



Compartment Review Presentation

Traverse City Forest Management Unit

Compartment 116

Entry Year 2016

Acreage: 2,074

County Kalkaska

Management Area: Grayling Ice Contact

Revision Date: 04/01/2014

Stand Examiner: Katie Armstrong

Legal Description:

T27N R5W Sections 21, 22, 23, and 24

Identified Planning Goals:

Compartment 116 is part of the Grayling Ice Contact management area. 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. Much of the topography in this management area was sculpted by melting glaciers that dissected some of the ice-contact ridges into steep ridges with flat sandy outwash plains between. These ice contact ridges now support northern hardwood and oak stands while jack pine, red pine and mixed stands can be found on the plains. Specifically, forest management will aim to balance the age classes of aspen on suitable sites, thin northern hardwood stands, balance age classes of red pine and jack pine, and regenerate the aging oak resource. Much of Sections 23 and 24 are comprised of good quality northern hardwood and/or fair quality oak stands. Similar stands in the compartment to the north recently experienced a period of maple decline, stemming from being thinned then stressed by drought and multiple years of insect defoliation. There is evidence of some maple and oak mortality in the northern part of this compartment and the hardwood stands will be monitored for evidence of similar decline.

Soil and topography:

With the exception of the Black Creek corridor and other isolated depressions which have muck soils, the entire compartment is sandy soils. Slightly better soils are found in Sections 23 and 24. The topography in this compartment ranges from flat to slightly rolling. There are scattered kettle depressions, some of which are wet or seasonally wet.

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

This compartment is mostly surrounded by State land with a few exceptions. The entire west and north boundary of Section 21 adjoins private lands. Much of the west boundary is seasonal residences along Lake Valley Road. Some of the private land in Section 21 has been managed for timber. Much of the north boundary of Section 21 is shared with Camp Gan Israel, a 600-acre children's camp affiliated with a congregation in Walled Lake, MI. Section 21 SESW adjoins undeveloped private property to the south. Section 23 SESW and SWSE join private property to the south, which is multiple year-round and seasonal residences accessed from North Forest Trail.

Unique Natural Features:

There are two observations of Hill's thistle (state SC) and most of the compartment is potential habitat for the Massasauga rattlesnake (state SC and federal candidate).

Archeological, Historical, and Cultural Features:

No Archeological, Historical, or Cultural Features known.

Special Management Designations or Considerations:

Section 24 is part of the long-term lease with Camp Grayling for military training. As a tributary of the Manistee River, Black Creek and its tributaries are protected by Natural Rivers designation.

Watershed and Fisheries Considerations:

South Black Lake is partially within the compartment and Black Creek, a tributary of the upper Manistee River, flows through the compartment. Black Creek is a Designated Trout Stream that contained brook trout at one time. Recent fish surveys have failed to find any trout. Beavers have had a significant impact on Black Creek and may have destroyed any potential trout habitat. There are two small kettle lakes in Section 21.

Wildlife Habitat Considerations:

Featured wildlife species for this management area include: American woodcock, beaver, Eastern massasauga rattlesnake, pileated woodpecker, red-headed woodpecker, ruffed grouse, wild turkey, and white-tailed deer. Some of the

most significant wildlife management issues will be maintenance of young forest and large open grassland complexes, the retention of large, over-mature trees and snags and the maintenance and expansion of hard mast and mesic conifer components. [To be edited by WLD]

Mineral Resource and Development Concerns and/or Restrictions

Surface sediments consist of ice-contact and glacial outwash sand and gravel and post-glacial alluvium. The glacial drift thickness varies between 400 and 600 feet. Beneath the glacial drift is the Mississippian Coldwater Shale. The Coldwater does not have an economic use. A gravel pit is located one mile to the south and potential is considered good. This area is located four miles south of Niagaran reef trend and the Antrim Shale gas play, but potential is limited for these plays. There are no State leases at this time.

Vehicle Access:

There is sufficient vehicle access throughout the compartment, although many of the seasonal county roads (Forest Trail and Black Lake Road) are in poor condition and could not support truck traffic. Black Creek flows through a culvert under Black Lake Road and this culvert needs attention before supporting truck traffic.

Survey Needs:

There are no survey needs at this time.

Recreational Facilities and Opportunities:

The Kalkaska ORV trails runs through Sections 22 and 24. This ORV trail is 50 inches in width, designed for ATV and motorcycle use. Appropriate trail protection specifications should be used to protect the trail where treatments are prescribed. Snowmobile use is relatively high along the Blue Lake Road corridor and coming off the pipeline in the east half of Section 24. (T.M.N. 5/15/14) .

Fire Protection:

The potential for catastrophic wildfire in this compartment is relatively low due to its timber types. Open spaces, sparser canopies in mixed stands, and northern hardwood stands would also serve as natural firebreak. Numerous fire-scarred stumps and tree trunks throughout the compartment, however, suggest that past fire was critical in shaping its current composition. Fire protection would be provided by the Kalkaska FRD office and the Bear Lake Fire Department.

Additional Compartment Information:

OI noted evidence of old settlements and fruit trees in Section 23 and there are multiple old railroad grades.

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**

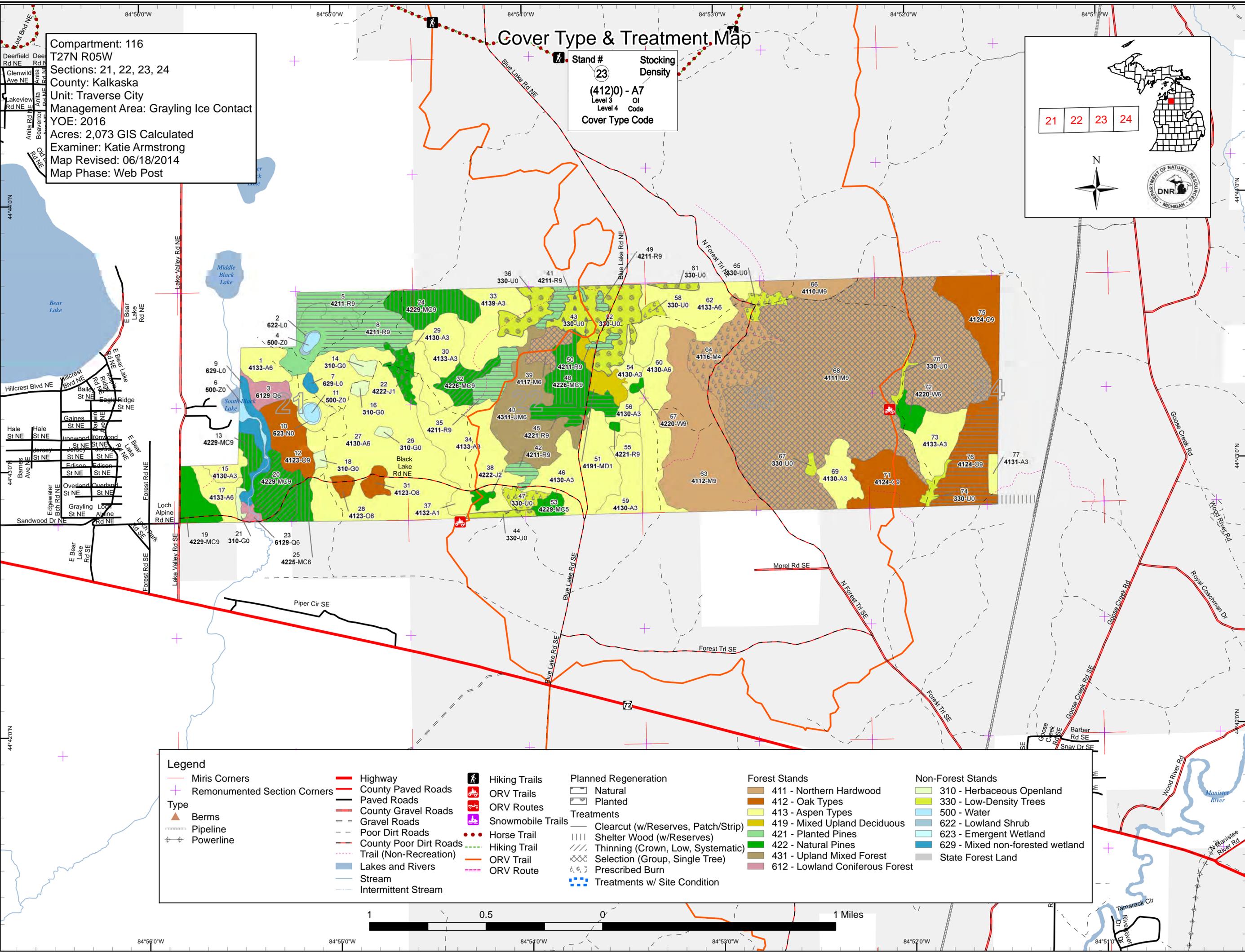
The following information is displayed, where pertinent, on the attached compartment maps:

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

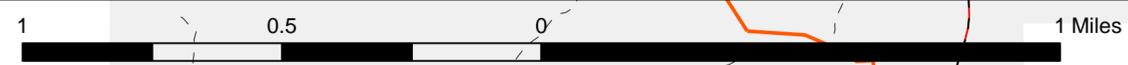
Cover Type & Treatment Map

Compartment: 116
 T27N R05W
 Sections: 21, 22, 23, 24
 County: Kalkaska
 Unit: Traverse City
 Management Area: Grayling Ice Contact
 YOE: 2016
 Acres: 2,073 GIS Calculated
 Examiner: Katie Armstrong
 Map Revised: 06/18/2014
 Map Phase: Web Post

Stand #
 23
Stocking Density
 (4120) - A7
 Level 3 OI
 Level 4 Code
Cover Type Code



Legend Miris Corners Remonumented Section Corners Type Berms Pipeline Powerline		Highway County Paved Roads Paved Roads County Gravel Roads Gravel Roads Poor Dirt Roads County Poor Dirt Roads Trail (Non-Recreation) Lakes and Rivers Stream Intermittent Stream		Hiking Trails ORV Trails ORV Routes Snowmobile Trails Horse Trail Hiking Trail ORV Trail ORV Route		Planned Regeneration Natural Planted Treatments Clearcut (w/Reserves, Patch/Strip) Shelter Wood (w/Reserves) Thinning (Crown, Low, Systematic) Selection (Group, Single Tree) Prescribed Burn Treatments w/ Site Condition		Forest Stands 411 - Northern Hardwood 412 - Oak Types 413 - Aspen Types 419 - Mixed Upland Deciduous 421 - Planted Pines 422 - Natural Pines 431 - Upland Mixed Forest 612 - Lowland Coniferous Forest		Non-Forest Stands 310 - Herbaceous Openland 330 - Low-Density Trees 500 - Water 622 - Lowland Shrub 623 - Emergent Wetland 629 - Mixed non-forested wetland State Forest Land	
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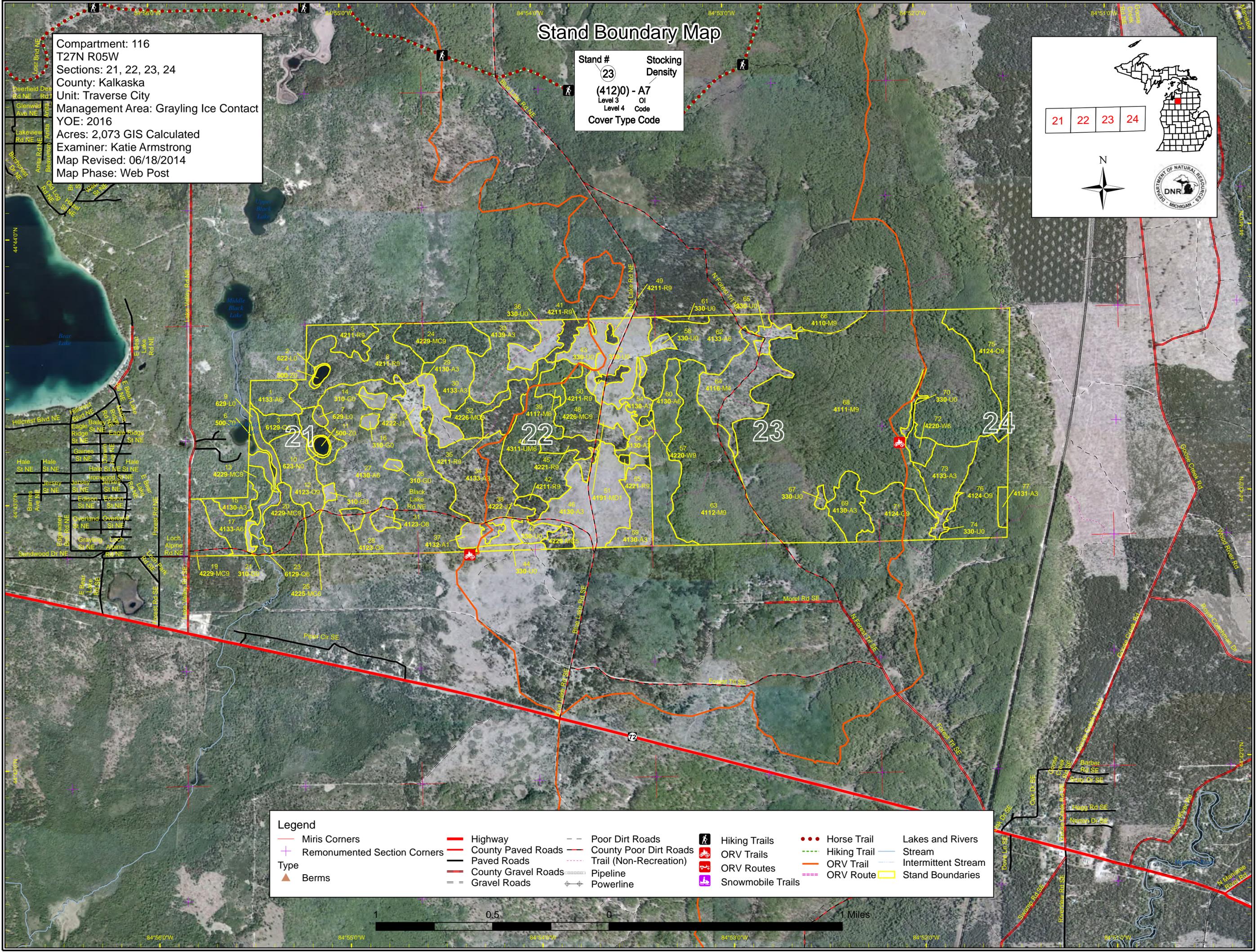
Stand Boundary Map

Compartment: 116
 T27N R05W
 Sections: 21, 22, 23, 24
 County: Kalkaska
 Unit: Traverse City
 Management Area: Grayling Ice Contact
 YOE: 2016
 Acres: 2,073 GIS Calculated
 Examiner: Katie Armstrong
 Map Revised: 06/18/2014
 Map Phase: Web Post

Stand # **23** Stocking Density
(4120) - A7
 Level 3 OI
 Level 4 Code
 Cover Type Code

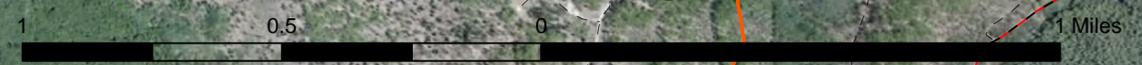
21 22 23 24

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 DEPARTMENT OF NATURAL RESOURCES
 DNR MICHIGAN



Legend

—+— Miris Corners	— Highway	--- Poor Dirt Roads	🚶 Hiking Trails	⋯ Hiking Trail	— Lakes and Rivers
—+— Remonumented Section Corners	— County Paved Roads	--- County Poor Dirt Roads	🛵 ORV Trails	⋯ Hiking Trail	— Stream
Type	— Paved Roads	--- Trail (Non-Recreation)	🛵 ORV Routes	— ORV Trail	— Intermittent Stream
▲ Berms	— County Gravel Roads	--- Pipeline	🛵 ORV Routes	— ORV Route	— Stand Boundaries
	— Gravel Roads	--- Powerline	🛵 Snowmobile Trails		



Report 1 – Total Acres by Cover Type and Age Class



	Age Class														Total
	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 +	Uneven Age	
Aspen	118	176	108	277	16	0	0	0	0	0	0	0	0	0	695
Herbaceous Openland	13	0	0	0	0	0	0	0	0	0	0	0	0	0	13
Jack Pine	0	4	12	0	0	0	0	0	0	0	0	0	0	0	15
Low-Density Trees	107	0	0	0	0	0	0	0	0	0	0	0	0	0	107
Lowland Conifers	0	0	0	0	0	11	3	0	0	0	0	0	0	0	14
Lowland Shrub	20	0	0	0	0	0	0	0	0	0	0	0	0	0	20
Marsh	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Mixed Upland Deciduous	15	0	0	0	0	0	0	0	0	0	0	0	0	0	15
Natural Mixed Pines	0	0	0	0	9	33	0	73	32	0	0	0	0	0	148
Northern Hardwood	0	0	0	53	0	0	12	18	574	0	0	0	0	0	657
Oak	0	0	0	0	0	0	0	39	126	0	0	12	0	0	177
Red Pine	0	0	0	0	0	0	0	125	0	0	0	0	0	0	125
Upland Mixed Forest	0	0	0	0	0	68	0	0	0	0	0	0	0	0	68
Water	9	0	0	0	0	0	0	0	0	0	0	0	0	0	9
White Pine	0	0	0	0	8	0	0	2	0	0	0	0	0	0	10
Total	283	179	119	330	33	113	16	256	732	0	0	12	0	0	2073



Report 2 – Proposed Treatment Summaries

Traverse City Mgt. Unit
Year of Entry 2016

Compartment 116
Total Compartment Acres: 2,074

Acres by Treatment Type

Commercial Harvest - 748 Tree Planting - 117 Other - 84
Habitat Cut - 0 Opening Maintenance - 23

Cover Type by Harvest Method

	<i>Clearcut</i>	<i>Selection</i>	<i>Seed Tree</i>	<i>Shelterwood</i>	<i>Thinning</i>	<i>Other - Specify</i>	<i>Total Acres</i>
Natural Pines	17	0	0	74	39	0	130
Northern Hardwood	0	468	0	0	0	0	468
Oak Types	51	0	0	0	0	0	51
Planted Pines	99	0	0	0	0	0	99
Total	168	468	0	74	39	0	748



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Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
5 61116005-Cut	18.6	42110 - Planted Red Pine	High Density Log	71	111-140	Harvest	Clearcut with Reserves	4211 - Planted Red Pine	Cmpt. Review Proposal

Prescription Per RSFMP guidelines, treatment should restart red pine. Clearcut everything except scattered large white pines. Leave retention around frost pockets or as pocket on interior edge of stand, such as a small (2-5 acre) island that is left relatively un-thinned to provide winter roosting cover for turkeys. Deciduous species should be encouraged within conifer plantations for diversity.

Other Corners for private line are in.
Comments:

Next Trench and plant red pine. An intermediate treatment may be necessary to eliminate competition from current understory. Reserve the right to use
Steps: herbicide, as necessary.

Proposed
Start Date: 10/01/2015

8 61116008-Cut	46.1	42111 - Planted Red Pine, Mixed Deciduous	High Density Log	75	111-140	Harvest	Clearcut	4211 - Planted Red Pine	Cmpt. Review Proposal
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Prescription Per RSFMP guidelines, treatment should restart red pine. Clearcut everything except 3-5 mast-producing oaks. Stand is variable and has already restarted as aspen or red maple in places. Treatment should avoid these areas. Trench and replant red pine in areas that can be sufficiently cleared. Deciduous species should be encouraged within conifer plantations for diversity.

Other Treatment boundary has already excluded retention: steep slopes and buffer around small lake. This can satisfy WLD request for unthinned part of
Comments: stand for winter roosting cover for turkeys. Corners for private line are in place.

Next Trench and replant red pine. Avoid areas of advanced regeneration. An intermediate treatment may be necessary to eliminate competition from
Steps: current understory. Reserve the right to use herbicide, as necessary.

Proposed
Start Date: 10/01/2015

13 61116013-Cut	8.5	42290 - Natural Mixed Pine	High Density Log	78	111-140	Harvest	Shelter Wood with Reserves	42290 - Natural Mixed Pine	Cmpt. Review Proposal
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Prescription Shelterwood harvest white pine, red pine and red maple to approximate residual BA of 50 sf/acre. Remove all aspen and leave under-represented species, especially deciduous species. Consider leaving a relatively unthinned area for winter roosting cover for turkeys. Buffer along Black Creek has already been removed from treatment. This may also provide turkey habitat. Leave additional retention, if necessary, in wet areas.

Other
Comments:

Next Regeneration survey at next inventory.
Steps:

Proposed
Start Date: 10/01/2015

20 61116020-Cut	24.2	42290 - Natural Mixed Pine	High Density Log	54	111-140	Harvest	Low Thinning	42290 - Natural Mixed Pine	Cmpt. Review Proposal
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Prescription Remove all jack pine and aspen and lightly thin red and white pine to approximately 100 sf/acre. Residual BA will be patchy depending on canopy. Management of this stand should encourage growth of larger pines and development of vertical structural and species diversity. Mark a few oak to cut to encourage sprouting. Consider incorporating small (2-5 acre) island that is left relatively un-thinned to provide winter roosting cover for turkeys.

Other Buffer along Black Creek has already been removed from treatment. Leave additional retention around low area in central part of stand and other
Comments: wet areas.

Next
Steps:

Proposed
Start Date: 10/01/2015



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Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
24 61116024-Cut	30.6	42290 - Natural Mixed Pine	High Density Log	77	141-170	Harvest	Shelterwood	42290 - Natural Mixed Pine	Cmpt. Review Proposal
<p><u>Prescription</u> Shelterwood harvest leaving approximately 50 sf/acre of mixed red pine, white pine, and red maple. Leave under-represented species in canopy. <u>Specs:</u> Residual may be evenly scattered or in clumps.</p> <p><u>Other</u> Avoid areas of advanced regeneration. <u>Comments:</u></p> <p><u>Next</u> Regeneration survey at next inventory. <u>Steps:</u></p> <p><u>Proposed</u> <u>Start Date:</u> 10/01/2015</p>									
25 61116025-Cut	8.8	42250 - Pine, Oak	High Density Pole	40	81-110	Harvest	Shelterwood	42250 - Pine, Oak	Cmpt. Review Proposal
<p><u>Prescription</u> Shelterwood harvest to release white pine and encourage oak regeneration. Mark to cut: white pine, oak, and red pine. Residual BA should be approximately 40-50 sf/acre. Remove all aspen. Leave some large-crowned oaks for mast production.</p> <p><u>Other</u> <u>Comments:</u></p> <p><u>Next</u> Regeneration survey at next inventory. <u>Steps:</u></p> <p><u>Proposed</u> <u>Start Date:</u> 10/01/2015</p>									
32 61116032-Cut	14.9	42260 - Natural Pine, Mixed Deciduous	High Density Log	77	141-170	Harvest	Crown Thinning	42260 - Natural Pine, Mixed Deciduous	Cmpt. Review Proposal
<p><u>Prescription</u> Thin stand to approximate residual BA of 80-100 sf/acre. Remove high risk and poor form trees to promote crop trees and create growing space. <u>Specs:</u> Remove all aspen and jack pine. Create canopy gaps over areas of advanced regeneration. Residual BA will be variable depending on canopy species composition.</p> <p><u>Other</u> Berm at south end of stand has been breached. Replace after harvest. <u>Comments:</u></p> <p><u>Next</u> <u>Steps:</u></p> <p><u>Proposed</u> <u>Start Date:</u> 10/01/2015</p>									
35 61116035-Cut	16.2	42110 - Planted Red Pine	High Density Log	77	141-170	Harvest	Clearcut with Reserves	4211 - Planted Red Pine	Cmpt. Review Proposal
<p><u>Prescription</u> Clearcut, leaving retention as an island combined with residual trees in Stand 32 and/or along ORV trail. Leave retention unthinned for turkey habitat (2-5 acre islands). Include trail protection specs in contract. Deciduous species should be encouraged within conifer plantations for diversity.</p> <p><u>Other</u> Berm at south end of stand has been breached. Replace after harvest. <u>Comments:</u></p> <p><u>Next</u> Trench and replant to red pine. <u>Steps:</u></p> <p><u>Proposed</u> <u>Start Date:</u> 10/01/2015</p>									



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Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
39 61116039-Cut	12.5	4117 - Mixed N. Hardwood - Pine	High Density Pole	65	81-110	Harvest	Single Tree Selection	4117 - Mixed N. Hardwood - Pine	Cmpt. Review Proposal

Prescription Thin stand by removing most of beech from dense beech pockets and thinning other species where they would benefit. Remove all aspen and jack pine. Residual BA will be variable. Include trail protection specs for ORV trail (which is not mapped correctly). Leave tops unchipped and in scattered piles as much as possible to provide horizontal habitat component for wildlife.

Other Comments: Combine with treatment on Stand 48 to provide access to this stand.

Next Steps:

Proposed Start Date: 10/01/2015

41 61116041-Cut	7.6	42110 - Planted Red Pine	High Density Log	77	111-140	Harvest	Clearcut	4211 - Planted Red Pine	Cmpt. Review Proposal
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Prescription Clearcut, leaving part of stand east of ORV trail as retention (already removed from treatment boundary). This will also serve as unthinned part for winter roosting cover for turkeys. Include trail protection specs in sale contract. Deciduous species should be encouraged within conifer plantations for diversity.

Other Comments:

Next Steps: Trench and replant to red pine. An intermediate treatment may be necessary to eliminate competition from current understory. Reserve the right to use herbicide, as necessary.

Proposed Start Date: 10/01/2015

42 61116042-Cut	5.7	42110 - Planted Red Pine	High Density Log	75	141-170	Harvest	Clearcut	4211 - Planted Red Pine	Cmpt. Review Proposal
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Prescription Per RSFMP guidelines, treatment should restart red pine. Clearcut, trench and replant red pine.

Other Comments: Stand is too small for retention. Can be combined with other nearby red pine cuts to improve marketability and efficiency of replanting.

Next Steps: Trench and replant red pine. An intermediate treatment may be necessary to eliminate competition from current understory. Reserve the right to use herbicide, as necessary.

Proposed Start Date: 10/01/2015

45 61116045-Cut	11.0	42210 - Natural Red Pine	High Density Log	77	141-170	Harvest	Clearcut with Reserves	4211 - Planted Red Pine	Cmpt. Review Proposal
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Prescription Clearcut, leaving retention as an island combined with retention from Stand 48 and/or along Blue Lake Road. This will also provide winter roosting cover for turkeys. Deciduous species should be encouraged within conifer plantations for diversity.

Other Comments:

Next Steps: Trench and replant red pine. An intermediate treatment may be necessary to eliminate competition from current understory. Reserve the right to use herbicide, as necessary.

Proposed Start Date: 10/01/2015



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Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
48 61116048_sm all-Cut	6.5	42260 - Natural Pine, Mixed Deciduous	High Density Log	83	111-140	Harvest	Clearcut	4211 - Planted Red Pine	Cmpt. Review Proposal

Prescription Clearcut stand since residual BA is relatively low.

Specs:

Other Comments: Stand is too small for retention and it can be left in part of stand west of Blue Lake Road.

Next Steps: Trench and plant red pine. Combine with Stand 45.

Proposed Start Date: 10/01/2015

48 61116048-Cut	25.6	42260 - Natural Pine, Mixed Deciduous	High Density Log	83	111-140	Harvest	Shelterwood	42260 - Natural Pine, Mixed Deciduous	Cmpt. Review Proposal
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Prescription Thin white pine, red pine and red maple to residual BA of approximately 50 sf/acre. Also remove all aspen. Residual BA will be variable depending on local composition of canopy. Cut some oak to encourage sprouting. Include trail protection specs in contract.

Other Comments:

Next Steps: Regeneration survey at next inventory.

Proposed Start Date: 10/01/2015

49 61116049-Cut	1.9	42110 - Planted Red Pine	High Density Log	77	141-170	Harvest	Clearcut	4211 - Planted Red Pine	Cmpt. Review Proposal
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Prescription Clearcut, trench and plant red pine.

Specs:

Other Comments: Stand is too small for retention. Can be combined with other nearby red pine cuts to improve marketability and efficiency of replanting.

Next Steps: Trench and replant red pine.

Proposed Start Date: 10/01/2015

50 61116050-Cut	3.4	42110 - Planted Red Pine	High Density Log	77	141-170	Harvest	Clearcut	4211 - Planted Red Pine	Cmpt. Review Proposal
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Prescription Per RSFMP guidelines, clearcut and replant red pine.

Specs:

Other Comments: Stand is too small for retention. Can be combined with other nearby red pine cuts to improve marketability and efficiency of replanting.

Next Steps: Trench and replant red pine.

Proposed Start Date: 10/01/2015



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Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
68 61116068-Cut	455.2	4111 - S.Maple, Hard Mast Association	High Density Log	83	111-140	Harvest	Single Tree Selection	411 - Northern Hardwood	Cmpt. Review Proposal

Prescription Specs: Thin stand per Compleat Marker to residual BA of approximately 70-80 sf/acre. Create regeneration gaps. Leave hemlock and other under-represented species. Leave tops unchipped and in scattered piles to provide horizontal habitat component for wildlife. Include trail protection specs for ORV trail.

Other Comments: Salvage isolated pockets of mortality, if found.

Next Steps:

Proposed Start Date: 10/01/2015

76 61116076-Cut	50.6	4124 - Red with White Oak	High Density Log	80	111-140	Harvest	Clearcut with Reserves	4124 - Red with White Oak	Cmpt. Review Proposal
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Prescription Specs: Per RSFMP guidelines, restart oak. Clearcut everything except for 1 oak per acre and all white pine and red pine. Oak to be left should be good mast producers. Leave scattered older aspen for wildlife, if present. Leave trees shall be considered retention. Leave tops unchipped and in scattered piles as much as possible to provide horizontal habitat component for wildlife.

Other Comments: Include out-of-YOE treatment on 61112041.

Next Steps: Regeneration survey at TCR date + 4 years. An intermediate treatment may be necessary to eliminate competition from current understory. Reserve the right to treat mechanically or with herbicide, if necessary.

Proposed Start Date: 10/01/2015

22 61116022-Burn	11.7	42221 - Natural Jack Pine, Mixed Deciduous	Low Density Sapling	28		Prescribed Burn	Unspecified	320 - Upland Shrub	Cmpt. Review Proposal
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Prescription Specs: FTP W62-733. Burn this stand at least once per entry period in order to set back woody encroachment, increase species diversity, stimulate native herbaceous vegetation, promote berry production, and recycle nutrients. The timing and frequency of the burns will be based on current needs of restoration such as reducing woody encroachment or promoting grasses versus forbs.

Other Comments:

Next Steps:

Proposed Start Date: 10/01/2015

64 61116064-Burn	60.6	4116 - Mixed N. Hardwood - Aspen	Low Density Pole	36		Prescribed Burn	Unspecified	320 - Upland Shrub	Cmpt. Review Proposal
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Prescription Specs: FTP W62-733. Burn this stand at least once per entry period in order to set back woody encroachment, increase species diversity, stimulate native herbaceous vegetation, promote berry production, and recycle nutrients. The timing and frequency of the burns will be based on current needs of restoration such as reducing woody encroachment or promoting grasses versus forbs.

Other Comments:

Next Steps:

Proposed Start Date: 10/01/2015



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Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
47 NF_61116047-Burn	8.1	330 - Low-Density Trees				Prescribed Burn	Unspecified	310 - Herbaceous Openland	Cmpt. Review Proposal

Prescription FTP W62-733. Burn this stand at least once per entry period in order to set back woody encroachment, increase species diversity, stimulate native herbaceous vegetation, promote berry production, and recycle nutrients. The timing and frequency of the burns will be based on current needs of restoration such as reducing woody encroachment or promoting grasses versus forbs.

Other
Comments:

Next
Steps:

Proposed
Start Date: 10/01/2015

58 NF_61116058-Burn	3.4	330 - Low-Density Trees				Prescribed Burn	Unspecified	310 - Herbaceous Openland	Cmpt. Review Proposal
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Prescription Burn this stand at least once per entry period in order to set back woody encroachment, increase species diversity, stimulate native herbaceous vegetation, promote berry production, and recycle nutrients. The timing and frequency of the burns will be based on current needs of restoration such as reducing woody encroachment or promoting grasses versus forbs.

Other
Comments:

Next
Steps:

Proposed
Start Date: 10/01/2015

14 NF_61116014-NonFor	4.4	310 - Herbaceous Openland				Non-Forest Management	Other - Specify	310 - Herbaceous Openland	Cmpt. Review Proposal
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Prescription This opening is a traditional wildlife planting. Plant to annual rye for several years and then convert to a pasture mix (i.e. clover/alfalfa) if soil will support it.

Other
Comments:

Next
Steps: Periodic maintenance such as mowing, fertilization, reseeding, and/or removal of woody encroachment.

Proposed
Start Date: 10/01/2015

16 NF_61116016-NonFor	2.8	31021 - Cool Season Grass				Non-Forest Management	Other - Specify	31021 - Cool Season Grass	Cmpt. Review Proposal
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Prescription his opening is a traditional wildlife planting. Plant to annual rye for several years and then convert to a pasture mix (i.e. clover/alfalfa) if soil will support it.

Other
Comments:

Next
Steps: Periodic maintenance such as mowing, fertilization, reseeding, and/or removal of woody encroachment.

Proposed
Start Date: 10/01/2015

18 NF_61116018-NonFor	2.3	310 - Herbaceous Openland				Non-Forest Management	Other - Specify	310 - Herbaceous Openland	Cmpt. Review Proposal
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Prescription This opening is a traditional wildlife planting. Plant to annual rye for several years and then convert to a pasture mix (i.e. clover/alfalfa) if soil will support it.

Other
Comments:

Next
Steps: Periodic maintenance such as mowing, fertilization, reseeding, and/or removal of woody encroachment.

Proposed
Start Date: 10/01/2015



S t a n d	Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
21	NF_61116021- NonFor	2.1	310 - Herbaceous Openland				Non-Forest Management	Other - Specify	310 - Herbaceous Openland	Cmpt. Review Proposal
<p><u>Prescription</u> This opening is a traditional wildlife planting. Plant to annual rye for several years and then convert to a pasture mix (i.e. clover/alfalfa) if soil will support it.</p> <p><u>Specs:</u></p> <p><u>Other</u> <u>Comments:</u></p> <p><u>Next</u> <u>Steps:</u> Periodic maintenance such as mowing, fertilization, reseeding, and/or removal of woody encroachment.</p> <p><u>Proposed</u> <u>Start Date:</u> 10/01/2015</p>										
26	NF_61116026- NonFor	1.9	3102 - Grass				Non-Forest Management	Other - Specify	3102 - Grass	Cmpt. Review Proposal
<p><u>Prescription</u> This opening is a traditional wildlife planting. Plant to annual rye for several years and then convert to a pasture mix (i.e. clover/alfalfa) if soil will support it.</p> <p><u>Specs:</u></p> <p><u>Other</u> <u>Comments:</u></p> <p><u>Next</u> <u>Steps:</u> Periodic maintenance such as mowing, fertilization, reseeding, and/or removal of woody encroachment.</p> <p><u>Proposed</u> <u>Start Date:</u> 10/01/2015</p>										
67	NF_61116067- NonFor	2.2	330 - Low-Density Trees				Non-Forest Management	Brush Cutting	310 - Herbaceous Openland	Cmpt. Review Proposal
<p><u>Prescription</u> 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.</p> <p><u>Specs:</u></p> <p><u>Other</u> <u>Comments:</u></p> <p><u>Next</u> <u>Steps:</u></p> <p><u>Proposed</u> <u>Start Date:</u> 10/01/2015</p>										
70	NF_61116070- NonFor	3.5	330 - Low-Density Trees				Non-Forest Management	Brush Cutting	310 - Herbaceous Openland	Cmpt. Review Proposal
<p><u>Prescription</u> 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.</p> <p><u>Specs:</u></p> <p><u>Other</u> <u>Comments:</u></p> <p><u>Next</u> <u>Steps:</u></p> <p><u>Proposed</u> <u>Start Date:</u> 10/01/2015</p>										
74	NF_61116074- NonFor	4.2	330 - Low-Density Trees				Non-Forest Management	Brush Cutting	310 - Herbaceous Openland	Cmpt. Review Proposal
<p><u>Prescription</u> 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.</p> <p><u>Specs:</u></p> <p><u>Other</u> <u>Comments:</u></p> <p><u>Next</u> <u>Steps:</u></p> <p><u>Proposed</u> <u>Start Date:</u> 10/01/2015</p>										

**Report 3 -- Treatments Prescribed
with No Limiting Factor**



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Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
Total Treatment Acreage Proposed:		855.3							



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Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
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#Type! #Type!

Prescription Specs:

Other Comment:

Next Steps:

Proposed Start Date: #Type!

Limiting Factor

Total Treatment Acreage Proposed: 0.0

Report 5 – Site Conditions

Traverse City Mgt. Unit
Katie Armstrong : Examiner

Compartment 116
Year of Entry 2016

Availability for Management

Total Acres	Acres		Dominant Site Conditions	Dominant Site Conditions					
	Available	Not Available		No	5C	5B	3L	2G	1A
695	695		Aspen	695					
15	15		Jack Pine	15					
14	5	10	Lowland Conifers	5				7	2
15	15		Mixed Upland Deciduous	15					
147	145	2	Natural Mixed Pines	145					2
656	656		Northern Hardwood	538	119				
177	165	12	Oak	52		113	12		
125	125		Red Pine	125					
68	68		Upland Mixed Forest		68				
10	10		White Pine	10					
1,922	1,898	24	Total Forested Acres	1,598	187	113	12	7	5
	99%	1%	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 Availability	Dominant Site Condition	Acres	Other Site Condition	Other Site Condition	Other Site Condition	Other Site Condition
002	Not Available	2G: Too wet (sensitive soils, does not include access issues)	8				
Comments:							
003	Not Available	1A: Federal/State/Local Law	10	3J: Water quality / BMPs (stream, river, or lake)			
Comments: Natural Rivers buffer							
004	Available	5B: Maintain for regeneration purposes	39				
Comments:							

Report 5 – Site Conditions

Traverse City Mgt. Unit
Katie Armstrong : Examiner

Compartment 116
Year of Entry 2016

005	Not Available	3L: Other wildlife concerns	5
Comments: WLD wants to retain oak for mast.			
006	Not Available	3L: Other wildlife concerns	7
Comments: WLD wants to retain oak for mast.			
007	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	68
Comments:			
008	Available	5B: Maintain for regeneration purposes	29
Comments:			
009	Available	5B: Maintain for regeneration purposes	45
Comments:			
010	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	119
Comments:			



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				
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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	Cold Water Lake	A coldwater lake has temperature and dissolved oxygen conditions that allow naturally-reproduced or stocked trout populations and those of other coldwater fish species to persist from year to year. Suitable conditions for coldwater fishes may occur in Michigan lakes if they are relatively deep, have substantial groundwater inflows, or are located in colder (northern) areas of the state. Such lakes are established by Director's action and designated as trout resources by Fisheries Order 200.
SCA	Cold Water Stream	A coldwater stream has temperature and dissolved oxygen conditions that allow naturally-reproduced or stocked trout populations and those of other coldwater fish species (e.g., slimy sculpin) to persist from year to year. Coldwater streams in Michigan typically provide these conditions due to substantial contributions of groundwater to their stream flows. Such streams are established by Director's action and designated as trout resources by Fisheries Order 210.
SCA	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.
HCVA	Natural Rivers	There are two Natural Rivers datasets which are derived from spatial buffers set from an established and approved distance from the river centerlines. The Natural Rivers Zoning District is a 400 foot buffer for most Natural Rivers. The Vegetative Buffer ranges from 25 to 100 feet. To view specific Zoning Districts and Vegetative Buffers for each Natural River see the table located on the I:\Documentation\GDSE data folder.



S t a n d	Traverse City Mgt. Unit		Report 8 – Forested Stands			Compartment: 116 Year of Entry: 2016	
	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:	
1	4133 - Aspen, Mixed Pine	High Density Pole	17.7	36		Variable stand, cut in 1978. Appears that some pine was left as residual and there was significant white pine understory in places. Steep slope along south edge contains some older residual white and red pine sawlog trees. Central part has pockets of overstory red pine (BA ~140 sf) which were left as residual in the last treatment. These would be thinnable but there is not enough volume to make it worthwhile. Crest of ridge in southeast part of stand contains some large residual oak sawlog trees.	
3	6129 - Mixed Coniferous Lowland Forest	High Density Pole	11.1	54		Small depression between 2 ridges. Very wet ground with leatherleaf. More red pine along edges and slopes, including some pockets that appear very old. Some areas are open or only have shrub layer. Observed snowshoe hare.	
5	42110 - Planted Red Pine	High Density Log	18.6	71	111-140	Good quality red pine. Jack pine is dying out of canopy. Similar to adjacent stand except this one has more red pine in canopy. Some areas (especially on the east side) that are regenerating with red maple and aspen saplings. Rolling hills. A few low spots, dry kettle holes.	
8	42111 - Planted Red Pine, Mixed Deciduous	High Density Log	58.6	75	111-140	Variable stand. Planted with red pine and jack pine in 1939. Some areas have already regenerated to aspen, with decent bigtooth just reaching pole size. Other areas with pine overstory have dense red maple and black cherry understory. The east end of the stand is more variable. Rolling hills.	
12	4123 - Red Oak	High Density Log	29.3	85	81-110	Stand 8 Oak, sale 61-062-96-01, completed 12/1996. Removed bigtooth aspen, thinned oak and cut some red maple and red pine. Heavy white pine or aspen understory in places. Stand is on a north-south ridge. West side slopes down to creek on a relatively steep incline. North end is local high spot. More red and white pine at bottom of slope near wetter areas. Residual BA is variable.	
13	42290 - Natural Mixed Pine	High Density Log	9.3	78	111-140	Transitional stand between upland and lowland along creek. Mostly upland but slopes towards water and may contain isolated wet spots. Variable stand; parts are almost all white pine in canopy and other parts are almost all red pine. Short-lived species (paper birch, aspen) used to be part of canopy. Evidence of past fire. May provide thermal cover for wildlife. Red maple is heavily browsed.	
15	4130 - Aspen	High Density Sapling	7.7	18		Lake Valley Road Aspen, sale 61-006-96-01. Removed everything > 2" dbh. Good regeneration. Mostly quaking aspen with some bigtooth. A few pole-sized oak left and scattered advanced oak saplings. A few small openings along the edges. Evidence of beaver chewing on the east edge of stand. Old railroad grade runs through the western part of stand.	
17	4133 - Aspen, Mixed Pine	High Density Pole	16.3	46		Variable stand. Mostly aspen in overstory but diameters vary. Some seems more recently regenerated and some seems small for its age. Some mature aspen along western edge of this stand was harvested with adjacent sale. There is not enough volume left to treat this stand at this time. Old railroad grade runs through north part of stand. Contains at least one dry, low area.	



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
19	42290 - Natural Mixed Pine	High Density Log	18.1	76	81-110	Lake Valley Red, sale 61-078-06-01, completed 8/2008. Removed all red pine > 12" dbh. Previous cut left variable stand with patchy residual BAs. Some areas of too-dense white pine and red pine mixed with other areas of low BA that have remained open or filled in with aspen regeneration.
20	42290 - Natural Mixed Pine	High Density Log	26.8	54	111-140	Part cut as Upper Black Creek Sale, 61-025-86-01, removed all aspen plus marked white pine, red pine and jack pine. Slopes toward creek on west side of stand. Has some low and/or wet areas, especially north central part of stand and along eastern border. Mostly dense understory. Oak is in poor shape. Illegal ORV trail noted in OI may have turned into a two-track since then.
22	42221 - Natural Jack Pine, Mixed Deciduous	Low Density Sapling	11.7	28		Was typed as U0 in OI but has filled in enough to be barely forested. Contains large old stumps.
23	6129 - Mixed Coniferous Lowland Forest	High Density Pole	3.4	68		Corridor for Black Creek, which is a tributary of the Manistee River. This southern part of the corridor is more forested than the northern part closer to the beaver dams. Understory is thick with tag alder and shrubby trees. It appears that the culvert where the creek flows under Black Lake Road may have been crushed.
24	42290 - Natural Mixed Pine	High Density Log	30.6	77	141-170	Eastern 2/3 (Section 22) treated as Halloween Pines, 61-012-96-01, completed 12/1997. Western portion has the red maple in canopy and a more diverse understory (heavy soft maple, beech, cherry oak, white pine). BA is slightly lower in treated part (130, 140). Pine is mediocre quality.
25	42250 - Pine, Oak	High Density Pole	8.8	40	81-110	Less oak in canopy than stand to the north. Oak is fair quality and condition. Heavy white pine understory. Stand has been treated in the past. Stand is mostly on a west-facing slope of a shallow north-south ridge.
27	4130 - Aspen	High Density Pole	199.7	39		Cut in 1975. Poor site. Most of stand has barely reached pole size. Aspen trees are 2 sticks at best. Some pockets of log-sized but limby white pine. Scattered dry kettle lakes, especially on west side.
28	4123 - Red Oak	Medium Density Log	4.6	118	51-80	Isolated "island" of large oak, originally left for mast in 1970s cut. Oak remains in fair condition, although some limbs are starting to die. Species other than oak only appear as canopy species since they have grown up where oak BA is zero or low. Understory species are approaching pole size. Some decent bigtooth aspen at edges.
29	4130 - Aspen	High Density Sapling	15.9	6		Blue Lake M72 Pine, sale 61-084-06-01, completed 5/2008. Small depression on southwest side.
30	4133 - Aspen, Mixed Pine	High Density Sapling	25.0	27		Middle Black Lake Sale, 61-031-86-01, clearcut completed 7/1987. Good regeneration, some trees just starting to reach pole size. Scattered overstory red and white pine, left as residual. Relatively flat terrain.
31	4123 - Red Oak	Medium Density Log	7.3	118	1-50	Isolated "island" of large oak, originally left for mast in 1970s cut. Oak remains in fair condition, although some limbs are starting to die. Contains relatively high spot.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
32	42260 - Natural Pine, Mixed Deciduous	High Density Log	14.9	77	141-170	Mixed stand, blend of adjacent types. Nearly even split between pine and deciduous species. Some aspen and jack pine that is ready to go and some decent red maple sawlogs. Pockets of pure A4 with red maple underneath that should be cut. OI noted oak but I did not see any. Less of a beech/maple understory than some nearby stands, so hopefully have a better chance of getting more pine regeneration. Some patches of open canopy have regenerated already to mostly red maple but there are some aspen spots.
33	4139 - Aspen, Mixed Deciduous	High Density Sapling	41.5	16		Variable stand. Part was treated in 1998 as 61-113-96-01. Residual trees were left but very little at the south end so that is almost all aspen regeneration. BA for canopy only: 0, 30, 50.
34	4133 - Aspen, Mixed Pine	High Density Sapling	69.5	17		Variable stand. Most was probably treated as part of Blind Porky Jack Pine, 61-064-96-01, completed 6/1997. Removed all jack pine except for a 50' wide buffer along the ORV trail. This stand is a mixture of pure regeneration and patchy areas with higher residual. (Sub-Canopy data refers to what is under Canopy vs. saplings in Canopy layer.) ORV trail runs through stand.
35	42110 - Planted Red Pine	High Density Log	16.2	77	141-170	Thinned in 1998, 61-113-96-01. Some rows discernable but has probably been thinned three times already. Contains scattered 1/10th acre canopy gaps starting to fill in with red maple which might suggest restarting rather than thinning again. Understory competition will be manageable if we try to restart this stand. ORV trails runs along edge or through stand.
37	4132 - Aspen, Jack Pine	Low Density Sapling	13.4	6		Sale 61-084-06-01, completed 6/2008. Removed everything but red pine in 1997, then removed residual red pine in 2008 to allow aspen and jack pine to take over. Regeneration is only patchy since the last harvest. A few overstory jack pines and taller red maples. ORV trail runs through the stand.
38	42221 - Natural Jack Pine, Mixed Deciduous	Medium Density	3.6	17		Part of Blue Lake-M72 Pine sale to remove overstory red pine, 61-084-06-01, completed 6/2008, but this part has more jack pine than surrounding aspen stand. May have regenerated after 1997 clearcut. Scattered open areas. ORV trail runs through the stand.
39	4117 - Mixed N. Hardwood - Pine	High Density Pole	12.5	65	81-110	Generally poor quality hardwood stand with some areas that are nearly 90% beech. BA breakdown: 60 red maple, 40 beech.
40	4311 - Pine, Aspen Mix	High Density Pole	68.0	58		Variable stand. More pine in west-central part; some pockets of dense pole-sized white pine. ORV trail runs through north part of stand.
41	42110 - Planted Red Pine	High Density Log	8.2	77	111-140	Removed jack pine in 1998. Terrain is rolling hills but operable. Some widely scattered oak regeneration. OI recommended thinning again now. Fair amount of browse.
42	42110 - Planted Red Pine	High Density Log	5.7	75	141-170	Small stand that was part of a larger sale from which everything but red pine was removed.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
45	42210 - Natural Red Pine	High Density Log	11.0	77	141-170	Thinned in 1998 as part of sale 61-013-96-01. Could probably thin again although high BA is patchy. Some regeneration around edges. Lies in an east-west shallow valley, highest at west end. Good quality red pine that might yield poles. Combine with other pine stands to create enough volume.
46	4130 - Aspen	High Density Sapling	80.4	6		Blue Lake Road Aspen, Sale 61-062-06-01, completed 8/2007. Clearcut and chipped, leaving scattered pine. Good aspen regeneration although it is somewhat patchy and not many overstory red pine are left. A few pockets of denser jack pine and scattered advanced oak regeneration.
48	42260 - Natural Pine, Mixed Deciduous	High Density Log	32.2	83	111-140	Variable stand but has some good quality pine. Red maple is mostly multi-stemmed. Topography is rolling hills but operable.
49	42110 - Planted Red Pine	High Density Log	1.9	77	141-170	Very small stand but good quality red pine. Jack pine was removed in 1998 and OI recommended holding this stand until this YOE. It is surrounded by larger, lesser quality red pine stand clearcut in 2007 and planted in 2010. Some denser young jack pine along the road and edges. Held til now in OI. Removed jack pine in 1998.
50	42110 - Planted Red Pine	High Density Log	3.4	77	141-170	Jack pine was removed in 1998 and OI recommended holding this stand until this YOE. It is surrounded by larger, lesser quality red pine stand clearcut in 2007 and planted in 2010. Some denser young jack pine along the road and edges.
51	4191 - Mixed Upland Deciduous with Conifer	Low Density Sapling	14.6	7		This stand appears to have been part of Blue Lake M72 Pine, Sale 61-084-06-01, completed 5/2007, but was NOT trenched and planted, probably due to high residual and/or higher natural regeneration. A few scattered pockets of 4" dbh jack pine. Some open areas. Time will tell whether this stand will be pine or aspen.
53	42290 - Natural Mixed Pine	Medium Density Pole	6.7	50	51-80	Variable stand. Was originally part of A6 stand to the east that was already harvested. Poor quality timber. 2 small sedge meadows with vehicle damage, or seasonally wet depressions.
54	4130 - Aspen	High Density Sapling	8.3	7		This stand appears to have been part of Blue Lake M72 Pine, Sale 61-084-06-01, completed 5/2007, but was NOT trenched and planted, probably due to high natural aspen regeneration.
55	42210 - Natural Red Pine	High Density Log	1.0	78	171-200	Very small, isolated pocket of good quality red pine that does not appear to have had much treatment. Jack pine has fallen out of the stand. Access via old skid trail through [stand 49] that joins southeast corner of this stand.
56	4130 - Aspen	High Density Sapling	8.3	18		Big Doe Aspen sale, 61-009-96-01, completed 8/1996. Good regeneration.
57	42200 - Natural White Pine	High Density Log	1.5	70	171-200	White pine could be thinned but stand is so small and isolated that it is not worth it at this time. Aspen is starting to go. Gently sloping topography. Not typed as its own stand in OI.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
59	4130 - Aspen	High Density Sapling	26.7	18		Big Doe Aspen sale, 61-009-96-01, completed 8/1996. Removed everything > 2" dbh except oak. Good regeneration. Scattered overstory oak of decent quality and condition and a few pines. Gentle slope with western aspect.
60	4130 - Aspen	High Density Pole	48.4	27		Regeneration Sale, 61-001-86-01, completed 7/1987. Clearcut aspen and mixed hardwoods. Manage with 61117049.
62	4133 - Aspen, Mixed Pine	High Density Pole	60.0	38		Variable stand. More white pine (poles) at west end. Aspen is a range of sizes but generally poor quality, just becoming A4 with white pine underneath. A few pockets of merchantable aspen on east end (10" dbh but poor quality). Also contains scattered small openings. Rolling hills.
63	4112 - Maple, Beech, Cherry Association	High Density Log	118.6	82	111-140	Stand 36 Hardwoods, sale 61-065-96-01, thinning completed January 1998. Contains a small pocket of healthy hemlock just north and west of North Forest Trail and two-track intersection. Northeastern edge is aspen that used to be typed as U0.
64	4116 - Mixed N. Hardwood - Aspen	Low Density Pole	52.7	36		Was U-type in OI but has filled in with lots of cherry, approaching pole size and expanding aspen clones. Topography is rolling hills.
66	4110 - Sugar Maple Association	High Density Log	17.5	78	81-110	Comp 16 Hardwoods, sale 61-181-96-01, completed 1/2001. Fairly good quality sugar maple stand. Some pockets of mortality similar to Section 13ish Salvage Sale, but too far gone to salvage. Wait to treat because that mortality will open up canopy.
68	4111 - S.Maple, Hard Mast Association	High Density Log	455.2	83	111-140	Comp 16 Hardwoods, sale 61-181-96-01, cut 7/1998-8/2000. Some very good quality hardwood, especially sugar maple. Some mortality in north part of stand, north of 2-track and west of ORV trail, similar to salvage sales in Compartment 113. Part of northeast part of stand was marked but not cut. ORV trail runs through stand. Trail is mapped on 2-track at north end of stand but they are often separate paths.
69	4130 - Aspen	High Density Sapling	22.0	18		Part of Section 23 Aspen sale, 61-003-96-01. Removed everything except oak and hemlock in April 1996 with in interest in getting birch regeneration. That does not appear to have happened. Hemlock from previous stand has all but died out. This part of treatment responded very differently from east half, perhaps due to more overstory oak in east half.
71	4124 - Red with White Oak	High Density Log	39.3	78	81-110	Part of Section 23 Aspen sale, 61-003-96-01. Removed everything except oak and hemlock in April 1996 with in interest in getting birch regeneration. That does not appear to have happened. Hemlock from previous stand has all but died out. This part of treatment responded very differently from west half, perhaps due to more overstory oak here. Stand is two-storied: older oak over mixed regeneration. ORV trail runs through the stand.
72	42201 - Natural White Pine, Mixed Deciduous	High Density Pole	8.2	42	111-140	Larger white pine trees are generally of poor form.
73	4133 - Aspen, Mixed Pine	High Density Sapling	29.7	28		Habitat cut in 1986. White pine is mostly in discrete patches.

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Traverse City Mgt. Unit

Report 8 – Forested Stands

Compartment: 116
Year of Entry: 2016

	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
75	4124 - Red with White Oak	High Density Log	44.7	89	51-80	Much of stand was treated with Section 24 Oak sale, 61-003-06-01, completed March 2009. Thinned oak and removed small amounts of red maple and aspen. Was previously treated in 1997 as part of 61-010-95-01. Removed everything except oak and hemlock. Good quality oak. Good regeneration despite lots of evidence of deer browse and deer activity. More bigtooth aspen from 1997 cut in west part of stand. Steep hills with top of ridge being more-or-less the west edge of stand. Manage with Comp 112 and access from east side.
76	4124 - Red with White Oak	High Density Log	51.7	80	111-140	Everything except oak and hemlock removed in 1997 as part of 61-010-95-01 (with Comp 112). Some oak is fairly good quality. Rolling hills with western aspect.
77	4131 - Aspen, Oak	High Density Sapling	4.5	28		Clearcut in 1986 with good regeneration since then. Some oaks are just reaching pole size. Contains isolated pockets of conifers. Stand continues to the east into Compartment 112.



Stand	Cover Type	Acres	Managed Site	Management Priority (Objective)	General Comments:
2	6229 - Mixed lowland shrub	1.0	No	Low	Nonforested buffer zone around small kettle lake. Lake has relatively steep banks with red pine but this is the flat area next to the lake.
4	50 - Water	2.6	No	Unspecified	Kettle lake with relatively steep banks.
6	50 - Water	3.6	No	Unspecified	Part of South Black Lake and beaver-dammed portion of Black Creek. This is a tributary of the Manistee River, subject to Natural Rivers regulations.
7	629 - Mixed non-forested wetland	2.5	No	Unspecified	Two kettle-like depressions. Wet but probably no open water. Mostly leatherleaf and other shrubs. A few scattered pine saplings and tag alder around the edges. Small forested patch in between them.
9	629 - Mixed non-forested wetland	16.3	No	Unspecified	Corridor for Black Creek, which is a tributary of the Manistee River. It appears that water levels used to be lower as the stream buffer contains numerous dead cedar and white pine, along with live tag alder and cattails. Evidence of beaver damming in numerous places.
10	623 - Emergent Wetland	1.7	No	Unspecified	Low area next to small kettle lake. Tag alder and a few pine seedlings.
11	50 - Water	2.8	No	Unspecified	Kettle lake with relatively steep banks.
14	310 - Herbaceous Openland	4.4	Yes	Low	WLD planted with rye.
16	31021 - Cool Season Grass	2.8	Yes	Low	WLD planted with rye. Educational signs need to be replaced.
18	310 - Herbaceous Openland	2.3	Yes	Low	WLD planted with rye. Educational signs need to be replaced.
21	310 - Herbaceous Openland	2.1	Yes	Low	WLD planted with rye. Berm needs to be repaired.
26	3102 - Grass	1.9	Yes	Low	WLD planted with rye.
36	330 - Low-Density Trees	17.2	Plantation	Red Pine	Blue Lake M72 Pine, Sale 61-084-06-01, completed 5/2007. FTP C62-750. Notes are unclear. Different parts of original FTP were planted and replanted at different times. Possibly trenched 2007, planted 2008 and replanted 2013. Also contains scattered taller oak, red maple, cherry and aspen. Red maple (up to 2" dbh) is fairly heavy and aspen is thick in places. May need release.



Stand	Cover Type	Acres	Managed Site	Management Priority (Objective)	General Comments:
43	330 - Low-Density Trees	11.8	Natural Regen	Red Pine	Blue Lake M72 Pine, Sale 61-084-06-01, completed 5/2007. Removed everything except red pine in 1998, then removed poor quality red pine in 2007. Replanting was dependent on natural regen which was expected to be patchy. Does not appear that this part was trenched or planted (as of 2011 aerial photo.)
44	3302 - Low Density Conifer Trees	4.8	Plantation	Red Pine	Cut with comp 117 in 2007 and 2008; trenched and replanted to red pine in 2010(?). Also has significant jack pine volunteers. Scattered overstory: 4" dbh jack pine, 4-6" dbh aspen, red maple and cherry sprouts, and 3-5' oak. FTP C62-727. Mostly in C117. ORV trail runs through the stand.
47	330 - Low-Density Trees	8.1	No	Unspecified	Was U0 at last inventory but contains lots of shrubby jack pine.
52	330 - Low-Density Trees	40.5	Plantation	Red Pine	Blue Lake M72 Pine, Sale 61-084-06-01, completed 5/2007. Trenched and planted to red pine. FTP C62-750. Notes are unclear. Different parts of original FTP were planted and replanted at different times. Possibly trenched 2007, planted 2008 and replanted 2010. Also contains scattered taller oak, red maple, cherry and aspen. Aspen is somewhat dense in pockets but stand does not need release.
58	330 - Low-Density Trees	3.4	No	Unspecified	Semi-open area with scattered cherry, jack pine and pockets of A3 along edges. Opening was slightly larger at last inventory but the west end got planted to red pine with
61	330 - Low-Density Trees	3.2	Plantation	Red Pine	Part of stand 61113013. FTP C62-831, trenched in 2012 and planted to red pine in 5/2013.
65	3301 - Low Density Deciduous Trees	7.9	No	Unspecified	Decent opening with scattered pole/log cherry trees and some shrubby red maple.
67	330 - Low-Density Trees	2.2	No	Unspecified	Semi-open area with scattered cherry and white pine.
70	330 - Low-Density Trees	3.5	No	Unspecified	Long, narrow opening running the length of a shallow valley. Scattered white pine, aspen, and black cherry. ORV trail runs through the north part of the opening.
74	330 - Low-Density Trees	4.2	No	Low	Opening that is filling in with multiple species: cherry (S/P), aspen along the edges, open-grown white oak, red oak, aspen and red pine.