

# **Compartment Review Presentation**

**Traverse City Forest Management Unit** 

Compartment 61141
Entry Year 2025
Acreage: 1,895
County Kalkaska

Management Area: High Sand Plains

Stand Examiner: Paul Roell

**Legal Description:** 

T25N R5W, Sections 16, 17 & 18.

#### **Identified Planning Goals:**

Management in the Kalkaska Sandy Moraines area will emphasize continuing to balance the age class of aspen on suitable sites and thinning the northern hardwoods, balancing age classes of red pine and jack pine and regenerating the aging oak resource. Management will strive to sustainably produce various forest products; enhance game and non-game wildlife habitat; protect areas of unique character, and provide for forest-based recreational uses. Expected trends within this 10-year planning period are increased recreational pressure, managing oil and gas development, introduced pests and diseases and the difficulty in regenerating oak.

## Soil and topography:

The topography in this compartment ranges from slightly rolling to hilly. Soil types are generally sandy with some ridges of better loams supporting higher quality big tooth aspen, pine and red oak.

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

The compartment and the area immediately surrounding it are State owned. The closest private land is approximately1/2 mile from the perimeter of this compartment. There is very little use outside of recreation in the form of hunting, snowmobiling and recreation vehicle traffic.

#### **Unique Natural Features:**

There aren't any known features within the compartment at this time.

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

There aren't any known features within the compartment at this time.

#### **Special Management Designations or Considerations:**

This compartment is part of a lease that has been negotiated with the Michigan National Guard.

#### **Watershed and Fisheries Considerations:**

none

#### Wildlife Habitat Considerations:

The landscape within compartment 141 undulates across low, sandy ice-contact ridges, and falls in the High Sand Plains Management Area of the Regional State Forest Management Plan. Featured wildlife species and their associated habitat niches for the MA include, American woodcock, golden-winged warbler, ruffed grouse, snowshoe hare, Kirtland's warbler, blackburnian warbler, wood thrush, wild turkey, black-backed woodpecker, and black bear. The well drained soils of this compartment support communities of aspen, hardwoods, oak, areas of low-density trees and herbaceous ground cover, with several natural conifer stands, as well as minor occurrences of several other cover types. Forest treatments should maintain a variety of successional stages of pine-oak-aspen forest and grass-shrub openings, with some mid to late successional forest in places, which is typical of a fire driven landscape.

Non-forested communities in this landscape should ideally be treated with prescribed fire. However, in this compartment the non-forested areas are very small in size. Burning would benefit these communities by setting back woody encroachment, stimulating native herbaceous vegetation and berry production, and recycling nutrients. In lieu of fire mechanical management techniques should be employed. Many rare species of plants and animals depend on these fire-prone grasslands, such as Hill's thistle, dusted skipper, and Kirtland's warbler.

Aspen harvests should be designed to mimic wildfires of various intensities. This creates a mosaic of age classes and increases structural diversity within the area. Timber operations should be utilized to create some (approximately 1-2 trees per acre) coarse woody debris (CWD), preferably via sale specs. CWD trees should be log sized or bigger, the more decay resistant the tree species is the better and cut approximately at breast height (4.5 feet). The log should be left within 3 feet its stump. Standing dead timber is usually left during harvest operations unless deemed a safety hazard. Wildlife

considerations regarding oak types include leaving mature mast-producing trees, protection of den/nest trees, maintaining oak as a component of the future stand, and maintaining the diversity of tree species within the stand. Hardwood treatments should retain a component of mature mast producing trees and protect/create snags, den, cavity, and downed trees.

Species associated with pine, oak and aspen mixed upland forests and openland habitats, such as deer, badger, wild turkey, scarlet tanager, hog-nosed snake, ruffed grouse, Cooper's hawk, red-backed salamander, and gray squirrel will benefit from management here.

# Mineral Resource and Development Concerns and/or Restrictions

Sections 16-18, T25N-R5W, Kalkaska County

There is no known metallic mineral potential in this part of the state. The nearest active sand/gravel pit is a State-owned pit three miles southwest. Good potential exists for sand & gravel within the compartment, but the compartment might be too far from populated areas (markets) to have much economic potential beyond use by the county road commission, DNR, or military for local road maintenance. Active oil & gas production is occurring immediately north of the compartment. Oil & gas production in the area primarily occurs from structural highs in the basin. Most fields are quite mature and are unlikely to see future expansion, and there is low probability for discovery of new, similar fields targeting the same formations. Some testing and minor production from the Collingwood Formation occurred a couple miles to the southwest, but the Collingwood has not been proven to be economical to produce commercially. Potential for additional oil & gas development within the compartment is considered low at this time. The state does not own all the mineral rights within the compartment. Because the mineral estate is the dominant estate, reasonable access to the surface must be provided to private owners if they choose to explore or develop their mineral rights

#### **Vehicle Access:**

Adequate vehicular access appears to be available with the road system that is already in place. Some areas on the snowmobile trail are very sandy and difficult to navigate with two wheel drive vehicles.

#### **Survey Needs:**

No survey needs at this time.

## **Recreational Facilities and Opportunities:**

The Cranberry Snowmobile Trail is located along the south and southwest edge of this compartment. Hunting is the main recreational use of the land in this compartment. Some camping activity occurs but it is usually associated with hunting.

#### **Fire Protection:**

The greatest difficulty with fire control in this compartment is with the response time. Heavy equipment is about 45 minutes away. Fortunately, there is a lack of volitile pine fuels in the area of this compartment so a catostrophic fire is unlikely. The terrain may cause the suppression crews some difficulty.

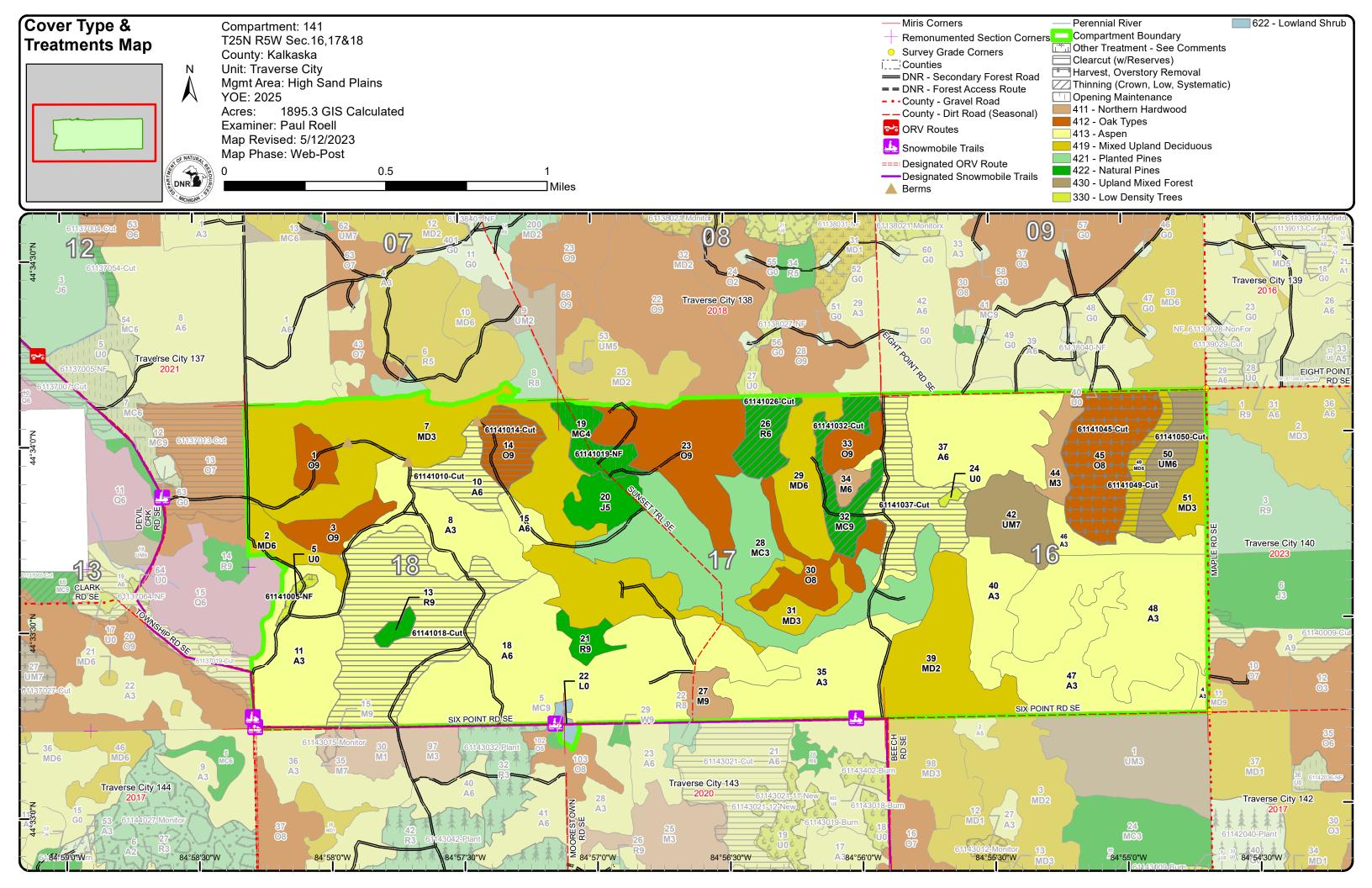
## **Additional Compartment Information:**

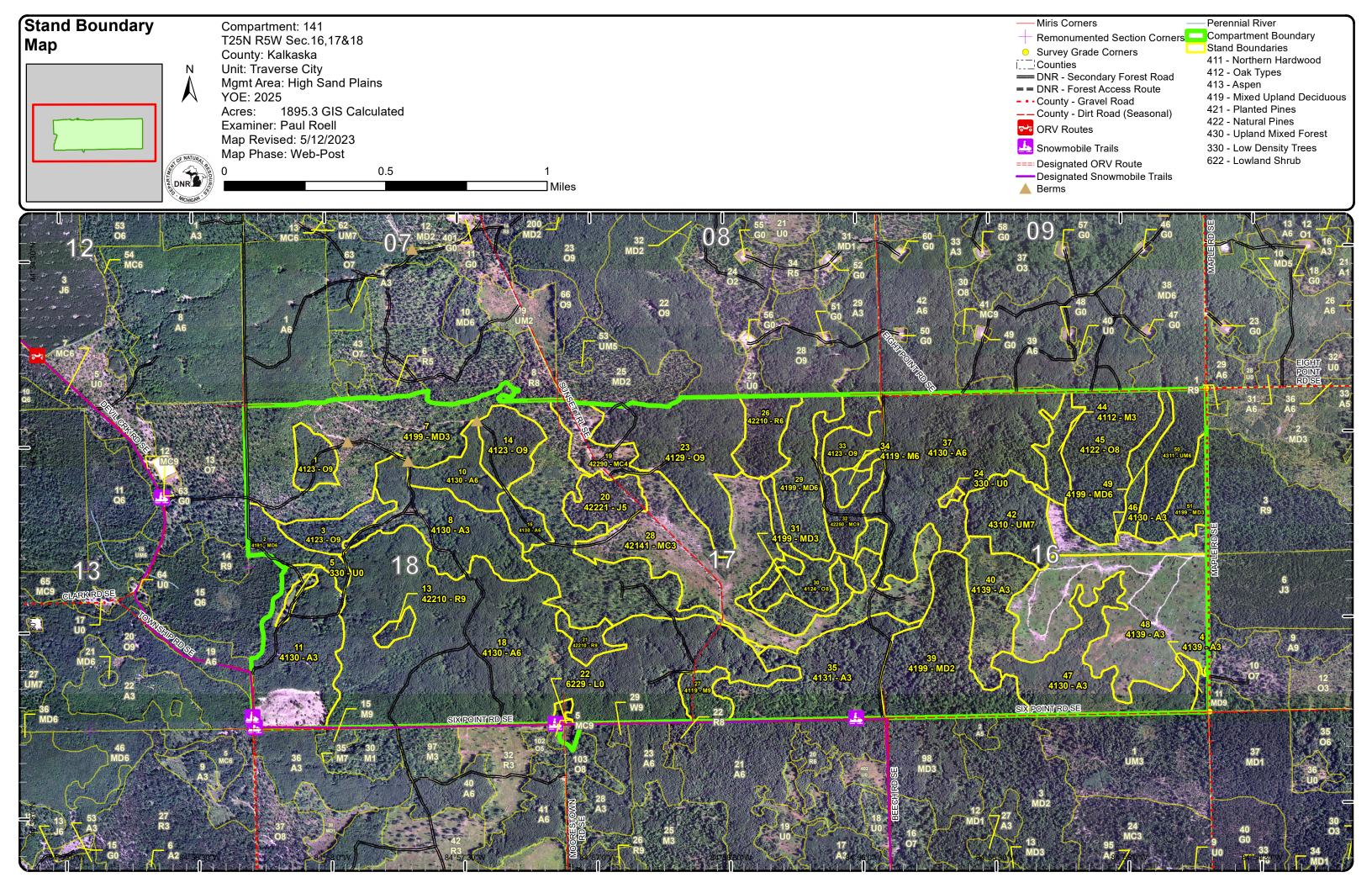
The following reports from the Inventory are attached:

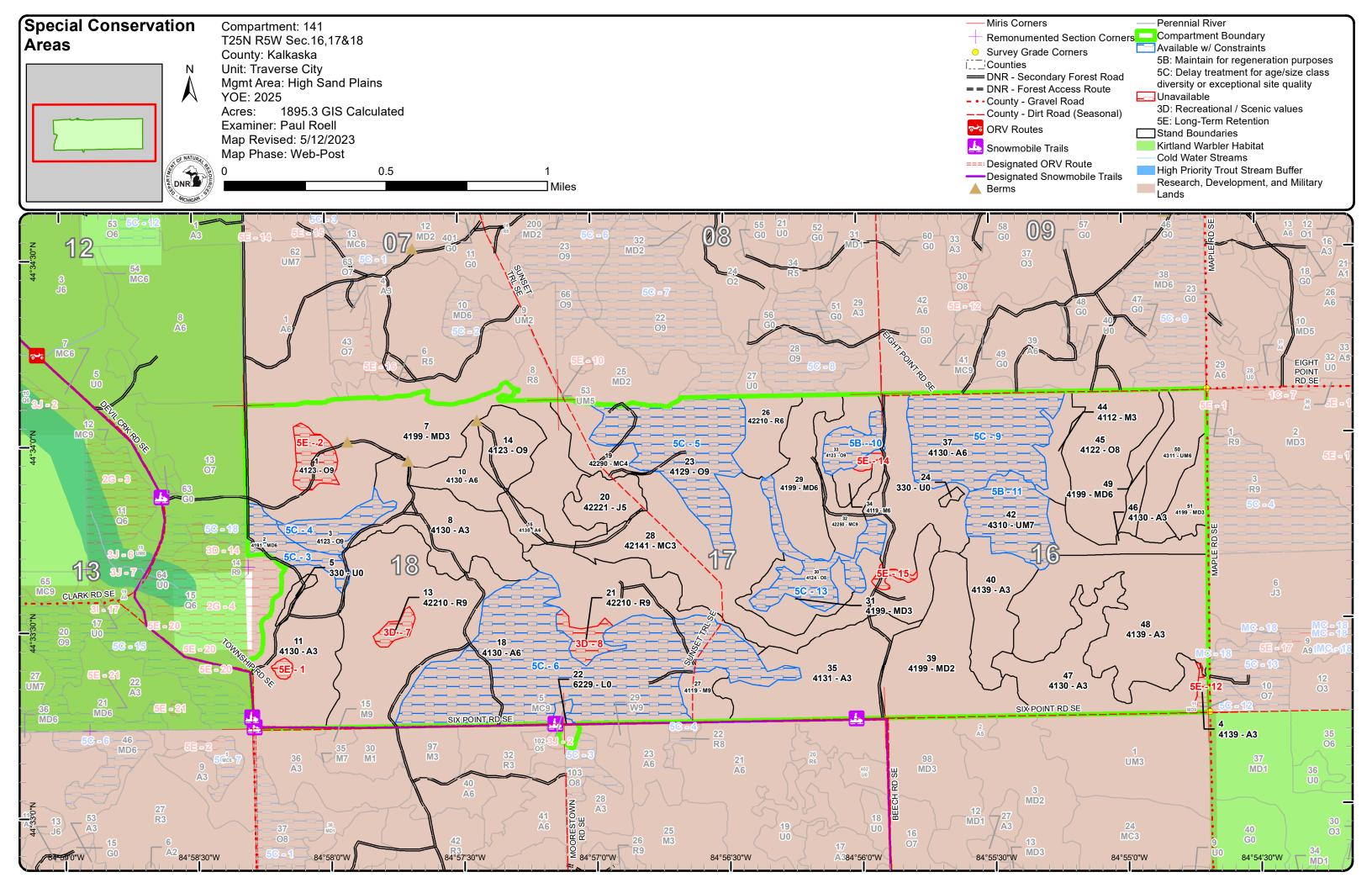
Total Acres by Cover Type and Age Class
Cover Type by Harvest Method
Proposed Treatments – No Limiting Factors
Proposed Treatments – With Limiting Factors
Stand Details (Forested and Nonforested)
Dedicated and Proposed Special Conservation Areas
Site Condition Details

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







Compartment 141 Year of Entry 2025

Traverse City Mgt. Unit

Paul Roell: Examiner



#### Age Class

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	, ₹oc	KO KO	3/2			3 / \$		/ % /&					'ia''				2 × ×	St He	AND LOS
Aspen	0	272	174	10	0	445	22	0	0	0	0	0	0	0	0	0	0	0	923
Jack Pine	0	0	0	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21
Low-Density Trees	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Lowland Shrub	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Mixed Upland Deciduous	0	0	300	16	41	14	0	0	0	19	0	0	0	0	0	0	0	0	389
Natural Mixed Pines	0	0	0	21	0	0	0	0	0	0	28	0	0	0	0	0	0	0	49
Northern Hardwood	0	0	14	0	6	0	0	0	0	13	0	0	0	0	0	0	0	0	33
Oak	0	0	0	0	0	0	0	0	0	0	236	0	0	0	0	0	0	0	236
Planted Mixed Pines	0	130	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	130
Red Pine	0	0	0	0	0	0	0	0	0	27	10	0	0	0	0	0	0	0	37
Upland Mixed Forest	0	0	0	0	0	0	33	0	0	0	36	0	0	0	0	0	0	0	69
Total	9	402	488	68	47	459	55	0	0	59	310	0	0	0	0	0	0	0	1896



# **Report 2 – Treatment Summary**

Traverse City Mgt. Unit Year of Entry: 2025

#### **Acres of Harvest**

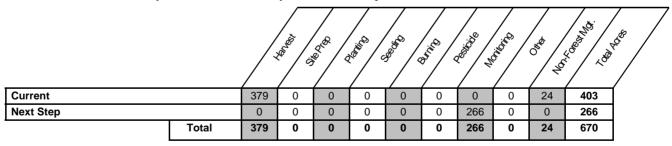
Compartment 141
Total Compartment Acres: 1,895

Commercial Harvest - 379
Harvests with Site Condition - 0
Next Step Harvest - 0
Habitat Cut - 0

# **Cover Type by Harvest Method**

	-	•										
		/			**************************************		South L	oniui, So	ROUGH O		E Z	\$ /
Aspen		197	0	0	0	0	0	0	0	0	197	
Mixed Upland Deciduous		14	0	0	0	0	0	0	0	0	14	
Natural Mixed Pines		0	0	0	0	0	28	0	0	0	28	
Oak		23	0	0	0	0	0	62	0	0	85	
Red Pine		0	0	0	0	0	22	0	0	0	22	
Upland Mixed Forest		33	0	0	0	0	0	0	0	0	33	
	Total	266	0	0	0	0	50	62	0	0	379	

# **Proposed and Next Step Treatments by Method**



Traverse City Mgt. Unit

Report 3 -- Treatments

S t а n

d

**Treatment** Name

Acres

Stand CoverType

Size Density

Stand BA Age Range **Treatment** Type

**Treatment** Method

**Cover Type** Objective

Compartment: 141

Year of Entry: 2025

Age Structure Habitat Cut

No

#### **Proposed Treatments:**

61141005-NF 3.5 330 - Low-Density Nonstocked NonForestMgt Fruit Tree/Shrub Planting

3204 - Mast **Producing Shrub** 

Specs:

Prescription Selectively hand fell woody encroachment to maintain upland brush/grassland community. Leave scattered mast producing trees and shrubs and/or conifers for wildlife food and cover. Plant site appropriate native shrubs and/or mast producing trees for wildlife food and

cover. May need to fertilize plantings and protect with wire cages or tubex.

Next Step

Treatments:

<u>Acceptable</u> Regen:

Other

Maintain as needed with mowing, native shrub planting, seeding of native grasses/forbs, burning, or removal of woody encroachment.

This is an old WLD DRIP opening. Comment:

Site Condition

Proposed Start Date: 10/1 /2024

61141010-Cut

22.2

4130 - Aspen

Monitoring, Natural Regen (Re-Inventory)

Poletimber Well

56 111-140 Harvest

Clearcut with Retention

Even-Aged 413 - Aspen

No

Prescription Harvest all trees two inches and larger in diameter. Look at leave tree marking some scattered white oaks and pine while cruising the stand.

Specs: Minimal area retention.

ORV/snowmobile trail protection specs, grouse spec and oak wilt specs for the harvest

Next Step

**Treatments:** 

Acceptable aspen, mixed oak, red maple and some pine which meet minimum stocking requirements

Regen:

Other Comment:

Site Condition

Proposed Start Date: 10/1 /2024

61141014-Cut

22.9 4123 - Red Oak Sawtimber Well

ORV/snowmobile trail protection specs, grouse spec and oak wilt specs for the harvest

111-140 Harvest

Clearcut with Retention

4121 - Oak, Aspen

Even-Aged

No

Prescription Harvest all trees two inches and larger in diameter. Look at leave tree marking some scattered white oaks and pine while cruising the stand. Minimal area retention.

Specs:

Next Step Monitoring, Natural Regen (Re-Inventory)

Treatments:

Acceptable Oak, aspen and red maple which meet minimal stocking requirements

Regen:

Other

Comment:

Site Condition

Proposed Start Date: 10/1 /2024

Traverse City Mgt. Unit

Report 3 -- Treatments

Compartment: 141 Year of Entry: 2025

S t

а **Treatment** Stand Size Stand BA **Treatment Treatment Cover Type** Acres Age Habitat n Method Range Objective Structure Name CoverType Density Age Type Cut d 18 61141018-Cut 122.8 4130 - Aspen Poletimber 81-110 Harvest Clearcut with 413 - Aspen Even-Aged Nο Well Retention Harvest all trees two inches and larger in diameter. Look at leave tree marking some scattered white oaks and pine while cruising the stand. Prescription Specs: Minimal area retention.

ORV/snowmobile trail protection specs, grouse spec and oak wilt specs for the harvest

Next Step Monitoring, Natural Regen (Re-Inventory)

**Treatments** 

Acceptable a fully stocked stand of aspen, red maple, mixed oak and some mixed pine

Regen:

Other Comment:

Site Condition

Proposed Start Date: 10/1 /2024

61141019-NF 20.9 42290 - Natural Poletimber 25 1-50 NonForestMgt Herbaceous/Crop 3205 - Mixed No Mixed Pine /Grass Planting **Upland Shrub** Poor

Specs:

Prescription Selectively remove woody vegetation to barrens equivalent. Important trees to retain would be mature "wolf" trees of oak, pine or cherry, fruiting shrubs, and a scattering of other trees and shrubs. Should eventually burn to stimulate any existing seed bank and encourage existing native vegetation. Augment with additional native seeds/seedling as needed to diversify site for wildlife forage and cover. Remove invasive species mechanically or with herbicide treatment.

Next Step Treatments:

Acceptable Regen:

Other

If any merchantable timber needs to be removed to facilitate a barrens type community work with FRD to have it removed commercially.

Comment:

Site Condition

Proposed Start Date: 10/1 /2024

61141026-Cut 22.0 42210 - Natural Poletimber 83 141-Harvest Crown Thinning 4221 - Natural Even-Aged No Red Pine Well 170 Red Pine

Prescription Thin stand down to a residual basal area of 100-120 square feet per acre. Focus on removing poor quality trees and releasing regeneration

where possible. Specs:

Next Step Treatments:

Acceptable Regen:

Other

Comment:

Site Condition

Proposed Start Date: 10/1 /2024

Traverse City	Mgt. Un

#### Report 3 -- Treatments

Compartment: 141

it S Year of Entry: 2025 t а **Treatment** Stand Size Stand BA **Treatment Treatment Cover Type** Acres Age Habitat n **Objective** Density Method Structure Name CoverType Age Range Type Cut d Sawtimber 32 61141032-Cut 28.4 42250 - Pine, Oak 81-110 Harvest Crown Thinning 42260 - Natural Even-Aged Pine, Mixed Well Deciduous Prescription Thin stand down to a residual basal area of 80 -100 square feet per acre. Focus on removing poor quality trees and releasing regeneration where possible. Over time this stand will convert to a oak type. Start to release established oak during this harvest. Specs: Next Step Treatments: Acceptable Regen: Other Comment: Site Condition Proposed Start Date: 10/1 /2024 61141037-Cut 51.9 Poletimber 81-110 Clearcut with 4130 - Aspen 49 Harvest 413 - Aspen Even-Aged No Well Retention Prescription Harvest all trees two inches and larger in diameter. Look at leave tree marking some scattered white oaks and pine while cruising the stand. Retention has been added to the site condition layer for this treatment Specs: include grouse spec and oak wilt specs for the harvest Next Step Monitoring, Natural Regen (Re-Inventory) Treatments: Acceptable aspen, mixed oak, red maple and some pines Minimal stocking requirements Regen: Other Comment: Site Condition Proposed Start Date: 10/1 /2024 Even-Aged 61141045-Cut 4122 - Oak, Pine Sawtimber 51-80 4199 - Other 62.3 93 Harvest Overstory No Medium Removal Mixed Upland Deciduous Prescription Harvest all trees four inches and larger in diameter. Four inch diameter will provide protection for smaller pines and scattered oaks present. Look at leave tree marking some scattered white oaks and pine while cruising the stand. Minimal area retention. PROTECT ESTABLISHED Specs: REGENERATION Include Oak wilt Spec during sale Next Step Treatments: <u>Acceptable</u>

Regen:

Other Comment:

Site Condition

Proposed Start Date: 10/1 /2024

Traverse City Mgt. Unit Report 3 -- Treatments Compartment: 141 S Year of Entry: 2025 t а **Treatment** Stand Size Stand BA **Treatment Treatment Cover Type** Acres Age Habitat n Structure Density Method Objective Name CoverType Age Range Type Cut d 49 61141049-Cut 13.7 4199 - Other Mixed Poletimber 51-80 Harvest Clearcut with 413 - Aspen Even-Aged No Retention **Upland Deciduous** Well Prescription Harvest all trees four inches and larger in diameter. Four inch diameter will provide protection for smaller pines and scattered oaks present. Look at leave tree marking some scattered white oaks and pine while cruising the stand. Minimal area retention. Specs: Oak Wilt Spec during timber sale Next Step Monitoring, Natural Regen (Re-Inventory) Treatments: Acceptable aspen, mixed oak and red maple which meets minimal stocking requirements Regen: Other Comment: Site Condition Proposed Start Date: 10/1 /2024 50 61141050-Cut 32.7 4311 - Pine, Aspen Poletimber 53 81-110 Harvest Clearcut with 4133 - Aspen, Even-Aged No Mixed Pine Mix Well Retention Prescription Harvest all trees four inches and larger in diameter. Four inch diameter will provide protection for smaller pines and scattered oaks present. Specs: Look at leave tree marking some scattered white oaks and pine while cruising the stand. Minimal area retention.

Include oak wilt spec.

Next Step Monitoring, Natural Regen (Re-Inventory)

Treatments:

Acceptable Aspen, red maple, mixed oaks and mixed pine which meets minimum stocking requirements

Regen:

Other Comment:

Site Condition

Proposed Start Date: 10/1 /2024

Total Treatment 403.3 Acreage Proposed:

Traverse City Mgt. Unit

Paul Roell: Examiner

Compartment: 141 Year of Entry: 2025

Availa	ability for	Managemer	nt					
Total	Acres	Acres Avail	Acres		Domina	nt Site	e Con	dition
Acres	Available	With Condition	Not Available		5B	5C	3D	5E
922	646	267	10	Aspen		267		10
21	21	0	0	Jack Pine				
5	5	0	0	Low-Density Trees				
4	4	0	0	Lowland Shrub				
388	370	18	0	Mixed Upland Deciduous		18		
49	49	0	0	Natural Mixed Pines				
33	33	0	0	Northern Hardwood				
236	85	138	13	Oak	14	124		13
130	130	0	0	Planted Mixed Pines				
36	22	0	14	Red Pine			14	
69	33	36	0	Upland Mixed Forest	36			
1,895	1,398	460	38	Total Forested Acres	50	410	14	23
	74%	24%	2%	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 Condition	Acres	Other Site Condition	Other Site Condition	Other Site Condition	Other Site Condition
1	Unavailable	5E: Long-Term Retention	2	3J: Water quality / BMPs (stream, river, or lake)	Unspecified	Unspecified	Unspecified
	Comments:						
2	Unavailable	5E: Long-Term Retention	13	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
3	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	19	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						

# Report 4 – Site Conditions

Traverse City Mgt. Unit
Paul Roell: Examiner

4	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	18	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
5	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	75	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
6	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	190	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
7	Unavailable	3D: Recreational / Scenic values	5	Unspecified	Unspecified	Unspecified	Unspecified
	Comments: Small stand with m	any legacy trees					
8	Unavailable	3D: Recreational / Scenic values	10	Unspecified	Unspecified	Unspecified	Unspecified
	Comments: Small stand with m	any legacy trees					
9	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	77	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						

# **Report 4 – Site Conditions**

Traverse City Mgt. Unit

Compartment: 141 Year of Entry: 2025 Paul Roell: Examiner

10	Available	5B: Maintain for regeneration purposes	14	Unspecified	Unspecified	Unspecified	Unspecified
	Comments: ook at harvesting i	in ten years hold to see if regene	eration es	tablishes itself			
11	Available	5B: Maintain for regeneration purposes	36	Unspecified	Unspecified	Unspecified	Unspecified
	Comments: ook at harvesting i	in ten years hold to see if regene	eration es	tablishes itself			
12	Unavailable	5E: Long-Term Retention	3	Unspecified	Unspecified	Unspecified	Unspecified
	Comments: Retention from adj	acent Stand 48 harvest from the	north				
13	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	31	Unspecified	Unspecified	Unspecified	Unspecified
(	Comments:						
14	Unavailable	5E: Long-Term Retention	2	Unspecified	Unspecified	Unspecified	Unspecified
	Comments: Area of retention fo	or stand number 37. This retention	on is goin	g to cover multiple treatn	nents, at least two harvests	5.	
15	Unavailable	5E: Long-Term Retention	3	Unspecified	Unspecified	Unspecified	Unspecified
	Comments: Retention from har	vest on stand 37 this retention v	vill serve ı	multiple harvests on this	stand and least two treatm	ents.	

5/2/2023 1:19:47 PM - Page 3 of 3 **POLEYN**  Mgt. Unit

Compartment: #Type! Year of Entry:

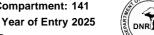


# Report 5 - PROPOSED SPECIAL CONSERVATION AREA\* (SCA) DETAILS

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

SCA Name	SCA Category	Detail Type	Recommendation	Acres
Comments				

Traverse City Mgt. Unit Compartment: 141



# 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.

Conservation Area	n Type	Description	ERA = Ecological Reference Area HCVA = High Conservation Value Area SCA = Special Conservation Area
SCA	Cold Water Stream	A coldwater stream has temperature and dissolved oxygen cond stocked trout populations and those of other coldwater fish speci year to year. Coldwater streams in Michigan typically provide the contributions of groundwater to their stream flows. Such streams designated as trout resources by Fisheries Order 210.	es (e.g., slimy sculpin) to persist from se conditions due to substantial
SCA	Research and Military Areas	These areas provide facilities and lands specifically dedicated fo include the 5,847 acre Forest Fire Experiment Station, the 12,00 Area, the Beaver Islands Archipelago Wildlife Research Area (th High and Hog Islands, all state owned land on Beaver, South Fo Wildlife Research Area, the 3,000 acre Hunt Creek Fisheries Re Nursery, and over 144,000 acres of Military Lands.	0 acre Houghton Lake Wildlife Research at includes most of Garden Island, all of x and North Fox Islands), the Cusino
SCA	Riparian Area	A transitional area between aquatic and terrestrial ecosystems in influences the aquatic ecosystem and vice-versa. Because of the streams and open water wetlands, riparian areas harbor a high communities are ecologically and socially significant in their effects as aesthetics, habitat, bank stability, timber production, and their	e unique conditions adjacent to lakes, liversity of plants and wildlife. Riparian cts on water quality and quantity, as well
HCVA	Designated Critical Habitat	Critical habitat areas are established via a consultative and coop U.S. Fish and Wildlife service for the recovery of threatened and 365, Endangered Species Protection, of the Natural Resources and 451, and the Federal Endangered Species Act of 1973. This species plans in various stages of review. As of now only two explover Habitat.	endangered species, as governed by Part and Environmental Protection Act, 1994 is an active program, with proposed



C4	d Laval 4.0	· T		C: D-	!4	A	Ctanal Ama D	A Dames	Managade	\!	General Comments
Stan	d Level 4 C	over Type		Size De	nsity	Acres	Stand Age B	A Kange	Managed S	onte	General Comments
1	4123 -	Red Oak	Ş	Sawtimb	er Well	13.3	93	81-110	N/A		Small stand taken out of the large oak treatment area Sale was completed in 2012, hold this stand to function as a mature island in a
	Canopy Species	% Cover	Size Class	DBH	Age	Sub-Car	opy Species	Density	Avg. Height	Size	heavily treated area.
	Red Pine	5	Pole/Log	8		Red	d Maple	Low	10 - 20 feet	Sapling	,
	White Oak	10	Pole	8	93	Wh	ite Pine	High	Variable	Sapling	
	Red Maple	15	Pole	8							
	Red Oak	60	Log/Pole	10	93						
	White Pine	10	Pole/Log	8							
2	4191 - Mixed Upla Co	and Decidu onifer	ous with F	Poletimb	er Well	18.5	88	81-110	N/A		
	Canopy Species	% Cover	Size Class	DBH	Age	Sub-Car	opy Species	Density	Avg. Height	Size	
	Red Maple	20	Pole/Log	8		Red	d Maple	Low	Variable	Sapling	
	Red Oak	30	Pole/Log	9	88	Wh	ite Pine	Medium	Variable	Sapling	
	White Pine	15	Pole/Log	9		Re	d Pine	Low	Variable	Sapling	
	Bigtooth Aspen	10	Pole/Log	8						1	
	Red Pine	10	Pole/Log	8							
	White Oak	15	Pole/Log	9							
3	4123 -	Red Oak	(	Sawtimb	er Well	17.9	93	81-110	N/A		Stand cut last YOE with Confusion oak closed in 2012. left thicker than most of the oak to the north.
	Canopy Species	% Cover			Age	Sub-Car	opy Species	Density	Avg. Height	Size	most of the oak to the north.
	Red Oak	85	Log/Pole	10	93		ite Pine	Low	5 - 10 feet	Sapling	
	White Oak	15	Log/Pole	12		Re	d Oak	Medium	5 - 10 feet	Sapling	
						Red	d Maple	High	5 - 10 feet	Sapling	
4	4139 - Aspen,	Mixed Deci	iduous	Sapling		3.3	8 1	mmature	N/A		141 Chipper Cherry sale completed August of 2016. All oak, red, and white pine were left along with green marked.
	Canopy Species	% Cover	Size Class	DBH	Age	Sub-Car	opy Species	Density	Avg. Height	Size	write pine were left along with green marked.
	Red Maple	5	Sapling	2	8		ry (Juneberry)	Medium	5 - 10 feet	Sapling	
	Red Oak	5	Sapling/Pole	2		Hawth	orn (spp.)	Low	5 - 10 feet	Tall Shrub	
	Black Cherry	50	Sapling	3	8						
	Quaking Aspen	35	Sapling	2	8						
	Bigtooth Aspen	5	Sapling	2							
5	330 - Low-	Density Tre	ees	Nonsto	cked	3.5			No		
5								<b>-</b>	Ava Haimbt	C:	
5						Sub-Car	opy Species	Density	Avg. Height	Size	
J							k Cherry	Medium	Avg. Height	Pole	
J						Blac			Avg. neight		



Stand	Level 4 C	over Type	:	Size De	ensity	Acres	Stand Age	BA Range	Managed S	ite	General Comments
7	4199 - Other Mixe			Saplin		205.7	15	1-50	N/A		Confusion oak sale was completed in 2012. Highlighting the understory regenerating stand. earlier cut portions of the sale have regenerated
	Canopy Species	% Cover	Size Class		l Age						nicely to a mixed red maple and oak. variable residual BA from 10-20 BA.
	White Oak	10	Pole/Log/Sap	8							Residual BA should be left for mast production and diversity of the area
	Red Pine	5	Pole/Sap/Log	8							
	Red Oak	25	Sapling	2	15						
	Red Oak	10	Log	14	93						
	Red Maple	35	Sapling	2	15						
	Bigtooth Aspen	10	Sapling	2							
	White Pine	5	Pole/Sap/Log	8							
8	4130	- Aspen		Saplin	g Well	59.0	6	Immature	N/A		141 notable aspen cut summer of 2018 some residual oak left scattered
	Canopy Species	% Cover	Size Class	DBH	l Age						
	Red Oak	5	Log	12	6						
	White Oak	5	Log	10							
	White Pine	5	Log/Pole	12							
	Red Maple	25	Sapling	1	6						
	Bigtooth Aspen	60	Sapling	1	6						
10	4130	- Aspen	P	Poletimb	er Wel	1 22.2	56	111-140	N/A		
	Canopy Species	% Cover	Size Class	DBH	l Age	Sub-Ca	nopy Speci	es Density	Avg. Height	Size	
	Red Maple	15	Pole	8		Re	d Maple	Low	Variable	Sapling	
	Bigtooth Aspen	75	Pole/Log	9	56			-			
	Red Oak	10	Pole	8							
11	4130	- Aspen		Saplin	g Well	71.1	6	Immature	N/A		141 notable aspen cut summer of 2018 except 1/4 of south was cut
	Canopy Species	% Cover	Size Class	DBH	l Age						summer of 2017. site already fully regenerated to aspen. scattered green oak left to increase good thick stem density.
	White Pine	3	Sapling	4							oak left to increase good trick sterri density.
	Balsam Fir	10	Sapling/Pole								
	Red Oak	3	Log/Pole	10							
	Red Maple	15	Sapling	1	6						
	Bigtooth Aspen	69	Sapling	1	6						
13	42210 - Na	tural Red P	ine S	Sawtimb	er Well	4.9	89	141-170	N/A		
	Canopy Species	% Cover	Size Class	DBH	l Age	Sub-Ca	nopy Speci		Avg. Height	Size	
	Red Pine	75	Log/Pole/XLog		89		d Maple	Low	Variable	Sapling	
L	Quaking Aspen	5	Pole	8					<u> </u>		I
	Quality Asper			U							
	Red Maple	15	Pole	8							



Stand	d Level 4 C	over Type	5	Size De	ensity	Acres	Stand Age E	BA Range	Managed S	ite	General Comments
14	4123 -	Red Oak	S	awtimb	er Well	22.9	93	111-140	N/A		
	Canopy Species	% Cover	Size Class	DBH	l Age	Sub-Ca	nopy Species	Density	Avg. Height	Size	
	Quaking Aspen	5	Pole/Sapling	6		Wh	nite Pine	Medium	5 - 10 feet	Sapling	
	Red Oak	80	Log/Pole	10	93	Re	d Maple	Low	10 - 20 feet	Sapling	
	Red Maple	15	Pole	6							
15	4130	- Aspen	Р	oletimb	er Well	10.0	28	51-80	N/A		
	Canopy Species	% Cover	Size Class	DBH	l Age						
	Red Oak	10	Log/Pole	12	93						
	Red Maple	15	Sapling	3							
	Bigtooth Aspen	75	Pole/Sapling	5	28						
18	4130	- Aspen	Р	oletimb	er Well	311.3	48	81-110	N/A		
	Canopy Species	% Cover	Size Class	DBH	l Age	Sub-Ca	nopy Species	Density	Avg. Height	Size	
	Red Oak	15	Pole/Sapling	6		Re	d Maple	Low	Variable	Sapling	
	Red Maple	15	Pole/Sapling	6		Wh	nite Pine	Low	Variable	Sapling	
	Bigtooth Aspen	65	Pole	7	48						
	White Pine	5	Pole	6							
19	42290 - Natu	ural Mixed F	Pine P	oletimb	er Poor	20.9	25	1-50	N/A		
	Canopy Species	% Cover	Size Class	DBH	l Age	Sub-Ca	nopy Species	Density	Avg. Height	Size	
	White Pine	30	Log/Pole	14		R	ed Oak	Low	Variable	Sapling	
	Jack Pine	50	Pole/Sapling	5	25	Wł	nite Pine	Low	Variable	Sapling	
	Red Oak	20	Log/Pole	14	93						
20	42221 - Natural Dec	Jack Pine, iduous	Mixed Pol	etimbe	r Medium	n 20.8	25	Immature	N/A		The overstory red pine was removed around 2018 '141 Central Bler Understory jack pine and oak is now the cover type. There is some
	Canopy Species	% Cover	Size Class	DBH	l Age						scattered log sized red pine that was left.
	Jack Pine	70	Pole/Sapling	5	25						
	Black Cherry	15	Sapling	2							
	Red Oak	15	Sapling	2							
21	42210 - Na	tural Red P	ine S	awtimb	er Well	9.5	90	141-170	N/A		
	Canopy Species	% Cover	Size Class	DBH	l Age	Sub-Ca	nopy Species	Density	Avg. Height	Size	
	Red Maple	10	Pole	7		WI	nite Pine	Medium	Variable	Sapling	
	Red Oak	15	Log/XLog/Pole	16							-
	White Pine	5	Pole/Sapling	7							
	Bigtooth Aspen	5	Log/Pole	13							
	Red Pine	65	Log/Pole/XLog	14	90						
			•					•			



23 Ca	4129 - N	#:									
Ca		/lixed Oak	\$	Sawtimber Well		75.4	92	111-140	N/A		
	anopy Species	% Cover	Size Class	DBH	Age	Sub-Ca	nopy Species	Density	Avg. Height	Size	
V	White Pine	5	Pole/Log	8		Re	d Maple	Low	Variable	Sapling	
	Red Oak	35	Log/Pole	10	92	Re	ed Oak	Low	Variable	Sapling	
	Red Pine	5	Log/Pole	10		Wh	nite Pine	Low	Variable	Sapling	
F	Red Maple	10	Pole	7		Re	ed Pine	Medium	Variable	Sapling	
Big	gtooth Aspen	10	Pole/Log	8					'		
V	White Oak	35	Log/Pole	10	92						
24	330 - Low-I	Density Tre	es	Nonsto	cked	1.4			No		
26	42210 - Nat	ural Red Pi	ine F	Poletimbe	er Well	22.0	83	141-170	N/A		
Ca	anopy Species	% Cover	Size Class	DBH	Age	Sub-Ca	nopy Species	Density	Avg. Height	Size	
	Red Oak	15	Pole/Log	8		Wh	nite Pine	Low	Variable	Sapling	
V	White Oak	5	Pole/Log	8		Re	ed Oak	Low	Variable	Sapling	
	Red Pine	75	Pole/Log	9	83	Re	d Maple	Low	Variable	Sapling	
V	White Pine	5	Pole/Log	9							
27	4119 - Mixed No	orthern Hard	dwoods S	Sawtimbe	er Well	12.9	88	51-80	N/A		- Stand was thinned around 2018 '141 Central Blend'.
Са	anopy Species	% Cover	Size Class	DBH	Age	Sub-Car	nopy Species	Density	Avg. Height	Size	
F	Red Maple	25	Pole/Log	9	88	Irc	onwood	Medium	Variable	Sapling	
F	Basswood	15	Log/Pole	10		Е	Beech	Low	Variable	Sapling	
Р	Paper Birch	5	Pole	8		Bigto	oth Aspen	Low	Variable	Sapling	
	Red Oak	35	Log/Pole	13	88						•
Sı	ugar Maple	20	Pole/Log	9							
28	42141 - Planted Mixed Pine, Mixed S Deciduous			Sapling	Well	130.2	8	Immature	N/A		Stand is a result of the North Branch Truck Sale which closed in 2006. All red pine was cut. This part of the sale and resulting stand has been roller
Ca	anopy Species	% Cover	Size Class	DBH	Age						chopped and trenched and planted to pine to get some red pine started back in this area. was not intended to be a fully stocked so the objective
BI	lack Cherry	45	Sapling	2	8						has been met. Part of stand is FTP C62-800. See reference layer
			0 11 /0 1								near Sunset Trail. 2.5 + 8.8 + 4.8 acres planted. 3rd year regen survey
	Jack Pine	20	Sapling/Pole	3							done in 2016 2020 regen survey shows 28% mortality, 630 TPA of



Stand	Level 4 C	over Type		Size De	nsity	Acres	Stand Age B	A Range	Managed Site		General Comments
29	4199 - Other Mixe	d Upland Deciduous		uous Poletimber		40.6	39	1-50	N/A		
	Canopy Species	% Cover	Size Class	DBH	Age						
	Red Oak	25	Pole/Sapling	5							
	Red Maple	40	Pole/Sapling	5	39						
	Black Cherry	5	Sapling	3							
	Jack Pine	2	Pole	5							
	Bigtooth Aspen	5	Pole/Sapling	5							
	White Oak	10	Sapling/Pole	3							
	Red Pine	3	Sapling/Pole	4							
	White Pine	10	Sapling	4							
30	4124 - Red	with White	Oak Sa	wtimbe	Mediun	n 31.0	93	51-80	N/A		
	Canopy Species	% Cover	Size Class	DBH	Age	Sub-Ca	nopy Species	Density	Avg. Height	Size	
	Red Oak	45	Log/Pole/XLog	g 12	93	R	ed Oak	Medium	5 - 10 feet	Sapling	
	White Oak	45	Log/Pole/XLog	g 12	93	Re	d Maple	Medium	5 - 10 feet	Sapling	
	Red Pine	5	Pole/Log	8		WI	nite Pine	Low	5 - 10 feet	Sapling	
	White Pine	5	Pole/Log	8		W	hite Oak	Medium	5 - 10 feet	Sapling	
31	4199 - Other Mixe	ed Upland D	Deciduous	Sapling	y Well	19.0	19	1-50	N/A		
	Canopy Species	% Cover	Size Class	DBH	Age						
	Red Maple	30	Sapling/Pole	4	19						
	Red Oak	25	Sapling/Pole	4							
	Black Cherry	5	Sapling	3							
	White Oak	15	Sapling	3							
	Bigtooth Aspen	25	Sapling/Pole	4							
32	42250 -	Pine, Oak	5	Sawtimb	er Well	28.4	90	81-110	N/A		Gully RD Red Pine Closed in 2007 all orange marked red pine, aspen
	Canopy Species	% Cover	Size Class	DBH	Age	Sub-Ca	nopy Species	Density	Avg. Height	Size	and jack pine were harvested.
	Red Oak	20	Log/Pole/XLog	g 14		R	ed Oak	Medium	Variable	Sapling	
	Red Pine	60	Log/Pole	13	90	Re	ed Maple	Low	Variable	Sapling	
	White Oak	10	Log/Pole	14			-				_
	Red Maple	10	Pole	7							
33	4123 -	Red Oak		Sawtimber Well		13.5	13.5 90		N/A		- Very nice red oak stand. Select cut releasing the nice quality single
	Canopy Species	% Cover	Size Class	DBH	Age	Sub-Ca	nopy Species	Density	Avg. Height	Size	stems trying to remove high risk trees. OK to cut some of all species, red pine, maple, and oak.
	White Oak	5	Log/Pole	13		Re	d Maple	Low	Variable	Sapling	- Stand was thinned around 2017 '141 Central Blend'. Residual BA is
	Red Oak	70	Log/Pole/XLog	g 14	90			1		1	around 60-90sqft/ac
	Red Maple	15	Pole/Log/Sap	10							
	Red Pine	10	Log/Pole/XLo								



Stand	d Level 4 C	over Type		Size Density			Stand Age BA Range		Managed Site		General Comments
34	4119 - Mixed No	orthern Ha	rdwoods Po	Poletimber Well		5.7	39	1-50	N/A		
	Canopy Species	% Cove	r Size Class	DBH	Age						
	Black Cherry	10	Pole/Sapling	5							
	Bigtooth Aspen	10	Pole/Sapling	5							
	Red Maple	50	Pole/Sapling	5	39						
	Red Oak	30	Pole/Sapling	6							
35	4131 - A	spen, Oal	,	Sapling	Well	71.9	17	Immature	N/A		Stand is a result of the North Branch Truck Sale which closed in 2006. All
	Canopy Species	% Cove	r Size Class	DBH	Age						red pine was cut. Some larger diameter oaks left scattered throughout
	Red Oak	20	Sapling/Pole	3							
	Black Cherry	15	Sapling	3	17						
	Quaking Aspen	10	Sapling	3							
	Bigtooth Aspen	35	Sapling/Pole	3	17						
	Red Maple	20	Sapling	3							
37	4130	- Aspen	Po	oletimbe	r Well	133.8	49	81-110	N/A		
	Canopy Species	% Cove	r Size Class	DBH	Age	Sub-Ca	nopy Species	Density	Avg. Height	Size	
	Quaking Aspen	10	Pole	7		Re	d Maple	Low	Variable	Sapling	
	Bigtooth Aspen	55	Pole/Log	8	49	R	ed Oak	Low	Variable	Sapling	
	White Pine	5	Pole/Log	8		Wh	nite Pine	Low	5 - 10 feet	Sapling	
	Red Maple	15	Pole/Log	8				-	,		-
	Black Cherry	15	Pole	6							
39	4199 - Other Mixe	d Upland l	Deciduous Sa	apling M	edium	75.2	18	Immature	N/A		- Stand had the overstory removed in 2018 '141 Central Blend'. Some
	Canopy Species	% Cove	r Size Class	DBH	Age						scattered pine and oak were left. Mostly red maple with some aspen and oak is what's remaining, open areas are filling in from the 2018
	Red Maple	35	Sapling	2	18						harvest definitely a second regeneration age class present. More trees
	White Oak	5	Log	10							should have been harvested in 2018
	Red Pine	2	Log/XLog/Pole	14	87						
	Red Oak	30	Sapling/Pole/Log	g 2	18						
	Bigtooth Aspen	28	Sapling	2							
40	4139 - Aspen,	Mixed Dec	ciduous S	Sapling	Well	38.1	15	1-50	N/A		Stand was harvested in late fall of 2007 Seven Point Oak. RX was to cut
	Canopy Species	% Cove	r Size Class	DBH	Age						all trees and only oak that are larger than 10 inches in DBH
	Red Maple	30	Sapling	3	15						
	Bigtooth Aspen	45	Sapling/Pole	3	15						
	Red Oak	15	Sapling	1							
	Black Cherry	10	Sapling	1							



Stand	Level 4 Co	el 4 Cover Type Size Density Acres Stand Age BA Range Managed Site		Site	General Comments						
42	4310 - Pir	ne, Oak Mix	k :	Sawtimber Poor		36.3	93	1-50	N/A		Stand was cut in 2015-2016 '141 Central Blend'. Residual BA varies quiet a bit but is a mix of oak and pine.
	Canopy Species	% Cover	Size Class	DBH	Age	Sub-Ca	nopy Species	Density	Avg. Height	Size	quiet a bit but is a mix or oak and pine.
	White Oak	20	Log/Pole	12		R	ed Oak	Medium	10 - 20 feet	Sapling	
	White Pine	35	Log/Pole	12	93	Re	ed Maple	Medium	10 - 20 feet	Sapling	
	Red Pine	10	Log/Pole	10		Quak	king Aspen	Medium	5 - 10 feet	Sapling	
	Red Oak	35	Log/Pole	12	93						
44	4112 - Maple, Beec	h, Cherry A	Association	Sapling	y Well	14.2	17	Immature	N/A		Stand cut last YOE Gardner Farm Jack pine sale closed in the spring of 2007. Overstory jack taken off the top of a nicely stocked maple oak
	Canopy Species	% Cover	Size Class	DBH	Age						stand, a few maple are almost pole size.
	White Oak	5	Sapling/Pole	9 4							·
	Red Oak	10	Sapling/Pole	e 3							
	Red Maple	80	Sapling/Pole		17						
	White Pine	5	Sapling/Pole	e 3							
45	4122 - (	Dak, Pine	Sa	awtimbe	Mediur	m 62.3	93	51-80	N/A		Gardener Farm Oak Sale closed January 2007. All orange marked trees,
	Canopy Species	% Cover	Size Class	DBH	Age	Sub-Ca	nopy Species	Density	Avg. Height	Size	aspen, jack pine, and red maple were harvested.
	White Oak	25	Log/Pole	13		Re	ed Maple	Medium	5 - 10 feet	Sapling	
	Red Oak	35	Log/Pole	13	93	R	ed Oak	Medium	5 - 10 feet	Sapling	
	Red Pine	10	Log/Pole	13		W	hite Oak	Low	5 - 10 feet	Sapling	
	White Pine	30	Pole/Log/Sap	р 9		WI	nite Pine	Medium	Variable	Sapling	
46	4130 -	- Aspen		Sapling	y Well	20.3	8	Immature	N/A		cut with adjacent stand. chipper challenge
	Canopy Species	% Cover	Size Class	DBH	Age						
	White Pine	5	Pole/Log	8							
	Red Oak	5	Sapling	2							
	Red Maple	10	Sapling	1	8						
	Quaking Aspen	35	Sapling	2	8						
	Black Cherry	15	Sapling	1	8						
	Bigtooth Aspen	30	Sapling	2	8						
47	4130	- Aspen		Sapling	y Well	63.5	15	Immature	N/A		
	Canopy Species	% Cover	Size Class	DBH	Age	Sub-Ca	nopy Species	Density	Avg. Height	Size	
	Black Cherry	10	Sapling	2		Hawt	horn (spp.)	Low	5 - 10 feet	Tall Shrub	
	White Pine	5	Sapling	3		Servicebe	erry (Juneberry	) Low	5 - 10 feet	Sapling	
	Bigtooth Aspen	30	Sapling	3	15			'		<u>'</u>	
	Quaking Aspen	30	Sapling	3	15						
	Red Oak	5	Sapling	2							
	Red Maple	20	Sapling	2							



Stand	Level 4 Cover Type			Size De	nsity	Acres	Stand Age BA Range		Managed	Site	General Comments
48	4139 - Aspen, Mixed Deciduous			Sapling Well		118.1	8	Immature	e N/A		141 Chipper Cherry sale completed August of 2016. All oak, red, and
	Canopy Species	% Cover	Size Class	DBH	l Age	Sub-Ca	nopy Species	Density	Avg. Height	Size	white pine were left along with green marked.
	Quaking Aspen	35	Sapling	2	8	Servicebe	erry (Juneberry	) Medium	5 - 10 feet	Sapling	
	Red Oak	5	Sapling/Pole	2		Hawt	horn (spp.)	Low	5 - 10 feet	Tall Shrub	
	Black Cherry	50	Sapling	3	8						-
	Red Maple	5	Sapling	2	8						
	Bigtooth Aspen	5	Sapling	2							
49	4199 - Other Mixe	ed Upland [	Deciduous P	oletimb	er We	ll 13.7	43	51-80	N/A		
	Canopy Species	% Cover	Size Class	DBH	l Age	Sub-Ca	nopy Species	Density	Avg. Height	Size	
	Red Maple	45	Pole	6	43	Re	d Maple	High	10 - 20 feet	Sapling	
	Red Oak	25	Pole	6				,			-
	White Oak	10	Pole	6							
	Bigtooth Aspen	20	Pole	7							
50	4311 - Pin	e, Aspen N	⁄lix P	oletimb	er We	II 32.8	53	81-110	N/A		
	Canopy Species	% Cover	Size Class	DBH	l Age	Sub-Ca	nopy Species	Density	Avg. Height	Size	
	Bigtooth Aspen	35	Pole	8	53	Re	d Maple	Low	Variable	Sapling	
	Red Maple	15	Pole/Sapling	6		R	ed Oak	Low	Variable	Sapling	
	Red Oak	5	Pole	6							-
	Red Pine	20	Log/Pole/XLog	14							
	White Pine	25	Log/Pole/XLog	12							
51	4199 - Other Mixe	ed Upland [	Deciduous	Sapling	y Well	15.7	23	Immature	N/A		
	Canopy Species	% Cover	Size Class	DBH	l Age						
	Black Cherry	10	Sapling	3							
	White Oak	10	Sapling	3							
	Jack Pine	5	Sapling/Pole	3							
	Bigtooth Aspen	15	Sapling/Pole	3							
	White Pine	5	Sapling/Pole	3							
	Red Maple	35	Sapling/Pole	3	23						
	Red Oak	20	Sapling	2							