



Compartment Review Presentation

Grayling Forest Management Unit

Compartment 72277

Entry Year 2017

Acreage: 1,058

County Crawford

Management Area: Kirtland's Warbler

Revision Date: 2015-05-28

Stand Examiner: Matthew Foster

Legal Description:

T27N R01W Sections 19, 20

Identified Planning Goals:

To provide an area that allows for National Guard training while maintaining forest health, productivity, sustainability, species diversification, and structural diversity throughout the compartment. In addition, to maintain a healthy habitat for the endangered *Dendroica kirtlandii* (Kirtland's warbler), taking into account warbler management plan directives, species diversification, and visual management.

Soil and topography:

The soils consist of Grayling/Graycalm sands and are level on the southern 2/3rd of the compartment to very hilly on the northern 1/3rd of the compartment.

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

This compartment is entirely comprised of State-owned lands. The compartment is under the 1935 long-term lease agreement L-1479 (Act 254 P. A. 1935) with the Michigan National Guard, Department of Military Affairs. The agreement provides for the use by the military during their encampment, with no permanent buildings or improvements to be erected. Military needs take precedence over resource management needs on long-term leased lands. The DNR will coordinate all prescribed activities with the National Guard to ensure they are compatible with military training needs.

Unique Natural Features:

Several occurrences of threatened and endangered species occur in or near the compartment.

Archeological, Historical, and Cultural Features:

The compartment has had two significant fires occur recently in it. The Bald Hill fire occurred in 1975 and burned about 75% of the compartment and the Stephan Bridge Road fire occurred in 1990 and burned about 75% of the compartment. Both fires occurred over approximately the same area in the compartment. It appears that fire occurs in the same general area within the compartment. Fire has historically played a significant role in the development of the current conditions in the compartment.

Special Management Designations or Considerations:

The compartment is part of lands under long-term lease to the National Guard. Section 20 is, also, part of the Old Down River Kirtland's warbler Management Unit, per the Cooperative Agreement with the Department of Natural Resources and the Department of Military Affairs of 1986.

Watershed and Fisheries Considerations:

One small bog is located in the south-central part of the compartment. No recognized water courses flow into, or out of, the compartment.

Wildlife Habitat Considerations:

The compartment is part of the Old Down River Kirtland's Warbler Management Unit.

Mineral Resource and Development Concerns and/or Restrictions

Surface sediments consist of ice-contact outwash and glacial outwash sand and gravel and postglacial alluvium. The glacial drift thickness varies between 200 and 600 feet. Beneath the glacial drift are the Coldwater Shale and Marshall Formation. The Coldwater does not have a current economic use. The Marshall has been used as a building stone in the past. The thickness of glacial overburden would prohibit any development of bedrock resources. A State gravel pit (Bald Hill Pit) is located in Section 24, T27N R2W, and potential is good on the upland areas. This area is Military Board land and not leased for oil and gas. However, State land immediately to the east is currently under lease. The nearest production is Conners Marsh Field just to the east. The field has produced over 20 Bcf gas from the Ordovician Prairie du Chien.

Vehicle Access:

Access into the compartment is provided by North Down River Road (a paved County maintained road), and Martindale Road (a gravel maintained County road) on the east side of the compartment. Martindale Road provides access to private residences to the southeast of the compartment. Bald Hill Road (a dirt maintained County road) is located just to the west of the compartment. Several poor dirt forest trails traverse through the compartment. No new roads need to be created at this time. No roads need to be closed at this time. All new roads created through management activities are to be closed upon completion.

Survey Needs:

None.

Recreational Facilities and Opportunities:

Dispersed recreational use occurs throughout the compartment. Recreational use is limited by military activities and Kirtland's warbler management in the compartment.

Fire Protection:

The compartment has a history of significant fires. Two large fires occurred in the compartment in 1975 and 1990. Much of the compartment is comprised of young jack pine and/or young jack pine/oak. The northern edge of the compartment is comprised of mature oak and red pine. Access for fire suppression equipment is on North Down River Road (paved), Bald Hill Road, and Martindale Road. The forest roads in the compartment are sandy and hilly in spots slowing response time for suppression equipment. The closest water source is at North Down River Road at the North Branch of the AuSable River approximately 2 miles east of the compartment. There are no established fuel breaks in or around the compartment. There are no wells or pipelines located in the compartment.

Additional Compartment Information:

The following reports from the Inventory are attached:

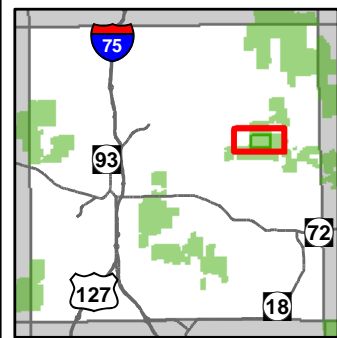
- Total Acres by Cover Type and Age Class**
- Cover Type by Harvest Method**
- Proposed Treatments – No Limiting Factors**
- Proposed Treatments – With Limiting Factors**
- Stand Details (Forested and Nonforested)**
- Dedicated and Proposed Special Conservation Areas**
- Site Condition Details**

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

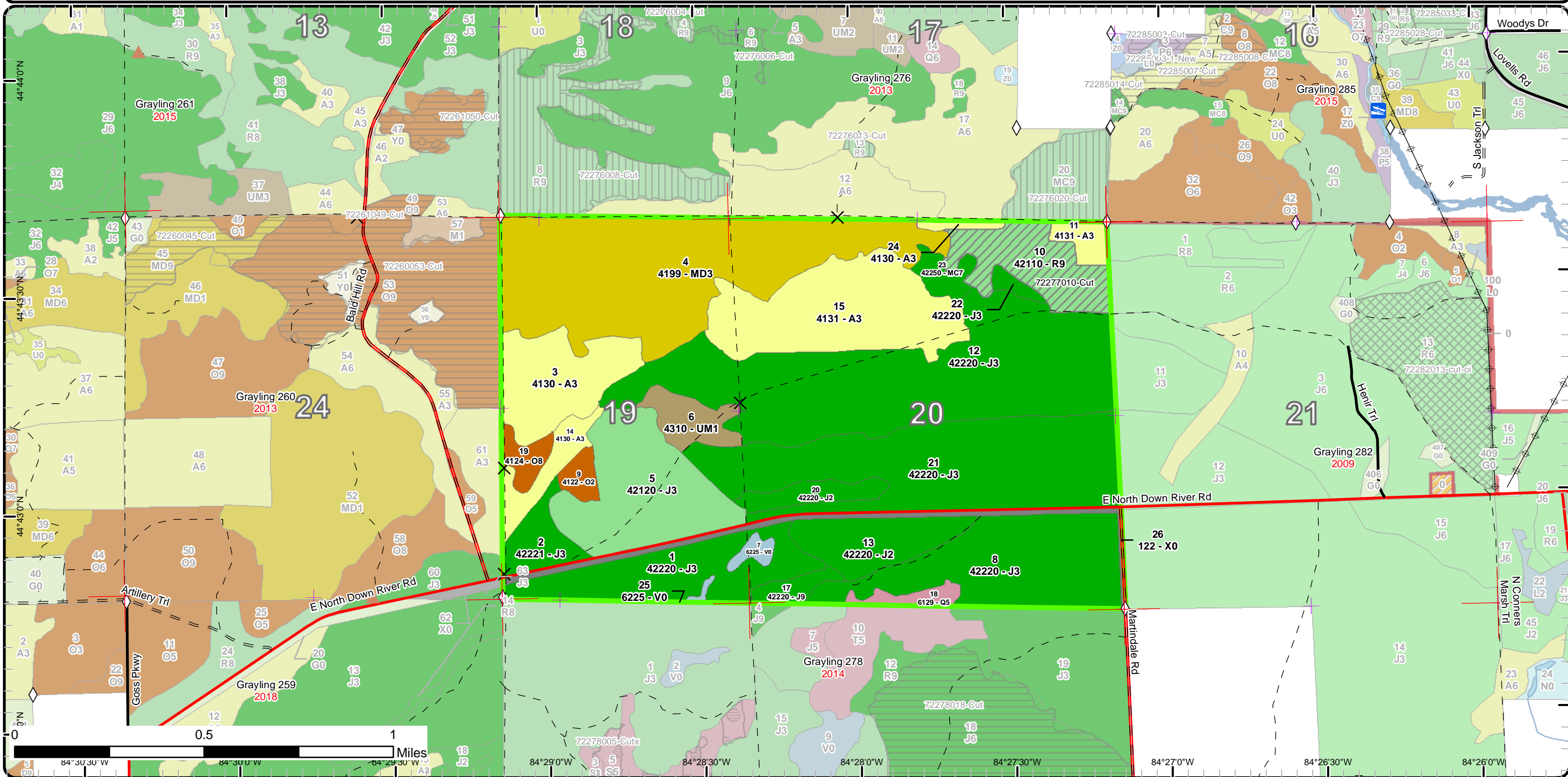
- Base feature information, stand boundaries, cover types, and numbers**
- Proposed treatments**
- Site condition boundaries**
- Details on the road access system**

Cover Type & Treatments Map

Compartment: 277
 T27N R01W 19,20
 County: Crawford
 Unit: Grayling
 Mgmt Area: Kirtland's Warbler
 YOE: 2017
 Acres: 1058 GIS Calculated
 Examiner: Matthew Foster
 Map Revised: 5/17/2016
 Map Phase: Post-Review

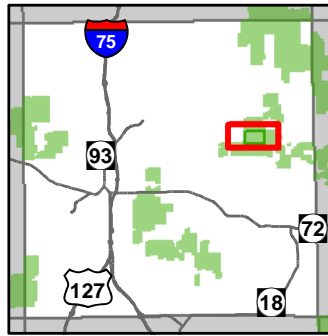


- Miris Corners
- Remonumented Section Corners
- Field Grade GPS Corners
- Gate
- Berms
- Boating Access Site
- County Paved Roads
- Paved Roads
- County Gravel Roads
- Gravel Roads
- Poor Dirt Roads
- Rivers
- Powerline
- Compartment Boundary
- Thinning (Crown, Low, Systematic)
- 412 - Oak Types
- 413 - Aspen
- 419 - Mixed Upland Deciduous
- 421 - Planted Pines
- 422 - Natural Pines
- 430 - Upland Mixed Fores
- 612 - Lowland Coniferous Forest
- 122 - Roads/Parking Lot
- 622 - Lowland Shrub
- Lakes

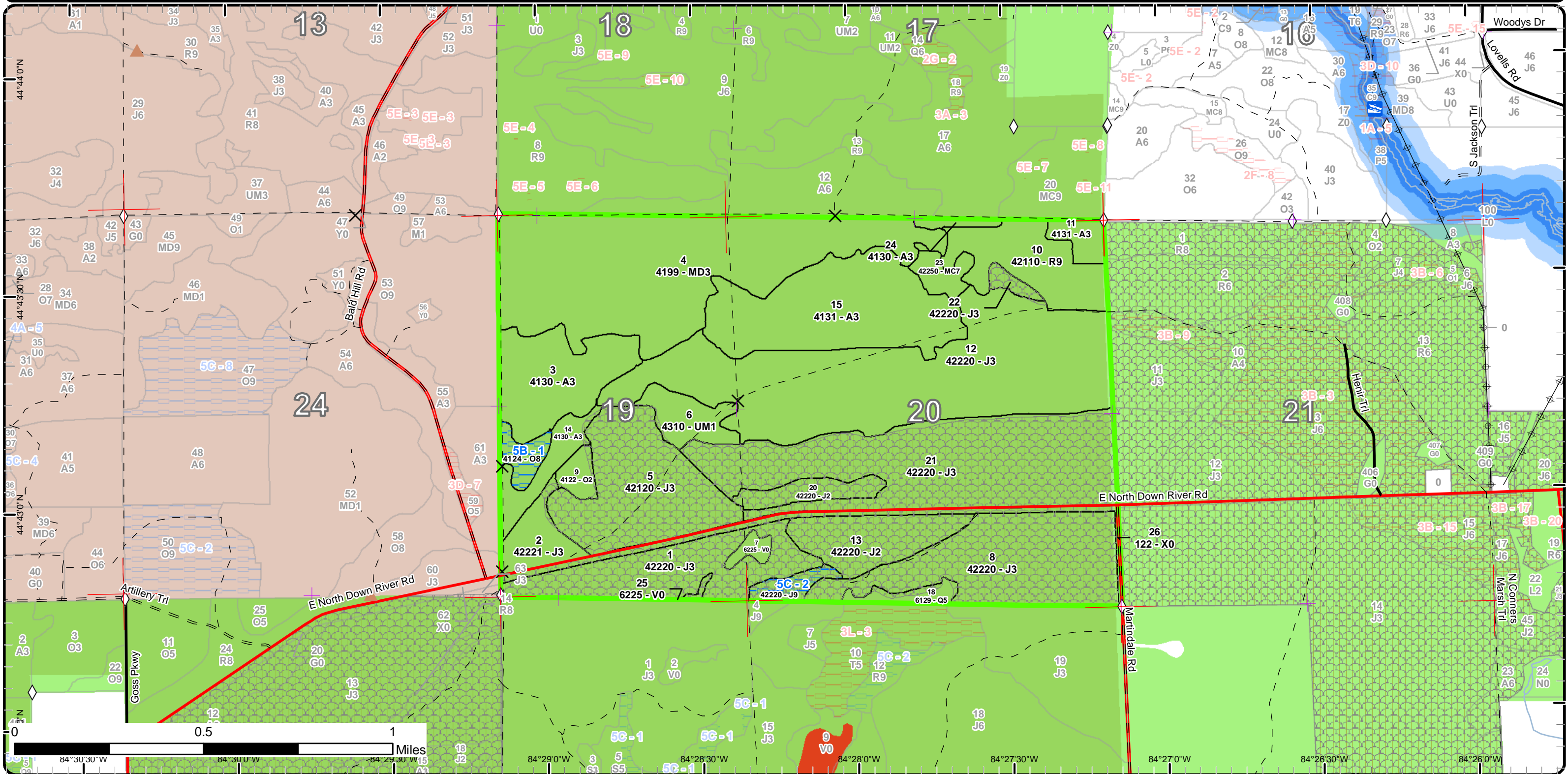


Special Conservation Areas & Site Conditions Map

Compartment: 277
 T27N R01W 19,20
 County: Crawford
 Unit: Grayling
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- Miris Corners
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- Boating Access Site
- County Paved Roads
- Paved Roads
- - County Gravel Roads
- - Gravel Roads
- - - - Poor Dirt Roads
- Rivers
- Powerline
- Compartment Boundary
- SCA
- SCA Removal
- Available w/ Constraints
- 5B: Maintain for regeneration purposes
- 5C: Delay treatment for age/size class diversity or exceptional site quality
- Stand Boundaries
- Special Conservation Areas
- Ecological Reference Areas
- Natural Rivers Vegetative Buffer
- Natural Rivers Zoning District
- Kirtland Warbler Habitat
- High Priority Trout Stream Buffer
- Research, Development, and Military Lands
- Fishing Access Site
- Other SCA (No Category Assigned)



Report 1 – Total Acres by Cover Type and Age Class



Age Class

	Non-Forest	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100-109	110-119	120-129	130-139	140-149	150+	Uneven-Aged	Total
Aspen	0	0	59	103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	162
Bog	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Jack Pine	0	0	0	379	0	228	0	0	8	0	0	0	0	0	0	0	0	0	615
Lowland Conifers	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	7
Mixed Upland Deciduous	0	167	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	167
Natural Mixed Pines	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0	9
Oak	0	0	0	7	0	0	0	0	0	9	0	0	0	0	0	0	0	0	16
Red Pine	0	0	0	0	0	0	0	0	40	0	0	0	0	0	0	0	0	0	40
Upland Mixed Forest	0	0	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17
Urban	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19
Total	24	167	59	506	0	228	0	0	64	9	0	0	0	0	0	0	0	0	1057



Report 2 – Treatment Summary

Grayling Mgt. Unit

Year of Entry: 2017

Acres of Harvest

Compartment 277

Total Compartment Acres: 1,058

Commercial Harvest - 40
 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
Red Pine		0	0	0	0	40	0	0	0	0	40
	Total	0	0	0	0	40	0	0	0	0	40

Proposed and Next Step Treatments by Method

		Harvest	Site Prep	Planting	Seeding	Burning	Pesticide	Monitoring	Other	Non-Forest Mgt.	Total Acres
Current		40	0	0	0	0	0	0	0	0	40
	Total	40	0	0	0	0	0	0	0	0	40



S t a n d	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
10	72277010-Cut	39.6	42110 - Planted Red Pine	Sawtimber Well	77	141- 170	Harvest	Crown Thinning	4211 - Planted Red Pine	Even-Aged	Proposal

Habitat Cut: No

Site Condition:

Prescription Thin stand down to 120 BA, remove all jack pine and oak.

Specs:

Next Step

Treatments:

Acceptable

Regen:

Other Old next step comments:

Comment:

Proposed Start Date: 10/1 /2016

**Total Treatment
Acreage Proposed: 39.6**

Report 5 – Site Conditions

Grayling Mgt. Unit
Matthew Foster : Examiner

Compartment: 277
Year of Entry: 2017

Availability for Management

Total Acres	Acres Available	Acres Avail		Dominant Site Conditions	Dominant Site Conditions		
		With Condition	Not Available		5B	5C	3B
163	163	0	0	Aspen			
5	5	0	0	Bog			
615	607	8	0	Jack Pine		8	0
7	7	0	0	Lowland Conifers			
167	167	0	0	Mixed Upland Deciduous			
9	9	0	0	Natural Mixed Pines			
16	7	9	0	Oak	9		
40	40	0	0	Red Pine			
17	17	0	0	Upland Mixed Forest			
19	19	0	0	Urban			
1,058	1,041	17	0	Total Forested Acres	9	8	0
	98%	2%	0%	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	Dominant Site Availability	Dominant Site Condition	Acres	Other Site Condition	Other Site Condition	Other Site Condition	Other Site Condition
1	Available		5B: Maintain for regeneration purposes	9	Unspecified	Unspecified	Unspecified	Unspecified
Comments:								
2	Available		5C: Delay treatment for age/size class diversity or exceptional site quality	8	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Hold stand for diversity across the landscape.								

Mgt. Unit

Compartment: #Type!

Year of Entry:



Report 6 – PROPOSED SPECIAL CONSERVATION AREA* (SCA) DETAILS

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

SCA Name	SCA Category	Detail Type	Recommendation	Acres
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Comments



Report 7 – EXISTING SPECIAL CONSERVATION AREA DETAILS

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

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

Conservation Area	Type	Description
SCA	Research and Military Areas	These areas provide facilities and lands specifically dedicated for research, or other purposes. They include the 5,847 acre Forest Fire Experiment Station, the 12,000 acre Houghton Lake Wildlife Research Area, the Beaver Islands Archipelago Wildlife Research Area (that includes most of Garden Island, all of High and Hog Islands, all state owned land on Beaver, South Fox and North Fox Islands), the Cusino Wildlife Research Area, the 3,000 acre Hunt Creek Fisheries Research Station, the 125 acre Wyman Nursery, and over 144,000 acres of Military Lands.
HCVA	Designated Critical Habitat	Critical habitat areas are established via a consultative and cooperative process between the DNR and the U.S. Fish and Wildlife service for the recovery of threatened and endangered species, as governed by Part 365, Endangered Species Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, and the Federal Endangered Species Act of 1973. This is an active program, with proposed species plans in various stages of review. As of now only two exist, Kirtland Warbler Habitat and Piping Plover Habitat.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
1	42220 - Natural Jack Pine	Sapling Well	57.0	25	Immature	This stand was part of both the 1975 Bald Hill Fire and the 1990 Stephan Bridge Road Fire. Stand has a couple of open areas along North Down River Road but majority of the stand is very thick jack pine stand mixed with some oak. Stand is part of KW management block 68.
2	42221 - Natural Jack Pine, Mixed Deciduous	Sapling Well	17.0	25	Immature	Mostly jack pine mixed with aspen. This stand was part of both the 1975 Bald Hill Fire and 1990 Stephan Bridge Road Fire. A few scattered mature trees are left from the fire.
3	4130 - Aspen	Sapling Well	47.6	17	Immature	Stand cut in 1998 under contract 72-005-97-01. Dense aspen stand mixed with red maple and oak stump sprouts. Eastern edge of the stand was part of the 1990 Stephan Bridge Road Fire.
4	4199 - Other Mixed Upland Deciduous	Sapling Well	167.3	7	Immature	Stand was harvested in 2008 under contract #72-602-07-01. This stand is now a red maple/oak/aspen mix with a few red pine and jack pine in spots. There are a few open areas with just stump sprouts but overall stand is regenerating well. Heavy deer browse on the smaller oak seedlings but oak stump sprouts are growing vigorously.
5	42120 - Planted Jack Pine	Sapling Well	72.9	25	Immature	This stand was part of both the 1975 Bald Hill Fire and the 1990 Stephan Bridge Road Fire. Stand was planted for KW habitat in 1990 after the fire. Dense jack pine with a few scattered oak. Stand is part of KW management block 68.
6	4310 - Pine, Oak Mix	Sapling Poor	16.9	25	Immature	This stand was part of both the 1975 Bald Hill Fire and the 1990 Stephan Bridge Road Fire. Sparse, open grown jack pine and oak mix, charred stumps found throughout the stand.
8	42220 - Natural Jack Pine	Sapling Well	84.5	40	Unspecified	This stand was part of the 1975 Bald Hill Fire. Very dense jack pine stand mixed with some oak, almost at merchantable level, borderline J3/J6 stand. Stand is part of KW management block 70.
9	4122 - Oak, Pine	Sapling Medium	6.9	25	Immature	Scattered jack pine and oak, fairly sparse. This stand was part of both the 1975 Bald Hill Fire and the 1990 Stephan Bridge Road Fire.
10	42110 - Planted Red Pine	Sawtimber Well	39.6	77	141-170	Red pine quality and BA varies throughout the stand, average stand BA = 170. Jack pine is dying out. There is a deep depression at the north end of the stand close to the two track.
11	4131 - Aspen, Oak	Sapling Well	8.5	18	Unspecified	Harvested in 1997 under contract #72-007-97-01. This stand has more of an oak component than stand 24 to the west. A few red pine seeding in from adjacent stand.
12	42220 - Natural Jack Pine	Sapling Well	185.9	25	Immature	This stand was part of both the 1975 Bald Hill Fire and the 1990 Stephan Bridge Road Fire. Both dense and some more open areas of jack pine regeneration from the fire, a few aspen pockets mixed in also.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
13	42220 - Natural Jack Pine	Sapling Medium	32.9	25	Immature	This stand was part of both the 1975 Bald Hill Fire and the 1990 Stephan Bridge Road Fire. Stand is sparse in some areas, heavy deer browse on the oak. Stand is part of KW management block 68.
14	4130 - Aspen	Sapling Well	16.1	25	Immature	This stand was part of the 1990 Stephan Bridge Road Fire. Mostly aspen dominated stand with some oak and maple.
15	4131 - Aspen, Oak	Sapling Well	87.0	25	Immature	This stand was part of both the 1975 Bald Hill Fire and the 1990 Stephan Bridge Road Fire. Mixed stand from the fires, scattered log sized red pine throughout the stand with burn scars. Some areas of the stand are getting close to pole size class, a small pocket of jack pine and red pine regeneration is included.
17	42220 - Natural Jack Pine	Sawtimber Well	7.9	70	Unspecified	This stand was part of both the 1975 Bald Hill Fire and the 1990 Stephan Bridge Road Fire. Stand was prescribed to be final harvested last YOE but was variance in 2007 to leave for diversity in a young jack pine/KW area. Jack pine is declining and dying out. Jack pine, oak and red pine are regenerating in the understory. Stand could be harvested but due to small size and surrounding stands it should be left for diversity. Stand is part of KW management block 68.
18	6129 - Mixed Coniferous Lowland Forest	Poletimber Medium	7.4	72	Unspecified	Mostly spruce mixed with tamarack. A lot of tag alder in the understory. OPIC - FMD: This stand was part of the 1975 Bald Hill Fire. 08/15/2005 mm
19	4124 - Red with White Oak	Sawtimber Medium	8.9	85	51-80	Repeated fires have left almost all trees with multiple fire scars and open wounds. This stand was part of both the 1975 Bald Hill Fire and the 1990 Stephan Bridge Road Fire. Aspen, oak, and maple will replace this stand naturally. East side of the stand has more oak standing, pockets on west side have fallen over and regeneration is filling in. Old comment: In 2007, decided not to treat and was supported by approved variance, so cut codes removed. Hold this ten acre stand surrounded by J3/A3 as retention across the landscape. Would do more harm than good to access site and harvest it as would have to make new road and destroy lots of reproduction. Leave and let fall down. SJT
20	42220 - Natural Jack Pine	Sapling Medium	13.1	25	Immature	This stand was part of both the 1975 Bald Hill Fire and the 1990 Stephan Bridge Road Fire. Open grown stand with two dense pockets of jack pine regeneration within it. Stand is part of KW management block 68.
21	42220 - Natural Jack Pine	Sapling Well	139.9	40	Unspecified	This stand was part of both the 1975 Bald Hill Fire. Very dense stand with a few scattered mature RP and JP left from the fire. Trees are getting close to being merchantable, borderline J3/J6 stand. Stand is part of KW management block 70.
22	42220 - Natural Jack Pine	Sapling Well	3.9	40	Unspecified	Stand was part of the 1975 Bald Hill Fire. Very dense jack pine stand.

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Grayling Mgt. Unit

Report 8 – Forested Stands

Compartment: 277
Year of Entry: 2017



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
23	42250 - Pine, Oak	Sawtimber Poor	9.0	70	51-80	North end of stand is more open and has more advanced regeneration than the south end. Stand looks to have been effected by past fires. Leave as is, stand will naturally replace itself.
24	4130 - Aspen	Sapling Well	3.3	18	Immature	Dense aspen stand, a few red pine seeding in from the adjacent stand.



Stand	Cover Type	Acres	Managed Site	General Comments:
7	6225 - Bog	4.1	No	Small bog area.
25	6225 - Bog	1.1	No	Small bog area.
26	122 - Road/Parking Lot	18.9	No	North Down River and Martindale Road.