



Compartment Review Presentation

Pigeon River Country Forest Management Unit

Compartment 53047

Entry Year 2022

Acreage: 1,869

County Otsego

Management Area: Pigeon River Country

Revision Date: 2020-07-22

Stand Examiner: Greg Rekowski

Legal Description:

T31N R01W Sections 3, 10, and 15

Identified Planning Goals:

Maintain current species mix and apply appropriate management techniques to mature stands of timber that are in need of treatment.

Soil and topography:

The entire Compartment is dominated by loamy soils such as the Blue Lakes consociation, Morganlake-Ossineke complex, and Menominee-Bamfield complex. Topography is mostly flat to gently rolling although there are some steeper slopes in the southern part of the Compartment.

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

The entire Compartment is under State ownership.

Unique Natural Features:

Several hardwood stands in the Compartment (stand #'s 45, 81, and 82) are very high quality and have significant components of much older and larger hardwood trees that are remnants of the original hardwood forests that were never cut during the widespread clearcuts of the early 1900's. These stands have been visited by Michigan Natural Features Inventory (MNFI) staff in the past and qualify as Ecological Reference Areas (ERAs).

In addition to high quality hardwood stands, this Compartment also has several stands that contain a large component of hemlock, which is relatively rare on the PRC landscape. Stands 34, 36, 39, 54, 59, 62, 83, and 94 all have large amounts of hemlock in both the overstory and understory.

Archeological, Historical, and Cultural Features:

Stand 72 is apparently the site of an old Hanson logging camp.

Special Management Designations or Considerations:

All of Section 3 and most of Section 10 in the Compartment are included as part of the larger Tin Shanty Dedicated Habitat Area (DHA), a High Conservation Value Area (HCVA) that will be managed to maintain the habitat for Core Interior wildlife species.

Watershed and Fisheries Considerations:

No water bodies are present within this Compartment.

Wildlife Habitat Considerations:

A Wildlife representative will be available for comment at the Open House and Compartment Review.

Mineral Resource and Development Concerns and/or Restrictions

Surface sediments consist primarily of coarse textured glacial till. The glacial drift thickness varies between 600 and 800 feet. Beneath the glacial drift are the Mississippian Berea Sandstone and Bedford Shale and the Devonian Antrim Shale. The Antrim is quarried for clay/shale elsewhere in the State. The nearest gravel pit is located 3 miles to the southwest. The thick glacial moraine deposits are considered to have good gravel potential. However, page 30 of the Concept of Management for the PRC says that extraction of surface minerals will rarely be allowed. One producing oil well and oil and gas lease remain in effect, in Section 10. This area appears to have additional Guelph (Niagaran) reef trend potential, as well as Antrim Shale potential. However, the entire Compartment is in the Consent Order area and, as provided on page 33 of the Concept of Management, no new leases will be issued in this Area.

Vehicle Access:

Access is good as Tin Shanty Road runs through the middle of most of the Compartment. Closed road networks provide good walk-in access for hunting opportunities.

Survey Needs:

None identified.

Recreational Facilities and Opportunities:

The North Spur of the Shore to Shore Equestrian Trail falls on Sawdust Pile Trail which passes through the southeastern portion of Section 15

Fire Protection:

Fire risk is generally low in Sections 3 and 10 but increases in Section 15 due to a higher oak and pine component. Access, via closed roads, is good in case of any suppression activities.

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

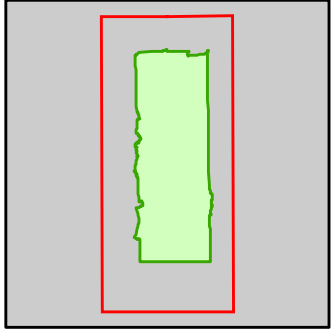


Age Class

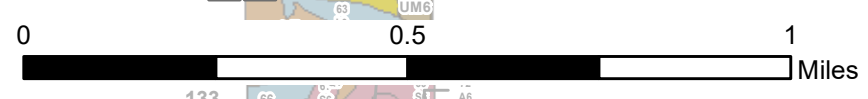
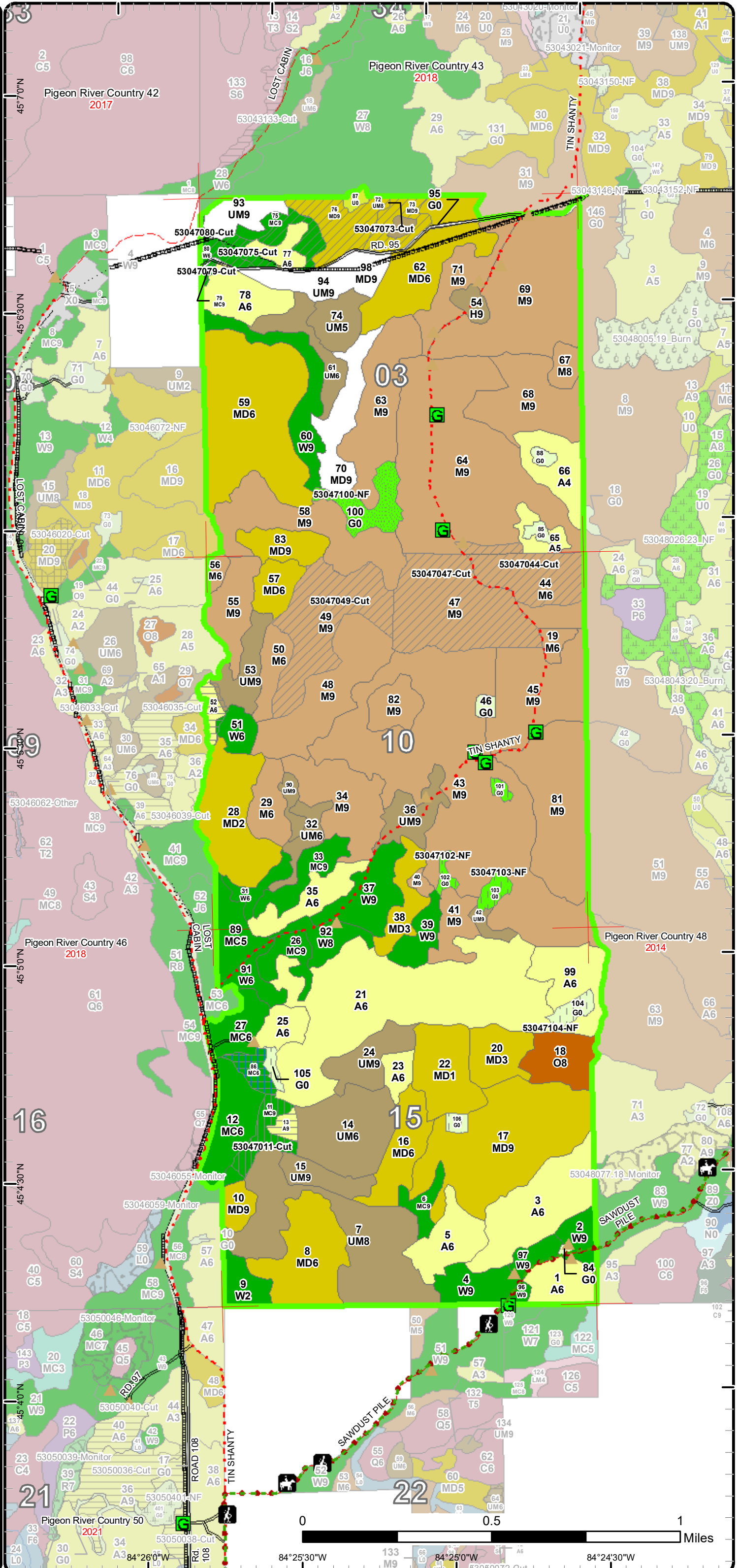
	Non-Forest	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100-109	110-119	120-129	130-139	140-149	150+	Uneven-Aged	Total
Aspen	0	0	0	30	100	132	0	0	0	3	0	0	0	0	0	0	0	0	265
Cropland	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20
Hemlock	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	4
Herbaceous Openland	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19
Low-Density Trees	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Mixed Upland Deciduous	0	0	56	12	14	0	0	32	34	217	0	0	0	0	0	0	0	11	376
Natural Mixed Pines	0	0	0	0	25	0	5	0	7	31	0	0	0	0	0	0	0	30	98
Northern Hardwood	0	0	0	0	0	0	0	0	39	466	243	0	0	0	0	0	0	10	758
Oak	0	0	0	0	0	0	0	0	0	15	0	0	0	0	0	0	0	0	15
Upland Mixed Forest	0	0	0	7	43	0	9	12	35	93	0	0	0	0	0	0	0	0	199
White Pine	0	0	0	9	0	20	8	19	24	36	0	0	0	0	0	0	0	0	115
Total	41	0	56	58	157	177	17	5	63	142	858	243	4	0	0	0	0	51	1871

Cover Type & Treatments Map

Compartment: 47
 T31N, R01W, Sec: 03, 10, 15
 County: Otsego
 Unit: Pigeon River Country
 Mgmt Area: Pigeon River Country
 YOE: 2022
 Acres: 1869.2 GIS Calculated
 Examiner: Greg Rekowski
 Map Revised: 3/1/2021
 Map Phase: Post-Review



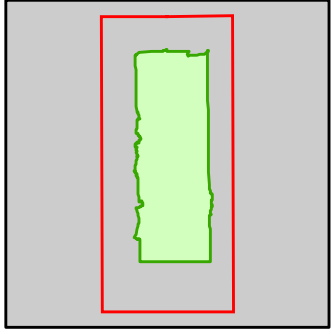
- Miris Corners
- Counties
- DNR - Secondary Forest Road
- County - Gravel Road
- County - Dirt Road (Seasonal)
- Hiking Trails
- Horse Trails
- Designated Hiking Trails
- Designated Equestrian Trails
- Intermittent Stream
- Lake/Pond
- Perennial River
- Lakes and Rivers
- Berms
- Gate
- Pipeline
- Compartment Boundary
- Clearcut (w/Reserves)
- Seed Tree (w/Reserves)
- Thinning (Crown, Low, Systematic)
- Shelter Wood (w/Reserves)
- Opening Maintenance
- Mowing
- 411 - Northern Hardwood
- 412 - Oak Types
- 413 - Aspen Types
- 419 - Mixed Upland Deciduous
- 422 - Natural Pines
- 430 - Upland Mixed Forest
- 211 - Cropland
- 310 - Herbaceous Openland
- 330 - Low Density Trees



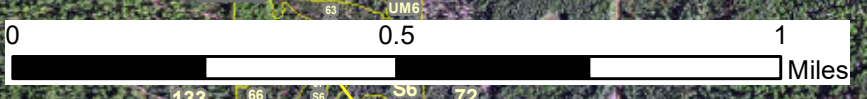
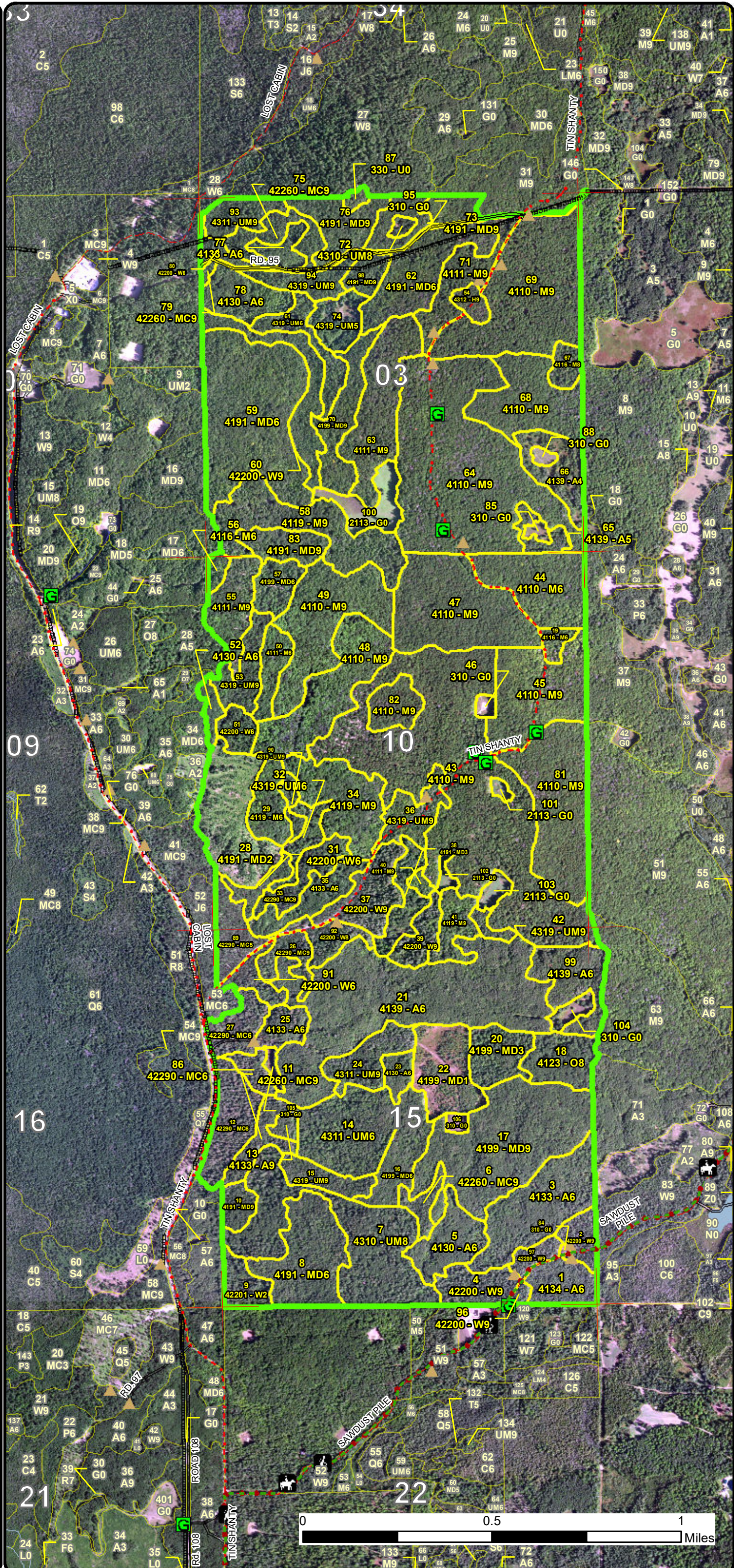
84°25'30"W 84°25'0"W 84°24'30"W

Stand Boundary Map

Compartment: 47
 T31N, R01W, Sec: 03, 10, 15
 County: Otsego
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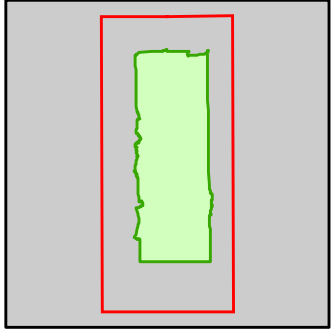


- Miris Corners
- Counties
- DNR - Secondary Forest Road
- County - Gravel Road
- County - Dirt Road (Seasonal)
- Hiking Trails
- Horse Trails
- Designated Hiking Trails
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- Intermittent Stream
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- Lakes and Rivers
- Berms
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- Compartment Boundary
- Stand Boundaries
- 411 - Northern Hardwood
- 412 - Oak Types
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- 419 - Mixed Upland Deciduous
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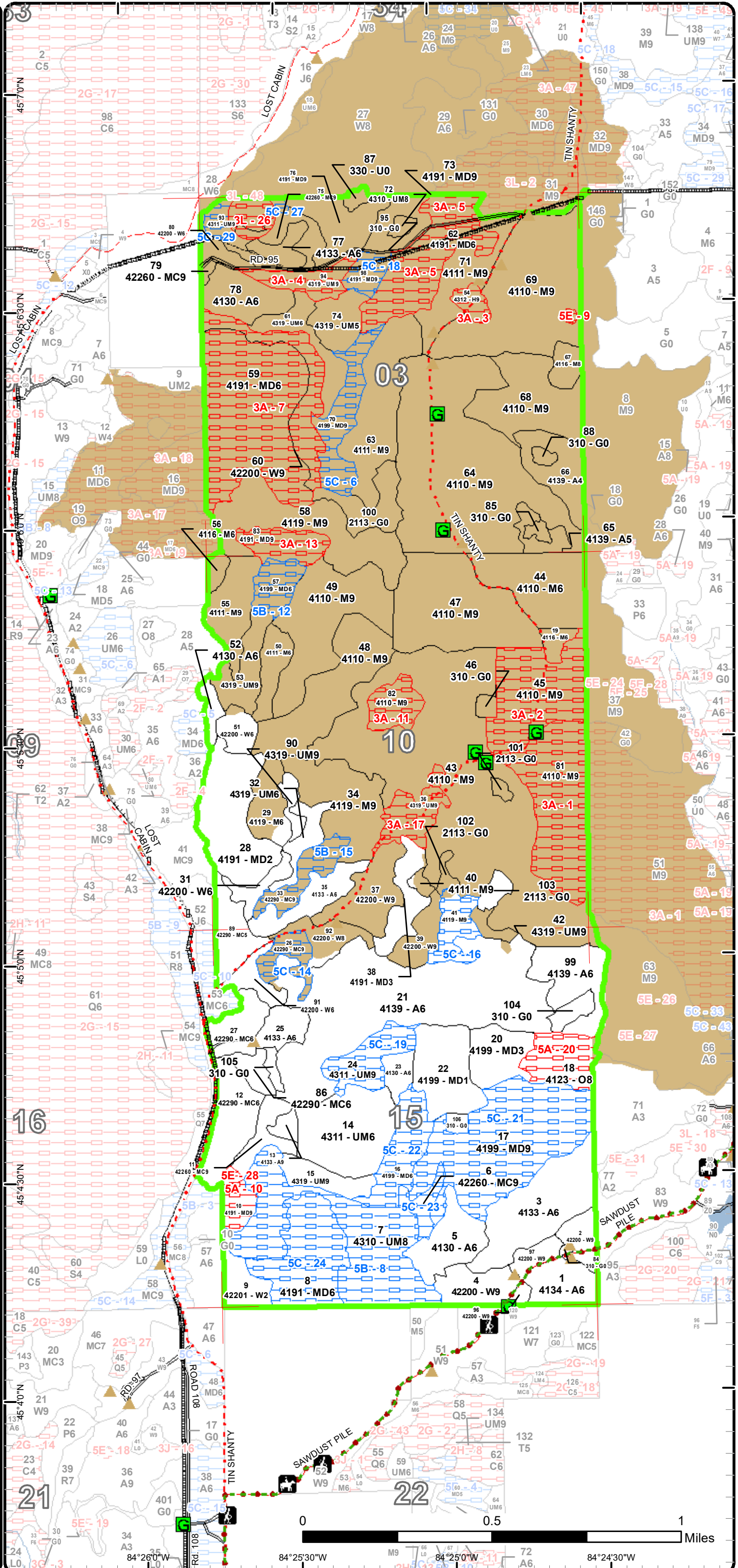


Special Conservation Areas

Compartment: 47
 T31N, R01W, Sec: 03, 10, 15
 County: Otsego
 Unit: Pigeon River Country
 Mgmt Area: Pigeon River Country
 YOE: 2022
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- Miris Corners
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 - Hiking Trails
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 - Gate
 - Pipeline
 - Compartment Boundary
 - Available w/ Constraints
 - Unavailable
- 5B: Maintain for regeneration purposes
 5C: Delay treatment for age/size class diversity or exceptional site quality
 3A: Conservation Values incompatible with harvest at this time
 3L: Other wildlife concerns
 5A: Not able to obtain desirable regeneration
 5E: Long-Term Retention
- Stand Boundaries
 - Forest Habitat Core Interior





Report 2 – Treatment Summary

Acres of Harvest

Commercial Harvest - 176
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	7	0	0	0	0	0	0	0	0	7
Mixed Upland Deciduous	0	0	0	0	0	26	0	0	0	26
Natural Mixed Pines	0	0	0	5	9	11	0	0	0	25
Northern Hardwood	0	0	0	0	0	114	0	0	0	114
White Pine	0	0	0	0	0	4	0	0	0	4
Total	7	0	0	5	9	155	0	0	0	176

Proposed and Next Step Treatments by Method

	Harvest	Site Prep	Planting	Seeding	Burning	Pesticide	Monitoring	Other	Non-Forest Mgt.	Total Acres
Current	176	0	0	0	0	0	0	28	0	203
Next Step	0	0	0	0	0	0	21	0	0	21
Total	176	0	0	0	0	0	21	28	0	225



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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Approved Treatments:

11	53047011-Cut	8.5	42260 - Natural Pine, Mixed Deciduous	Sawtimber Well	97	141-170	Harvest	Shelterwood with Retention	429 - Mixed Upland Conifers	Two-Aged	No
<p><u>Prescription</u> Mark to leave 30-40 square feet of the best quality and largest diameter red and white pine. Cut all other species except retain all oak and paper birch (trace amounts of both). Mark poor quality aspen as cut and leave trees. If present, protect any legacy size trees.</p> <p><u>Specs:</u></p> <p><u>Next Step</u> Monitoring, Natural Regen (Intermediate)</p> <p><u>Treatments:</u></p> <p><u>Acceptable Regen:</u> Fully-stocked stand dominated by red and white pine. Any additional mix of species will be acceptable.</p> <p><u>Other Comment:</u> Area retention at the far southern end on a small knob. No new roads, utilize the existing network. Use the G type to the north as a landing.</p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2021</p>											

13	53047013-Cut	2.8	4133 - Aspen, Mixed Pine	Sawtimber Well	80	141-170	Harvest	Clearcut	4319 - Mixed Upland Forest	Even-Aged	No
<p><u>Prescription</u> Clearcut all species except oak. Leave 3 large pine in the stand (18"+). Mark to leave 3-5 poor quality aspen as cut and leave trees.</p> <p><u>Specs:</u></p> <p><u>Next Step</u> Monitoring, Natural Regen (Re-Inventory)</p> <p><u>Treatments:</u></p> <p><u>Acceptable Regen:</u> Doubtful to get aspen regeneration because of browse so accept any combination of pine and hardwoods.</p> <p><u>Other Comment:</u></p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2021</p>											

44	53047044-Cut	25.1	4110 - Sugar Maple Association	Poletimber Well	84	81-110	Harvest	Crown Thinning	411 - Northern Hardwood	Uneven-Aged	No
<p><u>Prescription</u> Crown thin to 80-90 square feet focusing on removing suppressed poletimber and defective sawlog trees. No canopy gaps due to the high browse pressure in the area. Do not cut oak or elm. Leave large diameter beech with lots of rot for wildlife purposes. Leave the component of old, large diameter sugar maple (20"+).</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> The southern treatment boundary has excluded several acres of the southern part of stand 44 which has a much lower BA. This line is not exact, expect it to change. Push the northern boundary up to the closed road that goes east/west. Utilize this closed road for decking purposes. No new roads in the stand.</p> <p>Add bark slip spec.</p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2021</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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47	53047047-Cut	48.3	4110 - Sugar Maple Association	Sawtimber Well	109	111-140	Harvest	Crown Thinning	411 - Northern Hardwood	Uneven-Aged	No
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Prescription Crown thin to 80-90 square feet focusing on removing suppressed poletimber and defective sawlog trees. No canopy gaps due to the high browse pressure in the area. Do not cut oak, birch, or elm. Leave large diameter beech with lots of rot for wildlife purposes. Leave the component of old, large diameter sugar maple and basswood (20"+).

Next Step
Treatments:

Acceptable
Regen:

Other No new roads. A cleared area at the north end of the stand adjacent to Tin Shanty Road would work well for decking purposes.
Comment:

Site Condition

Proposed Start Date: 10/1 /2021

49	53047049-Cut	40.1	4110 - Sugar Maple Association	Sawtimber Well	98	111-140	Harvest	Crown Thinning	411 - Northern Hardwood	Uneven-Aged	No
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Prescription Crown thin to 80-90 square feet focusing on removing suppressed poletimber and defective sawlog trees. No canopy gaps due to the high browse pressure in the area. Do not cut oak or elm. Leave large diameter beech with lots of rot for wildlife purposes. Leave the component of old, large diameter sugar maple and basswood (20"+).

Next Step
Treatments:

Acceptable
Regen:

Other No new roads, utilize existing road network.
Comment:

Add bark slip spec.

Site Condition

Proposed Start Date: 10/1 /2021

52	53047052-Cut	4.6	4130 - Aspen	Poletimber Well	48	111-140	Harvest	Clearcut	413 - Aspen	Even-Aged	No
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Prescription Cut all species except for pine, oak, or birch. Mark to leave some aspen near the pine, oak, or birch to create clumps. No area retention due to the small size.

Next Step Monitoring, Natural Regen (Intermediate)
Treatments:

Acceptable At least a medium-stocked stand dominated by aspen.
Regen:

Other Do not extend the treatment boundary into the larger aspen clump at the south end of the stand which is a part of stand 34. This large aspen should be allowed to senesce as a part of that hardwood stand.
Comment:

Site Condition

Proposed Start Date: 10/1 /2017



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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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73	53047073-Cut	9.1	4191 - Mixed Upland Deciduous with Conifer	Sawtimber Well	94	111-140	Harvest	Crown Thinning	4191 - Mixed Upland Deciduous with Conifer	Even-Aged	No
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Prescription Thin to 80-90 square feet. Focus on removing suppressed red oak, red maple, and white pine stems from the poletimber and small sawlog size classes. Retain current species mix as much as possible and favor red oak over other deciduous species. Stay a 1/2 chain away from hemlock clumps. Leave large diameter trees (>20" DBH) as there aren't many in the stand.

Next Step
Treatments:

Acceptable
Regen:

Other Add bark slip spec. Add oak wilt spec- no exceptions.
Comment:

Site Condition

Proposed Start Date: 10/1 /2021

75	53047075-Cut	10.4	42260 - Natural Pine, Mixed Deciduous	Sawtimber Well	92	141-170	Harvest	Crown Thinning	42260 - Natural Pine, Mixed Deciduous	Even-Aged	No
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Prescription Crown thin down to 110-120 BA. Focus on removing suppressed poletimber stems. Leave large diameter pine (20"+). Unless needed to remove for operational access, retain most deciduous species in the stand (oak/maple/aspens) for diversity and wildlife purposes.

Next Step
Treatments:

Acceptable
Regen:

Other Add bark slip spec.

Comment: Short, steep slope at southeast side of treatment near the pipeline that may need to be avoided.

Add seasonal operating restrictions for the active goshawk nest to the north in stand 93.

Site Condition

Proposed Start Date: 10/1 /2021

76	53047076-Cut	16.4	4191 - Mixed Upland Deciduous with Conifer	Sawtimber Well	88	111-140	Harvest	Crown Thinning	4191 - Mixed Upland Deciduous with Conifer	Even-Aged	No
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Prescription Thin to 80-90 square feet. Focus on removing suppressed red oak, red maple, and white pine stems from the poletimber and small sawlog size classes. Retain current species mix as much as possible and favor red oak over other deciduous species. Stay a 1/2 chain away from hemlock clumps. Leave large diameter trees (>20" DBH) as there aren't many in the stand.

Next Step
Treatments:

Acceptable
Regen:

Other Add bark slip spec. Add oak wilt spec - no exceptions.

Comment: There may be some short, steep slopes along the south boundary that should be avoided when marking.

Site Condition

Proposed Start Date: 10/1 /2021



Stand
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Stand and ID	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
79	53047079-Cut	1.0	42260 - Natural Pine, Mixed Deciduous	Sawtimber Well	83	141- 170	Harvest	Crown Thinning	42260 - Natural Pine, Mixed Deciduous	Even-Aged	No
<p><u>Prescription</u> Crown thin down to 110-120 BA. Focus on removing smaller, suppressed white pine poletimber. Except for operational access, retain most deciduous species for wildlife and diversity purposes. Leave all large diameter pine (20"+).</p> <p><u>Specs:</u></p> <p><u>Next Step</u> <u>Treatments:</u></p> <p><u>Acceptable</u> <u>Regen:</u></p> <p><u>Other</u> Add bark slip spec. <u>Comment:</u></p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2021</p>											
80	53047080-Cut	4.2	42200 - Natural White Pine	Poletimber Well	83	141- 170	Harvest	Crown Thinning	4220 - Natural White Pine	Even-Aged	No
<p><u>Prescription</u> Crown thin down to 110-120 BA. Focus on removing smaller, suppressed white pine poletimber. Except for operational access, retain most deciduous species for wildlife and diversity purposes. Leave all large diameter pine (20"+).</p> <p><u>Specs:</u></p> <p><u>Next Step</u> <u>Treatments:</u></p> <p><u>Acceptable</u> <u>Regen:</u></p> <p><u>Other</u> Add bark slip spec. <u>Comment:</u></p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2021</p>											
86	53047086-Cut	5.3	42290 - Natural Mixed Pine	Poletimber Well	66	111- 140	Harvest	Seed Tree	429 - Mixed Upland Conifers	Two-Aged	No
<p><u>Prescription</u> Leave 10-20 square feet of the largest red and white pine, cut all other species. If present protect any legacy size trees. Mark poor quality aspen as cut and leave trees.</p> <p><u>Specs:</u></p> <p><u>Next Step</u> Monitoring, Natural Regen (Re-Inventory) <u>Treatments:</u></p> <p><u>Acceptable</u> Fully-stocked stand consisting of mixed pine regeneration. Any additional mix of species will be acceptable. <u>Regen:</u></p> <p><u>Other</u> Use the G type as the landing. <u>Comment:</u></p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2021</p>											
100	53047100-NF	12.3	2113 - Forage Crops Nonstocked			Unspec ified	NonForestMgt	Mowing	2113 - Forage Crops		No
<p><u>Prescription</u> Maintain the non-forested condition of this stand by burning, herbicide, or mechanical means.</p> <p><u>Specs:</u></p> <p><u>Next Step</u> <u>Treatments:</u></p> <p><u>Acceptable</u> <u>Regen:</u></p> <p><u>Other</u> <u>Comment:</u></p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2021</p>											



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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101	53047101-NF	1.5	2113 - Forage Crops	Nonstocked		Unspec ified	NonForestMgt	Herbaceous/Crop /Grass Planting	2113 - Forage Crops	No
<p><u>Prescription</u> Maintain the non-forested condition of this stand by burning, herbicide, or mechanical means. <u>Specs:</u> <u>Next Step</u> <u>Treatments:</u> <u>Acceptable</u> <u>Regen:</u> <u>Other</u> <u>Comment:</u> <u>Site Condition</u> <u>Proposed Start Date:</u> 10/1 /2021</p>										
102	53047102-NF	2.2	2113 - Forage Crops	Nonstocked		Unspec ified	NonForestMgt	Herbaceous/Crop /Grass Planting	2113 - Forage Crops	No
<p><u>Prescription</u> Maintain the non-forested condition of this stand by burning, herbicide, or mechanical means. <u>Specs:</u> <u>Next Step</u> <u>Treatments:</u> <u>Acceptable</u> <u>Regen:</u> <u>Other</u> <u>Comment:</u> <u>Site Condition</u> <u>Proposed Start Date:</u> 10/1 /2021</p>										
103	53047103-NF	3.6	2113 - Forage Crops	Nonstocked		Unspec ified	NonForestMgt	Herbaceous/Crop /Grass Planting	2113 - Forage Crops	No
<p><u>Prescription</u> Maintain the non-forested condition of this stand by burning, herbicide, or mechanical means. <u>Specs:</u> <u>Next Step</u> <u>Treatments:</u> <u>Acceptable</u> <u>Regen:</u> <u>Other</u> <u>Comment:</u> <u>Site Condition</u> <u>Proposed Start Date:</u> 10/1 /2021</p>										
104	53047104-NF	4.1	310 - Herbaceous Openland	Nonstocked		Unspec ified	NonForestMgt	Herbaceous/Crop /Grass Planting	2113 - Forage Crops	No
<p><u>Prescription</u> Maintain the non-forested condition of this stand by burning, herbicide, or mechanical means. <u>Specs:</u> <u>Next Step</u> <u>Treatments:</u> <u>Acceptable</u> <u>Regen:</u> <u>Other</u> <u>Comment:</u> <u>Site Condition</u> <u>Proposed Start Date:</u> 10/1 /2021</p>										



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Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
105 53047105-NF	2.0	310 - Herbaceous Openland	Nonstocked		Unspec ified	NonForestMgt	Herbaceous/Crop /Grass Planting	2113 - Forage Crops		No
<p><u>Prescription</u> Maintain the non-forested condition of this stand by burning, herbicide, or mechanical means. <u>Specs:</u> <u>Next Step</u> <u>Treatments:</u> <u>Acceptable</u> <u>Regen:</u> <u>Other</u> <u>Comment:</u> <u>Site Condition</u> <u>Proposed Start Date:</u> 10/1 /2021</p>										
106 53047106-NF	1.9	310 - Herbaceous Openland	Nonstocked		Unspec ified	NonForestMgt	Herbaceous/Crop /Grass Planting	2113 - Forage Crops		No
<p><u>Prescription</u> Maintain the non-forested condition of this stand by burning, herbicide, or mechanical means. <u>Specs:</u> <u>Next Step</u> <u>Treatments:</u> <u>Acceptable</u> <u>Regen:</u> <u>Other</u> <u>Comment:</u> <u>Site Condition</u> <u>Proposed Start Date:</u> 10/1 /2021</p>										

Total Treatment 203.4
Acreage Proposed:

Availability for Management

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

Dominant Site Conditions

5B 5C 3A 3L 5A 5E

Total Acres	Acres Available	Acres Avail With Condition	Acres Not Available	Dominant Site Condition	5B	5C	3A	3L	5A	5E
264	264	0	0	Aspen						
19	19	0	0	Cropland						
4	0	0	4	Hemlock			4			
19	19	0	0	Herbaceous Openland				0		
2	2	0	0	Low-Density Trees						
377	107	150	119	Mixed Upland Deciduous	10	141	113		6	
98	70	25	3	Natural Mixed Pines	11	14		2		1
757	654	10	93	Northern Hardwood		10	92			1
15	0	0	15	Oak					15	
199	93	78	28	Upland Mixed Forest	58	20	23	5		
115	96	0	19	White Pine			19			
1,869	1,324	263	282	Total Forested Acres	78	185	251	7	22	2
	71%	14%	15%	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	3A: Conservation Values incompatible with harvest at this time	46	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Stand was nominated as an SCA last inventory cycle and is now a part of the Tin Shanty DHA. MNFI staff have visited this stand and indicated that it would qualify as an ERA (mesic hardwoods).							
2	Unavailable	3A: Conservation Values incompatible with harvest at this time	37	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Stand was nominated as an SCA last inventory cycle and is now a part of the Tin Shanty DHA. MNFI staff have visited this stand and indicated that it would qualify as an ERA (mesic hardwoods).							

Report 4 – Site Conditions

Pigeon River Country Mgt. Unit

Compartment: 47

Greg Rekowski : Examiner

Year of Entry: 2022

3	Unavailable	3A: Conservation Values incompatible with harvest at this time	4	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
4	Unavailable	3A: Conservation Values incompatible with harvest at this time	10	Unspecified	Unspecified	Unspecified	Unspecified
Comments: High hemlock component, no management.							
5	Unavailable	3A: Conservation Values incompatible with harvest at this time	34	Unspecified	Unspecified	Unspecified	Unspecified
Comments: High hemlock component, both in the overstory and understory. No management.							
6	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	19	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Manage for a mixed hardwood/oak/pine stand. Thin when stand 63 is thinned again.							
7	Unavailable	3A: Conservation Values incompatible with harvest at this time	87	Unspecified	Unspecified	Unspecified	Unspecified
Comments: High hemlock component, leave this stand unmanaged.							
8	Available	5B: Maintain for regeneration purposes	58	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							

Report 4 – Site Conditions

Pigeon River Country Mgt. Unit

Compartment: 47

Greg Rekowski : Examiner

Year of Entry: 2022

9	Unavailable	5E: Long-Term Retention	1	Unspecified	Unspecified	Unspecified	Unspecified
<p>Comments: Stick nest buffer.</p>							
10	Unavailable	5A: Not able to obtain desirable regeneration	6	Unspecified	Unspecified	Unspecified	Unspecified
<p>Comments: Elk browse is too heavy in this area to regenerate oak or hardwoods on a high quality site like this.</p>							
11	Unavailable	3A: Conservation Values incompatible with harvest at this time	10	Unspecified	Unspecified	Unspecified	Unspecified
<p>Comments: Potential ERA</p>							
12	Available	5B: Maintain for regeneration purposes	10	Unspecified	Unspecified	Unspecified	Unspecified
<p>Comments: Let the second age class mature before making a treatment decision.</p>							
13	Unavailable	3A: Conservation Values incompatible with harvest at this time	11	Unspecified	Unspecified	Unspecified	Unspecified
<p>Comments: High hemlock component.</p>							
14	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	8	Unspecified	Unspecified	Unspecified	Unspecified
<p>Comments:</p>							

Report 4 – Site Conditions

Pigeon River Country Mgt. Unit

Compartment: 47

Greg Rekowski : Examiner

Year of Entry: 2022

15	Available	5B: Maintain for regeneration purposes	11	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
16	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	11	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
17	Unavailable	3A: Conservation Values incompatible with harvest at this time	13	Unspecified	Unspecified	Unspecified	Unspecified
Comments: High hemlock component, both in the overstory and understory.							
18	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	6	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Let BAs increase before treating.							
19	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	15	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Hold an entry and treat at the same time as stand 21.							
20	Unavailable	5A: Not able to obtain desirable regeneration	15	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Oak on a hardwood site, successful regeneration unlikely at current browse levels.							

Report 4 – Site Conditions

Pigeon River Country Mgt. Unit

Compartment: 47

Greg Rekowski : Examiner

Year of Entry: 2022

21	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	66	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Dependent on browse levels, consider treating this stand next entry along with the adjacent aspen stands to the south. This may create a big enough patch size to help alleviate browse concerns.							
22	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	18	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Manage for oak and hardwoods, thin at a later time.							
23	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	6	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Manage with stand 17.							
24	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	32	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
26	Unavailable	3L: Other wildlife concerns	7	Unspecified	Unspecified	Unspecified	Unspecified
Comments: 5 chain buffer for active goshawk nest.							
27	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	1	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							

Report 4 – Site Conditions

Pigeon River Country Mgt. Unit

Compartment: 47

Greg Rekowski : Examiner

Year of Entry: 2022

28	Unavailable	5E: Long-Term Retention	1	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
29	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	4	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							

Mgt. Unit

Compartment: #Type!

Year of Entry:



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

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

SCA Name	SCA Category	Detail Type	Recommendation	Acres
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Comments

Mgt. Unit

Compartment:

Year of Entry



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
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Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments																																															
1	4134 - Aspen, Spruce/Fir	Poletimber Well	13.0	37	81-110	N/A	Stand becomes progressively wetter and has more of a spruce/fir component as you move south. Some pockets look like they hold water in the spring (lots of bunchberry at the ground level). Aspen is healthy in the wet areas with diameters running around 6-7" on average. Aspen quality declines significantly in the drier north half, with diameters barely merchantable and many stems appearing close to death. Trace of paper birch. Average ba/acre from 6 plots = 93 square feet.																																															
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2	42200 - Natural White Pine	Sawtimber Well	7.6	57	81-110	N/A	Moderate quality white pine stand with a wide variety of diameters including some large legacy-size trees. Patches of white pine poletimber are more numerous in the south half of the stand. Could almost consider this stand uneven-aged as there may be 3 age classes present. Some areas aren't very well-stocked as it looks like there used to be more jack pine in the stand but it is now mostly dead. Aspen quality is very low and some are close to death. Average ba/acre from 5 plots = 92 square feet. Allow the stand to mature and treat with stand 83 to the east in Compartment 48.																																															
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3	4133 - Aspen, Mixed Pine	Poletimber Well	35.1	37	81-110	N/A	Stand was harvested in 1986 by George Kimball in the sale Red Oak Ridge (#53-011-83). All species were cut except for red oak. Aspen regenerated moderately well although there are several areas where it is not dominant which is due to heavy browse damage that was noted by previous stand examiners. Heavily browsed areas are now mostly filled in with pine and red maple. Diameters on the aspen tend to vary with some areas just reaching merchantability. Trace of red pine. Average ba/acre from 8 plots = 101 square feet. Rolling terrain but no inoperable slopes. Consider grouping with stands 5, 7, 8, and 17 next entry.																																															
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4	42200 - Natural White Pine	Sawtimber Well	12.7	83	111-140	N/A	Stand was harvested in 1993 by Gary Haskill in the sale Rumbling Antrim Aspen (#53-009-92). Everything was cut except for oak, red pine, and white pine. Stocking is variable as a result of the species removal and BAs are still high except for a few areas along the southern boundary. Regeneration came back primarily to red maple with a few clumps of bigtooth aspen scattered throughout. The residual pine is mostly high quality with some large white pine approaching legacy tree size scattered throughout. There are also some suppressed white pine poletimber stems that are old for their size. Average ba/acre from 5 plots = 112 square feet. Flat terrain.																																															
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5	4130 - Aspen	Poletimber Well	16.7	28	81-110	N/A	Stand harvested by Gary Haskill in 1993 in the sale Rumbling Antrim Aspen (#53-009-92). Aspen regenerated well except for in a few areas which have now filled in with mostly white pine. Diameters on the aspen vary considerably with some areas still in the sapling stage. Trace of sugar maple. Average ba/acre from 6 plots = 95 square feet. Rolling terrain but no inoperable slopes. Consider grouping with stands 3, 7, 8, and 17 next entry.																																															
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Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments		
6	42260 - Natural Pine, Mixed Deciduous	Sawtimber Well	5.9	85	111-140	N/A	Mixed species stand of only moderate quality. The east half of the stand sits on a west-facing side-slope that has a lot of white pine in both the overstory and understory but most species in this area are low quality. The northwestern "finger" of the stand is a pocket of dense, high quality pine (this is where most of the red pine is) and also has a few hardwoods mixed in as the site quality is better. There is a trace of hemlock in this area as well. Both ages verified from trees in the stand. Average ba/acre from 6 plots = 138 square feet. No management at this time, continue to let the white pine understory to develop.		
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density		Avg. Height	Size
Red Pine	9	Log/XLog	14	115	White Pine	High		Variable	Sapling
Red Oak	13	Log	14		Red Maple	Trace		>20 feet	Sapling
Sugar Maple	1	Pole/Log	8		Sugar Maple	Trace		>20 feet	Sapling
Bigtooth Aspen	13	Log/Pole	12		Witch Hazel	Low		5 - 10 feet	Tall Shrub
Red Maple	12	Pole	7						
White Pine	52	Log/Pole/XLog	12	85					
7	4310 - Pine, Oak Mix	Sawtimber Medium	57.9	94	51-80	N/A	Moderate to high quality stand of oak and pine. This stand was harvested by Gary Haskill in 1992 in the sale Rumbling Antrim Aspen (#53-009-92-01). Everything was cut except for red oak, red pine, white pine, and hemlock. Regeneration came back well but is almost exclusively red maple and white pine. The far northwest corner of the stand has a little red pine regeneration in what looks like the old landing. Most red maple saplings have wounds up and down the lower bole from elk stripping off the bark. Clumps of hemlock are present in the far southeast corner of the stand. Trace of beech, sugar maple, and red maple poletimber in the overstory. Average ba/acre from 13 plots = 76 square feet. Rolling terrain but no inoperable slopes. Current browse levels make successful regeneration of oak very unlikely. Consider cutting with stands 3, 5, 8, and 17 next entry. Do an oak shelterwood harvest and retain the large diameter (>20" pine).		
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density		Avg. Height	Size
Hemlock	2	Pole/Log	9		Red Maple	High		>20 feet	Sapling
Red Pine	6	Log/XLog	15		White Pine	Medium		Variable	Sapling
White Pine	34	Log/XLog	15		Sugar Maple	Trace		>20 feet	Sapling
Red Oak	58	Log/XLog	14	94	Striped Maple	Trace		Variable	Sapling
					Red Pine	Trace		>20 feet	Sapling
					Witch Hazel	Medium		5 - 10 feet	Tall Shrub
8	4191 - Mixed Upland Deciduous with Conifer	Poletimber Well	32.2	70	111-140	N/A	Mixed species stand of varying quality. Similar to nearby stands the oak and pine display the best quality in the stand while aspen and red maple are generally poor quality. No sale records exist but the stand appears to be two-aged based on the presence of a larger oak and pine component. The aspen component is clumpy and not uniform throughout. Trace of paper birch, beech, and balsam fir. Average ba/acre from 11 plots = 119 square feet. Rolling terrain but no inoperable slopes. Current deer and elk browse levels make oak and aspen regeneration very doubtful for this stand. Consider cutting with stands 3, 5, 8, and 17 next entry. Do a shelterwood harvest, managing for oak and pine.		
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density		Avg. Height	Size
Sugar Maple	1	Pole	6		White Pine	High		Variable	Sapling
Red Maple	24	Pole	7		Red Maple	Trace		>20 feet	Sapling
Red Pine	7	Log/Pole/XLog	10		Witch Hazel	Low		5 - 10 feet	Tall Shrub
White Pine	24	Pole/Log/XLog	8	70					
Red Oak	22	Log/Pole	12	97					
9	42201 - Natural White Pine, Mixed Deciduous	Sapling Medium	8.9	29	1-50	N/A	Poor quality stand that is a result of a clearcut in 1992 (Rumbling Antrim Aspen, cut by Gary Haskill). A scattered residual of red oak and white pine were left (<10 BA). Heavy deer and elk browse has occurred on all canopy and subcanopy species, including even some of the smaller white pine. Most red maple stems are being girdled by elk stripping off the bark from the lower boles. The white pine is mostly low quality from continued weevil damage. Only one small clone of aspen made it past the browse and can be found in the northwest corner of the stand. Trace of red pine. Average ba/acre from 6 plots = 42 square feet.		
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density		Avg. Height	Size
Ironwood	2	Sapling	2		Witch Hazel	Medium		Variable	Tall Shrub
Bigtooth Aspen	10	Pole/Sapling	5		Black Cherry	Low		Variable	Tall Shrub
Red Oak	8	Log/XLog	15						
Red Maple	20	Sapling	3						



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
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10 4191 - Mixed Upland Deciduous with Conifer Sawtimber Well 6.1 94 111-140 N/A

Canopy Species	% Cover	Size Class	DBH	Age
Bigtooth Aspen	9	Log/Pole	11	
Sugar Maple	4	Pole	5	
Red Maple	16	Pole	6	
White Pine	26	Log/XLog	15	
Red Pine	14	Log/XLog	15	
Red Oak	31	Log/XLog	15	94

Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	Low	>20 feet	Sapling
Red Maple	Low	>20 feet	Sapling
White Pine	Medium	Variable	Sapling
Hemlock	Trace	Variable	Sapling
Hemlock	Trace	Variable	Pole
Witch Hazel	Trace	5 - 10 feet	Tall Shrub

Nice stand of oak and natural pine. The southeast 1/2 of the stand has better site quality and more of a hardwood influence. There are also a couple clumps of suppressed hemlock in the understory in this area. The middle of the stand has a dense pocket of pine. Trace of basswood and paper birch. Average ba/acre from 5 plots = 128 square feet. Most of the stand sits on west facing side-slopes with a small valley running east-west through the middle. At current browse levels this stand would not successfully regenerate using even-aged or two-aged techniques. Leave alone for now and look at thinning in the future.

OPIC - FMD: RECOMMEND LETTING THIS STAND CONVERT NATURALLY TO WHITE PINE. IF HARVESTED, I DO NOT BELIEVE THAT IT WOULD SUCCESSFULLY REGENERATE ITSELF DUE TO SITE FACTORS AS WELL AS EXCESSIVE ELK BROWSING.

11 42260 - Natural Pine, Mixed Deciduous Sawtimber Well 9.7 97 141-170 N/A

Canopy Species	% Cover	Size Class	DBH	Age
Quaking Aspen	1	Pole	8	
Bigtooth Aspen	19	Log/Pole	11	80
Red Oak	2	Log/XLog	15	
Red Maple	9	Pole	6	
White Pine	21	Log/Pole/XLog	12	
Red Pine	48	Log/XLog	14	97

Sub-Canopy Species	Density	Avg. Height	Size
White Pine	Medium	Variable	Sapling
Red Maple	Low	>20 feet	Sapling
Witch Hazel	Low	5 - 10 feet	Tall Shrub

Nice natural pine stand with at least 2 age classes of mature pine present. In addition to the 96 year old stand age, another red pine was cored at 110 years old. There are a few very dense clumps of pine, one at the far southwest end and another in the finger that extends east. Aspen is not uniform throughout and tends to be most common in the central part of the stand. Trace of paper birch. Average ba/acre from 8 plots = 148 square feet. Rolling terrain in the south half of the stand.

12 42290 - Natural Mixed Pine Poletimber Well 19.8 59 81-110 N/A

Canopy Species	% Cover	Size Class	DBH	Age
Black Spruce	1	Pole	5	
Bigtooth Aspen	1	Log/Pole	10	
Jack Pine	2	Pole	8	
Red Pine	46	Log/XLog/Pole	13	113
White Pine	50	Pole/Log/XLog	8	59

Sub-Canopy Species	Density	Avg. Height	Size
White Pine	High	Variable	Sapling
Red Pine	Trace	Variable	Sapling
Black Spruce	Trace	Variable	Sapling

Complex stand with several age and size classes present although poletimber is the dominant size class. The different age and size classes are as follows; scattered large, old XL-sized trees (age 112), poletimber and smaller sawlog trees (age 58), and then more recent sapling ingrowth (age 29). Harvesting took place in both 1980 and 1991 which added to the complexity of the stand. Trace of red oak. Average ba/acre from 7 plots = 91 square feet. Flat terrain. No management until the smaller poletimber matures.

13 4133 - Aspen, Mixed Pine Sawtimber Well 2.8 80 141-170 N/A

Canopy Species	% Cover	Size Class	DBH	Age
Paper Birch	1	Pole/Log	9	
White Pine	14	Pole/Log	9	
Red Pine	17	Pole/Log	9	
Red Oak	4	Log/XLog	15	
Red Maple	15	Pole	6	
Bigtooth Aspen	49	Log/Pole	11	80

Sub-Canopy Species	Density	Avg. Height	Size
White Pine	Medium	Variable	Sapling
Witch Hazel	Low	5 - 10 feet	Tall Shrub

Moderate quality aspen stand. Some quality pine is present but a lot of it is poletimber overtopped by aspen. A few XL-sized red and white pine are present. Average ba/acre from 3 plots = 167 square feet. Stand sits on somewhat of a knob. Due to the small acreage and high browse pressure in the area, it is very unlikely that aspen will successfully regenerate here.



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments				
14	4311 - Pine, Aspen Mix	Poletimber Well	31.8	36	81-110	N/A	Stand was harvested in 1985 by George Kimball in the sale Red Oak Ridge (#53-011-83). All species except oak were cut. The stand regenerated well and is variable in composition. The aspen component is mostly along the east edge and northwest corner. The remainder of the stand has primarily white pine and red maple. Much of the white pine is clumpy and many of the clumps look like they were advanced regeneration that were protected during the harvest (see 98DOQ imagery). The red oak residual is scattered infrequently throughout. Northwest corner has some patches of red pine regeneration where the old landing was located. Average ba/acre from 7 plots = 85 square feet. Rolling terrain with some alternating ridges and valleys.				
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species		Density	Avg. Height	Size	
Red Oak		1	Sapling	3		Red Maple		Medium	>20 feet	Sapling	
Red Oak		5	Log/XLog	15		White Pine		Low	Variable	Sapling	
Red Pine		3	Pole/Sap/Log	6		Witch Hazel		Medium	5 - 10 feet	Tall Shrub	
Bigtooth Aspen		27	Pole/Sapling	6							
White Pine		42	Pole/Sap/Log	6	36						
15	4319 - Mixed Upland Forest	Sawtimber Well	9.4	52	111-140	N/A	Mixed species stand with oak and pine displaying the best quality. No sale records exist for the stand but it appears to be two-aged as there is a component of much larger and older pine and oak mixed in. All pine is of natural origin. White pine poletimber is abundant in the middle part of the stand. The aspen is poor quality and not uniform throughout, being most numerous at the far west end of the stand. The red maple component is mostly poor quality except for the far eastern part of the stand where site quality increases and other hardwoods start to show up in the stand (sugar maple, beech). Average ba/acre from 7 plots = 129 square feet. Most of the stand sits on a ridgeline. When the pine component matures, look at seed-tree or shelterwood harvests as options to regenerate the stand.				
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species		Density	Avg. Height	Size	
Paper Birch		1	Pole/Log	8		White Pine		Medium	Variable	Sapling	
Red Maple		19	Pole	7		Red Maple		Low	>20 feet	Sapling	
Bigtooth Aspen		19	Log/Pole	10		Witch Hazel		Low	5 - 10 feet	Tall Shrub	
Red Oak		12	Log/XLog	14							
White Pine		35	Log/Pole/XLog	10	52						
16	4199 - Other Mixed Upland Deciduous	Poletimber Well	17.9	85	111-140	N/A	Smaller diameter hardwoods with a component of larger red oak and bigtooth aspen mixed in (all species are the same age). The red oak is high quality and sugar maple displays moderate quality. Some but not all of the beech has BBD. Not much understory development at all, likely due to high elk use as evidenced by multiple "trails" leading through the stand. There used to be a lot more paper birch in the stand but most is now all dead. Average ba/acre from 7 plots = 131 square feet. Stand sits on a slight east-facing slope. Manage for oak and hardwoods, let the aspen component continue to die out and then thin.				
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species		Density	Avg. Height	Size	
Basswood		1	Pole/Log	9		Sugar Maple		Low	>20 feet	Sapling	
White Pine		3	Log/Pole/XLog	14		Beech		Low	>20 feet	Sapling	
Beech		12	Pole	7							
Red Maple		19	Pole/Log	8							
Sugar Maple		20	Pole/Log	8							
Red Oak		24	Log/XLog	14	85						
Bigtooth Aspen		20	Log/XLog	15							
Paper Birch		1	Log/Pole	10							



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments																																																													
17	4199 - Other Mixed Upland Deciduous	Sawtimber Well	65.7	95	81-110	N/A	<p>Mixed species stand that is dominated by oak and sits on a series of ridges and valleys. Red oak quality varies considerably depending on slope position and aspect. Ridgetops and south and west-facing slopes tend to have low quality oak. The remainder of the stand generally has better quality oak. Some areas of better site quality have a hardwood influence, in particular the far east and west parts of the stand as well as valleys and east-facing slopes. Trace of paper birch along with trace amounts of large XL-sized red and white pine. Average ba/acre from 15 plots = 99 square feet. Successful regeneration is doubtful due to current browse levels, as evidenced by stand 22 to the north. Hold this stand 10 years and consider cutting at the same time as adjacent stands 3, 5, 7, and 8, which may create a patch size big enough to overcome browse impacts. Retain pine and some oak, protect steep slopes. Exclude areas along the northern edge that are better site quality and have more hardwood components.</p> <p>OPIC - FMD: THIS STAND IS GROWING ON A POOR QUALITY SITE WITH A LOT OF EXPOSED RIDGE TOPS AND SOUTH FACING SLOPES. HISTORY HAS SHOWN THAT HARDWOOD REGENERATION ON ADJACENT SITES SUFFERED HEAVY BROWSE DAMAGE FROM ELK. PREFER TO LET THE WHITE PINE UNDERSTORY DEVELOP NATURALLY.</p>																																																													
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18	4123 - Red Oak	Sawtimber Medium	15.4	95	51-80	N/A	<p>Everything except oak was cut out of this stand in 1983 in the sale Red Oak Ridge (#53-011-83), bought by George Kimball. Regeneration came back mostly to ironwood and striped maple. Red oak overstory is somewhat variable in stocking with a few areas along the edges with lower BAs. Red oak is mostly high quality as this stand is on a hardwood site. Barren understory at the ground level in many areas of the stand, almost park-like, which is likely a result of heavy elk use. Average ba/acre from 7 plots = 66 square feet. Current browse levels make successful regeneration of this stand unlikely.</p>																																																													
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19	4116 - Mixed N. Hardwood - Aspen	Poletimber Well	3.7	92	81-110	N/A	<p>No sale records exist but this stand appears to have been heavily cut over/high-graded many years ago. Most of the maple that were left are poor quality with not much potential. Regeneration has been mostly a mix of ironwood, beech, and ash, some of which is recruiting into the poletimber size class. Difficult to tell during the dormant period but several of the smaller ash appear to still be alive. A small clone of mixed aspen regenerated in the northern part of the stand. A few small seasonally wet areas may be present along the eastern edge. Average ba/acre from 5 plots = 92 square feet.</p>																																																													
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Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments				
20	4199 - Other Mixed Upland Deciduous	Sapling Well	14.2	38	1-50	N/A	Everything except oak was cut out of this stand in 1983 in the sale Red Oak Ridge (#53-011-83), bought by George Kimball. Regeneration has come back mostly to red maple. Previous OI notes mention that there was initially a lot more aspen regen but elk browse killed it off. Red oak residual is generally high quality and healthy. Northeast end of the stand has more of a hardwood influence with a few scattered residual sugar maple. Most of the aspen is in one clump in the interior of the stand.				
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species		Density	Avg. Height	Size	
Red Oak		23	Log/XLog	14	95	Witch Hazel		Low	5 - 10 feet	Tall Shrub	
Sugar Maple		2	Sapling	2							
Ironwood		5	Sapling	2							
White Pine		15	Pole/Sap/Log	5							
Bigtooth Aspen		10	Sapling/Pole	4							
Red Maple		45	Sapling	3	38						

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments				
21	4139 - Aspen, Mixed Deciduous	Poletimber Well	102.8	46	81-110	N/A	This stand was clearcut in 1975 by Peter Kujawa. Aspen regenerated very well but so did a variety of other species including hardwoods and oak. Diameters on the aspen fluctuate significantly in this stand due to changing site quality. The east half has better site quality and the aspen is larger, ranging from 7-10" DBH. The west half declines in site quality and the aspen is much smaller, averaging around 4-7" DBH. The oak component is abundant in some localized areas, with small areas resembling more of an O6. A few pockets of nearly pure hardwoods are also present as well as some areas that are heavy to white pine. A few small clumps of hemlock are present along the north edge. Trace amounts of supercanopy red oak and white pine. Trace of American elm, basswood, white ash, and beech in the overstory. Average ba/acre from 21 plots = 95 square feet. Rolling terrain throughout with a few relatively steep slopes, but none that are inoperable. A small wildfire (5 acres) occurred in the southwest side of the stand in the spring of 2019. Some scattered mortality to smaller stems was noted. Hold this stand for one more entry until diameters in the west half of the stand become larger. Treat with adjacent stand 25 to the west. OPIC - FMD: 2010 This is a very variable stand from aspen to hardwood. The western part of the stand has a much smaller diameter and is aspen with a pine component, seems like two ages but the cutting records indicate one stand. This divide could be a stand divider.				
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species		Density	Avg. Height	Size	
Paper Birch		1	Pole/Sapling	5		Ironwood		Medium	>20 feet	Sapling	
Red Pine		1	Log	13		Sugar Maple		Medium	>20 feet	Sapling	
Ironwood		1	Pole/Sapling	5		Red Maple		Low	>20 feet	Sapling	
White Pine		12	Pole/Log	8		White Pine		Medium	Variable	Sapling	
Red Oak		13	Pole/Log	8		Witch Hazel		Low	5 - 10 feet	Tall Shrub	
Sugar Maple		4	Pole/Sapling	5		Hawthorn (spp.)		Trace	5 - 10 feet	Tall Shrub	
Red Maple		14	Pole/Sapling	6		Paper Birch		Trace	>20 feet	Sapling	
Quaking Aspen		10	Pole/Sapling	6		Beech		Trace	>20 feet	Sapling	
Bigtooth Aspen		44	Pole/Sap/Log	7	46						

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments				
22	4199 - Other Mixed Upland Deciduous	Sapling Poor	22.8	17	Immature	N/A	This stand was clearcut in 2004 by AJD in the sale Long Walk Aspen Block (#53-010-02) and it was formerly a fully-stocked bigtooth aspen stand with smaller amounts of red maple, red oak, and white pine. Terrible looking regeneration that has been significantly reduced in stocking by deer and elk browse. All deciduous species in the stand have been severely browsed even including such species as ironwood, black cherry, and beech, which have all been limited to under 5 feet tall. The red maple and aspen stems that did make it past the browse level have high levels of bole damage from elk stripping off the bark. The only good thing to come out of this harvest is that some red oak did regenerate, mostly on the east half of the stand. They are poor quality due to past browse but it should be noted that elk have not stripped the bark off of any of them. White pine is low quality with lots of weevil damage. Some but not all of the white pine have been browsed. Rolling terrain.				
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species		Density	Avg. Height	Size	
White Pine		13	Sapling/Pole	3		Ironwood		Medium	< 5 feet	Sapling	
Red Oak		10	Sapling/Pole	3		White Pine		Low	Variable	Sapling	
Bigtooth Aspen		25	Sapling/Pole	3		Black Cherry		Medium	< 5 feet	Tall Shrub	
Red Maple		52	Sapling	2	17	Witch Hazel		Medium	< 5 feet	Tall Shrub	
						Striped Maple		Low	Variable	Sapling	
						Beech		Trace	< 5 feet	Sapling	



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments		
23	4130 - Aspen	Poletimber Well	5.2	46	81-110	N/A	Nice young aspen stand on hardwood soils. Some sugar maple and red oak did regenerate after that harvest. Supercanopy of oak and a few white pine scattered throughout. Average ba/acre from 4 plots = 100 square feet. Diameters still small at this time to consider management. However the high amount of browse in this area makes successful regeneration almost impossible, evidence of that is in the adjacent stand to the east.		
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density		Avg. Height	Size
White Pine	2	Log/XLog/Pole	15		Sugar Maple	Medium		>20 feet	Sapling
Beech	1	Pole/Sapling	5		Red Maple	Medium		>20 feet	Sapling
Red Oak	12	Pole/Log/XLog	8		Ironwood	Low		>20 feet	Sapling
Sugar Maple	3	Pole/Sapling	5		Beech	Low		>20 feet	Sapling
Red Maple	15	Pole/Sapling	5		Striped Maple	Low		Variable	Sapling
Quaking Aspen	8	Pole	7						
Bigtooth Aspen	59	Pole	7	46					
24	4311 - Pine, Aspen Mix	Sawtimber Well	14.7	89	111-140	N/A	White pine dominated stand that was partially cut when the adjacent aspen stand to the north was harvested. As a result there are a few pockets of younger aspen and red maple present. However not all of the stand was harvested and some areas retain their original characteristics. A few small veins of planted red pine are present. The southeast corner has better site quality and a few hardwood species start to show up (sugar maple, beech). Some scattered, large XL-sized white pine are mixed in throughout, some of legacy tree size. Average ba/acre from 7 plots = 139 square feet. Rolling terrain. Hold for now and look at doing a shelterwood harvest next entry, in conjunction with a treatment of stand 21.		
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density		Avg. Height	Size
Sugar Maple	1	Pole/Log	8		Red Maple	Medium		>20 feet	Sapling
Paper Birch	1	Log/Pole	10		White Pine	Medium		Variable	Sapling
Red Oak	7	Log/XLog	14		Striped Maple	Low		Variable	Sapling
Beech	1	Pole/Log	8		Ironwood	Trace		Variable	Sapling
Quaking Aspen	4	Pole/Log	8		Witch Hazel	Low		5 - 10 feet	Tall Shrub
Bigtooth Aspen	15	Pole/Log	8	46	Red Oak	Trace		>20 feet	Sapling
Red Pine	7	Log/Pole	12						
Red Maple	16	Pole/Log	8						
White Pine	48	Log/Pole/XLog	13	89					
25	4133 - Aspen, Mixed Pine	Poletimber Well	7.9	37	81-110	N/A	Apparently two wildfires ran through this stand in the early 1970's which is likely the reason for the large representation of natural red pine. The pine component is most common in the western part of the stand but there are also pockets scattered throughout the rest of the stand. There is also a small component of supercanopy red pine. The aspen is just reaching merchantability in some places. Average ba/acre from 7 plots = 87 square feet. Stand sits on west-facing slopes. Treat next entry with stands 21 and 99.		
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density		Avg. Height	Size
Red Maple	10	Pole/Sapling	5		White Pine	Low		Variable	Sapling
Jack Pine	10	Pole/Sapling	5		Red Pine	Medium		Variable	Sapling
White Pine	5	Pole/Sapling	5		Witch Hazel	High		5 - 10 feet	Tall Shrub
Red Pine	23	Pole/Sap/Log	5						
Bigtooth Aspen	52	Pole/Sapling	6	37					
26	42290 - Natural Mixed Pine	Sawtimber Well	8.2	92	111-140	N/A	Moderate quality pine stand that is 2-aged in places. Some portions of the stand, like the thin finger that extends south, were included in the adjacent harvest of stand 21 and have a component of younger, smaller aspen. There are other areas of the stand that were not harvested and still have some larger red maple and aspen mixed in. Trace of paper birch and beech. Average ba/acre from 8 plots = 140 square feet. Rolling terrain with many parts of the stand, like the thin southern finger, sitting on ridge-lines or side-slopes.		
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density		Avg. Height	Size
Red Maple	10	Pole/Sap/Log	6		White Pine	Medium		Variable	Sapling
Bigtooth Aspen	12	Pole/Log/Sap	8	46	Red Maple	Low		>20 feet	Sapling
Quaking Aspen	1	Pole	7		Witch Hazel	Low		5 - 10 feet	Tall Shrub
Red Oak	6	Log/Pole	13						
Red Pine	25	Log/Pole/XLog	13						
White Pine	46	Log/XLog/Pole	14	92					



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
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27 42290 - Natural Mixed Pine Poletimber Well 11.6 41 81-110 N/A

Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Red Maple	1	Pole	7		White Pine	Medium	Variable	Sapling
White Pine	18	Pole/Log/XLog	8		Black Cherry	Low	Variable	Tall Shrub
Red Pine	9	XLog/Log	19					
Bigtooth Aspen	10	Pole	8					
Quaking Aspen	16	Pole/Sapling	6					
Jack Pine	46	Pole/Sapling	6	41				

Stand was harvested in 1980 by Ken Boughner. Jack pine regenerated well along with a few small clones of aspen. Scattered residual of large diameter red and white pine, more common in the western part near Tin Shanty Road. South of the small two-track road has more white pine and less jack pine. Some areas of lower stocking in the north half. Average ba/acre from 5 plots = 98 square feet. Flat terrain. Still a lot of small jack pine stems at this point, may be ready for a harvest next entry.

28 4191 - Mixed Upland Deciduous with Conifer Sapling Medium 33.2 16 Immature N/A

Canopy Species	% Cover	Size Class	DBH	Age
Bigtooth Aspen	15	Sapling	3	
Ironwood	4	Sapling	2	
Red Maple	35	Sapling	3	16
White Pine	33	Sapling/Pole	3	
Jack Pine	3	Sapling	1	
Red Pine	4	Sapling	3	
Beech	1	Sapling	1	
Red Oak	5	Sapling	3	

2020 - Stand clearcut in 2005 in the sale Blue Chair Block (#53-003-02), bought by AJD. Primary cut volume was aspen followed by red maple, red oak (90 cords), red pine, and white pine. Regeneration has not come back well due to deer and elk browse. There used to be a lot more aspen in the stand based on dead, browsed stems. Most red maple have damaged boles from elk girdling. A few red oak did make it past the browse but most did not. Terrain is a series of ridges and valleys and regeneration seems to be best on the steep side-slopes. A few small retention pockets were left, some on the steepest slopes.

2014- Stand updated from regen survey. At a PRC regen meeting, a variance was accepted in order to change MO from aspen to mixed regen. Elk continue to hammer the aspen, not sure how much of it will survive.

OPIC - FMD: 2000 COULD LEAVE GROUPS OF THE NICEST LOOKING OAK IF DESIRED BUT DO NOT LEAVE ALL OAK AS A GENERAL SPECIFICATION. 2010 another u created by the elk. Aspen looks to be a failure.

29 4119 - Mixed Northern Hardwoods Poletimber Well 11.7 95 81-110 N/A

Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Ironwood	1	Pole	5		Ironwood	Medium	>20 feet	Sapling
Red Pine	1	Log	13		Sugar Maple	Low	>20 feet	Sapling
White Pine	4	Log/XLog	14		White Pine	Trace	Variable	Sapling
Basswood	7	Log/Pole	11					
Beech	7	Pole/Log	8					
Bigtooth Aspen	18	Pole/Log	8	48				
Red Maple	17	Pole/Log	8					
Sugar Maple	33	Pole/Log	9	95				
Red Oak	12	Log/XLog	15					

Moderate quality hardwood stand that had a heavy partial harvest in 1973 in the southern 2/3rds of the stand. This resulted in a few small clones of aspen regeneration. Not all of the aspen was cut however as there are some larger aspen scattered throughout the stand. The northern 1/3rd of the stand was not included in the harvest for whatever reason, quality is better in this area. The red oak component is high quality. Most beech has BBD. Average ba/acre from 8 plots = 98 square feet. Rolling terrain in the south half of the stand while the north half is more of a ridgetop.



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments																																																																					
31	42200 - Natural White Pine	Poletimber Well	5.7	41	81-110	N/A	The southwest 1/2 of this stand is primarily poletimber and was likely cut at the same time as stand #89 to the west. The northeast 1/2 of the stand is more of a sawtimber stand and wasn't cut at the same time so there are some larger aspen and red maple mixed in this area. Trace of paper birch. Average ba/acre from 5 plots = 102 square feet. The stand slopes gently upward as you move northeast.																																																																					
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32	4319 - Mixed Upland Forest	Poletimber Well	7.4	28	Immature	N/A	This stand was cut in 1993 by Gary Haskill in the sale Tin Shanty Tri-color. Everything was cut in this stand except for red oak. Regeneration came back primarily to white pine and red maple in the south half of the stand. Site quality increases as you head north so a few more hardwood species show up in this part of the stand including a few black cherry saplings that will likely be merchantable. Most of the red maple stems have been damaged by elk girdling. Areas of thick witch hazel in the understory. Trace of sugar maple, paper birch, and red pine saplings. Red oak residual is large diameter and healthy. Terrain slopes up as you move north in the stand.																																																																					
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33	42290 - Natural Mixed Pine	Sawtimber Well	11.0	92	111-140	N/A	This is a highly variable stand that can be described in three parts. The northeastern third of the stand is unthinned hardwoods with clumps of hemlock present. The middle part of the stand resembles a shelterwood with massive natural white pine (many legacy size) and some scattered red oak and hemlock. The southern third has some clumps of planted red pine along with some white pine and oak mixed in. This stand was last cut in 1993, with all species removed except for red oak, red pine, hemlock, and white pine (Tin Shanty Tri-Color, cut by Gary Haskill). The northeast corner was not cut, likely due to the large hemlock influence. Regeneration is a mixed bag with mostly striped maple present in the middle of the stand, some of which is merchantable. The southern part of the stand has more of the red maple regeneration. Trace of paper birch and bigtooth aspen. Average ba/acre from 6 plots = 123 square feet. Rolling terrain. Evidence of heavy elk use in the middle parts of the stand.																																																																					
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34	4119 - Mixed Northern Hardwoods	Sawtimber Well	27.5	96	81-110	N/A	Moderate quality hardwood stand that was last thinned in 1993. Many areas were thinned heavily and still have BAs that are low. This stand seems to be a transition between differing habitat types, evident by the lower quality sugar maple, and also the red maple component which increases in abundance along the west/southwest sides of the stand. Significant component of hemlock, most of which are suppressed stems in the understory and occur in large clumps in the interior of the stand. A second age class of much larger, older sugar maple is present. Red oak and white pine quality is high. Rolling terrain with some steep slopes, some that are inoperable. Most beech has BBD. Hemlock appears mostly healthy. Heavy browse on the understory as there is high deer and elk use in the stand. Average ba/acre from 10 plots = 108 square feet.																																																																					
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Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments				
35	4133 - Aspen, Mixed Pine	Poletimber Well	13.3	28	51-80	N/A	Stand was harvested in 1993 in the sale Tin Shanty Tri-Color, cut by Gary Haskill. Everything was cut except for red oak. Aspen regenerated moderately well although browse may have impacted a few areas which are now dominated by white pine. Diameters on the aspen tend to vary. Trace of paper birch and red oak saplings. Ironwood and witch hazel are thick in some spots of the understory. Stand sits on a southeast facing side-slope.				
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species		Density	Avg. Height	Size	
Red Oak		4	Log/XLog	15		Ironwood		High	Variable	Sapling	
Ironwood		3	Sapling	2		White Pine		Low	Variable	Sapling	
Red Maple		5	Sapling/Pole	4		Beech		Trace	Variable	Sapling	
Sugar Maple		1	Sapling	3		Witch Hazel		Medium	5 - 10 feet	Tall Shrub	
White Pine		20	Pole/Sap/Log	6		Black Cherry		Low	Variable	Tall Shrub	
Bigtooth Aspen		67	Pole/Sapling	5	28						
36	4319 - Mixed Upland Forest	Sawtimber Well	12.8	98	141-170	N/A	Mixed species stand with a significant component of hemlock and a supercanopy of white pine. The hemlock occupies both the overstory and in suppressed clumps in the understory. Despite it's small size the hemlock is just as old as the other overstory species. Average ba/acre from 10 plots = 157 square feet. Rolling terrain with some steep slopes. Tin Shanty Road splits the stand in half and sits in somewhat of a valley with slopes on both sides. Leave this stand unmanaged indefinitely.				
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species		Density	Avg. Height	Size	
Red Oak		9	Log/XLog	15		Hemlock		Low	>20 feet	Sapling	
Ironwood		1	Pole	5		Hemlock		Low	>20 feet	Pole	
Basswood		11	Log/Pole	11		Sugar Maple		Low	>20 feet	Sapling	
Beech		2	Log/Pole	11		Ironwood		Low	>20 feet	Sapling	
Red Maple		8	Pole/Log	9		Beech		Low	Variable	Sapling	
Sugar Maple		15	Pole/Log	9							
Hemlock		16	Pole/Log	8							
Paper Birch		8	Log/Pole	11							
White Pine		30	Log/XLog	15	98						
37	42200 - Natural White Pine	Sawtimber Well	18.3	92	81-110	N/A	Moderate quality white pine stand with a well-developed understory from a harvest in 1993 that removed all species except white pine, red pine, and oak (Tin Shanty Tri-color, #53-007-92, Gary Haskill). Regeneration came back well to mostly red maple. Regeneration becomes more species diverse next to the road. There are some larger, high-quality white pine in the stand but there are also a lot of trees in the poletimber and small sawlog size class that are poor quality. Trace of hemlock and red oak in the overstory. Average ba/acre from 7 plots = 111 square feet. Rolling terrain.				
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species		Density	Avg. Height	Size	
Red Pine		22	Log/XLog	14		Red Maple		High	>20 feet	Sapling	
White Pine		78	Log/Pole/XLog	13	92	Bigtooth Aspen		Low	>20 feet	Sapling	
						Sugar Maple		Trace	Variable	Sapling	
						Ironwood		Trace	Variable	Sapling	
						Red Oak		Trace	>20 feet	Sapling	
						Paper Birch		Trace	>20 feet	Sapling	
						Beech		Low	Variable	Sapling	
						Black Cherry		Low	Variable	Tall Shrub	
						Witch Hazel		Medium	5 - 10 feet	Tall Shrub	
						White Pine		Medium	Variable	Sapling	



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments																																																																		
38	4191 - Mixed Upland Deciduous with Conifer	Sapling Well	11.8	28	Immature	N/A	Stand was harvested in 1993 by Gary Haskill in the sale Tin Shanty Tri-color (#53-007-92). All species were cut except red oak and hemlock. Regeneration is well-stocked but dominated mostly by red maple, white pine, and ironwood. Site quality is better in the north half of the stand and there are a few small pockets along the east edge with other hardwood species present, but overall ironwood is dominant. Site quality decreases in the south half of the stand and this is where most of the red maple is located. Many of the red maple have damaged stems from elk stripping off the bark of the lower bole. Scattered clumps of white pine throughout, some of these look like advanced regeneration that were protected during the harvest. Rolling terrain. Evidence of high elk use in parts of the stand.																																																																		
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39	42200 - Natural White Pine	Sawtimber Well	9.0	92	111-140	N/A	High quality white pine with clumps of smaller hemlock scattered throughout the stand. Some very large diameter white pine are present. Stand was last harvested in 1993 by Gary Haskill in the sale Tin Shanty Tri-color (#53-007-92). Everything was cut from this stand except for red pine, white pine, oak, and hemlock. The south half of the stand looks like it was cut heavier and regeneration came back moderately well to red maple. There is also a lot of striped maple in this part of the stand. The north half of the stand has a few residual hardwoods mixed in and beech and ironwood regeneration starts to increase. High elk use in the hemlock clumps. Average ba/acre from 6 plots = 123 square feet. Leave as is until the regeneration matures.																																																																		
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40	4111 - S.Maple, Hard Mast Association	Sawtimber Well	1.8	93	111-140	N/A	Moderate quality hardwoods with some large diameters. Aside from the southeast part, this stand looks like it was heavily cut many years ago. Some large, old sugar maple are present. Trace of suppressed hemlock in the understory. Average ba/acre from 3 plots = 120 square feet.																																																																		
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41	4119 - Mixed Northern Hardwoods	Sawtimber Well	10.5	86	111-140	N/A	This stand had a species removal harvest (all IW, PB, A cut) in 1993 in the sale Tin Shanty Tri-color, cut by Gary Haskill. It's also possible the southern 1/2 was cut when adjacent stand #21 was cut as there are younger poletimber stems mixed in. Basal areas vary widely with the north half having much higher BAs. A few clumps of hemlock are present in the middle of the stand. A few nice patches of sugar maple regeneration are present. Although rare, a second age class of larger, older sugar maple is present. Average ba/acre from 6 plots = 122 square feet. This includes some younger poletimber stems at the south end. Wait until those mature and then thin, possibly next entry. Rolling terrain.																																																													
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42	4319 - Mixed Upland Forest	Sawtimber Well	3.0	92	81-110	N/A	Mixed species stand that is on somewhat of a transition between different site qualities. Quality and stocking is best in the northwest corner. A few aspen mixed in along the eastern side. Trace of black cherry, yellow birch, and paper birch in the overstory. Average ba/acre from 4 plots = 143 square feet. Hold for now and thin when adjacent hardwood stands are treated.																																																													
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43	4110 - Sugar Maple Association	Sawtimber Well	141.5	108	81-110	N/A	Stand cut in fall/winter of 2015-16 in the 2 Little Pigs Hardwood sale, #53-010-12-01, bought by AJD. Very high quality hardwood stand that has a 2nd age class of much older, hardwood trees mixed in, these trees are more prevalent north of Tin Shanty Road. All ash as well as most beech were salvaged during the harvest. Trace of elm and bigtooth aspen in the overstory. Average ba/acre from 71 plots = 99 square feet. This stand is a part of the Tin Shanty DHA and will be managed for big trees and a higher residual BA to develop and maintain features of an old growth hardwood ecosystem. Very high elk use in this stand which has impacted hardwood regeneration success in canopy gaps created during the recent harvest.																																																													
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44	4110 - Sugar Maple Association	Poletimber Well	28.5	84	81-110	N/A	<p>Moderate to high quality hardwood stand that has a lot of variability in both diameters and basal area. The southern 1/4 of the stand looks like it was cut heavily long ago as BAs are mostly under 80. This stand was under private ownership until 2014 so it's harvesting history is unknown. The northwest corner of the stand is densely stocked and has much more poletimber than the rest of the stand. This is also where most of the paper birch is located. The central and northeast portions of the stand have larger diameters with stocking that is suitable for a thinning (>120 BA). An age class of much older, larger sugar maple and beech trees are present and a lot of these are good wildlife trees. These trees are more common in the central and eastern parts of the stand. BBD was noticed on some of the beech. Trace of red oak and elm. Average ba/acre from 12 plots = 105 square feet. Terrain is mostly flat in the northwest part of the stand then slopes down to the south and east.</p>																																																					
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45	4110 - Sugar Maple Association	Sawtimber Well	36.6	92	111-140	N/A	<p>Nice northern hardwood stand that has a second age class of older, larger hardwood trees. A site visit was made to this stand with MNFI staff who, after reviewing imagery from the 1930's, determined that trees in this older age class were not harvested during the initial cut-over of Michigan in the early 1900's. Does not meet criteria for Old Growth at this time but would likely as an ERA. Stand was nominated as an SCA last inventory cycle and is now a part of the Tin Shanty DHA.</p> <p>Stand characteristics; canopy is dominated by sugar maple and basswood. Beech is a smaller component and over 1/2 has BBD. White ash used to be a scattered minor component but it is now all dead. Trace of hemlock, paper birch, bigtooth aspen, and elm. Quality and basal areas decline somewhat east of the road. Average ba/acre from 12 plots = 127 square feet. Large vernal pool at the northeast corner of the stand. Terrain is mostly flat.</p>																																																					
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46	310 - Herbaceous Openland	Nonstocked	2.0		Unspecified		ACTIVE OIL WELL SITE																																																					
47	4110 - Sugar Maple Association	Sawtimber Well	48.3	109	111-140	N/A	<p>Moderate to high quality hardwood stand dominated by sugar maple. Stand was harvested while under private ownership but this was over 30 years ago with the exception being the southwest corner which doesn't look like it was cut. A lot of quality stems remain but the stand is in need of a TSI to get rid of the poor quality trees. Although not very common, an age class of much older, larger sugar maple and beech trees are present and a lot of these are good wildlife trees. BBD was only noticed on about a 1/4 of the beech. White ash is not a large component of the stand and most of it is dead from EAB, although there may be a few poletimber stems that are still alive. The elm component is healthy. Trace of red oak and bigtooth aspen. Average ba/acre from 12 plots = 115 square feet. Rolling terrain.</p> <p>An old hunting blind and the foundations of two "tin shanties" can be found at the far west side of the stand. There is another old hunting blind in the northern part of the stand.</p>																																																					
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Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments		
48	4110 - Sugar Maple Association	Sawtimber Well	35.0	98	81-110	N/A	Moderate quality hardwood stand that was thinned heavily in 1993 in the sale Tin Shanty Tri-color, cut by Gary Haskill. All ironwood, aspen, and paper birch were cut out of the stand as well as some marked trees. BAs are lower as is quality in the south half of the stand. The north half has much better quality. There used to be around 10 sq ft of white ash but it is now all dead and on the ground. Most beech has BBD. Trace of white pine and American elm. Average ba/acre from 8 plots = 93 square feet. Heavy elk use in the south half of the stand with several "trails" present. Flat to gently rolling terrain with a few short, steep slopes at the south end.		
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density		Avg. Height	Size
Ironwood	1	Pole	6		Ironwood	Medium		Variable	Sapling
Red Oak	1	Log/XLog	16		Beech	Low		Variable	Sapling
Red Maple	1	Log	11						
Beech	5	Log/XLog	13						
Basswood	20	Log/Pole/XLog	12						
Sugar Maple	72	Log/Pole	10	98					
49	4110 - Sugar Maple Association	Sawtimber Well	40.1	98	111-140	N/A	High quality hardwood stand dominated by sugar maple. Although rare, a second age class of larger, older hardwoods is present. A lot of the beech have cavities and are good wildlife trees. Most of the beech has BBD although there appeared to be a few resistant trees. Heavy elk use in the south half of the stand, the beech and ironwood understory is browsed in some areas. Trace of American elm. Only evidence of sale records for the stand come from the 1960's. Average ba/acre from 12 plots = 118 square feet. Flat to gently rolling terrain.		
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density		Avg. Height	Size
Ironwood	1	Pole	6		Beech	Medium		5 - 10 feet	Sapling
Red Maple	1	Log	13		Ironwood	Low		Variable	Sapling
Bigtooth Aspen	1	Log	14						
Paper Birch	2	Log/Pole	11						
Red Oak	3	Log/XLog	17						
Beech	5	Log/XLog	14						
Basswood	28	Log/XLog/Pole	12						
Sugar Maple	59	Log/Pole	10	98					
50	4111 - S.Maple, Hard Mast Association	Poletimber Well	9.3	92	81-110	N/A	Stand had a heavy partial harvest in 1973. Residual overstory hardwoods are moderate quality. A few younger hardwoods and aspen regenerated after the harvest. Most beech has BBD. A few white ash poletimber stems are still hanging on. Trace of paper birch and red pine. Average ba/acre from 5 plots = 86 square feet. Manage for hardwoods when BAs are high enough for a thinning.		
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density		Avg. Height	Size
Basswood	6	Log/XLog	13		Ironwood	Medium		>20 feet	Sapling
White Pine	6	Log/XLog	15		Sugar Maple	Low		>20 feet	Sapling
Red Oak	4	Log/Pole	12						
Ironwood	2	Pole/Sapling	5						
Beech	6	Pole/Log	8						
Bigtooth Aspen	8	Pole	8	48					
Quaking Aspen	7	Pole	7						
Red Maple	5	Pole/Log	8						
Sugar Maple	56	Pole/Log	9	92					
51	42200 - Natural White Pine	Poletimber Well	6.6	40	51-80	N/A	This stand was burned severely in a 1981 wildfire and then subsequently had a salvage harvest. Some residual white pine were left as were a few red pine, aspen, and red maple. Regeneration has come back primarily to white pine with only a little red maple and aspen mixed in. Witch hazel understory becomes thick in the north half of the stand. Trace of sugar maple and red oak. Average ba/acre from 5 plots = 80 square feet. Rolling terrain.		
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density		Avg. Height	Size
Red Pine	3	Log	13		White Pine	Medium		Variable	Sapling
Bigtooth Aspen	14	Pole/Sap/Log	6		Witch Hazel	Medium		5 - 10 feet	Tall Shrub
Red Maple	13	Pole/Sap/Log	6		Red Maple	Trace		>20 feet	Sapling
White Pine	70	Pole/Sap/Log	5	40					



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments		
52	4130 - Aspen	Poletimber Well	4.0	48	111-140	N/A	Stand is under contract, Ridgetop Aspen (#53-011-18-01) bought by Precision. Nice aspen stand. Trace of beech, red pine, and paper birch. Average ba/acre from 5 plots = 130 square feet.		
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density		Avg. Height	Size
White Pine	1	Log/XLog	15		White Pine	Medium		Variable	Sapling
Ironwood	1	Pole	5		Red Maple	Medium		>20 feet	Sapling
Red Oak	2	Pole/Log	8		Sugar Maple	Medium		>20 feet	Sapling
Red Maple	11	Pole/Log	8		Witch Hazel	Low		5 - 10 feet	Tall Shrub
Bigtooth Aspen	74	Pole/Log	8	48					
53	4319 - Mixed Upland Forest	Sawtimber Well	12.7	92	81-110	N/A	Two-aged stand from a harvest in 1973 in which all trees greater than 4" DBH were cut except for white pine. Some large diameter white pine are present. It looks like several sugar maple were left as residual because there are now many in the sawlog size class. There are also some smaller sugar maple which regenerated following that harvest (3-6" trees), mostly in the north end. Most of the aspen is at the south end. Most white ash are dead but a few poletimber trees are hanging on. The southwest part of the stand, west of the closed road, was not a part of the harvest and is more of a M9. Trace of paper birch. Average ba/acre from 6 plots = 108 square feet. Let the second age class of hardwoods mature before prescribing a treatment.		
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density		Avg. Height	Size
Beech	1	Pole	5		Ironwood	Medium		>20 feet	Sapling
Basswood	2	Log/XLog	14		Red Maple	Low		>20 feet	Sapling
Red Oak	4	Log/XLog/Pole	15		Sugar Maple	Low		>20 feet	Sapling
Ironwood	5	Pole/Sapling	5		Red Oak	Trace		>20 feet	Sapling
Red Maple	9	Pole/Log	8						
Sugar Maple	15	Log/Pole	10						
Bigtooth Aspen	10	Pole	7	48					
Quaking Aspen	4	Pole	7						
Red Pine	10	XLog/Log	18						
White Pine	40	Log/XLog	16	92					
54	4312 - Hemlock, Mixed Deciduous	Sawtimber Well	4.3	114	81-110	N/A	Hemlock inclusion that was excluded from the surrounding thinning. Most of the hemlock appears healthy. There used to be a large component of white ash in the stand, 40-50 BA, but it is now mostly all dead, although it looks like there may be a handful that have survived. Trace of paper birch. Flat terrain. Average ba/acre from 6 plots = 103 square feet. Do not manage.		
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density		Avg. Height	Size
Basswood	9	Log/Pole	11		Beech	Low		Variable	Sapling
White Ash	1	Pole/Log	9		Sugar Maple	Low		>20 feet	Sapling
Red Oak	11	Log/XLog	14		Ironwood	Low		>20 feet	Sapling
Sugar Maple	21	Pole/Log	9						
Hemlock	51	Log/XLog/Pole	14	114					
Beech	2	Log/XLog	14						
Ironwood	5	Pole	5						
55	4111 - S.Maple, Hard Mast Association	Sawtimber Well	16.4	104	81-110	N/A	Stand cut as part of Seahorse Hardwoods, #53-017-13-01, cut in the winter of 2015 by AJD. Very high quality stand. All beech had BBD, some of the larger wildlife trees were left. Several large canopy gaps were made, one of which had an enclosure placed in it. Very heavy browse pressure has significantly impacted regeneration in all canopy gaps except for the enclosure, do not cut this stand again until the browse issue is addressed. Average ba/acre = 86 square feet. This stand is a part of the Tin Shanty DHA.		
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density		Avg. Height	Size
Red Oak	28	Log/XLog	16		Beech	Low		Variable	Sapling
Basswood	21	Log/Pole	11		Ironwood	Low		Variable	Sapling
Beech	3	Log/XLog	13						
Red Maple	5	Pole/Log	9						
Paper Birch	1	Pole/Log	9						
White Pine	2	Log/XLog	17						
Sugar Maple	40	Pole/Log	9	104					



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments																																																																								
56	4116 - Mixed N. Hardwood - Aspen	Poletimber Well	2.8	90	111-140	N/A	This stand had a partial harvest in 1973 which looks like removed mostly the aspen component. The northern 1/3rd of the stand regenerated back to a clone of aspen while the rest of the stand is just lower quality, older hardwoods. Average ba/acre from 4 plots = 123 square feet. Manage with the aspen stand to the west in Compartment 46 (stand #25). 7" DBH serviceberry at the south end of the stand.																																																																								
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57	4199 - Other Mixed Upland Deciduous	Poletimber Well	9.6	92	81-110	N/A	Two-aged stand from a harvest in 1973 in which all trees greater than 4" DBH were cut except for white pine. There must have been quite a few smaller sugar maple not cut during that harvest because there are now many in the sawlog size class. There are also some smaller sugar maple which regenerated following that harvest (3-6" trees). A few clones of aspen came back as well as a mix of other species. There also used to be quite a bit of white ash in the poletimber size class but most of that is now dead except for a few trees that are hanging on. Average ba/acre from 6 plots = 95 square feet. Manage for hardwoods.																																																																								
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58	4119 - Mixed Northern Hardwoods	Sawtimber Well	37.2	104	81-110	N/A	Very high quality stand especially the red oak component. Stand was cut as part of Seahorse Hardwoods, #53-017-13-01, harvested in the winter of 2015 by AJD. The far eastern part of the stand was added as an amendment and all ash was cut out of this part. This area is lower quality as mostly just smaller sugar maple poletimber remains after the ash was salvaged. Most beech was cut as well except for some good wildlife trees. A few large canopy gaps were made throughout the stand but all are a regeneration failure at this time due to very heavy browse pressure. Sugar maple seedlings were observed in the most recent site visit but all seedlings, including striped maple, beech, and ironwood are being browsed. All stump sprouts are dead. Striped maple looks like it may be the only species that will survive in the understory. Do not cut this stand again until the browse issue is addressed. Average ba/acre = 89 square feet. This stand is a part of the Tin Shanty DHA and should be managed for big trees and a higher residual BA to develop and maintain features of an old growth hardwood ecosystem.																																																																								
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Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
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59 4191 - Mixed Upland Deciduous with Conifer Poletimber Well 67.7 90 141-170 N/A

Canopy Species	% Cover	Size Class	DBH	Age
Red Pine	1	Log/XLog	14	
Ironwood	1	Pole	5	
Bigtooth Aspen	1	Log	11	
Sugar Maple	4	Pole/Log	8	
Beech	5	Log/Pole/XLog	10	
Paper Birch	7	Pole/Log	9	
White Pine	5	Log/Pole	12	
Red Maple	20	Pole/Log	8	
Hemlock	24	Pole/Log/XLog	8	

Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	Low	>20 feet	Sapling
Beech	Low	>20 feet	Sapling
Hemlock	Low	>20 feet	Sapling

Very diverse stand with a large component of hemlock. The hemlock is both scattered throughout and also found in clumps, often times forming a dense understory beneath larger hardwoods. Oak displays the best growth and quality and is the dominant overstory species. Hardwood site quality increases as you move south, with the sugar maple and beech component increasing at the far southern end. Most of the hemlock appears healthy. Some but not all of the beech have BBD. Heavy deer and elk use has resulted in a barren understory except for some old, suppressed saplings. Average ba/acre from 14 plots = 151 square feet. Rolling terrain with a few steep slopes in the north half of the stand. No management due to the heavy browse pressure in the area and the large hemlock component.

60 42200 - Natural White Pine Sawtimber Well 19.0 74 141-170 N/A

Canopy Species	% Cover	Size Class	DBH	Age
Paper Birch	2	Pole/Log	8	
Red Oak	5	Log/Pole	14	
Sugar Maple	2	Pole	7	
Bigtooth Aspen	3	Log	11	
Hemlock	5	Pole/Log	8	
Red Pine	4	Log	12	
Red Maple	12	Pole/Log	8	
White Pine	67	Log/Pole/XLog	10	74

Densely-stocked, high quality natural white pine stand. Hardwoods not as common as in the adjacent white pine stand to the east. Red pine component mostly in the far northwest part of the stand. Small clumps of hemlock present throughout. Some recent blowdown in the part of the stand that is adjacent to the northern part of stand 61. Trace of basswood and ironwood. Understory development is limited due to the dense stocking. Average ba/acre from 8 plots = 158 square feet. Most of the stand sits in a slight valley.

61 4319 - Mixed Upland Forest Poletimber Well 12.4 74 111-140 N/A

Canopy Species	% Cover	Size Class	DBH	Age
Beech	1	Pole/Log	8	
Paper Birch	2	Pole/Log	9	
Bigtooth Aspen	2	Log/Pole	10	
Red Pine	3	Log/XLog	14	
Hemlock	5	Pole/Log/XLog	8	
Sugar Maple	2	Pole/Log	8	
Red Maple	23	Pole/Log	8	
Red Oak	15	Log/XLog	15	
White Pine	47	Pole/Log/XLog	9	74

Sub-Canopy Species	Density	Avg. Height	Size
Red Maple	Trace	>20 feet	Sapling
Sugar Maple	Trace	>20 feet	Sapling

Diverse stand dominated by natural origin white pine. There is quite a bit of variability as the northern half has more white pine poletimber while the south half has more oak and hardwoods, as well as some large diameter white pine. Similar to stand 70 to the east, this stand seems to be a transition between different habitat types (site quality). The understory is not very developed other than some old, suppressed maple saplings. A large area of relatively recent blowdown is present in the northern part of the stand. The north and south ends are where most of the hemlock is located. Average ba/acre from 7 plots = 119 square feet. Rolling terrain.



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
62	4191 - Mixed Upland Deciduous with Conifer	Poletimber Well	33.7	93	111-140	N/A	Diverse mixed-species stand with a significant component of hemlock. The hemlock is of a variety of sizes and can be found in both the overstory and understory with some of the understory clumps being very dense. The understory hemlock is not new in-growth; rather they are suppressed stems that are likely almost as old as the overstory trees. Some mortality on the hemlock was noticed but the majority of it appears healthy. Most hardwoods in the stand do not display very good growth with the exception of red oak, which is very high quality. Most beech has BBD. Ash used to be a minor component of the stand but it is now all dead and most have fallen over. Some areas of blowdown from a windstorm 3 years ago, mostly along the east/northeast edge. Average ba/acre from 11 plots = 137 square feet. Rolling terrain in the south half, becoming flat in the north half. This stand is part of the Tin Shanty DHA. No management due to the hemlock influence.

Canopy Species	% Cover	Size Class	DBH	Age
Basswood	3	Log	11	
Beech	9	Log/Pole/XLog	11	
Sugar Maple	9	Pole/Log	8	
Paper Birch	5	Log/Pole	10	
Red Maple	10	Pole/Log	8	
White Pine	2	Log/Pole	13	
Hemlock	30	Pole/Log/XLog	9	
Red Oak	32	Log/XLog	15	93

Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	Low	>20 feet	Sapling
Beech	Trace	Variable	Sapling
Hemlock	Medium	Variable	Sapling
Hemlock	Low	Variable	Pole

63	4111 - S.Maple, Hard Mast Association	Sawtimber Well	32.6	95	81-110	N/A	Diverse and high quality hardwood stand. Stand thinned in 2016 as part of Creaky Hardwoods (#53-008-12-01), bought and cut by Tulgestka. Average ba/acre from 27 plots = 93 square feet. This stand is a part of the Tin Shanty DHA and will be managed for big trees and a higher residual BA to develop and maintain features of an old growth hardwood ecosystem. Very high elk use in this stand which has impacted hardwood regeneration success.
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Canopy Species	% Cover	Size Class	DBH	Age
White Pine	1	Log	12	
Beech	2	Log	14	
Basswood	24	Log/Pole	11	
Red Oak	24	Log/XLog	15	
Ironwood	2	Pole	5	
Hemlock	2	Pole/Log	8	
Sugar Maple	42	Pole/Log	9	95
Bigtooth Aspen	1	Log	13	
Red Maple	2	Pole/Log	8	

Sub-Canopy Species	Density	Avg. Height	Size
White Ash	Low	< 5 feet	Seeding
Beech	Low	Variable	Sapling

64	4110 - Sugar Maple Association	Sawtimber Well	103.5	98	81-110	N/A	Moderate quality hardwood stand that was last thinned in 1993. The thinning must have been quite heavy as BAs still aren't ready for a thinning at this time. Although not common, there are a couple of areas that were only lightly thinned or not thinned at all during the last harvest. A second age class of much larger, older sugar maple is present. Similar to other stands in the Compartment, these are likely original trees of the stand that were missed during the clearcuts of the early 1900's. White ash used to be a common component of the stand, around 10 square feet of BA, but it is now all dead from EAB. Most beech appears to have BBD. Trace of red oak. Average ba/acre from 18 plots = 110 square feet. Flat terrain. Stand should be ready for a harvest next entry. According to OI notes, two old research plots lie west of the road, a MIMS plot (?) and a basswood decline plot. I did not find evidence of
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Canopy Species	% Cover	Size Class	DBH	Age
Hemlock	1	Log/XLog	14	
Ironwood	1	Pole	5	
Beech	3	Log/XLog	14	
Basswood	26	Log	12	
Sugar Maple	69	Log/Pole/XLog	10	98

Sub-Canopy Species	Density	Avg. Height	Size
Beech	High	Variable	Sapling
Ironwood	Low	Variable	Sapling
White Ash	Trace	Variable	Sapling



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments	
65	4139 - Aspen, Mixed Deciduous	Poletimber Medium	5.6	38	51-80	N/A	This stand was clearcut in 1983 by Champion in the sale Dry Aspen (#53-003-82). Sale records show this stand had much more hardwoods than aspen. OI notes indicate that deer and elk browse was a significant factor and that is reflected in the current species mix today. Some aspen did regenerate but it is clumpy and not uniform throughout. Ironwood dominates wherever aspen isn't present. Surprisingly a few sugar maple saplings did make it past the browse but it isn't a significant amount. A portion of the % noted in the sugar maple species breakdown is from residual stems that were not cut during the harvest. A few white ash stems are still alive. Most beech has BBD. Average ba/acre from 7 plots = 56 square feet.	
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species		
Balsam Poplar		2	Pole	8		Ironwood		
White Ash		1	Pole	8		Sugar Maple		
Beech		3	Pole/Log	8		Beech		
Bigtooth Aspen		8	Pole	9				
Sugar Maple		14	Pole/Sap/Log	6				
Ironwood		33	Sapling/Pole	4				
Quaking Aspen		39	Pole	7	38			
66	4139 - Aspen, Mixed Deciduous	Poletimber Poor	15.8	38	1-50	N/A	This stand was clearcut in 1983 by Champion in the sale Dry Aspen (#53-003-82). Sale records show this stand had much more hardwoods than aspen. Resulting stand is very poor quality due to deer and elk browse which has shifted this stand to a barely forested condition. A few small clones of aspen regenerated along the west edge. A small pocket of white pine is present at the south end. The remaining east half of the stand is clumps of ironwood saplings with a few scattered trees of other species mixed in. White ash used to be a larger component but is now mostly all dead from EAB. A few elm used to be present as well but they are all dead. A few sugar maple saplings did regenerate but they are rare and most sugar maple present in the stand are residual stems that were left after the harvest. Trace of red oak. Average ba/acre from 9 plots = 29 square feet. Gently rolling terrain.	
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species		
Paper Birch		1	Pole	5		Ironwood		
Balsam Poplar		1	Pole	7		Black Cherry		
White Ash		1	Pole	7				
White Pine		7	Pole/Log	8				
Sugar Maple		12	Pole/Sap/Log	7				
Bigtooth Aspen		7	Pole/Log	8				
Ironwood		38	Sapling/Pole	4				
Quaking Aspen		33	Pole/Log	8	38			
67	4116 - Mixed N. Hardwood - Aspen	Sawtimber Medium	5.5	98	51-80	N/A	Odd looking stand that resembles a two-aged shelterwood in most areas. According to sale records this stand has most of the aspen and birch removed in 1974, although several aspen were left and are now very large. Only a few small clones of aspen regenerated following the harvest. The remainder of the regeneration is ironwood and white ash. Most of the ash has died from EAB although there are a few trees hanging on here and there. Trace of white pine in the overstory. Average ba/acre from 6 plots = 60 square feet. Flat terrain. With current deer and elk browse levels there isn't much chance to regenerate this stand, it would probably end up with a worse species mix that what is currently here, I'm guessing only ironwood would make it past the browse.	
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species		
Red Oak		1	XLog/Log	19		Ironwood		
White Ash		3	Pole/Sapling	6		White Ash		
Bigtooth Aspen		21	Log/XLog/Pole	14		Paper Birch		
Quaking Aspen		2	Log	11		Sugar Maple		
Ironwood		16	Pole/Sapling	6				
Basswood		12	Log/Pole	11				
Sugar Maple		45	Log/Pole	11	98			
68	4110 - Sugar Maple Association	Sawtimber Well	30.2	98	81-110	N/A	Moderate to high quality hardwood stand. Sale notes indicate it was last thinned in 1973-74, removing all aspen, birch, and elm. This was apparently a very heavy thinning as there are still areas where the BAs are quite low, especially east of the closed road. A second age class of larger, older trees is present and is more prevalent in the north and west parts of the stand. Similar to other hardwood stands in this Compartment, this second age class of older trees are likely remnants of the original stand that were not cut during the widespread clearcuts of the early 1900's. White ash used to be occupy around 10 square feet of BA in the stand but it is now all dead from EAB. Trace of quaking aspen and red oak. Average ba/acre from 11 plots = 108 square feet. Flat terrain.	
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species		
Paper Birch		2	Log	11		Ironwood		
Bigtooth Aspen		2	Log/XLog	15		Beech		
Ironwood		2	Pole	6				
Beech		3	Log	13				
Basswood		25	Log	11				
Sugar Maple		66	Log/Pole/XLog	11	98			



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments		
69	4110 - Sugar Maple Association	Sawtimber Well	60.9	99	81-110	N/A	2016 Stand thinned as part of Creaky Hardwoods (#53-008-12-01), bought and cut by Tulgestka. High quality stand with a lot of diversity and a component of large, old growth trees. Trace of paper birch, bigtooth aspen, elm, and white pine. Average ba/acre from 43 plots = 84 square feet. This stand is a part of the Tin Shanty DHA and will be managed for big trees and a higher residual BA to develop and maintain features of an old growth hardwood ecosystem. Very high elk use in this stand which has impacted hardwood regeneration success in canopy gaps created during the recent harvest.		
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density		Avg. Height	Size
Beech	4	Log/XLog	14		Beech	Medium		Variable	Sapling
Red Oak	3	Log/XLog	15		White Ash	Medium	< 5 feet	Seeding	
Hemlock	2	Log/Pole	11						
Red Maple	1	Pole/Log	9						
Basswood	30	Log	12						
Sugar Maple	60	Log/Pole	10	99					
70	4199 - Other Mixed Upland Deciduous	Sawtimber Well	18.5	93	111-140	N/A	Diverse stand that is transitional between better hardwood soils to the east and oak/pine soils to the west. The red oak and white pine component is high quality and displays the best growth while the remainder of the hardwoods still display good quality but are quite a bit smaller with some areas of primarily poletimber. Not much understory development at all except for old suppressed sugar maple saplings. Hemlock is mostly healthy. Some of the beech, but not all, has BBD. Trace of basswood. Average ba/acre from 9 plots = 122 square feet. Gently rolling terrain. Regeneration using even-aged or two-aged techniques would not be successful here due to current elk browse levels. This stand is also a part of the Tin Shanty DHA and should be managed to retain a mature, closed canopy forest. Thin when stand 63 to the east is thinned again.		
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density		Avg. Height	Size
Paper Birch	14	Log/Pole	10		Sugar Maple	Medium		>20 feet	Sapling
Sugar Maple	11	Pole/Log	8		Ironwood	Low	>20 feet	Sapling	
Red Maple	17	Pole/Log	9		Beech	Low	< 5 feet	Seeding	
Beech	5	Pole/Log	8						
Ironwood	2	Pole	5						
Hemlock	7	Pole/Log	8						
White Pine	8	Log/XLog	14						
Red Oak	36	Log/XLog	15	93					
71	4111 - S.Maple, Hard Mast Association	Sawtimber Well	18.0	95	81-110	N/A	Stand was thinned in 2016 as part of Creaky Hardwoods (#53-008-12-01), bought and cut by Tulgestka. This unit of the sale had all of the ash removed. There is some blowdown along the north/northwest edges of the stand from a wind event in 2013. Average residual ba/acre from 11 plots = 91 square feet. This stand is a part of the Tin Shanty DHA and will be managed for big trees and a higher residual BA to develop and maintain features of an old growth hardwood ecosystem. Very high elk use in this stand which has impacted hardwood regeneration success.		
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density		Avg. Height	Size
White Pine	2	Log	12		Beech	Medium		Variable	Sapling
Hemlock	5	Pole/Log	9						
Beech	4	Log	13						
Red Maple	3	Pole/Log	8						
Red Oak	24	Log/XLog	15						
Basswood	22	Log/Pole	11						
Sugar Maple	40	Pole/Log	9	95					
72	4310 - Pine, Oak Mix	Sawtimber Medium	1.8	94	51-80	N/A	Stand had all hardwoods except oak cut in 1983 to release the white pine. The stand is now essentially a supercanopy of red oak with patches of white pine in both the understory and some clumps that are free to grow. Average ba/acre from 4 plots = 65 square feet. The middle of the stand is open and a popular camping spot. Old OI notes speculate that this area may have been a homestead or logging camp based on some old trash piles laying around. There was also mention of an old well pipe sticking up out of the ground. A few apple trees are still hanging on around the perimeter of the open area.		
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density		Avg. Height	Size
White Pine	45	Pole/Sap/Log	5	38	White Pine	Medium		>20 feet	Sapling
Red Oak	55	Log/XLog	15	94	Witch Hazel	Low	5 - 10 feet	Tall Shrub	



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments																																																				
73	4191 - Mixed Upland Deciduous with Conifer	Sawtimber Well	9.1	94	111-140	N/A	Moderate quality mixed species stand that has not been treated before. Diverse mix of species with oak and pine showing the best growth. Some clumps of hemlock are present, mostly along the west edge of the stand. Trace of beech in the overstory. Average ba/acre from 8 plots = 138 square feet. Mostly flat terrain except for some slopes along the south edge adjacent to the pipeline. Current browse levels make regeneration of this stand using even-aged or two-age techniques unlikely. This stand is also a part of the Tin Shanty DHA and should be managed to retain a mature, closed canopy forest.																																																				
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74	4319 - Mixed Upland Forest	Poletimber Medium	11.1	36	51-80	N/A	Stand was harvested in 1985 in the sale House's Hills (#53-008-83) bought by Champion. Previous inventory noted heavy browse on the regeneration and this is evident in the large non-forested areas present throughout most of the north half. Despite the browse a couple of red oak stump sprouts were able to regenerate. Elk use is still very heavy in the stand as the majority of the red maple stems have badly damaged boles from elk stripping off the bark. Average ba/acre from 6 plots = 60 square feet. Rolling terrain.																																																				
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75	42260 - Natural Pine, Mixed Deciduous	Sawtimber Well	12.4	92	141-170	N/A	Moderate to high quality mixed pine stand with no record of a past treatment. Diameters on the pine vary as there are quite a few suppressed poletimber stems as well as a second age class of larger, older XL-sized trees. Average ba/acre from 9 plots = 170 square feet. Rolling terrain and a short, steep slope at the southeast side of the stand adjacent to the ROW. This stand is a part of the Tin Shanty DHA and should be managed to retain a mature, closed canopy forest. Active goshawk nest in adjacent stand 93, close to the northwest boundary of this stand.																																																				
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76	4191 - Mixed Upland Deciduous with Conifer	Sawtimber Well	16.4	88	111-140	N/A	Nice mixed pine and oak stand. A second age class of larger, older pine and oak are present. A thin vein of mostly pine runs north-south along the eastern stand boundary. Trace of paper birch, sugar maple, and hemlock. Average ba/acre from 7 plots = 128 square feet. Central part of the stand is on a knob with slopes going down to the west and south. The slopes on the south edge adjacent to the ROW are somewhat steep. Regeneration using even-aged techniques will be an issue here due to the high browse levels. This stand is also part of the Tin Shanty DHA so management should be geared toward maintaining a closed canopy, uneven-aged stand.																																																				
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77	4133 - Aspen, Mixed Pine	Poletimber Well	6.1	36	81-110	N/A	This stand was clearcut by Champion in 1985 in the sale House's Hills. Aspen regenerated well except for the north finger which is now mostly red and white pine. Average ba/acre from 5 plots = 106 square feet. Rolling terrain.																																																				
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Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments		
78	4130 - Aspen	Poletimber Well	15.4	36	81-110	N/A	Stand was clearcut by Champion in 1985 in the sale House's Hills. Aspen regenerated well in the west half of the stand but not as well in the east half where old OI notes indicate that there was some elk browse damage. As a result the east half is dominated more by red maple and white pine. Diameters on the aspen vary with some areas averaging around 7-8" DBH while others are just reaching merchantability. A few areas, such as near the closed road and landing, that have nice mixed pine regeneration. Average ba/acre from 7 plots = 91 square feet. Rolling		
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density		Avg. Height	Size
Red Oak	1	Pole	7		White Pine	Medium		Variable	Sapling
Red Pine	3	Pole/Log	8		Red Maple	Medium		>20 feet	Sapling
White Pine	15	Pole/Sap/Log	6		Witch Hazel	Trace		5 - 10 feet	Tall Shrub
Red Maple	20	Sapling/Pole	4		Red Pine	Trace		Variable	Sapling
Quaking Aspen	5	Pole/Sapling	5						
Bigtooth Aspen	56	Pole/Sap/Log	6	36					
79	42260 - Natural Pine, Mixed Deciduous	Sawtimber Well	1.0	83	141-170	N/A	Nice natural pine stand with a variety of diameters including some very large legacy size white pine. Different from the adjacent stand to the north because of the larger diameters and red pine component. The far northeast part of the stand has a small inclusion of mostly red maple and bigtooth aspen. Avreage ba/acre from 3 plots = 167 square feet.		
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density		Avg. Height	Size
Paper Birch	1	Log	12		White Pine	Medium		Variable	Sapling
Red Oak	2	Log	13						
Red Maple	12	Pole/Log	8						
Bigtooth Aspen	18	Log/XLog	14						
Red Pine	25	Log/XLog	13						
White Pine	42	Log/Pole/XLog	12	83					
80	42200 - Natural White Pine	Poletimber Well	4.2	83	141-170	N/A	Dense white pine stand that is mostly in the poletimber and small sawlog size classes. Diameters start to increase as you get to the west edge of the stand and this is also where most of the red pine is located. Small amount of legacy size white pine trees. Trace of paper birch. Average ba/acre from 5 plots = 158 square feet. Mostly flat terrain. This stand is also a part of the Tin Shanty DHA and should be managed to retain a mature, closed canopy forest.		
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density		Avg. Height	Size
Bigtooth Aspen	3	Log/Pole	11		White Pine	Low		Variable	Sapling
Red Maple	6	Pole/Log	8		Red Maple	Trace		>20 feet	Sapling
Red Oak	5	Log	13						
Red Pine	9	Log	12						
White Pine	77	Pole/Log/XLog	9	83					
81	4110 - Sugar Maple Association	Sawtimber Well	45.5	92	111-140	N/A	Exceptional northern hardwood stand that has a second age class of older, larger hardwood trees. A site visit was made to this stand with MNFI staff who, after reviewing imagery from the 1930's, determined that trees in this older age class were not harvested during the initial cut-over of Michigan in the early 1900's. No management has taken place in this stand since that time. Does not meet criteria for Old Growth at this time but would likely as an ERA. Stand was nominated as an SCA last inventory cycle and is now a part of the Tin Shanty DHA. Stand characteristics; canopy is dominated by sugar maple and basswood. Beech is a smaller component and over 1/2 has BBD. The west edge of the stand has a few pockets that were heavy to white ash but they are now all dead. Trace of hemlock. Beech understory more common in the northern 1/3rd of the stand where BAs are lower. The remainder of the stand does not have much of an understory due to the dense stocking. Average ba/acre from 13 plots = 134 square feet. Large vernal pool complex slightly north of the center of the stand. Terrain is flat to gently rolling with a few steeper slopes at the northeast side. Remnants of an old road network meander through the stand.		
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density		Avg. Height	Size
Paper Birch	1	Log/Pole	10		Beech	Medium		Variable	Sapling
American Elm	1	Log/Pole	11		White Ash	Medium		< 5 feet	Seeding
Red Oak	1	Log/XLog	15		Sugar Maple	Low		>20 feet	Sapling
Ironwood	2	Pole	5						
Beech	5	Log/XLog	13						
Basswood	43	Log/XLog/Pole	13	131					
Sugar Maple	47	Log/Pole/XLog	11	92					



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments																																																
82	4110 - Sugar Maple Association	Sawtimber Well	10.0	122	111-140	N/A	Exceptional hardwood stand with at least two distinct age classes including a class of larger, older trees. Large diameter and very tall trees. Most but not all beech have BBD and many are already dead, but there may be a few resistant trees in the stand. White ash used to be a small component but is now all dead. Vernal pool complex along the east edge of the stand. Diverse herbaceous layer but not much tree regeneration. Heavy elk use. Average ba/acre from 6 plots = 123 square feet. MNFI staff have visited this stand in the past and determined that it meets the requirements for an ERA. As a result, no management is recommended for the stand.																																																
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83	4191 - Mixed Upland Deciduous with Conifer	Sawtimber Well	11.3	99	141-170	N/A	High quality stand, especially the oak component. A lot of large diameter trees are present giving this the appearance of an uneven-aged stand. Most of the beech has BBD and several are already dead or close to it. Hemlock common throughout although several appear unhealthy. Surprisingly there are a few clumps of advanced sugar maple regeneration. This regen likely resulted after the harvest of windthrown trees that took place in the stand in 1993-94. Elk have killed some of the clumps but there are others that look like they will survive. Average ba/acre from 7 plots = 161 square feet. Flat terrain.																																																
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84	310 - Herbaceous Openland	Nonstocked	0.5	0	Unspecified	No	Small open area not managed as a food plot. A lot of spotted knapweed and reindeer moss.																																																
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85	310 - Herbaceous Openland	Nonstocked	1.7	38	Unspecified	No	This stand was clearcut, along with stand 65, in 1983 by Champion in the sale Dry Aspen (#53-003-82). Sale records show this stand had much more hardwoods than aspen. Deer and elk browse have eliminated all regeneration from this stand. A browse line is evident on all trees in the stand, even the ironwood. Heavily browsed ironwood and balsam poplar seedlings are along the edges.																																																
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86	42290 - Natural Mixed Pine	Poletimber Well	5.3	66	111-140	N/A	Moderate quality stand of mixed pine with a variety of diameters present. There used to be a larger component of jack pine but most of it has died. An older age class of much larger pine is present giving the stand a 2-aged appearance in places. Most of the aspen is at the south end. Trace of black spruce and red oak. Average ba/acre from 5 plots = 113 square feet. Flat terrain. Different character than the adjacent MC stand to the south (#11) as there is a lot more white pine in this stand.																																																
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87	330 - Low-Density Trees	Nonstocked	1.8	0	Unspecified	No	Blowdown area from a wind event in the summer of 2017. Most of the trees on the ground are red oak and red maple and only a few trees are left standing. Tangled mess that is difficult to get through. White pine, aspen, and red maple seedlings are starting to show up in the understory.									
								Sub-Canopy Species	Density	Avg. Height	Size					
								Red Maple	Low	>20 feet	Sapling					
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								Red Oak	Low	>20 feet	Log					
								White Pine	Low	>20 feet	Log					
Red Pine	Trace	>20 feet	Log													
88	310 - Herbaceous Openland	Nonstocked	1.6	38	Unspecified	No	This stand, along with stand 66, was clearcut in 1983 by Champion in the sale Dry Aspen (#53-003-82). Sale records show this stand had much more hardwoods than aspen. Deer and elk browse have eliminated all tree species regeneration from the stand. A pile of some kind of white sandy material is present at the northwest corner next to the closed road.									
								Sub-Canopy Species	Density	Avg. Height	Size					
								Sugar Maple	Trace	>20 feet	Log					
								Autumn Olive	Trace	< 5 feet	Tall Shrub					
Mixed Grasses	Full	Unspecified	Non-Wood													
89	42290 - Natural Mixed Pine	Poletimber Medium	12.9	41	51-80	N/A	Stand had all jack pine, aspen, and red maple cut in 1980 by Ken Boughner (sale #53-021-78). Jack pine regenerated well as did white pine. An older age class of large red pine is present. Diameters are still small on the jack pine. There are quite a few dead jack pine, likely from a heavy spring snowstorm several years ago that did similar damage to other young jack pine stands in the area. Trace of red oak and black spruce poletimber. Average ba/acre from 6 plots = 65 square feet. Flat terrain.									
								Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
								Bigtooth Aspen	7	Pole	7		White Pine	Low	Variable	Sapling
								Quaking Aspen	2	Pole	6		Black Cherry	Low	Variable	Tall Shrub
								Red Maple	4	Pole	7		Witch Hazel	Trace	5 - 10 feet	Tall Shrub
								White Pine	30	Pole/Sap/Log	7					
								Red Pine	17	Log/XLog/Pole	15					
								Jack Pine	40	Pole/Sapling	6	41				
90	4319 - Mixed Upland Forest	Sawtimber Well	3.8	95	81-110	N/A	Hodgepodge stand that has a wide mix of species. The majority of the stand occupies a valley with an old road running north-south through the middle. This stand likely had a partial harvest at the same time as stand #29 to the west as there is a small amount of younger aspen present. Trace of red oak poletimber adjacent to the road. Average ba/acre from 5 plots = 102 square feet.									
								Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
								Beech	1	Log	14		Ironwood	Medium	Variable	Sapling
								Paper Birch	2	Log/Pole	11		White Pine	Medium	Variable	Sapling
								Bigtooth Aspen	9	Log/Pole	11		Beech	Low	Variable	Sapling
								Basswood	2	Log	11					
								Sugar Maple	15	Log/Pole	11					
								Red Maple	18	Log/Pole	11					
								Red Oak	11	Log/XLog	15					
								Red Pine	2	Log/Pole	13					
								White Pine	40	Log/XLog	15	95				



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91	42200 - Natural White Pine	Poletimber Well	6.8	41	111-140	N/A	Stand was harvested in 1980 by Ken Boughner. White pine regenerated well, especially in the east half of the stand. A second age class of larger, older pine is present, more common in the west half next to Tin Shanty Road. Trace of red oak and paper birch. Average ba/acre from 5 plots = 112 square feet.																																																									
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92	42200 - Natural White Pine	Sawtimber Medium	9.2	92	51-80	N/A	Moderate quality white pine stand with a well-developed understory from a harvest in 1993 that removed all species except white pine, red pine, and oak (Tin Shanty Tri-color, #53-007-92, Gary Haskill). This stand was cut at the same time as adjacent stand #37 but basal areas are significantly lower here. Regeneration is more species diverse than stand 37 and has some clumps of bigtooth aspen. There is also a nice representation of red oak ingrowth. Trace of hemlock and sugar maple in the overstory. Average ba/acre from 5 plots = 74 square feet. Most of the stand east of the road occupies a side-slope. No treatment until the understory matures.																																																									
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93	4311 - Pine, Aspen Mix	Sawtimber Well	10.2	83	111-140	N/A	Mixed species stand that is distinct from stand 76 to the east due to the lower amount of oak in this stand. Variety of diameters on the white pine including some close to legacy tree size. The aspen component is most common in a vein that runs along the western edge. Average ba/acre from 4 plots = 133 square feet. Stand sits on a slight west-facing slope. High browse levels make successful regeneration here doubtful. This stand is also a part of the Tin Shanty DHA and should be managed to retain a mature, closed canopy forest. An active goshawk nest was found in the middle part of the stand in a large diameter red oak tree. This prevented data collection from this area of the stand due to the aggressive protection of the nest. I saw two juvenile goshawks on the nest before leaving the area.																																																									
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94	4319 - Mixed Upland Forest	Sawtimber Well	10.2	88	141-170	N/A	Mixed species stand with a significant component of hemlock in the middle part of the stand. Most of the hemlock is small, suppressed trees in the understory although there are some larger trees present. Many large diameter white pine are present, some approaching legacy tree size. Paper birch component is mostly healthy. Trace of red pine and sugar maple. Average ba/acre from 5 plots = 168 square feet. Most of the stand sits on a slight north facing slope. Leave as is, no management due to the hemlock component.																																																									
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Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments																																																																										
96	42200 - Natural White Pine	Sawtimber Well	1.8	83	141-170	N/A	Small, densely-stocked stand that doesn't look like it's been thinned before. It may have been left for retention purposes when the stand to the west was cut. Nice white pine sawlog trees with a lot of smaller, suppressed white pine poletimber also mixed in. Average ba/acre from 3 plots = 153 square feet.																																																																										
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97	42200 - Natural White Pine	Sawtimber Well	5.1	83	81-110	N/A	This stand was harvested at the same time as adjacent stand #4 to the west in 1993 by Gary Haskill in the sale Rumbling Antrim Aspen (#53-009-92). Everything was cut except for oak, red pine, and white pine. Unlike stand #4, no aspen or red maple regenerated here and there is almost a barren understory. White pine dominates the canopy and is pretty good quality, although somewhat short in height for it's age. Trace of quaking aspen in the overstory. Average ba/acre from 4 plots = 83 square feet. Flat terrain. A small stick nest was found at the west end near the closed road. It was not active.																																																																										
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98	4191 - Mixed Upland Deciduous with Conifer	Sawtimber Well	6.4	92	111-140	N/A	Moderate quality mixed species stand. Similar to other adjacent stands to the north, except that white pine is a larger component of this stand. Pine and oak display the best quality. A lot of the red maple are smaller, suppressed poletimber stems. Not much understory development at this time. Trace of beech. Average ba/acre from 7 plots = 111 square feet. Rolling terrain. Some blowdown is present along the eastern side of the stand. Even-aged or two-aged management is not suitable for this area due to the high elk browse pressure. This stand is also part of the Tin Shanty DHA and should be managed to retain a mature, closed canopy forest.																																																																										
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99	4139 - Aspen, Mixed Deciduous	Poletimber Well	20.1	46	81-110	N/A	This stand, along with stand 21 to the west, was clearcut in 1975 by Peter Kujawa. Regeneration came back very well to a diverse mix of species and is probably the best hardwood regeneration I've seen in the southern half of the PRC. Many ash are still alive although there used to be a lot more in the stand prior to EAB. A few small non-forested areas along the north edge that did not regenerate well. Trace of white pine and balsam poplar. Average ba/acre from 7 plots = 98 square feet. Hold this stand until the hardwood component matures more. If treated next entry, use 10% retention to protect hardwood pockets, or type those pockets out as their own stand.																																																																										
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100	2113 - Forage Crops	Nonstocked	12.3		Unspecified	Managed Opening	Maintained food plot.				
101	2113 - Forage Crops	Nonstocked	1.5		Unspecified	Managed Opening	Managed food plot. Small area in the middle where rocks and dirt were piled.				
102	2113 - Forage Crops	Nonstocked	2.2		Unspecified	Managed Opening	Maintained opening. 2 apple trees present.				
103	2113 - Forage Crops	Nonstocked	3.6		Unspecified	Managed Opening	Maintained wildlife opening. Some linear mounds of earth on the sides of the opening, must be old stump piles from when the opening was first cleared. Only a couple of scattered trees throughout the opening.				
104	310 - Herbaceous Openland	Nonstocked	4.1		Unspecified	Managed Opening	Most of this stand is a maintained opening but it doesn't look like it has been worked in for years. There is now a lot of knapweed and other non-natives mixed throughout. Some white ash, ironwood, and beech seedlings are coming in along the edges that weren't maintained, but browse is holding them down. A browse line is evident also on the white pine saplings in the stand.				
								Sub-Canopy Species	Density	Avg. Height	Size
								Sugar Maple	Low	>20 feet	Log
								Basswood	Low	>20 feet	Log
								Red Oak	Low	>20 feet	Log
								White Pine	Trace	>20 feet	Log
								White Pine	Low	Variable	Sapling
Spotted Knapweed	Medium	Unspecified	Non-Wood								
105	310 - Herbaceous Openland	Nonstocked	2.0		Unspecified	No	Long, linear field that doesn't look like it has been planted for a while. Some pine coming in along the edges.				
								Sub-Canopy Species	Density	Avg. Height	Size
								White Pine	Low	Variable	Sapling
								Jack Pine	Low	Variable	Sapling
								Red Pine	Low	Variable	Sapling
106	310 - Herbaceous Openland	Nonstocked	1.9		Unspecified	No	Old well site, plugged in 1982.				
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