Compartment Review Presentation

Gaylord Forest Management Unit

Compartment 52063
Entry Year 2023
Acreage: 3,806
County Antrim
Management Area: Grayling Outwash

Revision Date: 2021-05-04

Stand Examiner: Zach Crew

Legal Description:

T29N-R05W, Sections 21, 22, 27, 28, 33, and 34

Identified Planning Goals:

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

Soil and topography:

This compartment is relatively flat with no slopes that exceed 10 percent. The soil type in this area is dominated by Kalkaska Sand.

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

This compartment is a contiguous block of state owned land. There are some private land holdings to the north and south west portions of the compartment.

Unique Natural Features:

None

Archeological, Historical, and Cultural Features:

None

Special Management Designations or Considerations:

None

Watershed and Fisheries Considerations:

This compartment contains Sand Lake, though none of the proposed treatments appear to be adjacent to surface waters.

Wildlife Habitat Considerations:

This compartment is part of the Sand Lake area and currently provides a mosaic of pine, aspen, and upland brush. The long-term goals are to provide larger areas of these covertypes. This will benefit wildlife species that prefer larger contiguous areas for their habitat requirements.

Mineral Resource and Development Concerns and/or Restrictions

The nearest active sand/gravel pit is more than four miles away, but there may be sand & gravel potential within the compartment. Most of the State land in the compartment is currently leased for oil and gas development and held by production of gas from the Antrim Shale. There has been some oil & gas production from Guelph (Niagaran) reefs to the south. Additional Antrim wells within the compartment could be possible, if the price of gas were to increase significantly. There may be potential for future gas storage development within some of the depleted reefs reservoirs. Active gas storage fields are located just to the southwest. There is no known potential for metallic minerals in this part of the state.

Vehicle Access:

This compartment is easily accessible to vehicles of all kinds. There are multiple seasonal county roads throughout the compartment and Mancelona Road borders the north boundary. There are also plenty of gas well roads throughout the compartment that provide vehicular access to nearly every stand.

Survey Needs:

None

Recreational Facilities and Opportunities:

There is a portion of a snowmobile trail as well as an ATV trail that cross through the compartment. A portion of the NCT also crosses through the west side of the compartment.

Fire Protection:

Fire protection for this area is provided out of the Bellaire and Gaylord Field Offices. There is some potential with the cover types in the area for a large scale fire event.

Additional Compartment Information:

The following reports from the Inventory are attached:

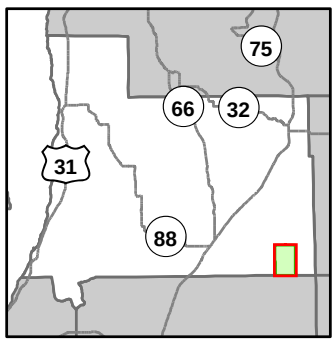
- **Total Acres by Cover Type and Age Class**
- **Cover Type by Harvest Method**
- **Proposed Treatments – No Limiting Factors**
- **Proposed Treatments – With Limiting Factors**
- **Stand Details (Forested and Nonforested)**
- **Dedicated and Proposed Special Conservation Areas**
- **Site Condition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

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

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

Cover Type & Treatments Map

Compartment: 63
T29N, R05W, Sec. 21, 22, 27, 28, 33, 34
County: Antrim
Unit: Gaylord
Mgmt Area: Grayling Outwash
YOE: 2023
Acres: 3805.6 GIS Calculated
Examiner: Zach Crew
Map Revised: 10/15/2021
Map Phase: Post-Review



N

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- Remonumented Section Corners
- Counties
- DNR - Secondary Forest Road
- DNR - Forest Access Route
- Federal / State / County - Paved Road
- Federal / State - Dirt / Gravel Road
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- County - Dirt Road (Seasonal)
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- Pesticide
- Clearcut (w/Reserves)
- Prescribed Burn
- Thinning (Crown, Low, Systematic)
- Regeneration Survey
- 411 - Northern Hardwood
- 413 - Aspen
- 419 - Mixed Upland Deciduous
- 421 - Planted Pines
- 422 - Natural Pines
- 430 - Upland Mixed Forest
- 310 - Herbaceous Openland
- 320 - Upland Shrub
- 330 - Low Density Trees
- 500 - Water
- 790 - Other Bare/Sparsely Vegetated

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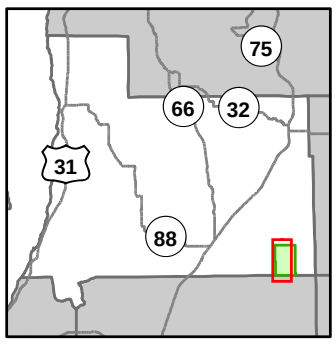

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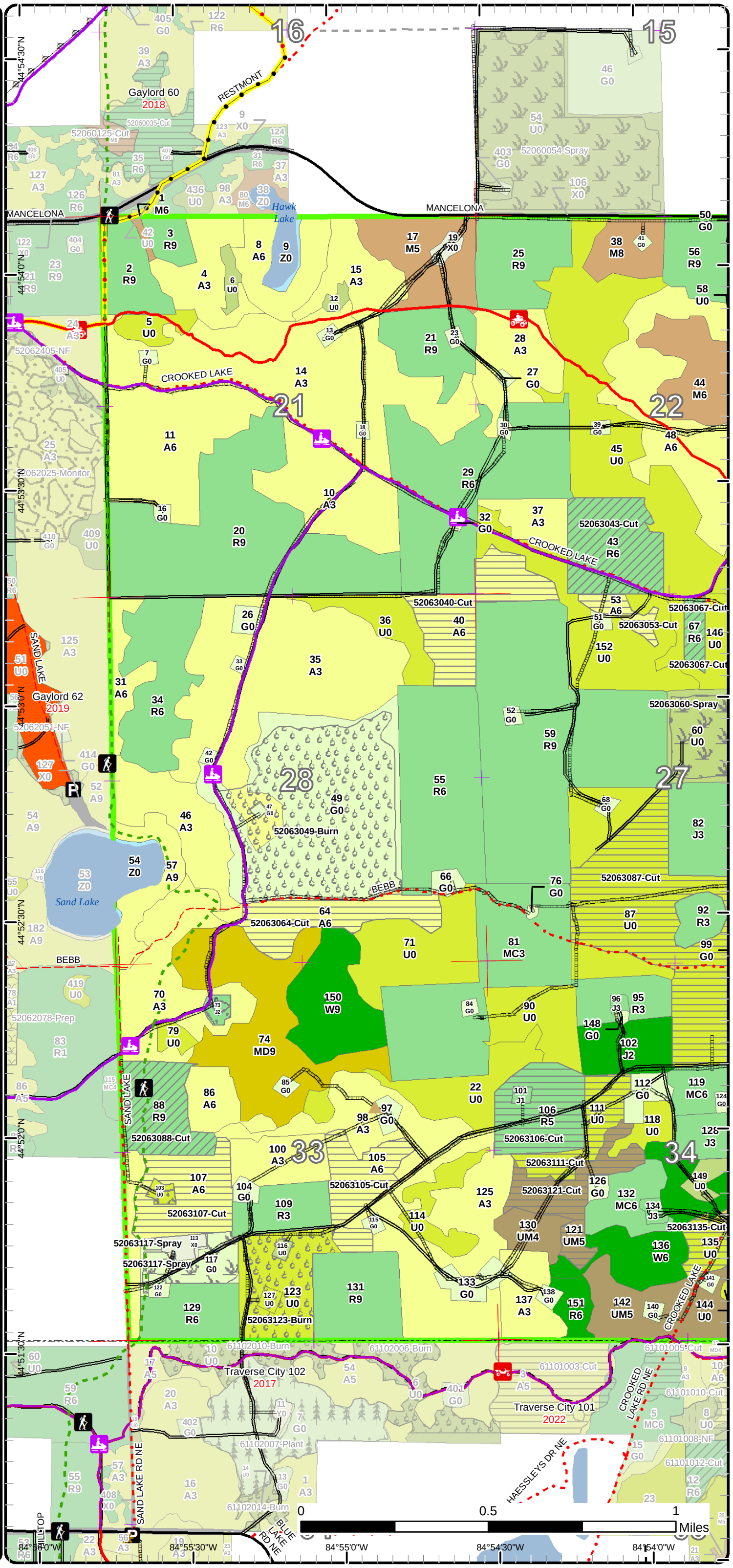

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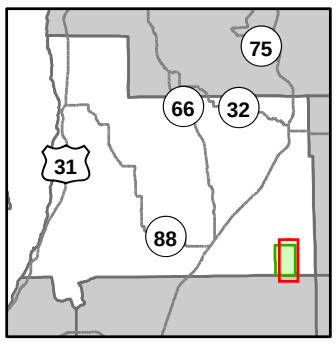

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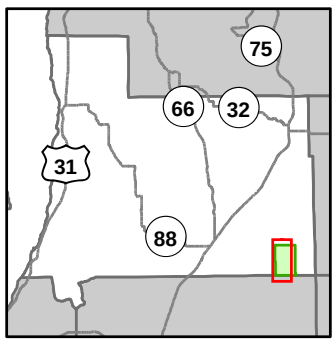

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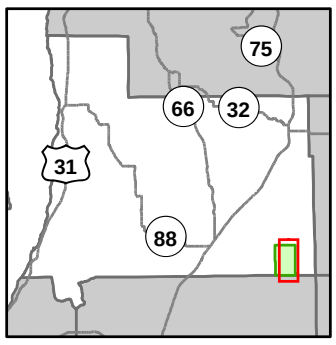

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Special Conservation Areas

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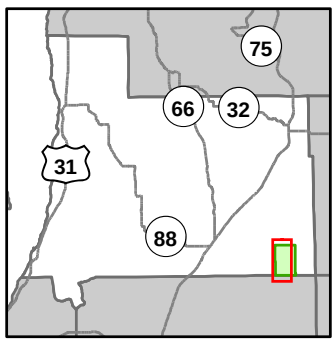

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- Available w/ Constraints
- 5B: Maintain for regeneration purposes
- Unavailable
- 3D: Recreational / Scenic values
- 5E: Long-Term Retention
- Stand Boundaries
- SCA
- Boat Access Site

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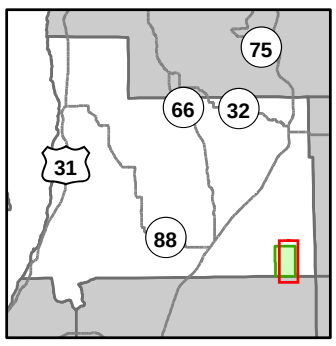

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- Stand Boundaries

Report 1 – Total Acres by Cover Type and Age Class

Gaylord Mgt. Unit **Compartment 63** **Year of Entry 2023**

Zach Crew : Examiner

Age Class

	Non-Forest	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100-109	110-119	120-129	130-139	140-149	150+	Uneven-Aged	Total
Aspen	0	462	192	66	101	62	45	40	72	0	0	0	0	0	0	0	0	51	**1090**
Bare/Sparsely Vegetated	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**7**
Herbaceous Openland	224	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**224**
Jack Pine	0	31	141	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**172**
Low-Density Trees	663	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**663**
Mixed Upland Deciduous	0	0	0	0	0	0	0	0	0	0	78	0	0	0	0	0	0	0	**78**
Northern Hardwood	0	0	0	0	0	0	0	0	54	23	32	0	0	0	0	0	0	0	**109**
Planted Mixed Pines	0	0	39	104	0	0	0	0	18	0	0	0	0	0	0	0	0	0	**161**
Red Pine	0	0	0	110	120	0	27	553	198	0	0	0	0	0	0	0	0	0	**1008**
Upland Mixed Forest	0	0	0	0	0	0	0	0	39	0	88	0	0	0	0	0	0	0	**127**
Upland Shrub	65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**65**
Water	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**19**
White Pine	0	0	0	0	0	0	0	0	43	0	39	0	0	0	0	0	0	0	**82**
Total	**978**	**493**	**372**	**280**	**221**	**62**	**72**	**593**	**424**	**23**	**237**	**0**	**0**	**0**	**0**	**0**	**0**	**51**	**3805**

Report 2 – Treatment Summary

Gaylord Mgt. Unit

Year of Entry: 2023

Acres of Harvest

Compartment 63

Total Compartment Acres: 3,806

Commercial Harvest - 503

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	158	0	0	0	0	0	0	0	0	**158**
Low-Density Trees	202	0	0	0	0	0	0	0	0	**202**
Red Pine	32	0	0	0	0	84	0	0	0	**116**
Upland Mixed Forest	27	0	0	0	0	0	0	0	0	**27**
Total	**419**	**0**	**0**	**0**	**0**	**84**	**0**	**0**	**0**	**503**

Proposed and Next Step Treatments by Method

	Harvest	Site Prep	Planting	Seeding	Burning	Pesticide	Monitoring	Other	Non-Forest Mgt.	Total Acres
Current	503	0	0	0	152	46	6	0	0	**707**
Next Step	0	315	265	0	34	234	481	0	0	**1330**
Total	**503**	**315**	**265**	**0**	**186**	**280**	**486**	**0**	**0**	**2036**

Approved Treatments:

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
40	52063040-Cut	37.0	4130 - Aspen	Poletimber Well	55	51-80	Harvest	Clearcut with Retention	413 - Aspen	Even-Aged	No

Prescription Specs: Final harvest stand, minimal retention. Leave all white pine.

Next Step Treatments: Monitoring, Natural Regen (Intermediate)

Acceptable Regen: A mix of species with aspen dominant that meets minimum stocking criteria.

Other Comment: Be sure to add appropriate trail protection specs. Protect wildlife shrubs during harvest.

Site Condition

Proposed Start Date: 10/1 /2022

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
43	52063043-Cut	39.5	42110 - Planted Red Pine	Poletimber Well	64	201+	Harvest	Crown Thinning	4211 - Planted Red Pine	Even-Aged	No

Prescription Specs: Mark to thin stand with a target residual BA of 120-140. Focus marking on removing trees with defect and/or poor form. Release the crowns of high quality red pine.

Next Step Treatments:

Acceptable Regen:

Other Comment: Be sure to include snowmobile trail protection specs.

Site Condition

Proposed Start Date: 10/1 /2022

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
49	52063049-Burn	117.8	3105 - Mixed Upland Herbaceous	Nonstocked		Unspecified	Burn	Opening	3105 - Mixed Upland Herbaceous		No

Prescription Specs: Not sure when next YOE is scheduled for burning, just gave date as next YOE which would be 3 years since last burn

Next Step Treatments: Monitoring, Other - Specify

Acceptable Regen: decrease woody material (trees and shrubs, maintaining a predominantly grass type.

Other Comment: Percent to Treat = 100%

Site Condition

Proposed Start Date: 10/1 /2021

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
53	52063053-Cut	7.3	4130 - Aspen	Poletimber Well	62	51-80	Harvest	Clearcut	413 - Aspen	Even-Aged	No

Prescription Specs: Final harvest stand, no retention due to small stand size, avoid damage to wildlife shrubs as much as possible.

Next Step Treatments: Monitoring, Natural Regen (Intermediate)

Acceptable Regen: A mix of aspen, cherry, and red maple, that meets requirements for a well stocked stand with aspen the dominant species.

Other Comment: Be sure to include snowmobile trail protection specs.

Site Condition

Proposed Start Date: 10/1 /2022

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
60	52063060-Spray	30.7	3205 - Mixed Upland Shrub	Nonstocked		Immature	Pesticide	ERROR	42111 - Planted Red Pine, Mixed Deciduous	Even-Aged	No

Prescription Specs: Site prep herbicide to ready site for planting.

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

Acceptable Regen: Plant red pine with oak.

Other Comment: Percent to Treat = 100%

Site Condition

Proposed Start Date: 10/1 /2021

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
64	52063064-Cut	31.2	4130 - Aspen	Poletimber Well	62	51-80	Harvest	Clearcut with Retention	413 - Aspen	Even-Aged	No

Prescription Specs: Final harvest stand, retention to be left west of the snowmobile trail, already coded in MIFI.

Next Step Treatments: Monitoring, Natural Regen (Intermediate)

Acceptable Regen: A mix of species dominated by aspen that meets minimum stocking requirements

Other Comment: Be sure to add appropriate trail protection specs. Avoid damage to white pine and wildlife shrubs during harvest operations.

Site Condition

Proposed Start Date: 10/1 /2022

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
65	52063065.59_ Cut	22.9	4130 - Aspen	Poletimber Well	75	51-80	Harvest	Clearcut	4130 - Aspen	Even-Aged	No

Prescription Specs: Final harvest with no retention. A small upland brush inclusion along North Crooked Lake is included in harvest boundaries to be utilized for a landing. NOTE: THIS STAND WILL HAVE A DELAYED TREATMENT FOR 2017 YOE TO BE TREATED WITH ADJACENT ASPEN IN COMP. 64.

Next Step Treatments:

Acceptable Regen:

Other Comment: Follow standard specs to protect snowmobile trail. Do not harvest stand during active snowmobile season since this trail is heavily used.

To be cut with the adjacent stand to the east in FY2017. Old next step comments: Monitor regeneration success which will be aspen primarily.

Site Condition

Proposed Start Date: 10/1 /2016

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
67	52063067-Cut	13.9	42110 - Planted Red Pine	Poletimber Well	60	171-200	Harvest	Systematic Thinning	4211 - Planted Red Pine	Even-Aged	No

Prescription Specs: First entry third row thinning, rows will need to be established via marking. Mark rows east/west. Target residual BA of 120-140

Next Step Treatments:

Acceptable Regen:

Other Comment: Be sure to include snowmobile trail protection specs.

Site Condition

Proposed Start Date: 10/1 /2022

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
73	52063073.49_ Monitor	3.2	42120 - Planted Jack Pine	Sapling Medium	7	Immature	Monitoring	Artificial Regen(1yr)	42141 - Planted Mixed Pine, Mixed Deciduous	Even-Aged	No

Prescription Specs:

Next Step Treatments: ; Monitoring, Artificial Regen(3yr)

Acceptable Regen: Mix of Oak, Pine and Spruce. Experimental planting using plugs, bare root and acorns.

Other Comment: Percent to Treat = 100%

Site Condition

Proposed Start Date: 4 /20/2016

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
87	52063087-Cut	121.4	330 - Low-Density Trees	Nonstocked			Harvest	Clearcut with Retention	4211 - Planted Red Pine	Even-Aged	No

Prescription Specs: Final harvest stand to prepare for conversion to red pine plantation. Retention is already coded for the sale.

Next Step Treatments: SitePrep, Trenching; Pesticide, Skidder - Site Prep; Planting, Initial Plant; Monitoring, Artificial Regen(1yr)

Acceptable Regen: A well stocked red pine plantation.

Other Comment:

Site Condition

Proposed Start Date: 10/1 /2022

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
88	52063088-Cut	30.7	42110 - Planted Red Pine	Sawtimber Well	63	201+	Harvest	Crown Thinning	4211 - Planted Red Pine	Even-Aged	No

Prescription Specs: Mark to thin stand with a target residual BA of 120-140. Focus marking on trees of poor form/defect. Open crowns of high quality red pine.

Next Step Treatments:

Acceptable Regen:

Other Comment: Be sure to include appropriate trail protection specs, and wildlife shrub protection specs.

Site Condition

Proposed Start Date: 10/1 /2022

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
103	52063103.55_ Monitor	2.4	330 - Low-Density Trees	Nonstocked			Monitoring	Artificial Regen(1yr)	31022 - Warm Season Grass		No

Prescription Specs: This is a monitoring of a gas well reclamation study. The Au Sable Institute of Environmental Studies is planting a variety of warm season grasses on this no long used gas well site.

Next Step Treatments:

Acceptable Regen: any type of native grass

Other Comment: Follow this up with a monitoring treatment every year. Site #7 of 10

Site Condition

Proposed Start Date: 10/1 /2015

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
105	52063105-Cut	26.1	4130 - Aspen	Poletimber Well	48	51-80	Harvest	Clearcut with Retention	413 - Aspen	Even-Aged	No

Prescription Specs: Final harvest stand, leave minimal retention.

Next Step Treatments: Monitoring, Natural Regen (Intermediate)

Acceptable Regen: A mix of species dominated by aspen that meets minimum stocking requirements.

Other Comment: Avoid damage to wildlife shrubs during harvest.

Site Condition

Proposed Start Date: 10/1 /2022

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
106	52063106-Cut	32.1	42110 - Planted Red Pine	Poletimber Medium	64	1-50	Harvest	Clearcut with Retention	4211 - Planted Red Pine	Even-Aged	No

Prescription Specs: Final harvest stand, leave minimal retention.

Next Step Treatments: Pesticide, Skidder - Site Prep; SitePrep, Trenching; Planting, Initial Plant

Acceptable Regen: A red pine plantation of good quality that meets stocking criteria.

Other Comment:

Site Condition

Proposed Start Date: 10/1 /2022

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
107	52063107-Cut	33.0	4130 - Aspen	Poletimber Well	55	51-80	Harvest	Clearcut with Retention	413 - Aspen	Even-Aged	No

Prescription Specs: Final harvest stand, utilize retention to protect the hiking trail that runs through the stand

Next Step Treatments: Monitoring, Natural Regen (Intermediate)

Acceptable Regen: A mix of species dominated by aspen that meets minimum stocking requirements

Other Comment: Consider only harvesting on the east side of the NCT, west of NCT is retention.

Site Condition

Proposed Start Date: 10/1 /2022

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
111	52063111-Cut	19.2	330 - Low-Density Trees	Nonstocked			Harvest	Clearcut	4211 - Planted Red Pine	Even-Aged	No

Prescription Specs: Final harvest stand in conjunction with stands 106 and 121 to allow for reforestation activities to occur.

Next Step Treatments: SitePrep, Trenching; SitePrep, Roller Chopping; Pesticide, Skidder - Site Prep; Planting, Initial Plant

Acceptable Regen: A fully stocked red pine plantation

Other Comment: No retention due to this not being a forested stand.

Site Condition

Proposed Start Date: 10/1 /2022

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
117	52063117-Spray	15.0	310 - Herbaceous Openland	Nonstocked	0		Pesticide	ERROR	4211 - Planted Red Pine	Even-Aged	No

Prescription Specs: Herbicide for Release.

Next Step Treatments: ; Monitoring, Artificial Regen(3yr)

Acceptable Regen: A red pine stand that meets minimum stocking criteria.

Other Comment: Be sure to include appropriate signage along the hiking trail.

Site Condition

Proposed Start Date: 10/1 /2020

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
121	52063121-Cut	27.3	4311 - Pine, Aspen Mix	Poletimber Medium	79	1-50	Harvest	Clearcut with Retention	4311 - Pine, Aspen Mix	Two-Aged	No

Prescription Specs: Cut all merchantable species except for white pine. Be sure to include specs to protect advanced conifer regen where it occurs.

Next Step Treatments: Monitoring, Natural Regen (Intermediate)

Acceptable Regen: New regeneration should consist of aspen, cherry, and red maple, with some scattered jack pine and white pine.

Other Comment: Include appropriate trail protection specs depending on haul routes, also include specs to protect wildlife shrubs. Retention shall be all white pine left, as well as protected sapling conifers.

Site Condition

Proposed Start Date: 10/1 /2022

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
123	52063123-Burn	34.2	330 - Low-Density Trees	Nonstocked	0		Burn	Opening	3301 - Low Density Deciduous Trees		No

Prescription Specs: Prescribed burn in conjunction with adjacent prescribed stands to maintain opening characteristics and set back woody vegetation.

Next Step Treatments: Burn, Opening

Acceptable Regen:

Other Comment:

Site Condition

Proposed Start Date: 10/1 /2022

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
135	52063135-Cut	61.7	330 - Low-Density Trees	Nonstocked			Harvest	Clearcut	4211 - Planted Red Pine	Even-Aged	No

Prescription Specs: Attempt to commercially harvest in order to clean up the site to allow for reforestation activities.

Next Step Treatments: SitePrep, Roller Chopping; SitePrep, Trenching; Pesticide, Skidder - Site Prep; Planting, Initial Plant

Acceptable Regen: A well stocked red pine plantation.

Other Comment: No retention due to this being a non forested stand and it being decided to convert it to a forested stand.

Site Condition

Proposed Start Date: 10/1 /2022

Total Treatment Acreage Proposed: **706.6**

Report 4 – Site Conditions

Gaylord Mgt. Unit

Zach Crew : Examiner

Compartment: 63

Year of Entry: 2023

Availability for Management

Total Acres	Acres Available	*Acres Avail With Condition*	Acres Not Available		Dominant Site Conditions *5B*	3D	5E
1091	1002	***0***	89	**Aspen**		48	41
7	7	***0***	0	**Bare/Sparsely Vegetated**			
224	224	***0***	0	**Herbaceous Openland**			
171	169	***0***	2	**Jack Pine**			2
663	635	***0***	28	**Low-Density Trees**			28
78	78	***0***	0	**Mixed Upland Deciduous**			
109	109	***0***	0	**Northern Hardwood**			
161	161	***0***	0	**Planted Mixed Pines**			
1008	1008	***0***	0	**Red Pine**			
127	39	***88***	0	**Upland Mixed Forest**	***88***		
65	65	***0***	0	**Upland Shrub**			
19	19	***0***	0	**Water**			
82	82	***0***	0	**White Pine**			
3,806	3,598	***88***	119	Total Forested Acres	***88***	48	72
	95%	***2%***	3%	Relative Percent			

**Due to limitations in the current Site Conditions Analysis tool, all nonforested acres are considered available. Future development will enable analysis of nonforested types.*

Site No.	Dominant Site Cond Availability	Dominant Site Condition	Acres	Other Site Condition	Other Site Condition	Other Site Condition	Other Site Condition
1	**Unavailable**	**5E: Long-Term Retention**	2	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
2	**Unavailable**	**3D: Recreational / Scenic values**	26	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
3	**Unavailable**	**5E: Long-Term Retention**	1	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						

4	**Unavailable**	**5E: Long-Term Retention**	3	Unspecified	Unspecified	Unspecified	Unspecified

Comments:

5	**Available**	**5B: Maintain for regeneration purposes**	88	Unspecified	Unspecified	Unspecified	Unspecified

Comments:
Stand beginning to establish regen at this time, should wait and let regeneration establish itself before considering a harvest.

6	**Unavailable**	**5E: Long-Term Retention**	12	Unspecified	Unspecified	Unspecified	Unspecified

Comments:

7	**Unavailable**	**3D: Recreational / Scenic values**	22	Unspecified	Unspecified	Unspecified	Unspecified

Comments:

8	**Unavailable**	**5E: Long-Term Retention**	3	Unspecified	Unspecified	Unspecified	Unspecified

Comments:

9	**Unavailable**	**5E: Long-Term Retention**	5	Unspecified	Unspecified	Unspecified	Unspecified

Comments:

10	**Unavailable**	**5E: Long-Term Retention**	3	Unspecified	Unspecified	Unspecified	Unspecified

Comments:

11	**Unavailable**	**5E: Long-Term Retention**	4	Unspecified	Unspecified	Unspecified	Unspecified

Comments:

12	**Unavailable**	**5E: Long-Term Retention**	11	Unspecified	Unspecified	Unspecified	Unspecified

Comments:

13	**Unavailable**	**5E: Long-Term Retention**	1	Unspecified	Unspecified	Unspecified	Unspecified

Comments:

14	**Unavailable**	**5E: Long-Term Retention**	2	Unspecified	Unspecified	Unspecified	Unspecified

Comments:

15	**Unavailable**	**5E: Long-Term Retention**	4	Unspecified	Unspecified	Unspecified	Unspecified

Comments:

16	**Unavailable**	**5E: Long-Term Retention**	2	Unspecified	Unspecified	Unspecified	Unspecified

Comments:
Pocket of natural red and white pine left as long term retention from previous harvest.

17	**Unavailable**	**5E: Long-Term Retention**	2	Unspecified	Unspecified	Unspecified	Unspecified

Comments:

18	**Unavailable**	**5E: Long-Term Retention**	18	Unspecified	Unspecified	Unspecified	Unspecified

Comments:

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

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

SCA Name	SCA Category	Detail Type	Recommendation	Acres

Comments

Report 6 – EXISTING SPECIAL CONSERVATION AREA DETAILS

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

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

Conservation Area	Type	Description

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
1	4116 - Mixed N. Hardwood - Aspen	Poletimber Well	2.4	85	81-110	N/A	Narrow stand with northern hardwood species and some mixed aspen. Orv recreational trail runs along north boundary which is also adjacent to Mancelona Road.

Canopy Species	% Cover	Size Class	DBH	Age
Sugar Maple	10	Pole	10	
Red Maple	35	Pole	9	85
Basswood	25	Pole	9	
Bigtooth Aspen	25	Log	12	
Black Cherry	5	Pole	9	

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

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
2	42110 - Planted Red Pine	Sawtimber Well	21.6	60	111-140	N/A	Red pine plantation thinned in 1993. Dense, tall red pine. Thinned in 2018. Avg BA 139.

Canopy Species	% Cover	Size Class	DBH	Age
Red Pine	100	Log/Pole	10	60

Sub-Canopy Species	Density	Avg. Height	Size
Red Maple	Medium	10 - 20 feet	Tall Shrub
Beech	Medium	10 - 20 feet	Tall Shrub

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
3	42110 - Planted Red Pine	Sawtimber Well	8.8	60	171-200	N/A	Red pine plantation on a steep hill. Very difficult to operate on for logging. Frost pocket in center of stand.

Canopy Species	% Cover	Size Class	DBH	Age
Red Pine	100	Log/Pole	10	60

Sub-Canopy Species	Density	Avg. Height	Size
Red Maple	Medium	Variable	Sapling
Ironwood	Low	Variable	Sapling
Beech	Low	Variable	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
4	4130 - Aspen	Sapling Well	28.1	4	Immature	N/A	Final harvested in spring of 2018, good regeneration starting to come back.

Canopy Species	% Cover	Size Class	DBH	Age
Red Maple	20	Sapling	1	
Quaking Aspen	45	Sapling	1	4
Bigtooth Aspen	30	Sapling	1	
Black Cherry	5	Sapling	1	

Sub-Canopy Species	Density	Avg. Height	Size
Witch Hazel	Low	5 - 10 feet	Tall Shrub

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
5	3303 - Mixed Low Density Trees	Nonstocked	8.6			No	
6	3205 - Mixed Upland Shrub	Nonstocked	3.9			No	
7	3104 - Degraded	Nonstocked	1.2				State Mancelona B1-21 Riverside Energy LLC
8	4133 - Aspen, Mixed Pine	Poletimber Well	26.5	75	81-110	N/A	Mixed stand of Large tooth aspen and northern hardwood pulp developing. The north & east hillside is primarily white pine sawtimber mixed in also. Steep slopes on all sides of Hawk Lake making this stand more important as a buffer.

Canopy Species	% Cover	Size Class	DBH	Age
Sugar Maple	20	Pole/Log	9	82
Red Maple	10	Pole	8	
Beech	10	Pole	5	
Bigtooth Aspen	40	Log/Pole	10	75
White Pine	20	Log	12	

Sub-Canopy Species	Density	Avg. Height	Size
Red Maple	Medium	Variable	Sapling
Beech	Medium	Variable	Sapling
Serviceberry (Juneberry)	Low	10 - 20 feet	Tall Shrub
Witch Hazel	Trace	5 - 10 feet	Tall Shrub

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
9	500 - Water	Nonstocked	8.6			No	
10	4130 - Aspen	Sapling Well	46.8	4	Immature	N/A	Harvested in spring 2018, regeneration coming back nicely at time of sale closing. All sugar maple was left during harvest.
11	4130 - Aspen	Poletimber Well	66.2	27	Immature	N/A	Dense aspen regeneration from a stand cut in 1994.
12	3205 - Mixed Upland Shrub	Nonstocked	2.1			No	
13	3104 - Degraded	Nonstocked	1.5				State Mancelona B3-21 Riverside Energy LLC
14	4130 - Aspen	Sapling Well	129.2	14	1-50	N/A	Aspen stand was final harvested in January, 2007. Well stocked aspen regeneration of healthy quality.
15	4130 - Aspen	Sapling Well	25.1	4	Immature	N/A	Stand harvested in spring of 2018, good regeneration starting to come back.
16	3104 - Degraded	Nonstocked	1.3				State Mancelona D1-21

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Canopy Species	% Cover	Size Class	DBH	Age
Red Maple	25	Sapling	1	
Quaking Aspen	30	Sapling	1	
Bigtooth Aspen	40	Sapling	1	4
Sugar Maple	5	Pole	8	

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Canopy Species	% Cover	Size Class	DBH	Age
Red Maple	15	Sapling/Pole	4	27
Quaking Aspen	33	Pole	5	27
Bigtooth Aspen	50	Pole	5	27
Black Cherry	2	Sapling/Pole	4	27

Sub-Canopy Species	Density	Avg. Height	Size
Witch Hazel	Low	10 - 20 feet	Tall Shrub
Serviceberry (Juneberry)	Low	10 - 20 feet	Tall Shrub
Nannyberry	Trace	5 - 10 feet	Tall Shrub
White Pine	Trace	5 - 10 feet	Sapling
Red Maple	Low	5 - 10 feet	Sapling
Black Cherry	Low	5 - 10 feet	Sapling

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Canopy Species	% Cover	Size Class	DBH	Age
Red Maple	15	Sapling	2	14
Quaking Aspen	20	Sapling	2	14
Bigtooth Aspen	58	Sapling	2	14
White Pine	2	Log	11	
Black Cherry	5	Sapling	2	14

Sub-Canopy Species	Density	Avg. Height	Size
Witch Hazel	Low	5 - 10 feet	Tall Shrub
Serviceberry (Juneberry)	Trace	5 - 10 feet	Sapling

15

Canopy Species	% Cover	Size Class	DBH	Age
Sugar Maple	15	Sapling	1	
Red Maple	15	Sapling	1	
Bigtooth Aspen	70	Sapling	1	4

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
17	4117 - Mixed N. Hardwood - Pine	Poletimber Medium	36.2	70	51-80	N/A	Low to moderately stocked red maple stand. Open grown, limby quality. Aspen along west boundary. White pine and red maple saps filling in

Canopy Species	% Cover	Size Class	DBH	Age
Red Maple	40	Pole/Log	9	70
Quaking Aspen	5	Pole	8	
Bigtooth Aspen	5	Pole/Log	9	
White Pine	25	Log/Pole	10	
Black Cherry	20	Pole	8	
Beech	2	Pole	7	
Sugar Maple	3	Pole	7	

Sub-Canopy Species	Density	Avg. Height	Size
White Pine	Medium	Variable	Sapling
Black Cherry	Low	Variable	Tall Shrub
Serviceberry (Juneberry)	Low	10 - 20 feet	Tall Shrub
Witch Hazel	Low	5 - 10 feet	Tall Shrub
Red Maple	Medium	Variable	Sapling
Ironwood	Low	10 - 20 feet	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
18	3104 - Degraded	Nonstocked	1.0				State Mancelona C3-21
19	790 - Other Bare/Sparsely Vegetated	Nonstocked	3.0				Gas Well Facility State Mancelona A4-21 State Mancelona A4-21 SWD
20	42110 - Planted Red Pine	Sawtimber Well	126.2	63	111-140	N/A	Red pine plantation of good quality. Completed a marked thinning in 2006.

Canopy Species	% Cover	Size Class	DBH	Age
Red Pine	100	Log/Pole	10	63

Sub-Canopy Species	Density	Avg. Height	Size
Red Maple	Medium	Variable	Tall Shrub
Witch Hazel	Low	5 - 10 feet	Tall Shrub
Sugar Maple	Trace	5 - 10 feet	Sapling
Beech	Low	5 - 10 feet	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
21	42110 - Planted Red Pine	Sawtimber Well	26.9	59	141-170	N/A	Red pine plantation thinned in 2006. 170, 150, 150.

Canopy Species	% Cover	Size Class	DBH	Age
Red Pine	100	Log/Pole	10	59

Sub-Canopy Species	Density	Avg. Height	Size
Red Maple	High	Variable	Tall Shrub
Beech	Low	5 - 10 feet	Tall Shrub

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
22	330 - Low-Density Trees	Nonstocked	30.9	0		No	Lots of black cherry, some white pine, and a few clones of aspen. Stand starting to fill in with saplings of aspen, cherry, white pine, and red maple. Doesn't quite meet 25 percent canopy cover for forested stand. Lots of witch hazel.
23	3104 - Degraded	Nonstocked	1.4				State Mancelona B4-21
24	42220 - Natural Jack Pine	Sapling Well	41.8	10	1-50	N/A	

Canopy Species	% Cover	Size Class	DBH	Age
Jack Pine	85	Sapling	2	10
Quaking Aspen	5	Sapling	2	
Black Cherry	10	Sapling	2	

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
25	42110 - Planted Red Pine	Sawtimber Well	35.6	65	111-140	N/A	Well stocked red pine plantation. Third row thinned in 1996. Minor component of red maple left in stand. Thinned in 2016.

Canopy Species	% Cover	Size Class	DBH	Age
Red Pine	100	Log/Pole	10	65

Sub-Canopy Species	Density	Avg. Height	Size
Red Maple	High	Variable	Tall Shrub
Beech	Low	10 - 20 feet	Sapling
Witch Hazel	Low	10 - 20 feet	Tall Shrub

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
26	3102 - Grass	Nonstocked	3.6			Managed Opening	Gravel removed from site and area has been seeded. Gate to remain in place with DNR lock 10/9/19. : Stand restored 2019. Restoration included recontouring, soil amendments, tilling and seasonal planting occurred before the final seed mix was planted in 2019. Gate at entrance and fence along state forest road are to remain in place until field staff determine they are no longer needed to protect the site and/or trail riders. (DNR lock on gate). Future maintenance or removal of the gate and fence are the responsibility of DNR (not oil/gas company). While no tree planting was associated with this restoration, in hind-site planting hawthorn and crap apple trees <6 feet tall along the north and west sides of the stand could have further enhanced the restoration and should be considered during future management of the site. RxM 10/2019.
27	3104 - Degraded	Nonstocked	1.0				State Mancelona B1-22
28	4130 - Aspen	Sapling Well	34.1	4	Immature	N/A	Final harvested in spring of 2018, starting to regenerate at time of sale closing. Quite few maple whips left developing into poles.

Canopy Species	% Cover	Size Class	DBH	Age
Red Maple	15	Sapling	1	
Quaking Aspen	60	Sapling	1	4
Bigtooth Aspen	25	Sapling	1	

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
29	42110 - Planted Red Pine	Poletimber Well	99.3	64	111-140	N/A	Dense red pine plantation. Third row thinning completed in 1997. Some narrow skid rows 8-9' wide. Understory varies from light to heavy with red maple/ beech. Thinned in 2018. Avg BA = 138

Canopy Species	% Cover	Size Class	DBH	Age
Quaking Aspen	5	Pole	6	
Red Pine	93	Log/Pole	11	64
Black Cherry	2	Pole	9	

Sub-Canopy Species	Density	Avg. Height	Size
Red Maple	Medium	5 - 10 feet	Tall Shrub
Beech	Low	10 - 20 feet	Tall Shrub
Quaking Aspen	Low	5 - 10 feet	Tall Shrub

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
30	3104 - Degraded	Nonstocked	1.2				State Mancelona C1-22

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
31	4130 - Aspen	Poletimber Well	13.8	57	81-110	N/A	Aspen mixed in with adjacent planted red pine. Aspen stand immediately to the west in adjacent compartment is being final harvested. North Country hiking trail is located along the west boundary of this stand. Some age & dbh variation in Aspen, some white pine in uderstory.

Canopy Species	% Cover	Size Class	DBH	Age
Red Maple	5	Log/Pole	10	
Quaking Aspen	20	Pole/Log	9	57
Bigtooth Aspen	52	Pole/Log	9	57
Red Pine	18	Pole/Sapling	6	
Black Cherry	5	Pole	8	

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

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
32	3104 - Degraded	Nonstocked	0.7				State Mancelona D4-21
33	3104 - Degraded	Nonstocked	1.0				State Mancelona A2-28
34	42111 - Planted Red Pine, Mixed Deciduous	Poletimber Well	46.1	33	111-140	N/A	Red pine plantation established in 1982, then due to poor survival 40%-90% in patches, the stand was re-planted in 1988 with more red pine. Current: Stand is just starting to develop into 1 stick pine, 25' tall. Some quaking aspen and black cherry intermixed. Some pockets of pure aspen. Where stand is mixed aspen dominates. Pine more developed in the north.

Canopy Species	% Cover	Size Class	DBH	Age
Quaking Aspen	19	Pole	8	
Red Pine	80	Pole/Sapling	5	33

Sub-Canopy Species	Density	Avg. Height	Size
Black Cherry	Low	10 - 20 feet	Tall Shrub
Witch Hazel	Low	5 - 10 feet	Tall Shrub

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
35	4130 - Aspen	Sapling Well	126.7	5	Immature	N/A	Aspen stand final harvested 04/2016. Edge regen check completed august 9th 2017. Regen already 4-5 feet tall throughout stand.

Canopy Species	% Cover	Size Class	DBH	Age
Bigtooth Aspen	40	Sapling	1	5
Quaking Aspen	40	Sapling	1	5
Red Maple	10	Sapling	1	
Black Cherry	10	Sapling	1	

Sub-Canopy Species	Density	Avg. Height	Size
Serviceberry (Juneberry)	Medium	>20 feet	Tall Shrub
Pin Cherry	Low	10 - 20 feet	Tall Shrub

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
36	330 - Low-Density Trees	Nonstocked	19.1		Immature	No	
37	4130 - Aspen	Sapling Well	14.2	14	Immature	N/A	Young aspen regeneration well stocked as a result of a final harvest in 2007. Note: Small inclusion of leave trees marked along Angle Road.

Canopy Species	% Cover	Size Class	DBH	Age
Red Maple	10	Sapling	2	14
Quaking Aspen	40	Sapling	3	14
Bigtooth Aspen	40	Sapling	3	14
Black Cherry	10	Sapling	2	14

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
38	4116 - Mixed N. Hardwood - Aspen	Sawtimber Medium	18.2	75	51-80	N/A	Lowly stocked hardwood with clump grown red maple and aspen.

Canopy Species	% Cover	Size Class	DBH	Age
Red Maple	37	Log/Pole	10	75
Bigtooth Aspen	25	Log/Pole	10	
Jack Pine	3	Pole	8	
Black Cherry	10	Pole	8	
Sugar Maple	20	Log/Pole	10	
Beech	5	Log/Pole	10	

Sub-Canopy Species	Density	Avg. Height	Size
Red Maple	Low	Variable	Sapling
Serviceberry (Juneberry)	Low	10 - 20 feet	Tall Shrub
Beech	Low	Variable	Sapling
Ironwood	Medium	Variable	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
39	3104 - Degraded	Nonstocked	1.3				State Mancelona C2-22

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
40	4130 - Aspen	Poletimber Well	37.0	55	51-80	N/A	Lowly stocked aspen poles with variable density of saps & poles.

Canopy Species	% Cover	Size Class	DBH	Age
Red Maple	10	Log/Pole	10	
Quaking Aspen	45	Pole/Log	8	55
Bigtooth Aspen	40	Pole/Log	9	
White Pine	3	Pole	10	
Black Cherry	2	Pole	7	

Sub-Canopy Species	Density	Avg. Height	Size
Witch Hazel	Low	5 - 10 feet	Tall Shrub
Serviceberry (Juneberry)	Trace	10 - 20 feet	Sapling
Black Cherry	Low	Variable	Sapling
Red Maple	Low	Variable	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
41	3104 - Degraded	Nonstocked	1.0				State Mancelona A2-22

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
42	3104 - Degraded	Nonstocked	1.1				State Mancelona B2-28

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
43	42110 - Planted Red Pine	Poletimber Well	39.5	64	201+	N/A	Red pine plantation densely stocked. Site index = 64. Avereage BA = 153 sq.ft./acre. Very little maple in understory. Some of the rows are narrow. Row thinning completed on this stand in Nov, 2005.

Canopy Species	% Cover	Size Class	DBH	Age
Red Pine	100	Log/Pole	11	64

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
44	4112 - Maple, Beech, Cherry Association	Poletimber Well	31.7	90	111-140	N/A	Smaller diameter mixed northern hardwood stand with red & sugar maple. Some aspen present around edges. Avg BA 125.

Canopy Species	% Cover	Size Class	DBH	Age
Sugar Maple	43	Pole/Log	9	90
Red Maple	30	Pole/Log	9	
Beech	10	Log/Pole	10	
Bigtooth Aspen	5	Log	14	
Ironwood	10	Pole/Sapling	5	
Yellow Birch	2	Log/Pole	10	

Sub-Canopy Species	Density	Avg. Height	Size
Beech	Medium	5 - 10 feet	Sapling
Ironwood	High	Variable	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
45	330 - Low-Density Trees	Nonstocked	159.2			No	dominated by black cherry as aspen clones. Some clones are merchantable size

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
46	4130 - Aspen	Sapling Well	36.9	5	Immature	N/A	Aspen stand final harvested 04/2016. Edge regen check completed august 9th 2017. Regen already 4-5 feet tall throughout stand.

Canopy Species	% Cover	Size Class	DBH	Age
Bigtooth Aspen	40	Sapling	2	5
Quaking Aspen	40	Sapling	2	5
Red Maple	10	Sapling	2	
Black Cherry	10	Sapling	2	

Sub-Canopy Species	Density	Avg. Height	Size
Serviceberry (Juneberry)	Low	>20 feet	Tall Shrub
Pin Cherry	Low	10 - 20 feet	Tall Shrub
Witch Hazel	Low	5 - 10 feet	Tall Shrub

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
47	3104 - Degraded	Nonstocked	0.6				State Mancelona C2-28

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
48	4130 - Aspen	Poletimber Well	101.1	37	51-80	N/A	Aspen sapling stand with a mix of big tooth & quaking aspen. Some clones larger than expected, could have been left as non merch last harvest.

Canopy Species	% Cover	Size Class	DBH	Age
Quaking Aspen	45	Pole	6	37
Bigtooth Aspen	45	Pole	6	37
Black Cherry	10	Sapling	4	37

Sub-Canopy Species	Density	Avg. Height	Size
Witch Hazel	Low	10 - 20 feet	Tall Shrub
Serviceberry (Juneberry)	Low	10 - 20 feet	Tall Shrub
Nannyberry	Trace	5 - 10 feet	Tall Shrub

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
49	3105 - Mixed Upland Herbaceous	Nonstocked	132.0		Unspecified	Managed Opening	RX burn completed 5/29/2018. Opening maintained through prescribed burning.

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
50	3104 - Degraded	Nonstocked	1.0				State Mancelona A3-22

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
51	3104 - Degraded	Nonstocked	1.6				State Mancelona A2-27

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
52	3104 - Degraded	Nonstocked	1.4			Managed Opening	State Mancelona B1-27

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
53	4130 - Aspen	Poletimber Well	7.3	62	51-80	N/A	Moderately stocked quaking aspen of variable size and density.

Canopy Species	% Cover	Size Class	DBH	Age
Red Maple	15	Pole	9	
Quaking Aspen	35	Pole/Log	8	62
Black Cherry	15	Pole	6	
Bigtooth Aspen	35	Pole/Log	8	

Sub-Canopy Species	Density	Avg. Height	Size
Red Maple	Low	Variable	Sapling
Serviceberry (Juneberry)	Low	>20 feet	Tall Shrub
Witch Hazel	Low	5 - 10 feet	Tall Shrub

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
54	500 - Water	Nonstocked	10.6			No	Sand Lake

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
55	42110 - Planted Red Pine	Poletimber Well	73.4	33	141-170	N/A	Young Red pine plantation developing into 1-2 pulpwood. Original plantation established in 1982, then re-planted in 1988 along with red pine stand in northwest corner of section 28. Rows run mostly north and south

Canopy Species	% Cover	Size Class	DBH	Age
Red Maple	5	Pole	9	
Red Pine	85	Pole	7	33
Black Cherry	1	Pole/Sapling	5	
Quaking Aspen	5	Pole	7	

Sub-Canopy Species	Density	Avg. Height	Size
Red Maple	Low	5 - 10 feet	Sapling
Black Cherry	Low	5 - 10 feet	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
56	42110 - Planted Red Pine	Sawtimber Well	71.9	65	141-170	N/A	Red pine plantation. Thinning completed in 2006. Third row thinned and also cut out clones of aspen. Avg BA 156

Canopy Species	% Cover	Size Class	DBH	Age
Quaking Aspen	3	Log	12	
Red Pine	94	Log/Pole	10	65
Black Cherry	3	Pole	8	

Sub-Canopy Species	Density	Avg. Height	Size
Red Maple	Medium	5 - 10 feet	Sapling
Quaking Aspen	Medium	10 - 20 feet	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
57	4130 - Aspen	Sawtimber Well	21.6	72	51-80	N/A	Aspen stand on hillside around the perimeter of Sand Lake. Red maple, white birch, & white pine intermixed. Multiple efforts have been made to block ORV use and vehicular traffic down to the Lake. An inclusion of younger aspen, 35 yrs. old in the northeast corner of this stand just west of an old barracaded trail rd. On southwest corner of stand there is a boulder baracade to prohibit vehicles from driving to the lake. A small quanity of red pine have also been planted to protect during adjacent harvest.

Canopy Species	% Cover	Size Class	DBH	Age
Red Maple	20	Pole/Log	9	
Paper Birch	5	Pole	9	
Quaking Aspen	10	Log/Pole	10	
Bigtooth Aspen	50	Log/Pole	10	72
White Pine	15	Log/Pole	10	

Sub-Canopy Species	Density	Avg. Height	Size
Red Maple	Medium	Variable	Sapling
Ironwood	Low	Variable	Sapling
Serviceberry (Juneberry)	Trace	5 - 10 feet	Sapling
White Pine	Trace	Variable	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
58	3205 - Mixed Upland Shrub	Nonstocked	12.8			No	

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
59	42110 - Planted Red Pine	Sawtimber Well	155.9	71	141-170	N/A	Red pine plantation thinned in 1996 with jack pine removed. Second entry thinning 2016. Site index = 60. 140, 150, 160, 160.

Canopy Species	% Cover	Size Class	DBH	Age
Red Pine	100	Log/Pole	11	71

Sub-Canopy Species	Density	Avg. Height	Size
Red Maple	Low	5 - 10 feet	Tall Shrub
Beech	Low	5 - 10 feet	Tall Shrub
Witch Hazel	Low	< 5 feet	Tall Shrub

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
60	3205 - Mixed Upland Shrub	Nonstocked	39.3		Immature	No	Non-forested, upland shrub. Chipped and harvested to convert to Red Pine and Oak 06/19. Trenching completed 8/11/21.
61	3205 - Mixed Upland Shrub	Nonstocked	0.5			No	
63	3104 - Degraded	Nonstocked	0.7			No	State Mancelona A4-22

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
64	4130 - Aspen	Poletimber Well	33.1	62	51-80	N/A	Low to medium stocking of quaking aspen, black cherry, & scattered conifer with white & jack pine.

Canopy Species	% Cover	Size Class	DBH	Age
Quaking Aspen	55	Pole	9	62
White Pine	3	Log	10	
Jack Pine	3	Pole	9	
Black Cherry	18	Pole	8	
Bigtooth Aspen	7	Log/Pole	10	
Red Maple	14	Pole/Log	9	

Sub-Canopy Species	Density	Avg. Height	Size
Black Cherry	Medium	10 - 20 feet	Tall Shrub
Witch Hazel	Low	10 - 20 feet	Tall Shrub
White Pine	Low	5 - 10 feet	Sapling
Serviceberry (Juneberry)	Low	10 - 20 feet	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
65	4130 - Aspen	Poletimber Well	24.2	75	51-80	N/A	Mature aspen stand predominantly quaking aspen. Most of sawlog size trees are defective with conks. Stand is located on both sides of North Crooked Lake Rd. A small upland brush inclusion with aspen is part of stand. Snowmobile trail runs through stand. Aspen held in past for Age class distribution. Stand still under contract (52-002-17) Long Time Aspen.

Canopy Species	% Cover	Size Class	DBH	Age
Red Maple	5	Pole	9	
Quaking Aspen	75	Pole	9	75
Bigtooth Aspen	15	Pole	10	
Black Cherry	5	Pole	9	

Sub-Canopy Species	Density	Avg. Height	Size
Quaking Aspen	Medium	>20 feet	Sapling
Maple Leaved Viburnum	Low	10 - 20 feet	Tall Shrub
Serviceberry (Juneberry)	Low	10 - 20 feet	Tall Shrub
Hawthorn (spp.)	Low	10 - 20 feet	Tall Shrub

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
66	3104 - Degraded	Nonstocked	3.4		Immature		State Mancelona D4-28

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
67	42110 - Planted Red Pine	Poletimber Well	13.9	60	171-200	N/A	Red pine plantation never been thinned. Old comments indicate it could of been prescribed last YOE for a 3rd row thinning, not sure why that didn't happen.

Canopy Species	% Cover	Size Class	DBH	Age
Red Pine	97	Pole/Log	9	60
Black Cherry	3	Pole	7	

Sub-Canopy Species	Density	Avg. Height	Size
Red Maple	Low	5 - 10 feet	Sapling
Black Cherry	Low	5 - 10 feet	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
68	3104 - Degraded	Nonstocked	1.5			Managed Opening	State Mancelona C2-27

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
69	42110 - Planted Red Pine	Poletimber Well	29.7	60	111-140	N/A	Red pine plantation with third row thin completed in 2006. Some open areas, looks like aspen was removed during previous third row thinning.

Canopy Species	% Cover	Size Class	DBH	Age
Red Pine	100	Log/Pole	10	60

Sub-Canopy Species	Density	Avg. Height	Size
Red Maple	Medium	5 - 10 feet	Sapling
Quaking Aspen	Medium	5 - 10 feet	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
70	4130 - Aspen	Sapling Well	55.0	2	Immature	N/A	Final harvested 2019 What A Poplar (52-029-13-01). Sale was chipped so at time of final inspection site was pretty bare.

Canopy Species	% Cover	Size Class	DBH	Age
Quaking Aspen	50	Sapling	1	2
Bigtooth Aspen	15	Sapling	1	
Red Maple	25	Sapling	1	
Black Cherry	10	Sapling	1	

Sub-Canopy Species	Density	Avg. Height	Size
Serviceberry (Juneberry)	Low	10 - 20 feet	Sapling
Witch Hazel	Low	5 - 10 feet	Tall Shrub

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
71	330 - Low-Density Trees	Nonstocked	41.4			No	Scattered aspen clones, black cherry and red maple. Some jack pine seeding in.

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
72	4130 - Aspen	Sapling Well	7.5	15	1-50	N/A	Dense aspen regeneration from harvest June, 2006. merge stands 72 and 77.

Canopy Species	% Cover	Size Class	DBH	Age
Red Maple	10	Sapling	2	15
Quaking Aspen	20	Sapling	2	15
Bigtooth Aspen	70	Sapling	2	15

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
73	42120 - Planted Jack Pine	Sapling Medium	3.2	7	Immature	N/A	Wild lupine broadcast seeded in 2014 on the north half of the stand along with red oak acorns and jack pine north edge of stand planted with white spruce in 2014. Site replanted. The south 1.32 acres planted with Red Oak saplings in 2015, and the center of the stand planted to Red Pine in 2015. Year 1 survey should have occurred in 2016 but no record found in database? Red pine and oak have died. Jack Pine doing well and some of the white spruce still present.

Canopy Species	% Cover	Size Class	DBH	Age
Jack Pine	80	Sapling	1	7
White Spruce	15	Sapling	1	
White Pine	5	Sapling	1	

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
74	4191 - Mixed Upland Deciduous with Conifer	Sawtimber Well	78.2	95	81-110	N/A	Large open grown white pine, some meet legacy criteria. Stand filling in with a mix of red maple, aspen, and white pine poles/logs.

Canopy Species	% Cover	Size Class	DBH	Age
Red Maple	30	Pole/Log	9	
Quaking Aspen	25	Log/Pole	10	
Bigtooth Aspen	10	Log/Pole	10	
White Pine	30	Log/Pole/XLog	12	95
Sugar Maple	2	Pole/Log	9	
Jack Pine	3	Log/Pole	10	

Sub-Canopy Species	Density	Avg. Height	Size
Red Maple	Medium	Variable	Sapling
Black Cherry	Medium	Variable	Tall Shrub
Witch Hazel	Low	10 - 20 feet	Tall Shrub
Serviceberry (Juneberry)	Low	10 - 20 feet	Sapling
White Pine	Low	Variable	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
75	42110 - Planted Red Pine	Sawtimber Well	42.1	71	141-170	N/A	Red pine stand was third row thinned in 1997, and marked for a thinning and completed in 2006. Pine looks healthy and needs time to occupy canopy thinning efforts. Avg BA 168.

Canopy Species	% Cover	Size Class	DBH	Age
Bigtooth Aspen	3	Log	12	
Red Pine	94	Log	11	71
Black Cherry	3	Pole	8	

Sub-Canopy Species	Density	Avg. Height	Size
Red Maple	Medium	5 - 10 feet	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
76	3104 - Degraded	Nonstocked	0.6			Managed Opening	State Mancelona 1-27

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
78	42220 - Natural Jack Pine	Sapling Well	39.4	16	1-50	N/A	History: Was a dense jack pine plantation, harvested and replanted with 3-0 White Pine stock. Natural j.pine regen. well established from seed source. Jack pine over topping white pine.

Canopy Species	% Cover	Size Class	DBH	Age
White Pine	8	Sapling	1	16
Jack Pine	80	Sapling	2	16
Black Cherry	5	Sapling	1	16
Bigtooth Aspen	7	Sapling	2	

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
79	3301 - Low Density Deciduous Trees	Nonstocked	4.3			No	Final harvest trees in this stand during cutting of adjacent aspen stand. Stand lined out of sale. Not sure why.

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
80	3104 - Degraded	Nonstocked	1.8			No	Plugged Gas Well
81	42140 - Planted Mixed Pine	Sapling Well	85.4	25	1-50	N/A	This stand had the jack pine cut in 1994, then red pine planted with 3-0 stock in 1996. In addition to red pine there is natural jack pine 10' - 14' height, scattered cherry, and aspen clones 15' - 20' height.

Canopy Species	% Cover	Size Class	DBH	Age
Quaking Aspen	5	Sapling/Pole	4	
Red Pine	55	Sapling/Pole	4	25
Jack Pine	35	Sapling/Pole	4	
Black Cherry	5	Sapling/Pole	4	

Sub-Canopy Species	Density	Avg. Height	Size
Red Maple	Low	5 - 10 feet	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
82	42120 - Planted Jack Pine	Sapling Well	39.6	16	1-50	N/A	History: Previous stand was a dense jack pine plantation, harvested & re-planted in 2005 with white pine. The logging process created lots of natural regen. jack pine from seed source. Furrow hand planted the 3-0 white pine planting stock. White pine currently over topped by jack pine. WP avg ht =6 ft, JP avg ht = 13 ft.

Canopy Species	% Cover	Size Class	DBH	Age
White Pine	35	Sapling	1	16
Jack Pine	65	Sapling	2	16

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
84	3102 - Grass	Nonstocked	1.2			Managed Opening	Plugged Gas Well
85	3104 - Degraded	Nonstocked	1.5			No	Plugged Gas Well
86	4130 - Aspen	Poletimber Well	16.0	43	81-110	N/A	Young aspen stand - Well stocked, healthy, vigorous enough to hold one decade. White pine, red maple, and a few red pine left from previous harvest.

Canopy Species	% Cover	Size Class	DBH	Age
Red Maple	25	Pole/Log	9	
Quaking Aspen	62	Pole	8	43
White Pine	3	Log	12	
Black Cherry	10	Pole	8	

Sub-Canopy Species	Density	Avg. Height	Size
Red Maple	Medium	Variable	Sapling
Witch Hazel	Medium	10 - 20 feet	Tall Shrub
Serviceberry (Juneberry)	Low	10 - 20 feet	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
87	330 - Low-Density Trees	Nonstocked	149.5			No	Dominated by black cherry, scattered aspen clones. Jack pine and red pine saplings prevalent in some areas. Scattered white pine. White pine planted adjacent to stand 95, lots of weevil damage. Jack pine and some red pine heavily stocked adjacent to stand 59.
88	42110 - Planted Red Pine	Sawtimber Well	30.7	63	201+	N/A	Red pine plantation thinned in 2004. Removed aspen & marked out pine. North Country Hike Trail runs through stand.

Canopy Species	% Cover	Size Class	DBH	Age
Red Pine	100	Log/Pole	11	63

Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	Low	>20 feet	Sapling
Red Maple	Medium	5 - 10 feet	Sapling
Beech	Low	5 - 10 feet	Tall Shrub
Quaking Aspen	Medium	10 - 20 feet	Sapling
Black Cherry	Low	10 - 20 feet	Sapling
Witch Hazel	Low	10 - 20 feet	Tall Shrub

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
89	3104 - Degraded	Nonstocked	1.0				State Mancelona C4-27
90	330 - Low-Density Trees	Nonstocked	26.3			No	Black Cherry, scattered white pine saplings.
92	42110 - Planted Red Pine	Sapling Well	10.0	25	1-50	N/A	An island of red pine planted in 1996.

Canopy Species	% Cover	Size Class	DBH	Age
Red Pine	95	Sapling/Pole	4	25
Black Cherry	5	Pole	6	

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
93	3104 - Degraded	Nonstocked	1.2				State Mancelona B4-27 HDL
94	42110 - Planted Red Pine	Sapling Well	39.3	25	1-50	N/A	Red pine plantation established in 1996. Mixed in with nature regenerating jack pine & some black cherry. some parts look to have been left unplanted.

Canopy Species	% Cover	Size Class	DBH	Age
Red Pine	70	Sapling/Pole	4	25
Jack Pine	25	Sapling/Pole	4	25
Black Cherry	5	Pole	6	

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
95	42110 - Planted Red Pine	Sapling Well	17.2	25	1-50	N/A	Red pine planted in 1996, now a 15 yr. old plantation. jack pine regenerated naturally after timber harvest creating a mixed stand. Red pine= 5'-10' tall Jack pine= 10'-15' tall Cherry= 8'-15' tall.

Canopy Species	% Cover	Size Class	DBH	Age
Red Pine	65	Sapling/Pole	4	25
Jack Pine	25	Sapling/Pole	4	25
Black Cherry	10	Sapling	3	

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
96	42120 - Planted Jack Pine	Sapling Well	1.4	5	Immature	N/A	Plugged Gas Well, re vegetated with Jack Pine, doing well. No record of when jack pine was planted so age is just an estimate.

Canopy Species	% Cover	Size Class	DBH	Age
Jack Pine	100	Sapling	1	5

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
97	3102 - Grass	Nonstocked	3.4			No	State Mancelona "A" 7-33 State Mancelona B3-33
98	4130 - Aspen	Sapling Well	36.7	7	Immature	N/A	Harvested in 2015 leaving all white pine. Very good clumps of red maple and cherry regen with heavy browse on any maple less than 5'. Stand does contain some low density pockets.

Canopy Species	% Cover	Size Class	DBH	Age
Quaking Aspen	60	Sapling	1	7
Black Cherry	10	Sapling	1	
White Pine	10	Log	12	
Red Maple	15	Sapling	1	
Paper Birch	5	Sapling	1	

Sub-Canopy Species	Density	Avg. Height	Size
Black Cherry	Low	< 5 feet	Sapling
Jack Pine	Low	< 5 feet	Sapling
Witch Hazel	Medium	5 - 10 feet	Tall Shrub
White Pine	Low	< 5 feet	Sapling
Red Maple	Low	< 5 feet	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
99	3104 - Degraded	Nonstocked	1.5				State Mancelona D3-27

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
100	4130 - Aspen	Sapling Well	20.4	17		N/A	This stand was cut in 2004. Stand regenerated back to aspen & some natural jack pine.

Canopy Species	% Cover	Size Class	DBH	Age
Red Maple	10	Sapling	3	17
Quaking Aspen	70	Sapling	3	17
Jack Pine	15	Sapling	3	17
Black Cherry	5	Sapling	3	17

Sub-Canopy Species	Density	Avg. Height	Size
Red Maple	Medium	5 - 10 feet	Sapling
Black Cherry	Low	5 - 10 feet	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
101	42120 - Planted Jack Pine	Sapling Poor	1.4	6	Immature	N/A	Plugged Gas Well. Looks to have been planted with Jack Pine.

Canopy Species	% Cover	Size Class	DBH	Age
Jack Pine	100	Sapling	1	6

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
102	42220 - Natural Jack Pine	Sapling Medium	22.3	5	Immature	N/A	Harvested in 2015. M.o was a mixed upland shrub with a non-forested objective. Currently meets the requirements for a non-forested stand; however may start to convert into a natural J1 stand due to good natural jack pine regen. Mostly cherry and willow clumps scattered throughout with a higher red maple and aspen component around the edges.

Canopy Species	% Cover	Size Class	DBH	Age
Jack Pine	80	Sapling	1	5
Black Cherry	10	Sapling	1	
Quaking Aspen	7	Sapling	1	
Red Maple	3	Sapling	1	

Sub-Canopy Species	Density	Avg. Height	Size
Witch Hazel	Medium	5 - 10 feet	Tall Shrub
Sweet Fern	High	< 5 feet	Tall Shrub

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
103	330 - Low-Density Trees	Nonstocked	2.4			Managed Opening	Plugged gas wells – Former site of the St Mancelona C1-33 (plugged 2011) and St Mancelona 10-33 (plugged 1993). Site of restoration study with the Au Sable Institute between 2014 – 2019. Study was authorized under land use permit and MOU. Results of the study are housed with Land Use Program Specialist. It seem that jack pine and red pine are responding the best, can't tell which treatment the trees fall under.
104	3104 - Degraded	Nonstocked	2.6				State Mancelona "B" 6A-33
105	4130 - Aspen	Poletimber Well	26.1	48	51-80	N/A	

Canopy Species	% Cover	Size Class	DBH	Age
Quaking Aspen	65	Pole/Log	8	48
Black Cherry	20	Pole/Log	8	
Red Maple	15	Pole	7	

Sub-Canopy Species	Density	Avg. Height	Size
Witch Hazel	Low	5 - 10 feet	Tall Shrub
Black Cherry	Medium	Variable	Sapling
Red Maple	Low	Variable	Sapling
Serviceberry (Juneberry)	Trace	Variable	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
106	42110 - Planted Red Pine	Poletimber Medium	32.1	64	1-50	N/A	Red pine stand currently sold under a red pine project harvest contract. Stand is not cut yet, but will be soon. Wildlife requested stand be allowed to become an upland brush type and not re-plant with red pine. Stand never harvested per contract. Re evaluate next YOE.

Canopy Species	% Cover	Size Class	DBH	Age
Quaking Aspen	5	Pole	8	
Red Pine	88	Pole/Log	9	64
Black Cherry	7	Pole	8	

Sub-Canopy Species	Density	Avg. Height	Size
Black Cherry	Low	>20 feet	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
107	4130 - Aspen	Poletimber Well	44.5	55	51-80	N/A	Low density aspen, black cherry, and red maple. St Mancelona B CPF was the site of several crude and brine spills in the 1990s. Since, 34 ground water monitoring wells have been installed around the release sites to track and monitor ground water. These wells are covered annual covered under a land use permit. Additional information can be found within the facility folder on the shared drive.

Canopy Species	% Cover	Size Class	DBH	Age
Red Maple	5	Pole	8	
Quaking Aspen	55	Pole/Log	8	55
Jack Pine	5	Pole	6	
Black Cherry	20	Pole	7	
Bigtooth Aspen	15	Pole/Log	8	

Sub-Canopy Species	Density	Avg. Height	Size
Witch Hazel	Trace	5 - 10 feet	Tall Shrub
Black Cherry	Medium	Variable	Sapling
Red Maple	Low	Variable	Sapling
Ironwood	Trace	< 5 feet	Sapling
White Pine	Trace	5 - 10 feet	Sapling
Red Pine	Trace	5 - 10 feet	Sapling
Serviceberry (Juneberry)	Trace	Variable	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
109	42110 - Planted Red Pine	Sapling Well	19.2	25	1-50	N/A	Red pine plantation established in 1996 with 3-0 stock. Previous stand was jack pine, so seed source created natural jack pine regen. also. Red pine = 8'-15' jack pine 10' - 15', cherry 15' - 20', aspen 15' - 20'.

Canopy Species	% Cover	Size Class	DBH	Age
Quaking Aspen	5	Sapling	2	
Red Pine	65	Sapling/Pole	4	25
Jack Pine	25	Sapling/Pole	4	
Black Cherry	5	Sapling	2	

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
110	42141 - Planted Mixed Pine, Mixed Deciduous	Sapling Well	39.1	10	1-50	N/A	Site trenched in 2010. Planted in 2011. Additional Red Oak sapling were planted in 2014 and 2015. Stand doesn't meet original goal of being a well stocked red pine stand, but red pine is still dominant species in the mix. Is this mix acceptable? No oak observed during inventory, will re check in snow off conditions.

Canopy Species	% Cover	Size Class	DBH	Age
Red Pine	30	Sapling	1	10
Jack Pine	35	Sapling	2	10
Quaking Aspen	20	Sapling	2	

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
111	330 - Low-Density Trees	Nonstocked	19.2			No	Quaking aspen and Black Cherry. White pine saplings seeding in.
112	3104 - Degraded	Nonstocked	7.1				Gas Well St Mancelona C1-34 has 50 ground water monitoring wells associated with the site. Monitoring wells are annually authorized by a land use permit. Site map, sampling results and additional information are stored in the facility file on the shared drive.
113	790 - Other Bare/Sparsely Vegetated	Nonstocked	4.1				St Mancelona B CPF was the site of several crude and brine spills in the 1990s. Since, 34 ground water monitoring wells have been installed around the release sites to track and monitor ground water. These wells are covered annual covered under a land use permit. Additional information can be found within the facility folder on the shared drive.
114	330 - Low-Density Trees	Nonstocked	15.5		Immature	No	Almost at 25% canopy cover with aspen clones. Scattered black cherry and white pine also.
115	3104 - Degraded	Nonstocked	1.4			No	Plugged Oil/Gas well, 6/22/2011

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
116	3205 - Mixed Upland Shrub	Nonstocked	1.3			No	According to EGLE Webmap, plugged Gas Well but no date.
117	310 - Herbaceous Openland	Nonstocked	17.1	0		No	Replanted 5/13/2019, meet objectives for mortality during year 1 survey. Free to grow was an issues at 50%. Release spray treatment added for f.y 2021 POW. 18% mortality, 50% free to grow, estimated stocking level of 820 trees/acre. St Mancelona B CPF was the site of several crude and brine spills in the 1990s. Since, 34 ground water monitoring wells have been installed around the release sites to track and monitor ground water. These wells are covered annual covered under a land use permit. Additional information can be found within the facility folder on the shared drive. Old Notes : Harvested 08/15. Site double trenched due to heavy slash 5/31/16. Planted by superior forestry 4/29/17. Initial plant 998 trees per acre. FTP 52-422. Failed year one regen survey, release herbicide spray done 09/19/2018, will be replanted spring 2019. Replanted 05/13/2019.
118	3303 - Mixed Low Density Trees	Nonstocked	8.2			No	upland brush stands, filling in with cherry, a few aspen clones, and white pine.
119	42140 - Planted Mixed Pine	Poletimber Well	18.9	25	Immature	N/A	Red pine plantation with natural jack pine regeneration. Established plantation in 1996. St Mancelona C1-34 has 50 ground water monitoring wells associated with the site. Monitoring wells are annually authorized by a land use permit. Site map, sampling results and additional information are stored in the facility file on the shared drive.
120	3102 - Grass	Nonstocked	1.2			No	Old potential gas well site, terminated permit
121	4311 - Pine, Aspen Mix	Poletimber Medium	27.3	79	1-50	N/A	Low density aspen and white pine. Some scattered black cherry. Stand was previously prescribed for a white pine underplanting.
122	3104 - Degraded	Nonstocked	2.1			No	Plugged Gas Well
123	330 - Low-Density Trees	Nonstocked	36.1	0		No	Dominated by black cherry, one nice clone of aspen in the NE corner. Lots of witch hazel, saplings of a variety of species include jack pine, white pine, aspen, black cherry, and red maple. Some nanny berry present as well.

Sub-Canopy Species (Stand 117)

Sub-Canopy Species	Density	Avg. Height	Size
Red Pine	Full	< 5 feet	Seeding
Red Maple	Medium	< 5 feet	Seeding
Black Cherry	Medium	< 5 feet	Seeding
Jack Pine	Low	< 5 feet	Seeding

Canopy Species (Stand 119)

Canopy Species	% Cover	Size Class	DBH	Age
Red Pine	52	Sapling/Pole	4	25
Jack Pine	48	Pole/Sapling	5	25

Canopy Species (Stand 121)

Canopy Species	% Cover	Size Class	DBH	Age
Quaking Aspen	35	Pole	7	45
White Pine	40	Log/Pole	10	79
Black Cherry	15	Pole	8	
Jack Pine	10	Pole	6	

Sub-Canopy Species (Stand 121)

Sub-Canopy Species	Density	Avg. Height	Size
Quaking Aspen	Medium	10 - 20 feet	Sapling
White Pine	Low	5 - 10 feet	Sapling
Black Cherry	Low	Variable	Sapling
Nannyberry	Trace	5 - 10 feet	Tall Shrub

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
124	3104 - Degraded	Nonstocked	2.8			No	Plugged Gas Well

125 4130 - Aspen | Sapling Well | 72.8 | 6 | Immature | N/A

Stand harvested in 2015 leaving all white pine. Retention was placed around upland brush (stand 114). Large diameter white pines (30-34") scattered throughout. Majority of red maple under 5' is browsed significantly. Meets regeneration check requirements.

Canopy Species	% Cover	Size Class	DBH	Age
Quaking Aspen	62	Sapling	1	6
Red Maple	15	Sapling	1	
Black Cherry	15	Sapling	1	
White Pine	4	Log/Pole/Sap	12	
Paper Birch	4	Sapling	1	

Sub-Canopy Species	Density	Avg. Height	Size
Red Maple	Low	< 5 feet	Sapling
Black Cherry	Medium	< 5 feet	Sapling
Witch Hazel	Trace	5 - 10 feet	Tall Shrub
Hawthorn (spp.)	Trace	5 - 10 feet	Tall Shrub

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
126	3104 - Degraded	Nonstocked	2.3			No	Plugged Gas Well
127	330 - Low-Density Trees	Nonstocked	1.9		Unspecified	Managed Opening	Plugged gas well Former St Mancelona B-9-33 (plugged 1993). Site of restoration study with the Au Sable Institute between 2013-2019. Study was authorized under land use permit and MOU. Results of the study are housed with Land Use Program Specialist. Jack Pine and Red Pine responding the best, can't tell which treatment they fall under.

128 42120 - Planted Jack Pine | Sapling Well | 19.8 | 17 | 1-50 | N/A

Planted white in 2004. Also, due to jack pine final harvest, there is a dense natural regeneration mixed in of jack pine from seed source. Lots of damage to white pine leaders. Many multi stemmed tops. FTP - C52-250.

Canopy Species	% Cover	Size Class	DBH	Age
Jack Pine	60	Sapling	3	17
Black Cherry	10	Sapling	2	
White Pine	30	Sapling	2	17

Sub-Canopy Species	Density	Avg. Height	Size
Serviceberry (Juneberry)	Low	10 - 20 feet	Tall Shrub

129 42110 - Planted Red Pine | Poletimber Well | 24.1 | 24 | 1-50 | N/A

Red pine plantation established in 1997 with 3-0 red pine. Previously a jack pine stand with residual seed which created natural j.pine regen. 10' - 15' height. Appears to be old well site adjacent to new one, dominated by black cherry.

Canopy Species	% Cover	Size Class	DBH	Age
Red Pine	67	Pole/Sapling	5	24
Jack Pine	20	Pole/Sapling	5	
Black Cherry	13	Sapling	4	

Sub-Canopy Species	Density	Avg. Height	Size
Black Cherry	High	5 - 10 feet	Sapling
Serviceberry (Juneberry)	Trace	10 - 20 feet	Sapling

130 4311 - Pine, Aspen Mix | Poletimber Poor | 11.6 | 75 | 1-50 | N/A

Low quality former upland brush stand starting to fill in with white pine.

Canopy Species	% Cover	Size Class	DBH	Age
Quaking Aspen	35	Pole	8	
White Pine	43	Pole/Log	9	75
Black Cherry	20	Pole/Log	9	
Jack Pine	2	Pole	6	

Sub-Canopy Species	Density	Avg. Height	Size
White Pine	Low	Variable	Sapling
Red Pine	Trace	5 - 10 feet	Sapling
Black Cherry	Low	Variable	Sapling
Quaking Aspen	Low	Variable	Sapling
Nannyberry	Trace	5 - 10 feet	Tall Shrub
Scotch Pine	Trace	10 - 20 feet	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
131	42110 - Planted Red Pine	Sawtimber Well	35.1	64	111-140	N/A	Red pine plantation with first row thinning completed in 2004. Aspen, cherry left in uncut rows in order to maintain a higher residual BA. Crowns have not had time to fill in yet. 4-5 stick red pine.

Canopy Species	% Cover	Size Class	DBH	Age
Red Pine	100	Log	10	64

Sub-Canopy Species	Density	Avg. Height	Size
Beech	Low	< 5 feet	Tall Shrub
Black Cherry	Low	< 5 feet	Tall Shrub
Witch Hazel	Low	5 - 10 feet	Tall Shrub
Northern Pin Oak	Trace	5 - 10 feet	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
132	42140 - Planted Mixed Pine	Poletimber Well	17.6	71	81-110	N/A	Mixed pine consisting of jack pine, red pine, white pine. Appears more like a natural stand with indistinct rows. Mortality in Jack Pine approaching 50 percent. 2 large 30+ dbh white pine seen during inventory. BA ~ 84 from 5 plots, plot in NW was zero plot with sapling sized white pine dominant, probably threw off stats. Jack pine and red pine planted in 1950.

Canopy Species	% Cover	Size Class	DBH	Age
Quaking Aspen	5	Pole	7	
White Pine	25	Pole/Log/Sap	9	
Red Pine	50	Log/Pole	10	71
Jack Pine	20	Pole	8	

Sub-Canopy Species	Density	Avg. Height	Size
White Pine	Medium	Variable	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
133	3104 - Degraded	Nonstocked	8.2			No	Plugged Gas Wells

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
134	42120 - Planted Jack Pine	Sapling Well	2.4	8	Immature	N/A	Plugged Gas Well 10/04/2011. Looks to have been re vegetated with planted Jack Pine. No planting records exist of when trees were put in the ground so age is technically an estimate.

Canopy Species	% Cover	Size Class	DBH	Age
Jack Pine	85	Sapling	2	8
Quaking Aspen	15	Sapling	2	

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
135	330 - Low-Density Trees	Nonstocked	61.7			No	Scattered cherry, red maple, white pine, and jack pine.

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
136	42200 - Natural White Pine	Poletimber Well	43.2	75	141-170	N/A	Large diameter legacy white pine present throughout the stand (DBH 34" and up). Evidence of lightning damage and some trees with existing dens. White pine filling in heaviest where larger trees present, some areas BA are over 200. Other areas have been filling in slower the farther they get from a seed source and are dominated by poles and saplings. BA ~ 156 from 8 plots. Red pine planted in 1950. Unsure of age of Xlog white pine (increment borer would not get to center of the tree). White pine age is for those that are the same size class as the red pine.

Canopy Species	% Cover	Size Class	DBH	Age
White Pine	80	Pole/Log/XLog	9	75
Red Pine	19	Log/Pole	10	71
Quaking Aspen	1	Pole	9	

Sub-Canopy Species	Density	Avg. Height	Size
White Pine	Medium	Variable	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
137	4130 - Aspen	Sapling Well	20.3	11	Immature	N/A	Previous Management objective: Red Pine

Canopy Species	% Cover	Size Class	DBH	Age
Quaking Aspen	95	Sapling	2	11
Black Cherry	5	Sapling	2	

Sub-Canopy Species	Density	Avg. Height	Size
Black Cherry	Low	5 - 10 feet	Sapling
Nannyberry	Trace	5 - 10 feet	Tall Shrub

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
138	3104 - Degraded	Nonstocked	1.8				State Mancelona 2-34 HD2

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
139	3102 - Grass	Nonstocked	1.1			No	Looks like a gas well but no data on EGLE Web Map. Bermed off from main road, appears to have been plugged at some point.

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
140	3104 - Degraded	Nonstocked	1.6			No	Plugged Gas Well 1993
141	3104 - Degraded	Nonstocked	1.3			No	Plugged Gas Well 2011.
142	4311 - Pine, Aspen Mix	Poletimber Medium	88.1	99	51-80	N/A	White pine and scattered clones of aspen. Stand starting to fill in with white pine saplings and some quaking aspen clones in the sapling size class. Large amount of old white pine stumps present throughout the stand.

Canopy Species	% Cover	Size Class	DBH	Age
Quaking Aspen	30	Pole/Log	8	
White Pine	50	Log/Pole	10	99
Bigtooth Aspen	20	Pole	7	

Sub-Canopy Species	Density	Avg. Height	Size
Quaking Aspen	Medium	10 - 20 feet	Sapling
White Pine	Medium	10 - 20 feet	Sapling
Nannyberry	Trace	5 - 10 feet	Tall Shrub
Black Cherry	Low	Variable	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
143	4139 - Aspen, Mixed Deciduous	Poletimber Well	19.4	48	81-110	N/A	Aspen pole stand, decent quality, some hardwood mixed throughout.

Canopy Species	% Cover	Size Class	DBH	Age
Sugar Maple	5	Sapling/Pole	4	
Red Maple	35	Pole/Log	8	
Bigtooth Aspen	55	Pole/Log	8	48
Black Cherry	5	Sapling/Pole	4	

Sub-Canopy Species	Density	Avg. Height	Size
Black Cherry	Low	10 - 20 feet	Tall Shrub
Serviceberry (Juneberry)	Low	>20 feet	Tall Shrub
Ironwood	Medium	Variable	Sapling
White Pine	Trace	5 - 10 feet	Sapling
Sugar Maple	Trace	5 - 10 feet	Sapling
Beech	Low	5 - 10 feet	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
144	3303 - Mixed Low Density Trees	Nonstocked	7.8			No	
145	4112 - Maple, Beech, Cherry Association	Poletimber Well	20.8	80	111-140	N/A	Mixed northern hardwoods with clump grown red maple. Patchy BA throughout, avg BA 125 from 6 points. BA CI ranges from 60 to 180. Ironwood understory noted, no other species noted during inventory.

Canopy Species	% Cover	Size Class	DBH	Age
Sugar Maple	60	Pole/Log	8	80
Red Maple	25	Pole/Log	8	80
Yellow Birch	3	Pole	9	
Beech	1	Pole	8	
Black Cherry	1	Pole	8	
Basswood	10	Log/Pole	10	

Sub-Canopy Species	Density	Avg. Height	Size
Ironwood	Medium	Variable	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
146	3301 - Low Density Deciduous Trees	Nonstocked	19.6			413 - Aspen	Lowly stocked aspen scattered throughout. There was a small aspen stand between the red pine strips that was clearcut in 2006. A dense, small young aspen stand has developed, but is not mapped out separately.
147	310 - Herbaceous Openland	Nonstocked	1.1		Immature	No	Small frost pocket depression.
148	3104 - Degraded	Nonstocked	0.7	0		No	Old well pad, no restoration work appears to have taken place. Older imagery shows gas well activity.

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
149	320 - Upland Shrub	Nonstocked	5.3			No	
150	42200 - Natural White Pine	Sawtimber Well	39.0	95	111-140	N/A	Further developed white pine stand than the white pine to the west. Probably just seeded in denser so existing trees are straighter and taller, less competition from deciduous. Legacy sized trees present.
151	42210 - Natural Red Pine	Poletimber Well	9.0	64	81-110	N/A	Has the appearance of a natural red pine stand. Per records planted in 1957, very low survival, hence the natural open grown look of the red pine.
152	330 - Low-Density Trees	Nonstocked	51.4		Immature	No	Lots of natural red pine and jack pine saplings. Stamd filling in with Jack pine, black cherry, quaking aspen, and red maple. Almost meets stand criteria.

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Canopy Species	% Cover	Size Class	DBH	Age
Red Maple	5	Pole/Log	8	
Quaking Aspen	15	Pole/Log	9	
Bigtooth Aspen	5	Pole/Log	9	
White Pine	75	Log/Pole/XLog	12	95

Sub-Canopy Species	Density	Avg. Height	Size
Red Maple	Low	Variable	Sapling
Black Cherry	Low	Variable	Tall Shrub
Witch Hazel	Low	10 - 20 feet	Tall Shrub
Serviceberry (Juneberry)	Low	10 - 20 feet	Sapling
White Pine	Low	Variable	Sapling

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Canopy Species	% Cover	Size Class	DBH	Age
Red Pine	60	Pole/Log	9	64
White Pine	25	Pole/Log	9	
Quaking Aspen	15	Pole	6	

Sub-Canopy Species	Density	Avg. Height	Size
White Pine	Medium	Variable	Sapling
Black Cherry	Medium	5 - 10 feet	Sapling