at least two seasonal water courses that flow/drain/filter into Grass Lake and the lowland conditions near the lake. Northern east/west linear feature has a defined creek/water-course, portions of which had flowing water during visit. Shingle Mill Pathway present within stand, small foot bridge goes over the creek bed in north. Southern east/west linear feature is more of a seasonal 'overflow/filter strip' composed of P/S BF/QA. This is the 'downstream' portion of a watercourse that travels east through Stands 23,27,110. Water might possibly go/flow underground within this stand. Eastern portions of stand close to Grass Lake had obvious areas where seasonally excessive water travels/flows and/or then dissipates along the lakes shoreline. Majority of stand is BF/QA dominant. Scattered older/younger and pole then log/xlog stems of several species listed above, portions of the stand have been treated in the past. Other areas haven't been recently harvested. A legacy BW observed (30"), some nearly legacy WP (25") and a few large RO. Trace HM (log). BA swings= 130,90,90,70,110 (98avg)

Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
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Red Oak	3	XLog/Log/Pole	18	85	Balsam Fir	High	10 - 20 feet	Sapling
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White Pine	3	Log/Pole/XLog	12		Red Oak	Trace	>20 feet	Sapling
Basswood	3	Log/XLog	15		Beech	Medium	5 - 10 feet	Sapling
Bigtooth Aspen	3	Log	15		Black Ash	Low	>20 feet	Sapling
Black Spruce	3	Pole/Sapling	7		American Elm	Trace	>20 feet	Sapling
					Tag Alder	Medium	5 - 10 feet	Tall Shrub

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
40	42111 - Planted Red Pine, Mixed Deciduous	Sawtimber Well	44.4	92	111-140	N/A	Shingle Mill Pathway briefly present in east. Believe most of the RP is planted, some natural present in west along sloping terrain that leads down to Stand 34. Composition similar to Stand 47 but w/greater species mixing (more WP/BTA, living JP). RP a smidge smaller DBH on average. Believe species removal occurred in mid-60's. Variable stocking/BA's depending on location. Some areas a bit heavier to suppressed pole/sap RP in sub-can. Corridor (~1chain) of natural/relic RP/WP in west along boundary of lowland Stand 34. The corridor resides on a mostly gradual, west facing slope. A few legacy WP in north against Stand 31 (J2) and in south near Elk Horn Rd. WP regen generally consistent on the lower end of 'high' density, ranged 5-20ft. Trace WhtSprc (log). BA swings= 120,150,130,100,170,80,110,90,90,200 (124avg)

Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Red Maple	6	Pole/Sap/Log	8	56	Red Maple	Medium	>20 feet	Sapling
Red Oak	8	Log/XLog/Pole	16		White Pine	High	10 - 20 feet	Sapling
Bigtooth Aspen	6	Log/Pole	11		Red Pine	Medium	>20 feet	Sapling
White Pine	10	Log/Pole/XLog	11		Balsam Fir	Low	Variable	Sapling
Red Pine	64	Log/Pole/XLog	13	92	Black Spruce	Trace	5 - 10 feet	Sapling
Jack Pine	6	Log/Pole	10		Common Lowbush Blueberry	Low	< 5 feet	Tall Shrub

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
41	4191 - Mixed Upland Deciduous with Conifer	Sawtimber Medium	27.5	91	51-80	N/A	Removal harvest in '94, left RO, RP, WP and looks like all/some BE. Previously classified as an A3, deciding to call the residual stems the featured stand this YO. Residual canopy closure ranges 25-100% depending on location. Low-end of 50-75% is a reasonable average. RO resides most common, WP/BE scattered, RP clumpy/more prevalent west of Devils Soup Lake. Some steeper slopes in east were left uncut (very minimal though). Regen is a broad range of species. HM, BE, RM, IW take turns being 'high/full' throughout. Some clonal aspen pockets present (more in west), a few emerging/have emerged into pole sizes. Residuals I saw were generally large, especially RO/RP, and appeared healthy. Shingle Mill Pathway briefly present in far east. BA swings= 60,50,40,60,110 (64avg)

Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	7	Pole/Sapling	6		White Ash	Low	>20 feet	Sapling
Beech	8	Pole/Sap/Log	7		White Pine	Medium	10 - 20 feet	Sapling
Red Oak	50	Log/XLog/Pole	16	91	Red Maple	High	>20 feet	Sapling
Bigtooth Aspen	6	Pole/Sap/Log	6	27	Ironwood	High	10 - 20 feet	Sapling
White Pine	15	Log/Pole/XLog	12		Beech	Medium	Variable	Sapling
Red Pine	14	Log/XLog/Pole	17		Sugar Maple	High	>20 feet	Sapling
					Red Pine	Low	10 - 20 feet	Sapling
					Bigtooth Aspen	Medium	>20 feet	Sapling
					Balsam Fir	Low	Variable	Sapling
					Red Oak	Low	>20 feet	Sapling



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments				
<b>42</b>	4133 - Aspen, Mixed Pine	Poletimber Well	16.6	44	51-80	N/A	Shingle Mill Pathway travels N/S through east side of stand. Harvested late 70's. Primarily BTA aspen w/a consistent component of pine/conifer regenerating w/the aspen. Scattered second age class of larger residual RO (most common) then some RP/WP stems. RM sap/pole and BF common. Nearly all residuals I observed appeared healthy. Most stems (that regenerated following harvest) are still quite small/lacking merchantability, ~5-6" DBH quite common. A few larger aspen stems were present close to northern boundary. Trace BlkSprc (S/P). BA swings= 50,50,80,70,60,50,30 (55avg)				
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species		Density	Avg. Height	Size	
Red Maple		5	Sapling/Pole	4		Red Maple		Medium	>20 feet	Sapling	
Quaking Aspen		4	Pole/Sap/Log	7	44	White Pine		Medium	10 - 20 feet	Sapling	
White Pine		12	Pole/Sap/Log	7		Red Pine		Low	10 - 20 feet	Sapling	
Jack Pine		2	Pole/Sapling	6		Balsam Fir		Medium	10 - 20 feet	Sapling	
Bigtooth Aspen		60	Pole/Sap/Log	6	44	Balsam Fir		Medium	< 5 feet	Seeding	
Red Pine		6	Pole/Log/XLog	8		Red Pine		Low	< 5 feet	Seeding	
Balsam Fir		3	Pole/Sapling	5		White Pine		Medium	< 5 feet	Seeding	
Red Oak		8	Log/XLog/Pole	15	95	Black Spruce		Trace	< 5 feet	Seeding	
<b>43</b>	4191 - Mixed Upland Deciduous with Conifer	Sawtimber Well	13.3	101	81-110	N/A		Shingle Mill Pathway travels N/S through portions of this stand. Creek that originates in Stand 29, flows east through Std37/then dissects this stand and empties into Grass Lake. Pathway bridge over creek present in this stand. South of the creek is the 'main body' of the stand, which appears to of had a red maple removal (maybe PB) sometime ago (estimated 40yrs). Majority of the limited aspen wasn't removed, it's older/larger. Removal likely occurred north of the creek in the two 'fingers', but isn't/wasn't as obvious up there. Larger RO are consistent (quite a few xlogs, legacy might be present). Scattered, clumpy and sometimes consistent RP/WP present. Quite a few WP observed were legacy/or xlog relic size (38",25"), xlog/relic RP too. Transitional low/soft ground along creeks (another creek in south, along boundary w/Stand 49) and on west boundary, lowland species mingling there. At least one informal/dispersed campsite present on bank of Grass Lake. Fir saps overall 'high', but stocking not always consistent. BA swings= 130,110,130,60,100 (106avg)			
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species			Density	Avg. Height	Size
Sugar Maple		2	Pole	6		Red Maple			Medium	>20 feet	Sapling
Red Maple		20	Pole/Sap/Log	8	40	Paper Birch			Trace	>20 feet	Sapling
Bigtooth Aspen		6	Log/XLog	13		Balsam Fir			High	Variable	Sapling
Red Oak		28	Log/Pole/XLog	16	101	White Pine			Medium	10 - 20 feet	Sapling
Paper Birch		5	Pole	8		Beech			Trace	Variable	Sapling
Quaking Aspen		6	Log/XLog	13		Tag Alder			Low	10 - 20 feet	Tall Shrub
Balsam Fir		5	Pole/Sapling	7							
White Pine		12	Log/XLog/Pole	15							
Red Pine		12	Log/XLog/Pole	15							
Black Spruce		2	Pole	7							
<b>44</b>	4130 - Aspen	Poletimber Well	4.2	48	81-110	N/A	Harvested in '73, left pine/oak. RO is the most common residual, most xlog with some legacy (30"). WP is much less prevalent but large/xlog (at least one 26" legacy). Aspen (~50/50 mix BTA/QA) varied in diameter but were fairly reliably pole sized. Brief area in north had fewer aspen stems, those that were present were smaller DBH due to higher oak residual. RM lagging behind, most still large sap or just barely pole size. BA swings= 70,160,70,80,90 (94avg)				
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species			Density	Avg. Height	Size
Red Maple		6	Pole/Sapling	6		Red Maple		High	>20 feet	Sapling	
Red Oak		16	XLog/Log	18	94	Balsam Fir		Medium	10 - 20 feet	Sapling	
Bigtooth Aspen		35	Pole/Log/Sap	7	48	White Pine		Medium	10 - 20 feet	Sapling	
White Pine		6	XLog/Log/Pole	18		Beech		Low	5 - 10 feet	Sapling	
Quaking Aspen		32	Pole/Sapling	7		Ironwood		Low	5 - 10 feet	Sapling	
Red Pine		2	Log	16		Sugar Maple		Low	>20 feet	Sapling	
Sugar Maple		3	Pole/Sapling	6							





Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments		
<b>45</b>	42260 - Natural Pine, Mixed Deciduous	Sawtimber Well	4.9	94	141-170	N/A	One of the few stands where not all of it seems to of had a removal type harvest in the past. Small area in NE, was cut w/Stand 41. Other areas in the stand had some younger stmp-sprt RM, HM, RO. Mostly log/xlog/relic WP/RO, a few WP recently moved into legacy sizes. Minor/scattered aspen present. Informal/dispersed campsites present south of Grass Lake Rd. Trace BW (L/P) and AmElm (Log). BA swings= 180,120,210,140 (162avg)		
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density		Avg. Height	Size
Red Maple	3	Pole/Sapling	7		Red Maple	Low		>20 feet	Sapling
Red Oak	20	Log/XLog/Pole	16		Red Oak	Low		>20 feet	Sapling
Bigtooth Aspen	5	Log/XLog	16		Beech	Low		10 - 20 feet	Sapling
White Pine	58	XLog/Log/Pole	18	94	Ironwood	High		5 - 10 feet	Sapling
Red Pine	8	Log/Pole/XLog	16		White Pine	Medium		10 - 20 feet	Sapling
Quaking Aspen	3	Log/XLog	16		Sugar Maple	Medium		>20 feet	Sapling
Sugar Maple	3	Pole/Sapling	7		White Ash	Low		10 - 20 feet	Sapling
					Hawthorn (spp.)	Low		5 - 10 feet	Tall Shrub
<b>46</b>	500 - Water	Nonstocked	37.1		Unspecified	No	Grass Lake. Heavy recreational influence on and around the lake. Numerous dispersed campsites observed along the shoreline. Shingle Mill Pathway travels through numerous stands located around the lake. Lowland shrub types present along areas of the shoreline.		
<b>47</b>	42110 - Planted Red Pine	Sawtimber Well	21.0	92	111-140	N/A	RP is planted, except for some scattered xlog 'relic' stems. BA was variable, but held somewhat consistent near the mid-100's. Majority of RP stems running mid to larger log size, most of decent/good quality/form. RM/BTA present are the result of previous deciduous removal, likely from mid-60's. Med to high WP regen, tapers out a bit in east. JP present is a mix of living and snagged out stems. BA swings= 70,100,200,160,140,140,140,100 (131avg)		
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density		Avg. Height	Size
Red Maple	7	Pole/Log	9	56	Red Maple	Medium		>20 feet	Sapling
Red Pine	75	Log/Pole/XLog	15	92	Balsam Fir	Low		10 - 20 feet	Sapling
Jack Pine	3	Pole/Log	9		White Pine	High		10 - 20 feet	Sapling
White Pine	8	Log/Pole	11		Red Pine	Low		>20 feet	Sapling
Red Oak	5	Log/XLog/Pole	16		Red Oak	Low		10 - 20 feet	Sapling
Bigtooth Aspen	2	Log/Pole	10		Black Spruce	Trace		10 - 20 feet	Sapling
					Common Lowbush Blueberry	Low		< 5 feet	Tall Shrub
					White Pine	Medium		< 5 feet	Seeding
<b>48</b>	42260 - Natural Pine, Mixed Deciduous	Sawtimber Well	2.6	103	111-140	N/A	"Grass Lake Overlook" and pathway spur present in north end of stand. Underbrush on top of overlook is manually cut to preserve view. Shingle Mill Pathway runs in-between the two polygons of this stand (pathway is in valley of Stand 58). Narrow band of MC9 w/RO and some NHWD influence from Stand 58. Most of stand resides on top of/or on the side of a steeper southwest facing slope. Patches of WP regen, mostly on SW slope, have established in areas as a result of previous harvest in Stand 41. Fairly consistent HM S/P and P/S throughout. BA swings= 190,130,130 (150avg)		
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density		Avg. Height	Size
Sugar Maple	7	Pole/Sap/Log	7		Sugar Maple	Medium		>20 feet	Sapling
Red Oak	14	Log/Pole/XLog	15		Beech	Low		5 - 10 feet	Sapling
Bigtooth Aspen	5	Log	14		White Pine	Medium		5 - 10 feet	Sapling
White Pine	27	Log/Pole/XLog	15	103	Ironwood	Medium		5 - 10 feet	Sapling
Red Pine	40	Log/Pole/XLog	15	103	Red Pine	Low		5 - 10 feet	Sapling
Red Maple	7	Pole/Sap/Log	7		White Ash	Low		10 - 20 feet	Sapling
					Red Oak	Low		>20 feet	Sapling
					Red Maple	Low		10 - 20 feet	Sapling



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments		
<b>49</b>	6120 - Lowland Cedar	Poletimber Well	11.6	103	111-140	N/A	Shingle Mill Pathway skirts west boundary. Moss covered in southern 2/3rds of stand (kind of neat). NWC primarily dominant within 'core' areas of stand (mixed w/BlkSprc), present as P/L and L/P. Black spruce more prevalent near perimeter. Emergent stream present in north. Dissects the stand as it flows west, then turns north and dumps into Grass Lake along boundary w/Stand 43. North of the stream, the stand composition/size changes. This area begins mingling w/transitional portions of Stand 57. Legacy/xlog WP start showing up (28", 40"+), and a mixture of larger deciduous and NWC. Briefly ~upland in north near Stand 57. A fun little lowland stand. BA swings= 80,130,170,120 (125avg)		
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density		Avg. Height	Size
Red Maple	4	Pole/Log	9		Black Spruce	Low		< 5 feet	Seeding
Balsam Fir	5	Pole/Sap/Log	7		Balsam Fir	Medium		Variable	Sapling
White Spruce	2	Log	12		Balsam Fir	Medium		< 5 feet	Seeding
Black Spruce	15	Pole/Sap/Log	7		Labrador Tea	Low		< 5 feet	Tall Shrub
Northern White Cedar	65	Pole/Log/Sap	9	103	Tag Alder	Medium		5 - 10 feet	Tall Shrub
Paper Birch	3	Log/Pole	11		Sphagnum Moss	High		Unspecified	Non-Wood
White Pine	3	Log/XLog	16						
Quaking Aspen	3	Log/XLog	16						
<b>50</b>	42290 - Natural Mixed Pine	Sawtimber Well	1.9	93	111-140	N/A		Small pocket of MC9 along Grass Lake. Hasn't been managed along with adjacent stands, does appear that a brief RM removal likely passed through at some point. Informal dispersed campsite on north end, near intersection of this stand and Stands 55/59. An old forest rd of shorts travels through this stand near east boundary? Present in a shallow 30-40ft wide trench, imagery shows it then traveling into Grass Lake overflow/flooding area. Recent beaver activity on south end near shoreline. BA swings= 170,120 (145avg)	
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height		Size
Red Maple	3	Log/Pole	15		Red Maple	Medium	10 - 20 feet		Sapling
Red Oak	10	Log/Pole/XLog	15		Black Cherry	Low	5 - 10 feet		Sapling
Bigtooth Aspen	8	Log/XLog	15		Balsam Fir	Low	Variable		Sapling
White Pine	30	Log/Pole/XLog	14		White Pine	Medium	5 - 10 feet		Sapling
Red Pine	48	Log/Pole/XLog	15	93	Red Oak	Low	10 - 20 feet		Sapling
Balsam Fir	1	Pole/Sapling	6		Beech	Medium	10 - 20 feet		Sapling
					Ironwood	Medium	Variable		Sapling
					Hawthorn (spp.)	Low	5 - 10 feet		Tall Shrub
<b>51</b>	42290 - Natural Mixed Pine	Sawtimber Well	3.7	93	111-140	N/A	Corridor of MC9 that wasn't harvested when adjacent stands were cut in mid-80's (in appearance anyhow). Fairly solid stocking of WP/RP w/some RO and other deciduous until reaching the narrow northern area. Deciduous increases up there, mixing w/some scattered log/xlog WP. Extreme northern area located on seasonally wet ground. Relic/xlog/some legacy WP present, xlog/relic RP too. Trace BW (Log). BA swings= 90,80,160,100 (107avg)		
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density		Avg. Height	Size
Sugar Maple	2	Pole/Sap/Log	8		Red Maple	Medium		10 - 20 feet	Sapling
Red Maple	8	Log/Pole	10		Balsam Fir	Medium		Variable	Sapling
Red Oak	6	Log/XLog/Pole	15		White Pine	Medium		Variable	Sapling
Paper Birch	5	Log/Pole	11		Beech	Low		10 - 20 feet	Sapling
Bigtooth Aspen	5	Log/XLog	16		Ironwood	Medium		10 - 20 feet	Sapling
White Pine	34	Log/Pole/XLog	15		Black Cherry	Low		5 - 10 feet	Sapling
Red Pine	34	Log/Pole/XLog	15	93	Sugar Maple	Low		>20 feet	Sapling
Quaking Aspen	3	Log	15		Witch Hazel	Low		5 - 10 feet	Tall Shrub
Balsam Fir	3	Pole	6		Tag Alder	Low		5 - 10 feet	Tall Shrub



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments		
<b>52</b>	4139 - Aspen, Mixed Deciduous	Sawtimber Well	5.8	48	111-140	N/A	<p>Though a small stand, aspen diameters vary from P/L to L/P depending on location. My eye saw log sizes a bit more dominant, could call a pole stand. Second/scattered age class of mostly RO, then a narrow strip of xlog/relic WP (one 26" legacy) along a shallow ditch north of Tin Shanty Rd. Shingle Mill Pathway runs along ditch before turning north through this stand. North-half of the stand resides on a gradual south facing slope. Trace BW (log), PB (pole), BE (P/S). BA swings= 130,90,150,110 (120avg)</p>		
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density		Avg. Height	Size
Sugar Maple	7	Pole/Sapling	6		Red Maple	Medium		10 - 20 feet	Sapling
Red Oak	15	Log/XLog/Pole	16	94	White Pine	Medium		10 - 20 feet	Sapling
Bigtooth Aspen	48	Log/Pole	10	48	Beech	Medium		5 - 10 feet	Sapling
White Pine	7	XLog/Log/Pole	20		Sugar Maple	Medium		>20 feet	Sapling
Red Pine	5	Log	14		Ironwood	Medium		10 - 20 feet	Sapling
Quaking Aspen	3	Log/Pole	12		Balsam Fir	Low		5 - 10 feet	Sapling
Red Maple	15	Pole/Log	9		Red Oak	Low		>20 feet	Sapling
<b>53</b>	4130 - Aspen	Poletimber Well	4.0	36	51-80	N/A		<p>Yikes, though a small aspen stand, it has minor components of many species. Harvested mid-80's with nearly everything else in the surrounding Grass Lake area. Extreme northern portion w/Shingle Mill Pathway footbridge appeared uncut (too wet). Variety of aspen DBH's throughout, Sap-Log. Most of stand had aspen stems that were reliably pole sized. Scattered 2nd age class present, mainly xlog/legacy RO (25", 28"). A few older WP too. Sugar/red maple and IW saps are 'high' density in areas. BA swings= 100,30,60,80,120 (78avg)</p>	
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height		Size
Red Maple	3	Log/Pole/Sap	12		Sugar Maple	Medium	>20 feet		Sapling
Quaking Aspen	65	Pole/Sap/Log	7	36	Red Maple	Medium	>20 feet		Sapling
Balsam Fir	4	Pole/Sapling	5		Balsam Fir	Low	Variable		Sapling
Bigtooth Aspen	15	Pole/Sap/Log	7		Ironwood	Medium	10 - 20 feet		Sapling
Red Oak	4	XLog/Log/Pole	21		White Spruce	Trace	10 - 20 feet		Sapling
White Pine	2	Log/Pole/XLog	15		Black Cherry	Medium	10 - 20 feet		Sapling
Paper Birch	2	Pole	6		White Pine	Medium	10 - 20 feet		Sapling
Red Pine	2	Pole	7		Red Pine	Low	10 - 20 feet		Sapling
Balsam Poplar	2	Pole	7		Beech	Low	10 - 20 feet		Sapling
American Elm	1	Pole/Sapling	7		Tag Alder	Low	10 - 20 feet		Tall Shrub
<b>54</b>	500 - Water	Nonstocked	7.4	0	Unspecified	No	<p>Pigeon River (Natural River). Vegetative (and zoning ) buffers apply along the banks of this Natural River.</p>		
<b>55</b>	4130 - Aspen	Poletimber Well	5.9	36	51-80	N/A	<p>Shingle Mill Pathway travels through center of stand. Harvested mid-80's along w/many other adjacent stands. Not fully converted to pole sized aspen, but quite close. Some log sized BTA has emerged. Scattered 2nd age class of xlog/log RP,WP,RO (some legacy WP present). WP saps 'high' against Grass Lake overflow/flooding shoreline (~1-chain strip), BF/RP saps there too. Outside of the 'conifer strip', WP saps decrease to med/low. Old bermed forest rd winds through the stand, then into SW corner of Stand 67. Recent/old beaver activity observed. Trace BAM (S/P). BA swings= 60,100,40 (66avg)</p>		
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density		Avg. Height	Size
Red Maple	12	Sapling/Pole	4		Red Maple	Medium		>20 feet	Sapling
Quaking Aspen	5	Pole/Sapling	6	36	Balsam Fir	Low		Variable	Sapling
Bigtooth Aspen	65	Pole/Sap/Log	7	36	White Pine	High		10 - 20 feet	Sapling
White Pine	8	Log/Pole/XLog	15		Sugar Maple	Low		>20 feet	Sapling
Red Oak	5	Log/XLog	16	94	Ironwood	Medium		10 - 20 feet	Sapling
Red Pine	5	XLog/Log/Pole	20		Red Oak	Low		10 - 20 feet	Sapling
					Black Cherry	Medium		Variable	Sapling
					Red Pine	Medium		10 - 20 feet	Sapling
					Hawthorn (spp.)	Low		5 - 10 feet	Tall Shrub
					Witch Hazel	Low		5 - 10 feet	Tall Shrub



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments				
<b>56</b>	4199 - Other Mixed Upland Deciduous	Poletimber Well	5.7	55	81-110	N/A	Formally composed of 2-stands (56/57). Stand 56 was the north ~2ac and is older/has somewhat larger stems. Stand 57 was remaining southern portion, younger/smaller average DBH. Species removal swept through majority of stand in mid-60's, leaving RO,RP,WP. Variable stem sizes common, could get away w/calling the stand pole or log sized. Observed a few Legacy WP within stand and/or skirting northern boundary locations. Shingle Mill Pathway present in NE. Heavier BF component in north. Nearly all perimeter locations influenced by/mixing w/adjacent stand covertypes. Some snagged out JP present. BA swings= 90,70,90,90,80,90 (85avg)				
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species		Density	Avg. Height	Size	
Red Maple		35	Pole/Log/XLog	8	55	Red Maple		Medium	>20 feet	Sapling	
Paper Birch		11	Pole/Log	9		Balsam Fir		High	Variable	Sapling	
Quaking Aspen		16	Log/Pole	11		White Pine		Medium	10 - 20 feet	Sapling	
Balsam Fir		6	Pole/Sapling	7		Ironwood		Low	>20 feet	Sapling	
White Pine		4	Log/Pole/XLog	16		Beech		Low	10 - 20 feet	Sapling	
Red Pine		4	Log/Pole/XLog	16	88	Black Spruce		Low	5 - 10 feet	Sapling	
Bigtooth Aspen		6	Pole/Log	9	55	Red Oak		Low	10 - 20 feet	Sapling	
Red Oak		16	Log/Pole/XLog	16	88						
Sugar Maple		2	Pole	8							
<b>57</b>	42210 - Natural Red Pine	Sawtimber Well	11.3	95	141-170	N/A		Shingle Mill Pathway travels through NE area of stand. The NE then SE portion(s) of this stand are very likely planted RP. Everything else in between appears to be natural/fire origin pine. NE/SE likely had ~most deciduous removed in mid-60's (like Stds56/64). Heavier conifer component in sub-can because of transitional ground influence, brief bouts of 'lowland' along west/north boundaries. Xlog/relic RP quite common (24",25") and legacy WP observed (38",35"). Stocking in the 'natural' area, though not terribly erratic, was somewhat high/low like fire origin pine typically is. More deciduous 'mingling' along interface w/Stand 56. Trace NWC (L), WhtSprc (xlog) and a few living JP observed (most snagged out). BA swings= 220,200,220,150,130,160,110 (170avg)			
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species			Density	Avg. Height	Size
Red Maple		5	Pole/Log	8		Red Maple			Medium	>20 feet	Sapling
Red Oak		4	Log/Pole	14		Balsam Fir			High	Variable	Sapling
Bigtooth Aspen		2	Log/XLog/Pole	17		White Pine			Medium	10 - 20 feet	Sapling
Red Pine		62	Log/Pole/XLog	15	95	Black Cherry			Low	10 - 20 feet	Sapling
Quaking Aspen		5	Log/XLog	16		Black Spruce			Low	10 - 20 feet	Sapling
White Pine		14	Log/Pole/XLog	13		Ironwood			Low	10 - 20 feet	Sapling
Paper Birch		4	Log/Pole	10		Beech			Low	10 - 20 feet	Sapling
Black Spruce		2	Pole/Log	9		Red Pine			Low	>20 feet	Sapling
Balsam Fir		2	Pole/Sapling	7		Leatherwood			Low	< 5 feet	Tall Shrub
<b>58</b>	4111 - S.Maple, Hard Mast Association	Sawtimber Well	44.2	94	111-140	N/A	McDonald '11: Stand was thinned in 1995-97. A good deal of white pine was removed.JSP '21: Shingle Mill Pathway(s) in NW. Some higher quality/larger DBH M/MD9. Visually, the stocking doesn't appear overly dense (to me), yet the larger average diameters were easier to pick-up w/10BAF. Hard maple/BW generally higher quality, some marginal stems south & just west of Tin Bridge Rd. Heavy RO component in west, then in south. Most RO is xlog, quite clean and at least one legacy present south of Tin Bridge (a 26"). Prominent knoll in south, just north of Tin Bridge, holds a smaller inclusion of WP mixed w/RO and NHWD species. Sub-canopy of mostly non-desirables at overall medium density. A few areas where saps were 'high', some areas 'low'. Average sap heights were variable upon location. Wht ash snags and downed CWD present. Trace appearance of RP (Log), BTA/QA (large log), PB (large log), BlkChrry (log). West/southwest facing slopes in west/southwest, tended to be gradual. Valley/draw between the 2-polygons of Stand 48, somewhat steep west of Shingle Mill Pathway in this valley. Some brief but abrupt banks in areas along Tin Bridge, the result of 'building up the road'.				
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species			Density	Avg. Height	Size
Sugar Maple		50	Log/Pole/XLog	12	94	Sugar Maple		Medium	Variable	Sapling	
Basswood		24	Log/Pole/XLog	15	94	White Ash		Medium	Variable	Sapling	
Beech		2	Log/XLog	14		Beech		Low	5 - 10 feet	Sapling	
Red Oak		18	XLog/Log/Pole	20		Ironwood		Medium	Variable	Sapling	
White Pine		5	Log/XLog/Pole	15		White Pine		Trace	5 - 10 feet	Sapling	
Red Maple		1	Pole/Log	9		White Ash		Low	< 5 feet	Seeding	
						American Elm		Trace	>20 feet	Sapling	



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments				
59	42201 - Natural White Pine, Mixed Deciduous	Sawtimber Medium	19.8	99	51-80	N/A	Shingle Mill Pathway passes through stand in west. Two-aged, same removal harvest as Stand 67 in '85, left all RP,WP,RO. Residuals occupy the canopy at variable stocking levels. Some areas where residuals were at 75-100% closure, some 25-50%, overall average fits into 50-75%. Deciduous (and some WP) regen shares and/or 'owns' the canopy in many areas, very consistent stocking of saps (some now poles) in the ~sub-can layer. Sugar maple saps mainly 20ft or greater, some were hanging out at 10-15ft tall. Majority of stand was looking healthy (regen and residual). Will likely convert to more of a NHWD type over time. Quite a few xlog/a some legacy WP/RO observed. Minimal RP present, most near Grass Lake. Trace BW (L/XL). BA swings= 110,30,20,70 (57avg)				
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species		Density	Avg. Height	Size	
Red Oak		22	Log/XLog/Pole	17		Basswood		Low	>20 feet	Sapling	
White Pine		60	Log/Pole/XLog	15	99	Balsam Poplar		Low	10 - 20 feet	Sapling	
Red Pine		3	Log/Pole	13		Ironwood		High	10 - 20 feet	Sapling	
Bigtooth Aspen		5	Pole/Sap/Log	7	36	White Pine		Low	10 - 20 feet	Sapling	
Red Maple		5	Pole/Sap/Log	7		Paper Birch		Trace	>20 feet	Sapling	
Sugar Maple		4	Pole/Sapling	6		Sugar Maple		High	>20 feet	Sapling	
Balsam Poplar		1	Pole/Sapling	7		Beech		Low	10 - 20 feet	Sapling	
						White Ash		Medium	>20 feet	Sapling	
						American Elm		Low	>20 feet	Sapling	
						Black Cherry		Low	>20 feet	Sapling	
						Red Oak		Low	>20 feet	Sapling	
60	4119 - Mixed Northern Hardwoods	Sapling Well	4.2	25	1-50	N/A		McDonald '11: This stand was part of a larger hardwood thinning that had a concentrated portion of white pine that was removed creating this open stand. JSP '21: Sapling stand transitioning into pole. Main sapling class exists as sap/pole, and residual overstory log class exists as log/pole, but with the restrictions of MiFI is represented as sapling and log only, respectively. Trace BAM, elm, basswood, bigtooth aspen, and quaking aspen in the dominant sapling layer. Trace residual (log/pole) red oak, <1%. Rare hazelnut and white pine in the subcanopy. Grassy opening used for decking logs in the north along E-W road with oriental bittersweet along the forested edge. Southwest quarter of stand has a phenomenal advanced sugar maple sapling layer (1" dbh) beneath residual mature hardwood.			
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species			Density	Avg. Height	Size
Sugar Maple		40	Sapling	4	25	Prickly Or Wild Gooseberry			Trace	< 5 feet	Tall Shrub
Red Oak		2	Pole/Sapling	5	25	Ironwood			Trace	Variable	Sapling
Ironwood		10	Sapling/Pole	3	25	Sugar Maple			Low	Variable	Sapling
White Ash		28	Sapling/Pole	4		Blackberry/Raspberry			Low	< 5 feet	Tall Shrub
Paper Birch		3	Sapling	4		Serviceberry (Juneberry)			Trace	10 - 20 feet	Sapling
Pin Cherry		2	Sapling	3		Beech			Trace	Variable	Sapling
Beech		5	Pole/Sap/Log	6		Bittersweet			Trace	Unspecified	Vine
Basswood		3	Log/Pole	12	74						
Black Cherry		1	Log	14							
Black Cherry		2	Sapling	4							
Paper Birch		1	Log	14							
Sugar Maple		3	Log	12							
61	500 - Water	Nonstocked	14.5		Unspecified	No	Grass Lake overflow watershed. Old and recent beaver activity observed in '21. Dam(s) present and numerous trees cut by beaver in surrounding stands. Alder along perimeter, some conifer/deciduous of varying sizes in seasonally ~drier areas.				
Sub-Canopy Species		Density	Avg. Height	Size							
Tag Alder		High	Variable	Tall Shrub							
62	42220 - Natural Jack Pine	Sapling Medium	21.8	16	Immature	N/A	Clearcut in '05. JP volunteers quite dense where established, then scattered and/or non-forested in areas. Somewhat mimics a KW 'weave' in a somewhat more natural way. Forested areas likely received more scarification, on imagery (MI Best IR) you can make out some linear regen lines where repetitive skidding likely occurred. A few pole size WP,RP,RO present, likely left as residual (some log sizes along/close to perimeter areas). Some/most BlkChry in sub-can was browsed at some point. No BA swings taken.				
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species		Density	Avg. Height	Size	
Red Pine		5	Sapling/Pole	3	16	Black Cherry		Medium	5 - 10 feet	Sapling	
Jack Pine		90	Sapling	3	16						
Red Oak		2	Sapling/Pole	4							
White Pine		3	Sapling/Pole	4							



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments		
<b>63</b>	4130 - Aspen	Poletimber Well	6.8	36	51-80	N/A	Harvested mid-80's along w/other areas surrounding Grass Lake flooding. Now an overall 'small pole' stand w/plenty of saps still present. A ~1-chain strip along the northern boundary has regenerated very heavy to a mix of sap/pole conifer species, a couple very large/perhaps legacy pine stems present there too. Scattered residual RO present throughout stand, as well as some younger stems regenerating off the stump. ~One acre pocket of non-merch/mainly sapling hard/soft maple regen in east. Another small pocket of RP/WP regen in west along southern boundary. Small clone of BTA w/some a few larger DBH's in west too. Appears that some clumps of BF may of been left during harvest? BA swings= 60,80,90,120,20 (74avg)		
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density		Avg. Height	Size
White Pine	5	Pole/Sap/Log	5		Balsam Fir	Medium		10 - 20 feet	Sapling
Quaking Aspen	68	Pole/Sapling	6	36	White Pine	Medium		10 - 20 feet	Sapling
Red Pine	4	Pole/Sap/Log	6		Red Pine	Medium		10 - 20 feet	Sapling
Red Oak	3	Pole/Sap/Log	6		Red Maple	Low		>20 feet	Sapling
Balsam Fir	10	Pole/Sap/Log	6		Ironwood	Low		10 - 20 feet	Sapling
Bigtooth Aspen	10	Pole/Log	8		Black Cherry	Medium		Variable	Sapling
					Leatherwood	High		< 5 feet	Tall Shrub
					Red Oak	Low		>20 feet	Sapling
					Sugar Maple	Low		>20 feet	Sapling
					White Ash	Trace		>20 feet	Sapling
<b>64</b>	429 - Mixed Upland Conifers	Sawtimber Well	23.0	97	111-140	N/A		RP is planted, remainder of stand is natural. Species removal in mid-60's, left all RP,WP,RO. Deciduous DBH's quite variable, larger if they had more growing room following removal, smaller if they didn't. Most aspen (mainly BTA) hanging out as large pole/or small log size. Similar story for RM, though overall average DBH is smaller when compared to aspen stems. RP generally accounted for 1/2 or more of the stands BA. RP was mostly larger log size and of good/decent form/quality (most 'heavy limbed' near top). Sub-canopy generally stable throughout as far as stocking/species present. Majority of stand has a 'park-like/open view' while on foot. Didn't have room in canopy list for: JP 2% (L/P), trace PB (L/P) and BW (L). BA swings= 120,150,150,140,160,110 (138avg).	
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density			Avg. Height
Red Maple	8	Pole/Log	8		Red Maple	Medium	>20 feet		Sapling
Red Oak	10	Log/Pole/XLog	15		Balsam Fir	Medium	Variable		Sapling
Bigtooth Aspen	20	Pole/Log	9	55	White Pine	Medium	10 - 20 feet		Sapling
Red Pine	50	Log/XLog/Pole	16	97	Black Cherry	Low	Variable		Sapling
Balsam Fir	2	Pole/Sapling	7		Bigtooth Aspen	Low	>20 feet		Sapling
White Pine	8	Log/Pole/XLog	12		Red Pine	Low	10 - 20 feet		Sapling
Quaking Aspen	2	Pole/Log	9		Ironwood	Low	10 - 20 feet		Sapling
					Black Spruce	Low	10 - 20 feet		Sapling
					Red Oak	Low	10 - 20 feet		Sapling
					Leatherwood	Low	< 5 feet		Tall Shrub
<b>65</b>	4139 - Aspen, Mixed Deciduous	Sawtimber Well	3.2	56	111-140	N/A	Shingle Mill Pathway skirts through the southern portion of this stand. Stand is variable from aspen w/mixed deciduous, to MD w/aspen. Looks like a few large/healthy RO (and only a few ~3-4) left when harvested last. Also appears that some HM and perhaps a few RP/WP were also left as residual. Measured a 28" WP on east boundary and 24" RP on north boundary. Mix of pole and log sizes, enough 'logs' present to call the stand that size though not a fully stocked log stand. Leatherwood abundant in sub-can. BA swings= 110,130,110 (116avg)		
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density			Avg. Height
Sugar Maple	12	Log/Pole/XLog	11		Leatherwood	High		< 5 feet	Tall Shrub
Red Maple	10	Pole/Log	8		Balsam Fir	Low		>20 feet	Sapling
Basswood	8	Log/XLog/Pole	15		White Pine	Low		10 - 20 feet	Sapling
Red Oak	2	XLog/Log	18		Ironwood	Medium		10 - 20 feet	Sapling
Paper Birch	8	Pole/Log	8		Sugar Maple	Low		>20 feet	Sapling
Bigtooth Aspen	30	Log/Pole	12	56	Red Maple	Low		>20 feet	Sapling
Quaking Aspen	15	Log/Pole	11						
Red Pine	4	Log/XLog/Pole	17						
Beech	5	Pole	7						
Ironwood	4	Pole	8						
White Pine	2	Log/XLog	16						



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments																																																																																				
<b>66</b>	4110 - Sugar Maple Association	Sawtimber Medium	16.6	73	51-80	N/A	McDonald '11: Heavily cut in 1995-97. All "soft" hardwood and all white pine removed. JSP '21: Residual BA varies 20-120, 50BA most common, stand averaged 58BA. Gaps are fully stocked M3 dominated largely by white ash (high to full stocking - sap/pole), ironwood (medium), and sugar maple (medium) with lesser and variable densities of red oak (sap/pole), black and pin cherry, paper birch (sap/pole), beech, and trace balsam poplar and quaking aspen (sap/pole). Siberian crab apple (listed as 'apple' above) present in western gaps. Sub-canopy under heavier residuals is less diverse and still dominated by ash and ironwood with an increase in beech. Southwest portion of stand contains a very full stocking of white ash saplings beneath mature hardwood. Red oak picks up in south half of stand. Trace scattered paper birch (P), red pine (P), and elm (L/xlog, 19.5"). Trace Xlog sugar maple. Trace hawthorn in subcanopy. BA swings= 20,50,100,30,120,50,50,50 (59avg)																																																																																				
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<b>67</b>	42290 - Natural Mixed Pine	Sawtimber Well	15.8	99	111-140	N/A	Two-aged, removed all species except WP,RP,RO in ~'85. Residual stems are the featured class, yet regen does 'own' the canopy in areas. Deciduous regen is generally dense throughout but tends to be heavier in north 1/2 of stand. RM, HM, BTA, IW regen take turns having a 'high' density depending on location. Pole (a few logs) sized BTA have emerged in some areas near Grass Lake Rd, similar story for some RM/RO stems. Quite a few xlog/relic/large log WP (some possible legacy) present, as well as large/relic RO/RP. Old forest rd in SW used to cross the Grass Lake flooding. Old/recent beaver activity in/along watershed. Trace QA (P/S). BA swings= 120,170,170,120 (145avg)																																																																																				
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<b>68</b>	42210 - Natural Red Pine	Sawtimber Well	24.9	97	81-110	N/A	Single Tree selection harvested in '15, RP cut-tree marked and aspen/deciduous apparently removed (except oak and a few scattered deciduous). Residuals I saw appeared healthy. Overall canopy closure now on lower end of 75-100%, some areas on high side of 50-75%. Shingle Mill Pathway travels east//west through center of stand, BA left higher on either side of the pathway. Stand required a regen survey during 2020 inventory. Initial assessment is that it 'needs more time'. In '20, the sub-canopy is/was basically still composed of regen that was present prior to harvest. WP seeds (most less than 1ft) are seeding in/present at 'medium'/sometimes 'high' stocking level. BE seeds (and some IW/BlkChrry) coming in too. Regenerating deciduous appears to be 'seedling height' because of constant browse pressure. Didn't observe RP seedlings (yet) or much vegetative regen from deciduous that was harvested (likely eaten). Trace PB (P/L). BA swings= 90,70,100 (86avg)																																																																																				
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69	3205 - Mixed Upland Shrub	Nonstocked	27.1		Unspecified	Managed Opening	McDonald '11: Cut in 1975 and again in 1993 to create brushy opening. Scattered cherry throughout with pockets of Aspen and scattered hardwood. JSP '21: Historically managed a non-forested/forested complex, has been Rx burned. The northwest is heavy to cherry and Siberian crabapple. Very much a forested stand in areas, with scattered aspen clones (QA, BTA, and BAM) and a larger aspen/mixed hardwood clump occupying the southwest. Trace red pine, white pine, basswood, paper birch, black cherry, knapweed, honeysuckle, mullein, goldenrod. Trees listed in the stand description are generally present in multiple size classes, the most dominant of which being represented.																																																																																				
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70	42200 - Natural White Pine	Sawtimber Well	14.0	93	111-140	N/A	McDonald '11: Older stand. Aspen in poor condition. High recreation use area. Leaving this stand would protect the watershed from Grass Lake flowing into the Pigeon River. JSP '21: Shingle Mill Pathway cuts through stand in east. South edge of stand drops quickly into the stream corridor in some areas. Narrow gorge in center of stand, travels south into stream. RP stocking picks up in the east with a higher stocking of pole white pine in the sub-can. WP saps 'high' in west. A few legacy WP present. Small clone of larger DBH aspen in far east, 14-18". Trace red pine and aspen saps (20ft+) in far east too. BA swings 110,160,80,150,140 (128avg)																																																																																				
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71	4110 - Sugar Maple Association	Sawtimber Well	50.3	97	81-110	N/A	Rather nice quality hardwood stand. Dead standing white ash (higher density in east and especially northeast), many falling apart. Trace paper birch and bigtooth aspen. Southwest has much higher density of beech, especially the subcanopy which is high to fully stocked beech. BA range is creeping up, but averages 109 yet. Seep in the north flowing east through the draw. Canopy is not entirely closed yet. 'Low' WP saps in west leg, trace elsewhere. Increased HM saps >20ft in west leg, decreased BE regen in that area. Trace leatherwood, white pine (<5'), and maple leaved viburnum in subcanopy. BA swings= 90,100,90,130,120,90,140,110 (109avg)																																																																																				
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<b>72</b>	42200 - Natural White Pine	Sawtimber Well	34.9	94	111-140	N/A	Species removal in '94, left all RP, WP, RO. Areas that were heavily disturbed during '94 harvest (appears to of been whole tree skid) have high/full WP regen, most 10-20ft. Areas what weren't heavily scarified held far less regen. Deciduous regen present but at medium or less density. Canopy dominated by higher quality, generally large/tall WP (a few legacy present too). RO and RP common, but not always consistent. Parking area and informal campsites in northern part of stand provide access to Section 4 Lake and Shingle Mill Pathway. Areas of decent regen found near/around parking/campsites. Portion of stand west of Grass Lake Rd held ~somewhat higher BA/was more consistently stocked. Advanced WP regen a bit more patchy/inconsistent west of Grass Lake Rd. Trace BW (Log) and PB (P/L). BA swings= 150,180,80,80,130,170,110,130,120,100,90,120,140 (123avg)																																																																																							
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<b>73</b>	500 - Water	Nonstocked	3.1		Unspecified	No																																																																																								
<b>74</b>	4130 - Aspen	Sapling Well	34.8	8	Unspecified	N/A	A difficult stand to represent in MiFI: Dominant sapling layer is occupied by aspen with trace amounts of red oak, black cherry, and ironwood. Residual "supercanopy" is dominated by red and white pine and red oak with lesser amounts of aspen, sugar maple, ironwood, beech, and red maple (<2% of canopy all together). The residual pine/oak is generally clumpy and on steeper hillsides with more diverse and more advanced hardwood and pine (generally white) underneath. Diameters of residuals vary wildly, present in pole/log/xlog/sapling classes. West half is dominated by sapling bigtooth with scattered quaking and balsam poplar; white pine sub-can with occasional beech and red oak. East half is more quaking dominated with much higher ironwood sub-can and a noticeable inclusion of black cherry with varying densities of white pine regen. Extreme impact from browsing in the northernmost acreage of the east half (dominated by very poor quality ironwood, black cherry, mixed aspen).																																																																																							
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<b>75</b>	42110 - Planted Red Pine	Sawtimber Well	17.3	93	141-170	N/A	McDonald '11: This stand was left out of past cutting due to pathway and Section 4 Lake influence. JSP '21: Shingle Mill Pathway and Section 4 Lake present within stand. Thin + deciduous removal in past has spurred on a thick layer of sapling WP/BE, high/full depending on location. BA ran pretty consistent from 140-170ish. Most RP on the larger side on log. WP more prevalent closer to north boundary that slopes/leads down to creek flowing out of Grass Lake. Some of the slopes along creek were steep, most gradual though. Xlog RP/WP present, observed some legacy WP too. Area NW of Sec.4 Lake was a bit more mixed/natural w/WP/RP some deciduous. Trace pole beech. BA swings= 150,180,150,140,170,160,150 (157avg)																																																																											
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<b>76</b>	3301 - Low Density Deciduous Trees	Nonstocked	13.6		Unspecified	Managed Opening	McDonald '11: Scattered cherry and clones of aspen. Treated with Tordon in 1973 and commercially cut in 1993. A small stand kind of variable terrain; little potholes and mounds. Beech present in L/P/S; balsam fir P/S; paper birch S/P.JSP '21: Shingle Mill Pathway along north perimeter of stand. Siberian crab apple present (trace at north tip). Black knot on the cherry. Northeast clump of trees is dominated by ironwood (44% S/P), beech (42% L/P/S), black cherry (10% S/P), white pine (2% S/P) and 2% balsam fir, white ash, paper birch, red pine, red maple, white spruce, witch hazel, and serviceberry.																																																																											
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Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments		
77	42210 - Natural Red Pine	Sawtimber Well	6.7	91	111-140	N/A	<p>McDonald '11: Small acreage of mature pine with south half on a relatively steep slope along the creek. It also has hiking trail passing thru it.</p> <p>JSP '21: Shingle Mill Pathway in east. A large crater/perhaps old barrow pit in northwest. Captured that area as 'too steep', slopes leading down into pit were quite steep. Signs of previous deciduous removal, beech saps abundant, RM 'off-the-stump' present. Old beaver damage along south edge, along the stream corridor. Trace Norway spruce in the east tip. Trace scattered paper birch, quaking aspen, sugar maple, red oak, and white spruce in canopy. Rare white ash and basswood in sub-can. Red maple is barely mixing in with crowns. Sub-acre inclusion of bigtooth aspen on the far east. BA swings= 150,100,130,170 (137avg).</p>		
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density		Avg. Height	Size
White Pine	5	XLog/Log/Pole	20		Sugar Maple	Trace		>20 feet	Pole
Bigtooth Aspen	5	Log	14		Red Maple	Trace		>20 feet	Sapling
Red Pine	88	Log/Pole	14	91	Beech	High		Variable	Sapling
Red Maple	2	Pole/Sapling	6		White Spruce	Trace		>20 feet	Sapling
					White Pine	Medium		Variable	Sapling
					Hazelnut (American)	Trace		5 - 10 feet	Tall Shrub
					Maple Leaved Viburnum	Trace		5 - 10 feet	Tall Shrub
					Black Cherry	Low		Variable	Sapling
					Hawthorn (spp.)	Trace		5 - 10 feet	Tall Shrub
					Ironwood	Trace		Variable	Sapling
					Serviceberry (Juneberry)	Trace		>20 feet	Sapling
					Red Oak	Trace		>20 feet	Sapling
78	4110 - Sugar Maple Association	Sawtimber Well	54.4	88	81-110	N/A	<p>McDonald '11: Majority of stand was selectively cut in 2015. East edge, especially slopes and areas with seeps, heavy to hemlock and yellow birch, were excluded from harvest. '21: Approximately 4% of the canopy is a mix of red oak (on south edge), red maple (in SE and W), bigtooth aspen, elm, black cherry (in SW), quaking aspen, red pine, and beech (in W) in the canopy; none in high enough densities to warrant their own listing. Trace BF and whtsprc in the sub-can. A few small clumps of sugar maple seedlings &lt;1'. Some very nice quality, platy sugar maple phenotypes.</p>		
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density		Avg. Height	Size
Sugar Maple	51	Log/Pole/XLog	12	88	Sugar Maple	Low		>20 feet	Sapling
Yellow Birch	1	Log/Pole	12		Hemlock	Low		>20 feet	Pole
Basswood	40	Log/Pole/XLog	14		Ironwood	Medium		Variable	Sapling
Paper Birch	1	Log/Pole	12		White Pine	Trace		Variable	Sapling
White Pine	3	Log	14		Beech	Low		Variable	Sapling
Hemlock	2	Log	13		White Ash	Medium		< 5 feet	Sapling
Ironwood	2	Pole	8		Blackberry/Raspberr	Low		< 5 feet	Tall Shrub
79	42110 - Planted Red Pine	Sawtimber Poor	49.5	94	1-50	N/A		<p>McDonald '11: This stand had aspen and hardwood removed in 1994. West end was cut heavier, so there is more advanced regeneration. Rekowski, 8/17/2015 - Treatment boundary is the portion of the stand that was cut. Areas of heavy mixed pine regeneration were excluded from the treatment boundary to protect them from harvesting damage. Stand cut in fall of 2014 by Biewer, Red Line Nightmare, #53-009-13-01. Whole-tree skidding did not take place but the tops were skidded with grapple skidders. Not sure if this created enough scarification though to encourage more pine regeneration. Existing pockets of red pine regeneration were protected moderately well. Res ba/acre = 17 sq ft. JSP May '21: Residual is still the featured stand. Natural RP/RP has established moderately well throughout most of the stand. Most pine regen, as a result of '15 harvest, is still less than 3ft tall (~0.5-1.0ft avg). Regen survey conducted May '21, put in 19 1/100th acre plots. No-parentheses indicate seeds/saps 3ft and greater, parentheses indicate seedlings &lt;3ft. Red Pine TPA= 115 (589), WP= 205 (252), BlkCherry= 194 (42), Beech= 26 (10), BAM= 47 (15). As mentioned above, existing pockets of 10-20ft tall RP/WP saplings were protected during harvest. Most of these scattered pockets are small, maybe 0.2ac at best. One regen plot landing in a pocket (2600 TPA WP, 100 RP, 100 BE). My opinion the regen/stand needs more time, to allow seedlings to grow above 3ft and be considered 'free to grow'. Browse has removed most deciduous competition.</p>	
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density			Avg. Height
Red Oak	3	Log/XLog/Pole	14		White Pine	Medium	10 - 20 feet		Sapling
White Pine	7	Log/Pole/XLog	12		Red Pine	Low	10 - 20 feet		Sapling
Red Pine	90	Log/XLog/Pole	15	94	Jack Pine	Trace	5 - 10 feet		Sapling
					Beech	Low	5 - 10 feet		Sapling
					Red Maple	Trace	>20 feet		Sapling
					Balsam Poplar	Trace	< 5 feet		Seeding
					Bracken Fern	Medium	Unspecified		Non-Wood
					White Pine	Medium	< 5 feet		Seeding
					Red Pine	Medium	< 5 feet		Seeding
					Black Cherry	Medium	< 5 feet		Seeding
					Beech	Low	< 5 feet		Seeding
					Common Lowbush Blueberry	Medium	< 5 feet		Tall Shrub



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments		
<b>80</b>	4130 - Aspen	Sawtimber Well	8.3	100	111-140	N/A	<p>Nearly all of this stand resides on a steep side slope with Shingle Mill Pathway at slope bottom. Small plateau dominated by pole aspen on the west edge. The stand has pretty much been cut up to during past Rx's. Trace red pine, white pine, quaking aspen, red oak, paper birch, and basswood in canopy. Slope is dominated by bigtooth aspen with a variable sub-canopy depending on aspect and position on the slope. There's more pine in the sub-can in the south; middle is understocked mixed hardwood, and north is a mix with an increase in paper birch. Trace red pine, balsam fir, and elm in upland sub-can. Small lowland inclusion in south (south of trail) contains trace wild raisin, highbush cranberry, black spruce, alder, willow, larch, bam, and ninebark. BA swings= 130,100 (115avg)</p>		
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density		Avg. Height	Size
Sugar Maple	7	Pole/Log	8		Sugar Maple	Trace		Variable	Sapling
Bigtooth Aspen	90	Log/Pole/XLog	12	100	White Pine	Low		Variable	Sapling
White Spruce	2	Pole/Log	8		White Ash	Trace		Variable	Sapling
Red Maple	1	Log	12		Beech	Low		Variable	Sapling
					Black Cherry	Medium		Variable	Sapling
					Serviceberry (Juneberry)	Trace		10 - 20 feet	Sapling
					Bigtooth Aspen	Low		< 5 feet	Sapling
					Maple Leaved Viburnum	Trace		5 - 10 feet	Tall Shrub
					Hazelnut (Spp.)	Trace		5 - 10 feet	Tall Shrub
					White Spruce	Low		Variable	Sapling
					Prickly Or Wild Gooseberry	Trace		< 5 feet	Tall Shrub
					Ironwood	Low		Variable	Sapling
					Red Oak	Trace		>20 feet	Sapling
<b>81</b>	6220 - Alder/willow	Nonstocked	27.8		Unspecified	No	<p>McDonald '11: Tag alder and willow along river bottom JSP '21: Observed from edge on from both sides of Pigeon River. A lot of tag alder and some willow type brush. Scattered conifer and deciduous of varying size classes present. Flowing water courses and pooled water present. More a less a large filtering area for water that eventually makes its way into the Pigeon River.</p>		
Sub-Canopy Species	Density	Avg. Height	Size						
Alder	High	10 - 20 feet	Tall Shrub						
Willow spp.	Medium	Variable	Tall Shrub						
<b>82</b>	4133 - Aspen, Mixed Pine	Sawtimber Well	8.1	78	81-110	N/A	<p>McDonald '11: Steep slope of aspen leading to the river bottom along the Pigeon River. Too steep for harvesting operations and also presents an erosion threat. JSP '21: Eastern ~2/3rds of stand resides on a short, 'stair-stepped', and somewhat steep slope that bottoms out before heading into lowland Stand 81. East ~2/3rds mainly populated w/QA (some BTA) then a mixing of other decid/conifer. Most of the slopes appeared impractical for conventional harvesting equipment, would likely result in damage + increased threat of erosion. Western sliver (where Shingle Mill Pathway passes through) resides on top of the slope and is MC6/9 with QA/BTA/RO mixing in. It's more/less and a brief extension of Stand 104. Shingle Mill pathway travels through this stand. Trace pole BW &amp; HM. BA swings= 110,110,110.</p>		
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density		Avg. Height	Size
Red Maple	10	Log/Pole	11		Beech	Medium		Variable	Sapling
Paper Birch	5	Pole/Log	9		Black Cherry	Medium		10 - 20 feet	Sapling
Bigtooth Aspen	10	Log/XLog/Pole	15		White Pine	Medium		10 - 20 feet	Sapling
White Pine	10	Log/Pole	11		Red Pine	Low		>20 feet	Sapling
Red Pine	20	Log/Pole	11		Serviceberry (Juneberry)	Low		10 - 20 feet	Sapling
Quaking Aspen	40	Log/Pole	14	78	Tag Alder	Low		5 - 10 feet	Tall Shrub
Red Oak	2	Log/XLog	16		Hawthorn (spp.)	Trace		5 - 10 feet	Tall Shrub
Black Spruce	3	Pole/Log	8						



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments																																																																																														
<b>83</b>	6129 - Mixed Coniferous Lowland Forest	Sawtimber Poor	16.5	111	1-50	N/A	Wet, river bottom stand. Poor quality timber. Trace bigtooth, elm, balsam fir in canopy. North and portions along west edge are transitioning in the wake of EAB/ash mortality. Spruce, pine, some red maple and ash coming up under dead ash. Beaver activity closer to the river.																																																																																														
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<b>84</b>	6120 - Lowland Cedar	Poletimber Well	26.5	113	111-140	N/A	Pigeon River (Natural River) passes through stand. Seasonal backflows present, as well as flowing water that has split off from the main river. Areas of mortality because of excessive water. Portion of stand west of the river had a broader mixture of conifer and deciduous.																																																																																														
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<b>85</b>	6120 - Lowland Cedar	Poletimber Well	2.6	113	Unspecified	N/A	Small cedar stand w/a few other species mixing in, primarily along the boundary w/adjacent stands. Left uncut when Stand 86 was harvested. Fairly steep slope in south, where Stand 92 descends quickly into this stand.																																																																																														
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<b>86</b>	6122 - Black Spruce	Sapling Well	7.3	35	Unspecified	N/A	McDonald '11: Winter deer cut in 1986 JSP '21: Observed from eastern boundary of Stand 87 (which was flooded at the time, didn't cross). Appeared to be a fairly dense mix of conifer regeneration, looked like some pole sizes were beginning to emerge. Some standing dead cedar on north boundary, result of seasonal flooding (I'd say).																																																																																														
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Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
87	6239 - Mixed Emergent Wetland	Nonstocked	3.0		Unspecified	No	Marsh grass, backwater flowage from Pigeon River. Flooded when visited 3/3/21.

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments			
88	42260 - Natural Pine, Mixed Deciduous	Sawtimber Well	15.7	88	111-140	N/A	Stand resides on a series of ridges, valleys, and draws that all bottom out into lowland Stand 84 (then into Pigeon River). Some slopes in NW were 'Too steep', others moderate then some gradual. Natural pine mixed w/deciduous. Beech saplings quite extensive in sub-can, unsure if the result/response to a previous thin? Minor wet pockets with clumps of NWC at bottom of several draws, then NWC present along interface w/Stand 84. BA swings= 60,160,100,160 (120avg).			
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species		Density	Avg. Height	Size
Red Maple		7	Pole/Sapling	7		Red Maple		Medium	>20 feet	Sapling
Red Oak		4	Log/Pole	12		White Pine		Medium	10 - 20 feet	Sapling
Paper Birch		4	Pole/Log	9		Red Pine		Low	10 - 20 feet	Sapling
Bigtooth Aspen		12	Log/Pole	14		Beech		High	10 - 20 feet	Sapling
White Pine		30	Log/Pole/XLog	12		Balsam Fir		Low	10 - 20 feet	Sapling
Red Pine		35	Log/Pole/XLog	15	88	Black Spruce		Medium	Variable	Sapling
Balsam Fir		3	Pole/Sapling	6		Black Cherry		Low	10 - 20 feet	Sapling
Quaking Aspen		3	Log/Pole	11		Ironwood		Medium	10 - 20 feet	Sapling
Northern White Cedar		2	Log/Pole	12						

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments			
89	42260 - Natural Pine, Mixed Deciduous	Sawtimber Well	4.6	88	111-140	N/A	Stand resides on a series on slopes, some a bit steep, that lead/slope down into the lowland complex that then drains into Pigeon River (a 'Natural River'). Somewhat of an 'open/park-like' setting/appearance, lightly stocked sub-can w/large and xlog RP (some WP) in canopy. East boundary against Stand 100 holds the brief 'low' ground, alder present there. Evidence of past deciduous removal throughout, observed stmp-sprt PB, RM and some older aspen saps. Shingle Mill pathway not far from west boundary of this stand. BA swings= 100,110,160,140 (127avg)			
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species		Density	Avg. Height	Size
Paper Birch		10	Pole/Log	9		Balsam Poplar		Trace	>20 feet	Sapling
Red Maple		5	Pole/Sapling	6		Black Spruce		Medium	10 - 20 feet	Sapling
White Spruce		3	Log/Pole/XLog	12		White Spruce		Low	10 - 20 feet	Sapling
Black Spruce		3	Pole/Sapling	6		Tag Alder		Low	5 - 10 feet	Tall Shrub
Red Pine		55	Log/Pole/XLog	13	88	Beech		Medium	Variable	Sapling
White Pine		7	Log/XLog/Pole	14		White Pine		Medium	10 - 20 feet	Sapling
Quaking Aspen		10	Log	14		Red Pine		Low	10 - 20 feet	Sapling
Jack Pine		2	Pole	7		Red Maple		Low	>20 feet	Sapling
Red Oak		2	Log/Pole	16		Bigtooth Aspen		Low	10 - 20 feet	Sapling
Bigtooth Aspen		3	Log/XLog	17		Black Cherry		Medium	10 - 20 feet	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments			
90	42260 - Natural Pine, Mixed Deciduous	Sawtimber Medium	12.8	68	81-110	N/A	Series of undulating hills and slopes throughout (steepest in north, remainder a bit more gradual), less than ideal terrain for conventional equipment in some areas. Some narrow valley bottoms + slopes appeared easily erodible. Stand ends abruptly in some western areas (along lowland interface). At least 2-aged, all the signs of a previous removal harvest, ~mid-70's timeframe, that left RP,WP,RO (prob some JP). Aged an 18.1" RP in north at 170yrs. Calling the scattered/clumpy stocking of RP,WP,RO residual the featured canopy. This canopy is stratified overtop the regenerating layer of S/P and P/S stems from ~mid-70's removal harvest. Can-closure is 75-100% between both layers, choose 50-75% to represent the scattered/clumpy composition of the residual pine/oak. Aspen generally scattered or in smaller clones in south. Merchantability of regenerated stems increases in some southern locations. Informal hiking trail along western boundary. Two E/W older/overgrown forest rds present, one likely used to access Stand 86 (S3). Legacy WP observed. BA swings= 30,60,80,80 (62avg)			
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species		Density	Avg. Height	Size
Red Maple		15	Pole/Sap/Log	7	42	Red Maple		Medium	>20 feet	Sapling
Red Oak		4	Log/Pole	14		Balsam Fir		Medium	Variable	Sapling
Paper Birch		6	Pole/Log	9		White Pine		High	10 - 20 feet	Sapling
Bigtooth Aspen		10	Log/Pole	11		Beech		Medium	10 - 20 feet	Sapling
White Pine		20	Log/Pole/XLog	10	170	White Spruce		Medium	Variable	Sapling
Red Pine		32	Log/Pole/XLog	14	68	Red Pine		Low	10 - 20 feet	Sapling
Jack Pine		10	Log/Pole	10		Jack Pine		Low	Variable	Sapling
White Spruce		2	Pole/Sap/Log	9						
Black Spruce		1	Pole	8						



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
91	500 - Water	Nonstocked	5.0		Unspecified	No	Creek/Stream corridor of run-off from Grass Lake. Flows east into the large lowland shrub complex (Stand 81), then eventually empties into the Pigeon River. The banks of this corridor are populated with variety of species 'creeping' in from surrounding/adjacent stands. Primary species include red/white pine, spruce, fir and some deciduous (maple, birch, ash, aspen, etc). Shingle Mill Pathway crosses the creek/stream on the east end of the stand. Observed a beaver dam (unsure if active) just east of the pathway bridge. Beaver 'sign' along the banks too (saps/poles cut down by beaver).

92	42290 - Natural Mixed Pine	Sawtimber Well	17.9	88	111-140	N/A	Stand has 2-personalities. ~N1/2 is generally populated w/large WP, RP, some RO on steep to gradual slopes. Sub-can less dense in areas (tree spacing variable too) giving it a more 'open/park like' appearance. ~S1/2 graduates into more JP, Fir some spruce, aspen (etc) and has a sub-can that is usually dense w/conifer. Average DBH's smaller in south (could prob call pole sized in areas). Bank along Pigeon River has some clumps of NWC in spots. Many areas had evidence of a previous deciduous removal (stmp-sprt RM and younger pole/sap aspen). Unofficial pathway present along/hear river bank, originates from horse campground in south. BA swings= 110,130,160,70,90 (112avg).	
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Red Maple	4	Pole/Sap/Log	7		Red Maple	Medium	>20 feet	Sapling
Red Oak	4	Log/Pole/XLog	14		White Pine	Medium	10 - 20 feet	Sapling
Bigtooth Aspen	6	Pole/Sapling	7		Red Pine	Low	Variable	Sapling
White Spruce	4	Pole/Log	9		White Spruce	Medium	10 - 20 feet	Sapling
White Pine	31	Log/Pole/XLog	16	88	Beech	Low	5 - 10 feet	Sapling
Red Pine	19	Log/Pole/XLog	14		Balsam Fir	Medium	Variable	Sapling
Jack Pine	19	Log/Pole	11		White Oak	Trace	>20 feet	Sapling
Balsam Fir	3	Pole/Sapling	6		Black Spruce	Medium	10 - 20 feet	Sapling
Paper Birch	4	Pole	9					
Northern White Cedar	3	Log/Pole	12					
Black Spruce	3	Pole/Sapling	6					

93	42290 - Natural Mixed Pine	Poletimber Well	21.4	38	1-50	N/A	Still in transition from sap to pole. Enough pole present to that size ~dominant, but not yet 'well stocked' w/poles. Similar to Stand 88; rolling, hilly, some steep ridged terrain. Decent mix of natural pine has regenerated. Can-closure averages low-end of 75-100%, some patchy/semi-open areas present. BA swings= 70,20,30 (40avg).	
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Red Maple	3	Sapling/Pole	4		Beech	Medium	5 - 10 feet	Sapling
Quaking Aspen	5	Pole/Sapling	5		Ironwood	Low	10 - 20 feet	Sapling
White Pine	20	Pole/Sapling	5	38	Black Cherry	Medium	10 - 20 feet	Sapling
Red Pine	20	Pole/Sapling	6					
Jack Pine	30	Pole/Sapling	6	38				
Bigtooth Aspen	12	Pole/Sapling	5					
Balsam Fir	4	Sapling/Pole	4					
Paper Birch	3	Sapling/Pole	4					
Black Spruce	3	Sapling/Pole	4					



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments		
<b>94</b>	4133 - Aspen, Mixed Pine	Poletimber Well	16.4	59	81-110	N/A	Aspen (QA) quite consistent, mix of P/L then L/P sizes, somewhat dependent on location (could call a ~log stand). WP consistent too, w/areas of higher prominence. RP clumped in a couple areas, then scattered. Wht spruce, though not high% in canopy, is commonly scattered about (in canopy/sub-can). Decent sub-can mixture of species, WP/spruce doing well. Areas along north, west and southern boundary slope down into adjacent stands, sometimes more the gradual. Didn't observe (still had snow) but seeps could be present on some of those slopes. Trace sugar maple (pole). BA swings= 70,130,160,120,70 (110avg)		
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density		Avg. Height	Size
Bigtooth Aspen	5	Log/Pole	12		Red Maple	Medium		>20 feet	Sapling
White Spruce	5	Log/Pole/XLog	13		Red Pine	Low		>20 feet	Sapling
White Pine	12	Log/Pole/XLog	14		White Pine	High		5 - 10 feet	Sapling
Red Pine	6	Log/XLog/Pole	17		Ironwood	Low		10 - 20 feet	Sapling
Quaking Aspen	50	Pole/Log/XLog	9	59	Beech	Medium		10 - 20 feet	Sapling
Red Maple	12	Pole/Log	8		Sugar Maple	Low		>20 feet	Sapling
Balsam Fir	4	Pole/Sapling	7		Balsam Fir	Medium		Variable	Sapling
Paper Birch	3	Log/Pole	11		White Spruce	Medium		10 - 20 feet	Sapling
Jack Pine	3	Log/Pole	10		Balsam Fir	Medium		< 5 feet	Seeding
					White Spruce	Medium		< 5 feet	Seeding
					Witch Hazel	Low		5 - 10 feet	Tall Shrub
<b>95</b>	42290 - Natural Mixed Pine	Sawtimber Well	6.1	91	111-140	N/A		Stand is now somewhat of an 'orphan island', surrounded by past/previous harvests. South, west and northern boundary locations all slope down towards adjacent stands. Some slopes quick/steep, some a bit gradual. Interior/core was pretty stable, there is a sloping 'bowl' type depression in center. Generally composed of better quality WP/RP in canopy. Deciduous present is scattered then a bit more prevalent depending on location. BA swings, though not many taken, were a bit erratic. Beech and IW consistent in sub-can and were 'high' in areas. BA swings= 120,210,120 (150avg)	
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height		Size
Paper Birch	4	Pole/Log	9		Beech	Medium	10 - 20 feet		Sapling
White Pine	42	Log/Pole/XLog	15	91	Ironwood	Medium	10 - 20 feet		Sapling
Red Pine	36	Log/Pole/XLog	14						
Red Maple	10	Pole/Log	8						
Quaking Aspen	4	Log/Pole	12						
Bigtooth Aspen	4	Log/Pole	12						
<b>96</b>	42200 - Natural White Pine	Sawtimber Well	8.8	90	111-140	N/A	Use 98's or MIIR-Best imagery for this stand. A bit different depending whether east or west of Grass Lake Rd. East of Grass Lake Rd, WP is generally dominant/large, mixing w/RP (large too) and some deciduous stems. West of G.L. Rd, canopy WP still consistent (and some RP) but fir increases in canopy/sub-canopy as stand narrows. In west 1/3rd, stand begins to widen back out. The area surrounding Grass Lake was heavily harvested in the mid-80's, as a result ~1.4ac of the western most portion of this stand has regenerated conifer, except for a small/sub-acre patch of aspen. The small patch is now a dominated by A6 sized BTA. Immediately north of this patch is a very large beaver dam located within the outflow from Grass Lake. Old and new beaver 'sign' observed in this area. Another water course dissects the stand just west of the A6 pocket. Some larger RP overtopping thick BF saps/poles south of A6 pocket.		
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density		Avg. Height	Size
Balsam Fir	6	Pole/Sapling	7		Red Maple	Medium		>20 feet	Sapling
Red Maple	7	Pole/Log	8		White Pine	Medium		10 - 20 feet	Sapling
Paper Birch	5	Pole	8		Tag Alder	Low		5 - 10 feet	Tall Shrub
Bigtooth Aspen	2	Pole	8	36	Beech	Medium		10 - 20 feet	Sapling
White Pine	60	Log/Pole/XLog	15	90	Balsam Fir	Medium		Variable	Sapling
Red Pine	10	Log/XLog/Pole	17		Serviceberry (Juneberry)	Low		10 - 20 feet	Sapling
Red Oak	3	Log/Pole	14		Black Cherry	Medium		Variable	Sapling
Quaking Aspen	5	Log/Pole	11		Red Oak	Low		10 - 20 feet	Sapling
Hemlock	2	Log/Pole	10		Ironwood	Low		10 - 20 feet	Sapling
					Hazelnut (Beaked)	Low		5 - 10 feet	Tall Shrub
					Hawthorn (spp.)	Low	5 - 10 feet	Tall Shrub	





Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments				
<b>97</b>	42290 - Natural Mixed Pine	Sawtimber Well	4.3	94	141-170	N/A	McDonald '11: Steep slope with nice timber. More and more hardwood becoming part of the stand. This portion was left out of the sale when stand 98 was cut due to the steep terrain. JSP '21: Stand is on some steeper ground, has been cut up to but excluded from harvest(s) on nearly all sides. Southern area mixing w/NHWD species before remainder of stand becomes primarily pine dominant. Beech and IW saps 'high' in areas. BA swings= 140,140,170 (150avg)				
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species		Density	Avg. Height	Size	
Red Maple		12	Pole/Log	8		Beech		Medium	10 - 20 feet	Sapling	
Paper Birch		5	Pole/Log	9		Ironwood		Medium	10 - 20 feet	Sapling	
Bigtooth Aspen		4	Log/Pole	12		Balsam Fir		Low	10 - 20 feet	Sapling	
White Pine		37	Log/Pole/XLog	15	94						
Red Pine		32	Log/Pole/XLog	14							
Hemlock		2	Pole/Log	8							
Basswood		2	Log/Pole	11							
Sugar Maple		3	Pole/Log	8							
Quaking Aspen		3	Log/Pole	12							
<b>98</b>	42290 - Natural Mixed Pine	Sawtimber Medium	4.3	94	81-110	N/A		Thin+removal type harvest in '05. Most merch deciduous cut out, then marking thin of pine. Southern/narrow 'tail' area has far fewer residual stems and is more sapling dominant. Generally a mix of conifer saps (WP,JP,Sprc,BF,some RP) at 50-75% closure in south. The northern 'block' shaped area is dominated by large/tall WP/RP with a can-closure that very much fits into 75-100%. North block has a sub-can of desirable and non-desirable saps depending on location. Some areas quite heavy to beech saps, others w/more WP+other conifer. Variable WP/RP diameters (pole to legacy, saps too). BA swings= 90,130,100 (106avg)			
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species			Density	Avg. Height	Size
White Pine		47	Log/Pole/XLog	17	94	Red Maple			Medium	Variable	Sapling
Red Pine		42	Log/Pole/XLog	17	94	Beech			Medium	10 - 20 feet	Sapling
White Spruce		2	Log/Pole	10		Ironwood			Medium	10 - 20 feet	Sapling
Red Maple		6	Pole/Sapling	7		Balsam Fir			Medium	Variable	Sapling
Paper Birch		3	Pole/Log	9		White Pine			Medium	10 - 20 feet	Sapling
						Jack Pine			Low	Variable	Sapling
						Red Pine			Low	10 - 20 feet	Sapling
						Black Spruce			Low	Variable	Sapling
						Sugar Maple			Trace	Variable	Sapling
						Black Cherry			Medium	10 - 20 feet	Sapling
						White Oak			Trace	5 - 10 feet	Sapling
<b>99</b>	42200 - Natural White Pine	Sawtimber Well	3.0	95	141-170	N/A	Small stand of generally large and xlog WP. Mix of decent/ok quality, then quite a few weevil damaged/poor forms. Some WP remain single stemmed all the way up, others branch out into 2-3 stems after ~20ft or more above the ground. Most appear to be good seed producers. Desirable WP, spruce and cherry saps populate areas of the sub-canopy. BA swings= 230,150,140 (173avg)				
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species			Density	Avg. Height	Size
White Spruce		3	Pole	7		Red Maple		Low	>20 feet	Sapling	
Quaking Aspen		10	Log/Pole	11		Balsam Fir		Medium	10 - 20 feet	Sapling	
White Pine		80	XLog/Log/Pole	18	95	White Pine		Medium	10 - 20 feet	Sapling	
Red Pine		5	Log/XLog	15		Beech		Medium	Variable	Sapling	
Jack Pine		2	Log	10		White Spruce		Medium	10 - 20 feet	Sapling	
						Black Cherry		Medium	10 - 20 feet	Sapling	
<b>100</b>	6112 - Lowland Aspen	Poletimber Poor	19.6	84	Unspecified	N/A	'11: Scattered aspen and balm along the river bottom. '21: Observed from the edge in a few areas. Stand is somewhat of a 'catch all', instead of breaking/splitting things out. ~One acre clump of NWC in north. Tamarack, spruce and quaking aspen as you move south from the cedar. Didn't see interior areas west of the Pigeon River. Small polygon east of the river had dense alder and some scattered NWC. Didn't see what populates the island in the middle of river (adjacent to the horse campground).				
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species		Density	Avg. Height	Size	
Quaking Aspen		55	Log/Pole	10	84	Black Ash		Medium	5 - 10 feet	Sapling	
Balsam Poplar		15	Pole	9		Tag Alder		High	5 - 10 feet	Tall Shrub	
Northern White Cedar		10	Pole/Log/XLog	9							
Tamarack		10	Pole/Log	9							
Black Spruce		10	Pole/Log	8							



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments		
<b>101</b>	42290 - Natural Mixed Pine	Poletimber Well	4.2	44	51-80	N/A	Believe this stand was roller chopped mid-70's w/Stand 103. On the level/flat ground portion of the stand, most stems are small pole/large sap size. However, a small clump of BF just south of Stand 99 has some surprisingly larger stems. Brief portions along west boundary 'spill-off' the slope that then leads down through Stand 92 into Pigeon River. A few more pole sized stems in the 'spill-over' area. Some decent WP stocking in spots. Except for the clump of BF, the remainder of stand is primarily non-merch, likely needs ~two or more rotations. Trace P/S black cherry. BA swings= 60,40,80,80,30,50 (56avg)		
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density		Avg. Height	Size
Balsam Fir	8	Pole/Sap/Log	7		White Spruce	Medium		10 - 20 feet	Sapling
Quaking Aspen	8	Pole/Sapling	6		Balsam Fir	Medium		Variable	Sapling
White Pine	18	Pole/Sap/Log	6		White Pine	Medium		10 - 20 feet	Sapling
Red Pine	5	Log/Pole	10		Jack Pine	Low		>20 feet	Sapling
Jack Pine	55	Pole/Sap/Log	6	44	Beech	Low		10 - 20 feet	Sapling
Red Maple	3	Pole	7						
White Spruce	3	Pole/Sap/Log	9						
<b>102</b>	42210 - Natural Red Pine	Sawtimber Medium	4.8	94	81-110	N/A		McDonald '11: Cut '05, RP thinned and other species removed. Some browse damage on aspen. JSP '21: Didn't see much of the S1/2, or any aspen regen per Rick's comment above (so south might have some aspen). Residual BA was variable, can-closure high-end of 50-75% overall, was 75-100% in some areas. Variable sub-can stocking of both desirable and some non-desire. WP regen quite good, not always consistent though, similar story for BE. Residuals I observed appeared healthy. BA swings= 70,130,70 (90avg).	
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height		Size
White Pine	4	Log/Pole/XLog	11	94	Beech	High	10 - 20 feet		Sapling
Red Pine	90	Log/XLog/Pole	15	94	Balsam Fir	Medium	Variable		Sapling
Red Maple	4	Pole/Sapling	6		White Pine	High	10 - 20 feet		Sapling
Red Oak	2	Log/XLog	16		Ironwood	Low	10 - 20 feet		Sapling
					Jack Pine	Low	10 - 20 feet		Sapling
					Black Spruce	Medium	10 - 20 feet		Sapling
					White Spruce	Medium	10 - 20 feet		Sapling
					Black Cherry	Medium	5 - 10 feet		Sapling
					Red Pine	Low	5 - 10 feet		Sapling
<b>103</b>	4136 - Aspen, Mixed Conifer	Poletimber Well	5.6	46	81-110	N/A	McDonald '11: Stand was cut in early '70's and was roller chopped in 1974. JSP '21: Quaking aspen mixed w/conifer (sprc, BF, WP, ~some JP). Collectively, this stand could use another rotation of growth, yet the QA is showing signs of decline (QA appears offsite, conifer better suited for site). Small area (~1ac) left as a campground visual buffer present between this stand and Stand 1 (C033). Now part of Stand 92 but holds a few larger BTA, JP, other conifer/deciduous stems. BA swings= 110,90,80,60 (85avg)		
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density			Avg. Height
Red Maple	3	Pole	7		Red Pine	Low		10 - 20 feet	Sapling
Quaking Aspen	65	Pole/Log/Sap	7	46	White Pine	High		10 - 20 feet	Sapling
White Pine	8	Pole/Log	8		Balsam Fir	Medium		Variable	Sapling
Jack Pine	4	Pole	7		Black Cherry	Medium		10 - 20 feet	Sapling
Bigtooth Aspen	2	Log/Pole	11		White Spruce	Medium		10 - 20 feet	Sapling
White Spruce	8	Pole	7						
Balsam Fir	10	Pole	6						
<b>104</b>	42110 - Planted Red Pine	Sawtimber Medium	52.8	94	81-110	N/A		McDonald '11: This stand had aspen and hardwood removed in 1994. West end was cut heavier, so there is more advanced regeneration. JSP '21: Shingle Mill Pathway dips in/out along east boundary. Residual stems (from '94 harvest) still the featured stand, yet majority of sub-can is high/full w/MC type regeneration. I did not see all eastern portions of this stand. Residual BA was variable depending on location, ranged 60-140 on my swings. My eyes saw an overall can-closure that averaged the high-side of 50-75%, some areas very much 75-100% closure. Residual stems I observed appeared healthy. Advanced WP is most common in sub-can, 'High' was average w/areas of 'Full' stocking. RP/JP regen not quite as prevalent as WP, yet still overall 'High' w/areas of 'Full'. All together an encouraging mixture of natural pine regeneration and stratified structure. BA swings= 60,100,70,140,110 (96avg).	
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height		Size
Red Oak	5	Log/Pole	14		White Pine	High	10 - 20 feet		Sapling
White Pine	10	Log/Pole/XLog	14		Red Pine	High	10 - 20 feet		Sapling
Red Pine	82	Log/Pole/XLog	15	94	Jack Pine	High	>20 feet		Sapling
Jack Pine	3	Pole/Sapling	6		Beech	Medium	Variable		Sapling
					Red Maple	Low	>20 feet		Sapling
					Black Cherry	Low	Variable		Sapling
					Bigtooth Aspen	Low	>20 feet		Sapling
					White Spruce	Low	10 - 20 feet		Sapling



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments				
<b>105</b>	4130 - Aspen	Sapling Well	13.6	8	Immature	N/A	Harvested in '13, part of sale 'Grass Lake Aspen'. Stand 110 formally part of this stand (same Rx history). Other than what was the landing area and some perimeter locations, remainder of stand is regenerating well to almost exclusively QA. Zigged-zagged down middle of stand, might be some RM regen in areas, but I didn't see any. Some BF/BlkSprc saplings weren't cut/run-over. During my visit those conifer stems were about the same height as the QA regen (~10-20ft). Scattered 2-age class of older, generally large log/xlog RO,RP,WP. A strip of conifer/mixed deciduous was left as retention along the northern boundary, against lowland and watercourse portions of Stand 23. Passing regeneration survey.				
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species		Density	Avg. Height	Size	
Quaking Aspen		87	Sapling	2	8	White Pine		Low	< 5 feet	Seeding	
Balsam Fir		4	Sapling	3		Blackberry/Raspberry		Medium	< 5 feet	Tall Shrub	
Black Spruce		2	Sapling	3		Jack Pine		Trace	< 5 feet	Seeding	
White Pine		2	XLog/Log/Pole	22	94	Red Pine		Low	< 5 feet	Seeding	
Red Oak		3	Log/XLog/Pole	17	94	Balsam Fir		Medium	< 5 feet	Seeding	
Red Pine		2	Log/XLog/Pole	17	94						
<b>106</b>	6220 - Alder/willow	Nonstocked	3.0		Unspecified	No	Observed from east and northern boundary. Alder and willow with a mixture of lowland conifer/deciduous types ranging sap through some P/L. A vein of established conifer/deciduous in east, then more scattered/mixing with alder/willow brush. Wet during visit. Southern boundary is an old railroad grade and or ice/forest rd. Walked the grade in other stands, tended to be wider than most 'narrow gauge' grades I've come across in the past.				
<b>107</b>	4134 - Aspen, Spruce/Fir	Poletimber Well	3.0	35	81-110	N/A	This stand and west portion of Std.27 were formally part of Stand 20 (same Rx history). Essentially the same/similar covertype as Stand 20 but separated by beaver dam influenced/flowing watercourses in Stands 23/27. West areas were flooded/had standing water during visit. This has likely occurred more than one season, some BF saps were flagging/declining from high water level(s). Canopy stems appeared to be ok given water level, some tip-ups present. Didn't see north boundary, likely holds some larger WP (like Std.105's north boundary). Same grown over road present (in this stand) as mentioned in Stand 20 comments. Southeast mingles w/stems from Stand 27. BA swing= 80				
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species		Density	Avg. Height	Size	
Red Maple		5	Pole/Sapling	7		Red Maple		Low	>20 feet	Sapling	
Quaking Aspen		54	Pole/Sap/Log	7	35	Balsam Fir		High	10 - 20 feet	Sapling	
Balsam Fir		25	Pole/Sap/Log	5		Ironwood		Low	10 - 20 feet	Sapling	
Balsam Poplar		10	Pole/Sapling	7		Black Cherry		Medium	10 - 20 feet	Sapling	
Paper Birch		3	Pole	8		Striped Maple		Trace	>20 feet	Sapling	
Northern White Cedar		3	Log/Pole	12		White Spruce		Low	Variable	Sapling	
						Tag Alder		Low	5 - 10 feet	Tall Shrub	
<b>108</b>	429 - Mixed Upland Conifers	Sapling Well	6.7	36	1-50	N/A	Split out of Stand 28, harvested mid-80's w/Std28. Tends to be conifer dominant with a fairly wide range of those species present. Mix of sap/pole and pole/sap sizes, still overall 'sap' sized. Moving towards 'pole sized', likely next ~10-15yrs. Patchy/clumpy stocking, low-end of 75-100% can-closure seemed about average. Observed some scattered, likely residual WP/RP stems. BA swings= 40,30 (35avg)				
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species		Density	Avg. Height	Size	
Bigtooth Aspen		10	Pole/Sapling	6		Black Cherry		Low	5 - 10 feet	Sapling	
Balsam Fir		30	Sapling/Pole	4	36						
White Pine		15	Pole/Sap/Log	5							
Jack Pine		12	Pole/Sapling	5							
Red Pine		12	Pole/Sapling	5							
Black Spruce		8	Sapling/Pole	4							
Red Maple		8	Sapling/Pole	4							
Quaking Aspen		5	Sapling/Pole	4							



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
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**109** 6128 - Lowland Coniferous, Mixed Deciduous Poletimber Medium 2.5 104 51-80 N/A

Saw from distance while in Stand 100. Appeared to be a mixture of spruce, larch, NWC, BF and some aspen. Relying (heavily) on what McDonald had listed during previous inventory.

Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Paper Birch	8	Log/Pole	10		Balsam Fir	Medium	< 5 feet	Sapling
Balsam Fir	3	Pole/Sapling	8		Black Spruce	Low	5 - 10 feet	Sapling
White Spruce	5	Log/Pole	10		Tamarack	Low	5 - 10 feet	Sapling
Black Spruce	12	Pole/Sapling	8		Tag Alder	High	5 - 10 feet	Tall Shrub
Northern White Cedar	40	Pole/Log	8	104				
Tamarack	20	Pole/Log	8					
Quaking Aspen	6	Log	12					
Balsam Poplar	6	Log/Pole	11					

**110** 4130 - Aspen Sapling Well 1.4 8 Immature N/A

Harvested in '13, part of sale 'Grass Lake Aspen'. Formally part of Stand 105. This area is part of a seasonally flooded/drainage course that appears to move water towards Grass Lake. The drainage course originates in Stand 23, then travels east through Std.27, through this stand and finally the southern arm of Std.39. Imagery available in '21 (MIBest IR) shows/ed evidence that this small area held water after being harvested (was very 'dark' on imagery). In April '21, it was dry but showed obvious signs of holding water. Anyhow, felt it necessary to segregate this stand from its parent and explain field and imagery observations. Has regenerated well to QA thus far, component of older/residual pine present.

Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Quaking Aspen	86	Sapling	2	8	White Pine	Low	< 5 feet	Seeding
Balsam Fir	4	Sapling	3		Blackberry/Raspberry	Medium	< 5 feet	Tall Shrub
Black Spruce	2	Sapling	3		Jack Pine	Trace	< 5 feet	Seeding
White Pine	6	XLog/Log/Pole	22	94	Red Pine	Low	< 5 feet	Seeding
Red Pine	2	Log/XLog/Pole	17	94	Balsam Fir	Medium	< 5 feet	Seeding

Passing regeneration survey.

**111** 429 - Mixed Upland Conifers Poletimber Well 1.5 36 51-80 N/A

Harvested in mid-80's along w/Stand 53, regenerated heavier to a mix of conifer and some deciduous. Not really pole dominated (yet) and no longer just sapling sized. A 50/50 mix of those two sizes (basically). Log sized BF present. Some of the alder was 20ft or greater. Patchy stocking in areas w/small openings present here/there. Heavily inhabited by numerous bird species during my visit. Shingle Mill Pathway briefly crosses through the southern portion of this stand. BA swings= 40,70,40 (50avg)

Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Quaking Aspen	3	Pole/Sapling	7		Hawthorn (spp.)	Low	5 - 10 feet	Tall Shrub
Red Maple	8	Sapling/Pole	4		Balsam Fir	High	Variable	Sapling
Red Oak	8	Pole/Sap/Log	5		White Pine	Medium	Variable	Sapling
Black Cherry	8	Sapling/Pole	4		Tag Alder	Medium	10 - 20 feet	Tall Shrub
Balsam Fir	46	Pole/Sap/Log	5	36				
White Pine	20	Pole/Sap/Log	6					
Red Pine	5	Sapling/Pole	4					
Black Spruce	2	Sapling	3					



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments																																																																											
<b>112</b>	4199 - Other Mixed Upland Deciduous	Sawtimber Well	3.6	92	111-140	N/A	<p>Small swath of larger timber that for most part has gone un-harvested in this area. Some of the SW interface w/Stand 33 does appear to of been cut when 33 was treated last (dense sub-can regen/BF 'high' there too). Mainly large RO (legacy observed, 30") mixed w/smaller shots of HM, RM, BF, QA, BAM and a patch of xlog/relic RP/some legacy WP in SW near flooding. Minor low ground in west near Stands 23/25, small pocket of BAM there too. Old railroad grade (I think) travels through this stand, is the south boundary in east 1/2. Trace BE (Pole). BA swings= 140,90,170,130 (132avg)</p>																																																																											
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<b>113</b>	3102 - Grass	Nonstocked	0.7	0	Unspecified	No	<p>Shingle Mill Pathway travels through this non-forested. Small grassy opening with varying size classes of quaking aspen and NHWD species along perimeter. East transitions in lower/wet ground.</p>																																																																											
<b>114</b>	42290 - Natural Mixed Pine	Sapling Well	4.7	27	1-50	N/A	<p>Formally part of Stand 2, same harvest history. Approximates an area of regenerating mixed pine/conifer, generally sap/some poles. A few residual RP, WP, RO present. Thinking this area was more JP dominant (some BTA) during the harvest in '94, likely landing location too. Overall canopy-closure low end of 75-100%, patchy/lower stocked areas in east. Other areas quite dense. JP stems generally bushy, WP/RP of decent/ok form. Elk usage obvious along southern lowland interface.</p>																																																																											
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