

GLADWIN FOREST MANAGEMENT UNIT COMPARTMENT REVIEW PRESENTATION

COMPARTMENT #9 ENTRY YEAR: 2014

Compartment Acreage: 6783 County: Clare

Revision Date: June 1, 2012; June 20, 2012

Stand Examiner: Tim Gallagher, Forest Technician and Blair Tweedale, Forester

Legal Description: T20N – R5W: Sections: 2 – 10 & 15 – 20 T20N – R6W: Sections: 1, 13, 14, & 23 – 26

RMU (if applicable): N/A

Management Goals: The entire compartment is in the heart of the "Leota Kirtland Warbler Management Area" (LKWMA) which is dominated by large contiguous blocks of even age jack pine management areas that are designed to produce nesting habitat for the Kirtland Warbler. The entire LKWMA has special resource management direction as a "Dedicated Species Recovery Area" and has been dedicated as a High Conservation Value Area (HCVA). Leota KW management Blocks 113, 114, 115, 116, 117 and 118 are all within the compartment. Three of these blocks have proposed treatments this YOE and are as follows:

- Block 114 POW 2014 Natural Regeneration Acres 260
- Block 115 POW 2014 Natural Regeneration _ Acres 348
- Block 117 POW 2018 Plant Year 2021 Acres 260

Many of the red pine stands that have been thinned in the past 10 to 20 years have a very dense oak understory. The under-story is the direct result of the harvests in the past, in several of these stands it has been proposed to manage for the oak under-story.

Soil and Topography: The area varies from well drained Grayling sands in the outwash plains to poorly drained mucky Lupton-Markey soils as you enter the Muskegon River Floodplain, the Clam River Floodplain and the Cranberry Creek Corridor. The terrain varies from nearly level to the steep banks that lead down into the floodplain of the Muskegon River, Clam River and Cranberry Creek.

Ownership Patterns, Development, and Land Use in and Around the Compartment: The state land in this compartment is spread out over 22 sections and occurs in large contiguous blocks. Private in-holdings are mostly comprised of large (40 plus acres) forested blocks with single absentee ownerships. There is little forest management activities on the private holdings. Rainbow Bend Subdivision is located in the center of the compartment (Section 16) along the Muskegon River. This is a small subdivision made up of both homes for permanent residents and seasonal use cottages that concentrates use on the state land and along the river. The town of Leota is directly adjacent to the east end of the compartment.

There are several U.S. Fish and Wildlife Service parcels within the compartment.

Unique, Natural Features: This area has a variety of rare species that could be or are present including; Secretive Locust, Kirtland Warbler, Red-legged Spittle Bug, Red Shouldered Hawk, Eastern Box Turtle, Goshawk, Bald Eagle, Osprey, Great Blue Heron, Wood Turtle and Blanding's Turtle. There is also potential for Beak Grass, Broad-leafed Puccoon in stands along the Muskegon River, and dry prairie plants in the grassy openings.

Archeological, Historical, and Cultural Features: There are six documented sites within the compartment.

Special Management Designations or Considerations: The entire compartment is within the Leota Kirtland Warbler Management Area and has special resource management direction as a "Dedicated Species Recovery Area". Therefore the entire compartment has been dedicated as a High Conservation Value Area (HCVA).

Watershed and Fisheries Considerations: Cranberry Creek and the Clam River flow into the Muskegon River within the compartment. Cranberry Creek and the Clam River are both designated trout streams and should be treated as cold water fisheries. Cranberry Creek and the Clam River are in valleys and have a natural buffer of lowland brush, lowland timber types and marsh directly adjacent to its banks; these river corridors should be considered sensitive wetland. The Muskegon River, a warm water fishery and a major Michigan watershed has a natural corridor (floodplain) of lowland swamp hardwood along most of the water course and should be considered a sensitive area for timber harvest purposes. Upland/High bank areas along the river should also be considered sensitive. The Muskegon River Floodplain and associated bottomlands are seasonally flooded.

Wildlife Habitat Considerations: Timber harvest and planting prescriptions are heavily influenced by the needs of the endangered species the Kirkland's Warbler. Jack Pine stands in this compartment will be managed to provide suitable habitat for the warblers. A Kirkland's Warbler management plan exists outlining a cutting rotation for this compartment. Some game species that use this compartment include white-tailed deer, black bear, ruffed grouse and wild turkey. Many other wildlife species likely to use this compartment include upland sandpiper, common nighthawk, brown thrasher and eastern hognose snake.

Mineral Resource and Development Concerns and/or Restrictions: Much of the compartment lies within the Cranberry Gas Storage Field. Numerous gas wells, pipelines and access roads are scattered over much of the compartment. Many of the pipelines, access roads, and gas well sites are under long term lease agreements with Consumers Energy.

Surface sediments consist of glacial outwash sand and gravel and postglacial alluvium and ice-contact outwash sand & gravel. The glacial drift thickness varies between 400 and 800 feet. Beneath the glacial drift are the Pennsylvanian Saginaw and Grand River Formations. The Saginaw Formation is used for brick making in other areas of the State. Gravel pits are located in Section 4, and potential appears to be good, especially the uplands. Cranberry Lake Field lies within the Compartment. The field produced from five formations and now is a gas storage field and also is in secondary recovery operations. The entire compartment is under lease for oil and gas production and/or gas storage operations.

Vehicle Access: Access to most of the compartment is good via the county road system and state two tracks that are in place.

Survey Needs: None

Recreational Facilities and Opportunities: The Leota ORV trail is located within the compartment. The area receives moderate hunting pressure, most of which is deer hunters. Moderate fishing occurs on Cranberry Creek, Clam River and the Muskegon River. Canoe traffic on the Muskegon River can be heavy on weekends during the summer.

Fire Protection: Large contiguous blocks of explosive jack pine fuels exist, causing this area to be vulnerable to wildfire of catastrophic proportions. This area is prime for potential fire control problems. Oak mortality has added high levels of dead woody material near the ground. If ignited, this dead wood will carry higher levels of heat up into the ladder fuels, thus torching and crown fires are more likely to develop. Some natural fuel breaks exist. The Natural Gas Storage Field and pipelines add additional challenges for fire control forces.

Additional Compartment Information: Three separate fuel breaks have been proposed this YOE and are as follows:

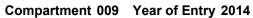
- Muskegon Fuel break POW 2014 Acres 130
- Pigeon Fuel break POW 2014 Acres 100
- Jackson Fuel break POW 2014 Acres 20

The proposed fuel breaks have been designed to meet three functional objectives; 1) Management of fuels. 2) Barrens habitat. 3) Visual corridors.

Table 1 – Total Acres by Cover Type and Age Class

Gladwin Mgt. Unit

Blair TWEEDALE : Examiner





| Age | Class |
|-----|-------|
|-----|-------|

| | / | 6.0 | 6 ^{.7} 0 | D ² D | 60 60 | 100 M | | 00 00 | 10 | 40 ¹ 6 | 69 | 801.001 | 817.01' | NO JIN | AND LO | is, |
|------------------------|-----|------|-------------------|------------------|----------|-------|-----|----------|-----|-------------------|-----|---------|---------|--------|--------|-----|
| Aspen | 33 | 43 | 123 | 0 | 0 | 0 | 0 | 0 | 41 | 0 | 0 | 0 | 0 | 0 | 241 | |
| Bog | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | |
| Herbaceous Openland | 91 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 91 | |
| Jack Pine | 251 | 1533 | 395 | 440 | 182 | 162 | 589 | 137 | 0 | 74 | 0 | 0 | 0 | 0 | 3763 | |
| Lowland Conifers | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | 0 | 20 | 0 | 10 | 0 | 64 | |
| Lowland Deciduous | 0 | 11 | 0 | 0 | 0 | 10 | 0 | 117 | 52 | 145 | 91 | 0 | 0 | 0 | 426 | |
| Lowland Mixed Forest | 0 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | 0 | 0 | 0 | 52 | |
| Lowland Shrub | 272 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 272 | |
| Marsh | 45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 45 | |
| Mixed Upland Deciduous | 0 | 0 | 0 | 0 | 0 | 0 | 36 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 | |
| Natural Mixed Pines | 0 | 28 | 0 | 0 | 0 | 0 | 51 | 115 | 0 | 31 | 0 | 0 | 0 | 0 | 225 | |
| Northern Hardwood | 0 | 23 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 36 | |
| Oak | 38 | 41 | 51 | 0 | 0 | 0 | 0 | 0 | 52 | 73 | 0 | 0 | 0 | 0 | 255 | |
| Planted Mixed Pines | 0 | 0 | 71 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 71 | |
| Red Pine | 0 | 0 | 0 | 0 | 0 | 38 | 265 | 694 | 0 | 0 | 0 | 0 | 0 | 0 | 997 | |
| Upland Mixed Forest | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 | 0 | 0 | 0 | 0 | 0 | 0 | 36 | |
| Water | 83 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 83 | |
| White Pine | 0 | 0 | 0 | 45 | 0 | 0 | 0 | 0 | 0 | 26 | 0 | 0 | 0 | 0 | 71 | |
| Total | 832 | 1679 | 659 | 485 | 182 | 211 | 941 | 1112 | 178 | 349 | 145 | 0 | 10 | 0 | 6783 | |



Table 2 – Proposed Treatment Summaries

| MICHIGAN . | Gladwin Mgt. Unit Year of Entry 2014 | | | | | | | | | Compartment Total Compartment Acres: | |
|------------|---|-----------------|-------------|-------------------------|-----------|----------------------|------------|----------|---|---|--|
| | | | | Acres | by Trea | tment T | /pe | | | | |
| | Commercial Harvest - 1762 | 2 Site Prep - 0 | | Tre | ee Planti | ng - 0 | | Preso | ribed Burn - 0 | Other - 0 | |
| | Habitat Cut - 0 | Opening Main | tenance - 0 | Tre | ee Seed | ng - 0 | | Pesti | cide - 0 | | |
| | | | | Cove | r Type k | y Harve | st Metl | nod | | | |
| | | | | Selection of the second | | Street of the second | Initian OS | <u> </u> | Solution of the second | | |
| | Aspen | | 41 | 0 | 0 (| | 0 | 41 | | | |
| | Jack Pir | ne | 868 | 0 | 211 (| 0 | 0 | 1079 | | | |
| | Natural | Mixed Pines | 31 | 0 | 109 (| 0 | 0 | 140 | | | |
| | Norther | n Hardwood | 0 | 13 | 0 (| 0 | 0 | 13 | | | |
| | Oak | | 75 | 12 | 0 0 | 0 | 0 | 87 | | | |
| | Red Pin | e | 103 | 0 | 0 19 | 103 | 0 | 403 | | | |
| | | Total | 1118 | 25 | 320 19 | 7 103 | 0 | 1762 | | | |

Table 3 -- Treatments Prescribed Compartment: 009 Gladwin Mgt. Unit with No Limiting Factor Year of Entry 2014 s t а Treatment Acres CoverType Size Stand BA Treatment Treatment Cover Type n Approval Method Name Density Objective Status Age Range Type d 73009009-Cut 42110 - Planted 200+ 42110 - Planted 9 57 High 52 Harvest Systematic Cmpt. Review Thinning Red Pine Red Pine Density Proposal Pole Prescription Thin red pine to 110 - 140 BA/AC. Remove all jack pine. Specs: Other_ Planted red pine. Stand is within the Cranberry Gas Storage Field; pipelines, wells and service roads are within the area. Comments: <u>Next</u> Monitor residual red pine as to how it reacts to thinning. Steps: Proposed 10/01/2013 Start Date: Cmpt. Review 73009011-Cut 42290 - Natural 98 51-80 42290 - Natural 31.4 High Harvest Clearcut with 11 Mixed Pine Density Reserves Mixed Pine Proposal Pole Prescription Clear cut with reserves 2" spec. Leave all white pine, red pine and mark scattered wind firm oak to leave. Manage for a mix of natural regeneration jack pine, oak and white pine. Specs: Mixed pine stand with some oak. Stand is within the Cranberry Gas Storage Field; pipelines, wells and service roads are within the area. Stand is Other falling apart, Lots of diversity. Stand could be left for buffer between jack pine regen and Cranberry Creek. However there is a high amount of Comments: dead/dying timber. Monitor natural regeneration until adequate regeneration is achieved. A mix of jack pine, mixed oak and white pine regeneration is acceptable. Next Steps: Interplant red pine to maintain full stocking if needed. Proposed 10/01/2013 Start Date: 42220 - Natural 42220 - Natural 21 73009021-Cut 25.9 High 98 Harvest Clearcut with Cmpt. Review Jack Pine Reserves Jack Pine Proposal Density Pole Prescription Clear cut with reserves 2" spec. Leave all white pine, red pine and mark scattered wind firm oak to leave. Manage for a mix of natural regeneration jack pine, oak and white pine. Specs: Other Old jack pine stand with oak. Stand is within the Cranberry Gas Storage Field; pipelines, wells and service roads are within the area. Comments: Monitor natural regeneration until adequate regeneration is achieved. A mix of jack pine, mixed oak and white pine regeneration is acceptable. Next Steps: Interplant red pine to maintain full stocking if needed. Proposed Start Date: 10/01/2013 22 73009022-Cut 16.3 42220 - Natural High 50 Harvest Clearcut with 42110 - Planted Cmpt. Review Jack Pine Density Reserves Red Pine Proposal Pole Prescription Clear cut with reserves followed by planting red pine. Leave scattered mature red pine and mixed oak to meet retention guidelines. Require chip Specs: harvest Stand is within LKW block 115. Jack pine stand with scattered red pine, white pine and oak. Red pine is found in northern portion of stand. Stand Other_ Comments: is within the Cranberry Gas Storage Field; pipelines, wells and service roads are within the area. <u>Next</u> Following harvest trench and plant red pine. Steps: Proposed 10/01/2013 Start Date:

Table 3 -- Treatments Prescribed with No Limiting Factor

Compartment: 009 Year of Entry 2014



| a n d | Treatment Name | Acres | CoverType | Size Density | Stand Age | BA Range | Treatment Type | Treatment Method | Cover Type Objective | Approval Status |
|-------------|-------------------|-------|-----------------------------|-------------------------|--------------|-------------|-------------------|---------------------------|----------------------------------|--------------------------|
| 27 | 73009027-Cut | 31.3 | 4134 - Aspen, Spruce/Fir | High Density Pole | 84 | 1-50 | Harvest | Clearcut with Reserves | 4139 - Aspen, Mixed Deciduous | Cmpt. Review Proposal |

Prescription Clear cut with reserves 2" spec. Manage for a mix of natural regen aspen and red maple. Leave all white pine, red pine, oak and mark scattered Specs: wind firm maple to leave.

- Stand is dominated by quaking aspen, red maple and balsam fir. Scattered oak of all size classes. Mostly an upland stand, with pockets of low <u>Other</u> wet soils. Aspen and balam have reached maturity. Deer browse present through out stand on oak less than 2' ft. Large CWD through out entire Comments: stand (aspen/balsam)
- Monitor natural regeneration until adequate regeneration is achieved. A mix of aspen, red maple, white pine, balsam fir and oak regeneration is <u>Next</u> Steps: acceptable.

s 4

| Propo Start | | 10/01/201 | 3 | | | | | | | | |
|---------------------------|---------------------|-----------------|------------------------------|---|-------------------------|----------|--------------|--------------------|-------------------------------|--|--------------------------|
| 30 | 73009 | 9030-Cut | 31.5 | 42220 - Natural Jack Pine | High Density Pole | 50 | | Harvest | Clearcut with Reserves | 42110 - Planted Red Pine | Cmpt. Review Proposal |
| <u>Pres</u> Spec | | - | t with reserv chip harves | | ning and plar | nting re | d pine. Leav | e scattered win | d firm oak and red p | oine to meet retention | guidelines. |
| <u>Othe</u> Com | | the 50 y | r age class. | | n remains co | | | | | n 50 - 67. Most of the j erry Gas Storage Field | |
| <u>Next</u> Step | | Following | g harvest tre | ench and plant red pir | ıe. | | | | | | |
| <u>Propo</u> Start | | 10/01/201 | 3 | | | | | | | | |
| 45 | | 9045_MF -Cut | 33.6 | 42220 - Natural Jack Pine | High Density Pole | 65 | | Harvest | Seed Tree with Reserves | 3302 - Low Density Conifer Trees | Cmpt. Review Proposal |
| Pres Spec | | | | as fuelbreak stand. S be on the 2018 POW | | th rese | rves 2" spec | all jack pine. L | eave all red pine an | d oak. Require chip ha | rvest. Fuel |
| <u>Othe</u> <u>Com</u> | <u>r</u> ments: | Stand is | within LKW | block 115. Stand is v | within the Cr | anberry | Gas Storag | je Field; pipeline | es, wells and service | e roads are within the | area. |
| <u>Next</u> Step | | Following | g harvest cr | reate and maintain as | fuel break s | tand. | | | | | |
| Propo Start | | 10/01/201 | 7 | | | | | | | | |
| 47 | | 9047_MF -Cut | 46.9 | 42110 - Planted Red Pine | High Density Pole | 65 | 111-140 | Harvest | Shelter Wood with Reserves | 3302 - Low Density Conifer Trees | Cmpt. Review Proposal |
| Pres Spec | | | | as fuelbreak stand. S be on the 2018 POW | | with re | serves 2" sp | ec. Leave 50 B | A/AC of wind firm re | ed pine. Require chip h | arvest. Fuel |
| <u>Othe</u> <u>Com</u> | <u>er</u> ments: | Stand is | within LKW | block 115. Stand is v | within the Cr | anberry | Gas Storag | je Field; pipeline | es, wells and service | e roads are within the | area. |
| <u>Next</u> Step | | Following | g harvest cr | eate and maintain as | fuel break s | tand. | | | | | |
| Propo Start | | 10/01/201 | 7 | | | | | | | | |

| S t | | Glad | win Mgt. Unit | Tab | | | ents Prescril ting Factor | bed | Compartment: 009 Year of Entry 2014 | DNR DR NATURAL |
|---|---|--|---|--|--|---|--|--|--|---|
| a n d | Treatment Name | Acres | CoverType | Size Density | Stand Age | BA Range | Treatment Type | Treatment Method | Cover Type Objective | Approval Status |
| 53 | 73009053-Cut | 100.0 | 42220 - Natural Jack Pine | High Density Pole | 60 | | Harvest | Clearcut with Reserves | 42220 - Natural Jack Pine | Cmpt. Review Proposal |
| Pres Spec | cs: KW harv | ests. Stan | | 115. 2014 | POW. Sa | ale specs r | need to include s | | etention guidelines as t le best possible chance | |
| <u>Othe</u> Com | | | | | | | | | ine (3-12 inches). Jack service roads are withir | |
| <u>Next</u> Step | | natural rege ar would be | | ate regenera | ition is ad | chieved. Pl | ant jack pine if n | atural regen fails to | produce suitable KW | habitat. Target |
| Propo Start | <u>osed</u> <u>Date:</u> 10/01/20 ⁻ | 13 | | | | | | | | |
| 57 | 73009057-Cut | 9.4 | 4130 - Aspen | Medium Density Pole | 80 | | Harvest | Clearcut with Reserves | 4139 - Aspen, Mixed Deciduous | Cmpt. Review Proposal |
| Pres Spec | | t with reser | rves 2" spec. Leave so | cattered win | d firm oa | ik to meet i | retention guidline | 28. | | |
| Othe | | | | | | | | | | |
| Com | ments: | | | | | | | | | |
| <u>Next</u> | Monitor | natural reg | eneration until adequa | ate regenera | ition is ad | chieved A | mix of sanon re | d manle and miver | l oak regeneration is a | ccentable |
| Ston | с. | | | 0 | | | mix of saperi, re | u maple and mixed | a oak regeneration is a | |
| <u>Step</u> Propo | | | | U U | | | mix of sapen, re | | a oak regeneration is a | |
| Propo | | 13 | | Ū | | | This of Sapen, re | | oak regeneration is a | |
| Propo | osed_ | 13 70.1 | 42220 - Natural Jack Pine | High Density Pole | 43 | | Harvest | Clearcut with Reserves | 42120 - Planted Jack Pine | |
| Propo Start | <u>Date:</u> 10/01/20 73009059_KW -Cut <u>cription</u> Clear cu <u>cs:</u> KW harv | 70.1 t with reser vests. Stand | Jack Pine | Density Pole al regenerat 115. 2014 | 43 tion for K POW. Sa | W habitat. ale specs r | Harvest Leave scattered need to include s | Clearcut with Reserves I red pine. Follow re | 42120 - Planted | Cmpt. Review Proposal hey pertain to |
| Propo Start 59 Press Spec Othe | 73009059_KW -Cut cription Clear cu s: KW harv regenera er Stand is | 70.1 t with reser rests. Stand ation. (Leav | Jack Pine rves manage for natur d is within LKW block ve tops, late summer h | Density Pole al regenerat 115. 2014 narvest, pos | 43 tion for K POW. Sa t harvest | W habitat. ale specs r scarificatio | Harvest Leave scattered to include s on). | Clearcut with Reserves I red pine. Follow re pecs that ensure th | 42120 - Planted Jack Pine | Cmpt. Review Proposal hey pertain to e for natural |
| Propo Start 59 Press Spec Othe | <u>Date:</u> 10/01/20 73009059_KW -Cut <u>cription</u> Clear cu <u>cription</u> Clear cu <u>cription</u> Stand is <u>iments:</u> Monitor | 70.1 t with reser rests. Stand ation. (Leav within LKV | Jack Pine rves manage for natur d is within LKW block /e tops, late summer h V block 115. Stand is eneration until adequa | Density Pole al regenera 115. 2014 harvest, pos within the C | 43 tion for K POW. Sa t harvest ranberry | W habitat. ale specs r scarification Gas Stora | Harvest Leave scattered need to include s on). ge Field; pipelind | Clearcut with Reserves I red pine. Follow re pecs that ensure th es, wells and servic | 42120 - Planted Jack Pine etention guidelines as t le best possible chance | Cmpt. Review Proposal hey pertain to e for natural area. |
| Propo Start I 59 Press Spec Othe Com Next Step Propo | 73009059_KW -Cut Cription Clear cu S: KW han regenera er Stand is ments: Monitor S: plant yea | 70.1 t with reser vests. Stand tition. (Leav within LKV natural regu ar would be | Jack Pine rves manage for natur d is within LKW block /e tops, late summer h V block 115. Stand is eneration until adequa | Density Pole al regenera 115. 2014 harvest, pos within the C | 43 tion for K POW. Sa t harvest ranberry | W habitat. ale specs r scarification Gas Stora | Harvest Leave scattered need to include s on). ge Field; pipelind | Clearcut with Reserves I red pine. Follow re pecs that ensure th es, wells and servic | 42120 - Planted Jack Pine etention guidelines as t le best possible chance e roads are within the a | Cmpt. Review Proposal hey pertain to e for natural area. |
| Propo Start I 59 Press Spec Othe Com Next Step Propo | Date: 10/01/20 73009059_KW -Cut cription Clear cu cs: KW han cription Stand is iments: Monitor s: plant yea psed Date: | 70.1 t with reser vests. Stand tition. (Leav within LKV natural regu ar would be | Jack Pine rves manage for natur d is within LKW block /e tops, late summer h V block 115. Stand is eneration until adequa | Density Pole al regenera 115. 2014 harvest, pos within the C | 43 tion for K POW. Sa t harvest ranberry | W habitat. ale specs r scarification Gas Stora | Harvest Leave scattered need to include s on). ge Field; pipelind | Clearcut with Reserves I red pine. Follow re pecs that ensure th es, wells and servic | 42120 - Planted Jack Pine etention guidelines as t le best possible chance e roads are within the a | Cmpt. Review Proposal hey pertain to e for natural area. habitat. Target |
| 59 Press 59 Press Spec Com Next Step Propc Start | Date: 10/01/20° 73009059_KW -Cut cription Clear cu 25: KW harve 25: Stand is 27: Stand is 28: Monitor 29: plant yea 20: 10/01/20° 73009059_MF B-Cut cription Create a | 70.1 t with reservests. Stand ation. (Leav within LKV natural regular would be 13 25.8 nd maintai | Jack Pine Twes manage for natur d is within LKW block ve tops, late summer h V block 115. Stand is eneration until adequa e 2021. 42220 - Natural Jack Pine | Density Pole al regenerai 115. 2014 harvest, pos within the C ate regenera High Density Pole Seed tree w | 43 tion for K POW. Sa t harvest ranberry tion is ac | W habitat. ale specs r scarificatio Gas Stora chieved. Pl | Harvest Leave scattered teed to include s on). ge Field; pipelind ant jack pine if n Harvest | Clearcut with Reserves I red pine. Follow re pecs that ensure th es, wells and servic atural regen fails to Seed Tree with Reserves | 42120 - Planted Jack Pine etention guidelines as t te best possible chance e roads are within the produce suitable KW 3302 - Low Density | Cmpt. Review Proposal hey pertain to e for natural area. habitat. Target Cmpt. Review Proposal |
| Propec Start 1 59 Press Spec Othe Com Next Step Propc Start 1 59 | Date: 10/01/20 73009059_KW -Cut cription Clear cu SS: KW han cription Stand is iments: Monitor Ssed Date: Date: 10/01/20 73009059_MF B-Cut cription Create a cription Create a ss: break tree | 70.1 t with reservests. Standation. (Leav within LKV matural regrar would be 13 25.8 and maintai eatment wil | Jack Pine Types manage for natur d is within LKW block ve tops, late summer h V block 115. Stand is eneration until adequa 2021. 42220 - Natural Jack Pine n as fuelbreak stand. I be on the 2018 POW | Density Pole al regenerai 115. 2014 harvest, pos within the C ate regenera High Density Pole Seed tree w V. | 43 tion for K POW. Sa t harvest ranberry tion is ac 43 vith reser | W habitat. ale specs r scarificatio Gas Stora chieved. Pl | Harvest Leave scattered need to include s on). ge Field; pipelind ant jack pine if n Harvest c all jack pine. L | Clearcut with Reserves I red pine. Follow re pecs that ensure th es, wells and servic atural regen fails to Seed Tree with Reserves eave all red pine an | 42120 - Planted Jack Pine etention guidelines as t e best possible chance e roads are within the produce suitable KW 3302 - Low Density Conifer Trees | Cmpt. Review Proposal hey pertain to e for natural area. habitat. Target Cmpt. Review Proposal arvest. Fuel |
| Propoc Start 1 59 Press Spec Othe Com Next Step Propoc Start 1 59 Propoc Start 1 59 Press Spec Othe Othe Othe Start 1 | Date: 10/01/20 73009059_KW -Cut cription Clear cut cs: KW harver cs: Stand is ments: Monitor s: plant yes psed 10/01/20 73009059_MF B-Cut cription Create a cription Create a cs: break tree s: Stand is psed Date: Date: 10/01/20 Create a break tree pset Stand is pressed Stand is | 70.1 t with reservests. Stand ation. (Leav within LKV natural regunation ar would be 13 25.8 and maintai eatment will within LKV | Jack Pine Types manage for natur d is within LKW block ve tops, late summer h V block 115. Stand is eneration until adequa 2021. 42220 - Natural Jack Pine n as fuelbreak stand. I be on the 2018 POW | Density Pole al regenerai 115. 2014 harvest, pos within the C ate regenera High Density Pole Seed tree w V. within the C | 43 tion for K POW. Sa t harvest ranberry tion is ac 43 vith reser ranberry | W habitat. ale specs r scarificatio Gas Stora chieved. Pl | Harvest Leave scattered need to include s on). ge Field; pipelind ant jack pine if n Harvest c all jack pine. L | Clearcut with Reserves I red pine. Follow re pecs that ensure th es, wells and servic atural regen fails to Seed Tree with Reserves eave all red pine an | 42120 - Planted Jack Pine etention guidelines as t e best possible chance e roads are within the a p produce suitable KW 3302 - Low Density Conifer Trees | Cmpt. Review Proposal hey pertain to e for natural area. habitat. Target Cmpt. Review Proposal arvest. Fuel |

| t | | | Glad | lwin Mgt. Unit | Tab | | | ents Prescril ing Factor | bed | Compartment: 009 Year of Entry 2014 | OF NATURAL |
|--|---|--|--|--|--|---|--|---|--|--|---|
| a n d | | tment me | Acres | CoverType | Size Density | Stand Age | BA Range | Treatment Type | Treatment Method | Cover Type Objective | Approval Status |
| 61 | 730090 | 061-Cut | 37.2 | 42110 - Planted Red Pine | High Density Pole | 77 | 111-140 | Harvest | Clearcut with Reserves | 42120 - Planted Jack Pine | Cmpt. Review Proposal |
| Presc Spec: | <u>s:</u> | pine of a | verage dia | | ive trees sh | ould be | eft individua | ally and in small | groups. Follow ret | to three trees per acre ention guidelines as the s 2021. | |
| <u>Other</u> Comr | | | | V block 117 - 2018 PC Cranberry Gas Storag | | | | | | istinguishable; jack pin | e is on decline. |
| <u>Next</u> Steps | | Following | g harvest t | rench and plant jack p | ine for KW I | nabitat. | | | | | |
| Propos Start D | | 10/01/201 | 17 | | | | | | | | |
| 64 | | 064_KW Cut | 71.8 | 42220 - Natural Jack Pine | High Density Pole | 74 | | Harvest | Clearcut with Reserves | 42220 - Natural Jack Pine | Cmpt. Review Proposal |
| Presc Spece | | KW harv | ests. Stan | | 115. 2014 | POW. S | ale specs n | eed to include s | | etention guidelines as t ne best possible chanc | |
| Other | _ | Stand is | within LKV | • | ack pine sta | | | , | tand is within the C | cranberry Gas Storage | Field; pipelines |
| <u>Next</u> Steps Propos | <u>:</u> sed_ | plant yea | natural reg ar would be | | ite regenera | tion is a | chieved. Pla | ant jack pine if n | natural regen fails to | o produce suitable KW | habitat. Target |
| Start D | Date: | 10/01/201 | 13 | | | | | | | | |
| <u>64</u> | 730090 | 10/01/201 064_MF Cut | 13 18.0 | 42220 - Natural Jack Pine | High Density Pole | 74 | | Harvest | Seed Tree with Reserves | 3302 - Low Density Conifer Trees | Cmpt. Reviev Proposal |
| 64 | 730090 B-1 | 064_MF Cut Create a | 18.0 nd maintai | Jack Pine | Density Pole Seed tree w | | ves 2" spec | | Reserves | | Proposal |
| 64 Presc Specs | 73009(B- cription s: | 064_MF Cut Create a break tre Stand is | 18.0 nd maintai atment wil | Jack Pine in as fuelbreak stand. I be on the 2018 POW | Density Pole Seed tree w /. ack pine sta | ith reser | | all jack pine. Lu | Reserves eave all red pine a | Conifer Trees | Proposal arvest. Fuel |
| 64 Presc Spec: Other Comr Next | 730090 B-1 s: <u>s:</u> nents: | 064_MF Cut Create a break tre Stand is pipelines | 18.0 nd maintai atment wil within LKV s, wells and | Jack Pine in as fuelbreak stand. I be on the 2018 POW V block 115. Natural j | Density Pole Seed tree w /. ack pine sta hin the area | ith reser and with | | all jack pine. Lu | Reserves eave all red pine a | Conifer Trees | Proposal arvest. Fuel |
| 64 Presc Spec: Other Comr Next Steps Propos | 73009(B- sription S: nents: | 064_MF Cut Create a break tre Stand is pipelines | 18.0 nd maintai eatment wil within LKV s, wells and g harvest c | Jack Pine in as fuelbreak stand. I be on the 2018 POW V block 115. Natural j d service roads are wit | Density Pole Seed tree w /. ack pine sta hin the area | ith reser and with | | all jack pine. Lu | Reserves eave all red pine a | Conifer Trees | Proposal arvest. Fuel |
| 64 Presc Spec: Other Comr | 73009(B- s: <u>s:</u> <u>nents:</u> <u>sed</u> <u>bate:</u> | 064_MF Cut Create a break tre Stand is pipelines Following | 18.0 nd maintai eatment wil within LKV s, wells and g harvest c | Jack Pine in as fuelbreak stand. I be on the 2018 POW V block 115. Natural j d service roads are wit | Density Pole Seed tree w /. ack pine sta hin the area | ith reser and with | | all jack pine. Lu | Reserves eave all red pine a | Conifer Trees | Proposal arvest. Fuel |
| 64 Presc Spec: Other Comr Next Steps Propos Start I 65 | 73009(B- s: nents: <u>sed</u> Date: 73009(s: | D64_MF Cut Create a break tre Stand is pipelines Following 10/01/201 D65-Cut Clear cut pine of a | 18.0 nd maintai eatment wil within LKV s, wells and g harvest c 17 47.2 t with reserverage dia | Jack Pine in as fuelbreak stand. I be on the 2018 POW V block 115. Natural j d service roads are wit create and maintain as 42220 - Natural Jack Pine rves followed by planti | Density Pole Seed tree w /. ack pine sta hin the area fuel break s High Density Pole ng jack pine ave trees sh | ith reser and with stand. 70 e for KW ould be | oak and rec 81-110 habitat. Lea | all jack pine. Lu pine present. S Harvest Harvest ave scattered re ally and in small | Reserves eave all red pine an Stand is within the G Clearcut with Reserves ed pine. Leave two I groups. Follow ret | Conifer Trees nd oak. Require chip ha Cranberry Gas Storage 42120 - Planted Jack Pine to three trees per acre ention guidelines as the | Proposal arvest. Fuel Field; Cmpt. Reviev Proposal favoring red |
| 64 Pressc Spec: Other Comr Next Steps Propos Start L 65 Pressc Spec: Other | 73009(B- si nents: <u>sed</u> <u>2ate:</u> 73009(sription s: <u>nents:</u> | 064_MF Cut Create a break tre Stand is pipelines Following 10/01/201 065-Cut Clear cur pine of a KW harv Stand is service r | 18.0 nd maintai eatment wil within LKV s, wells and g harvest c g harvest c 17 47.2 t with reserver verage dia rests. Stan within LKV oads are w | Jack Pine in as fuelbreak stand. I be on the 2018 POW V block 115. Natural j d service roads are wit create and maintain as 42220 - Natural Jack Pine rves followed by planti imeter and greater, lea d is within LKW block V block 117 - 2018 PC vithin the area. Jack pi | Density Pole Seed tree w /. ack pine sta hin the area fuel break s fuel break s High Density Pole ng jack pine ave trees sh 117. Defer W - target p ne is maturo | ith reser and with stand. 70 for KW ould be treatme blant yea e and at | 81-110 Abitat. Lea eft individua nt to the 20 ar 2021. Sta risk of blow | all jack pine. Lo pine present. S Harvest Harvest ave scattered re ally and in small 18 plan-of-work, nd is within the down and/or bu | Reserves eave all red pine an Stand is within the C Clearcut with Reserves ed pine. Leave two I groups. Follow ret target plant year is Cranberry Gas Sto d worm. Oak is alro | Conifer Trees nd oak. Require chip ha Cranberry Gas Storage 42120 - Planted Jack Pine to three trees per acre ention guidelines as the | Proposal arvest. Fuel Field; Cmpt. Review Proposal favoring red ey pertain to vells and nice red pine |
| 64 Pressc Spec: Other Comr Next Steps Propos Start L 65 Pressc Spec: Other | 73009(B- si si nents: sed Date: 73009(sription si nents: | 064_MF Cut Create a break tre Stand is pipelines Following 10/01/201 065-Cut Clear cur pine of a KW harv Stand is service r mixed in | 18.0 Ind maintai eatment will within LKV s, wells and g harvest of g harvest of 47.2 t with reselver verage dia rests. Stan within LKV oads are w mainly in a | Jack Pine in as fuelbreak stand. I be on the 2018 POW V block 115. Natural j d service roads are wit create and maintain as 42220 - Natural Jack Pine rves followed by planti imeter and greater, lea d is within LKW block V block 117 - 2018 PC vithin the area. Jack pi | Density Pole Seed tree w /. ack pine sta hin the area fuel break s fuel break s fuel break s fuel break s fuel break s fuel break s Pole ng jack pine ave trees sh 117. Defer)W - target j ne is maturu e north edg | ith reser and with stand. 70 e for KW ould be l treatme blant yea e and at e of star | 81-110 Abitat. Lea eft individua nt to the 20 ar 2021. Sta risk of blow | all jack pine. Lo pine present. S Harvest Harvest ave scattered re ally and in small 18 plan-of-work, nd is within the down and/or bu | Reserves eave all red pine an Stand is within the C Clearcut with Reserves ed pine. Leave two I groups. Follow ret target plant year is Cranberry Gas Sto d worm. Oak is alro | Conifer Trees nd oak. Require chip ha Cranberry Gas Storage 42120 - Planted Jack Pine to three trees per acre ention guidelines as the s 2021. rage Field; pipelines, v eady in decline. Some | Proposal arvest. Fuel Field; Cmpt. Review Proposal favoring red ey pertain to vells and nice red pine |

Table 3 -- Treatments Prescribed Compartment: 009 Gladwin Mgt. Unit with No Limiting Factor Year of Entry 2014 s t а Treatment Acres CoverType Size Stand BA Treatment Treatment Cover Type n Approval Method Objective Name Density Status Age Range Type d 73009068-Cut 42220 - Natural 33 Clearcut with 68 294 High Harvest 3302 - Low Density Cmpt. Review Density Reserves Proposal Jack Pine Conifer Trees Pole Prescription Create and maintain as fuelbreak stand. Clear cut with reserves 2" spec. Require chip harvest. Leave all oak and red pine. Fuel break treatment will be on the 2018 POW. Specs: Other_ Stand is within LKW block 115. Stand is within the Cranberry Gas Storage Field; pipelines, wells and service roads are within the area. Comments: <u>Next</u> Following harvest create and maintain as fuel break stand. Steps: Proposed 10/01/2017 Start Date: 73009069-Cut 19.0 42110 - Planted 171-200 42120 - Planted Cmpt. Review 69 High 77 Harvest Clearcut with Red Pine Density Reserves Jack Pine Proposal Pole Prescription Clear cut with reserves followed by planting jack pine for KW habitat. Leave scattered red pine. Leave two to three trees per acre favoring red pine of average diameter and greater, leave trees should be left individually and in small groups. Follow retention guidelines as they pertain to Specs: KW harvests. Stand is within LKW block 117. Defer treatment to the 2018 plan-of-work, target plant year is 2021. Stand is within LKW block 117 - 2018 POW - target plant year 2021. Old 1937 hand planting. Rows are indistinguishable; jack pine is on decline. Other Stand is within the Cranberry Gas Storage Field; pipelines, wells and service roads are within the area. Comments: Following harvest trench and plant jack pine for KW habitat. Next Steps: Proposed Start Date: 10/01/2017 73009072-Cut 42110 - Planted 51 High 77 141-170 Shelter Wood 4122 - Oak, Pine Cmpt. Review 72 Harvest Red Pine Density with Reserves Proposal Pole Prescription Shelterwood to release and establish a mix of natural regen of oak, white pine and jack pine. Remove all jack pine and oak, reduce red pine residual down to 50 BA/AC. Red pine density varies, in some places not much red pine will need marking to hit the desired residual. Address Specs: retention along slope leading down to the Cranberry Creek flood plain and leaving scattered large wolfy oak. Old 1938 hand planting. Rows are indistinguishable; jack pine is on decline. Stand is within the Cranberry Gas Storage Field; pipelines, wells and Other service roads are within the area. Comments: <u>Next</u> Monitor natural regeneration until adequate regeneration is achieved. A mix of oak/pine regeneration is acceptable. Interplant red pine to maintain full stocking if needed. Steps: Proposed Start Date: 10/01/2013 73009076-Cut 24.9 42110 - Planted 77 111-140 Harvest Shelter Wood 4122 - Oak, Pine Cmpt. Review 76 High Red Pine with Reserves Density Proposal Pole Prescription_ Shelterwood to release and establish a mix of natural regen of oak, white pine and jack pine. Remove all jack pine and oak, reduce red pine residual down to 50 BA/AC. Red pine density varies, in some places not much red pine will need marking to hit the desired residual. Address Specs: retention along slope leading down to the Muskegon River flood plain and leaving scattered large wolfy oak. Old 1938 hand planting. Rows are indistinguishable; jack pine is on decline. Stand is within the Cranberry Gas Storage Field; pipelines, wells and Other Comments: service roads are within the area. Very visable stand, Otter Drive bi-sects stand. Part off stand is a long/skinny arm pniched between KW block 117 and the Muskegon River flood plain with Otter Drive down the middle. <u>Next</u> Monitor natural regeneration until adequate regeneration is achieved. A mix of oak/pine regeneration is acceptable. Interplant red pine to maintain full stocking if needed. Steps:

Proposed Start Date: 10/01/2013

| S t | | | Glad | dwin Mgt. Unit | Tabl | | | ents Prescrik ing Factor | bed | Compartment: 009 Year of Entry 2014 | OF NATURAL OF NATURAL |
|---|--|---|---|---|--|---|---|---|--|---|--|
| a n d | | tment Ime | Acres | CoverType | Size Density | Stand Age | BA Range | Treatment Type | Treatment Method | Cover Type Objective | Approval Status |
| 77 | 73009 | 077-Cut | 39.7 | 4122 - Oak, Pine | High Density Pole | 88 | 51-80 | Harvest | Clearcut with Reserves | 42120 - Planted Jack Pine | Cmpt. Review Proposal |
| Presc Spece | | pine of a | verage dia | | ive trees she | ould be l | eft individu | ally and in small | groups. Follow ret | to three trees per acre ention guidelines as the s 2021. | |
| <u>Other</u> Comr | <u>_</u> ments: | service r | bads are v | | oak/ jack p | ine stand | d, poor qua | lity oak. jack pin | e appears to be yo | rage Field; pipelines, w unger than the oak how | |
| <u>Next</u> Steps | <u>:</u> | Following | g harvest f | trench and plant jack p | ine for KW I | nabitat. | | | | | |
| Propos Start D | | 10/01/201 | 7 | | | | | | | | |
| 78 | 73009 | 078-Cut | 5.7 | 42110 - Planted Red Pine | High Density Log | 77 | 111-140 | Harvest | Clearcut with Reserves | 42120 - Planted Jack Pine | Cmpt. Reviev Proposal |
| Presc Specs | | pine of a | verage dia | | ve trees she | ould be l | eft individu | ally and in small | groups. Follow ret | to three trees per acre ention guidelines as the s 2021. | |
| <u>Other</u> Comr | <u>.</u> nents: | Stand is | within the | | e Field; pipe | elines, w | ells and se | vice roads are v | vithin the area. All | listinguishable; jack pin jack pine and marked r | |
| <u>Next</u> Steps | <u>:</u> | | | trench and plant jack p | | | | onie camege, m | | | |
| Propos Start D | sed | 10/01/201 | 7 | | | | | | | | |
| 80 | 73009 | 080-Cut | 12.9 | 4119 - Mixed Northern Hardwoods | High Density Pole | 73 | 81-110 | Harvest | Single Tree Selection | 4119 - Mixed Northern Hardwoods | Cmpt. Reviev Proposal |
| Presc Specs | | | | tand with a few scatter understory. | ed red and | white pir | i. A lowland | l draw runs throu | ugh the stand with | a few cedars present. L | ow levels of |
| <u>Other</u> Comr | nents: | Selectior | harvest i | reduce residual BA/AC | down to 60 | to 80 sq | , ft. Do not | eliminate any or | ne species. | | |
| | | Monitor r | natural reg | oporation until adoqua | te regenera | tion is a | chieved. A | mix of mixed oal | and red maple re | generation is acceptab | le. |
| <u>Next</u> Steps | <u>;;</u> | | | | | | | | | 3 | |
| Steps Propos | sed | 10/01/201 | 3 | | | | | | | 3 | |
| | <u>sed</u> Date: | 10/01/201 081-Cut | 3 35.0 | 42220 - Natural Jack Pine | High Density Pole | 60 | 81-110 | Harvest | Clearcut with Reserves | 42120 - Planted Jack Pine | |
| Steps Propos Start D | sed Date: 73009 | 081-Cut Clear cut pine of a | 35.0 with reseverage dia | 42220 - Natural Jack Pine rves followed by planti | Density Pole ng jack pine ive trees sho | for KW ould be I | habitat. Le eft individu | ave scattered re ally and in small | Clearcut with Reserves d pine. Leave two groups. Follow ret | 42120 - Planted Jack Pine to three trees per acre ention guidelines as the | Cmpt. Revie Proposal favoring red |
| Steps Propos Start D 81 Presc Specs Other | sed Date: 73009 ription s: | 081-Cut Clear cut pine of a KW harv Stand is Jack pine | 35.0 with rese verage dia ests. Star within LKN | 42220 - Natural Jack Pine rves followed by planti ameter and greater, lea Id is within LKW block W block 117 - 2018 PC It at the age of decline | Density Pole ng jack pine ive trees sho 117. Defer W - target p | for KW ould be l treatmen | habitat. Le eft individu nt to the 20 nr 2021. Aln | ave scattered re ally and in small 18 plan-of-work, nost a pure jack | Clearcut with Reserves d pine. Leave two groups. Follow ret target plant year is pine stand, not mu | 42120 - Planted Jack Pine to three trees per acre ention guidelines as the | Cmpt. Revie Proposal favoring red ey pertain to 1/J1 at best. |
| Steps Propos Start D 81 Presc Specs Other | <u>sed</u> <u>Date:</u> 73009 <u>rription</u> <u>s:</u> <u>nents:</u> | 081-Cut Clear cut pine of a KW harv Stand is Jack pine are within | 35.0 with reseverage dia ests. Star within LKN e is OK bu | 42220 - Natural Jack Pine rves followed by planti ameter and greater, lea Id is within LKW block W block 117 - 2018 PC It at the age of decline | Density Pole ng jack pine ive trees sho 117. Defer W - target p and budwor | for KW ould be l treatmen olant yea m risk. { | habitat. Le eft individu nt to the 20 nr 2021. Aln | ave scattered re ally and in small 18 plan-of-work, nost a pure jack | Clearcut with Reserves d pine. Leave two groups. Follow ret target plant year is pine stand, not mu | 42120 - Planted Jack Pine to three trees per acre ention guidelines as the s 2021. uch in the understory O | Cmpt. Review Proposal favoring red ey pertain to 1/J1 at best. |

Table 3 -- Treatments Prescribed Compartment: 009 Gladwin Mgt. Unit Year of Entry 2014 with No Limiting Factor s t а Treatment Acres CoverType Size Stand BA Treatment Treatment Cover Type n Approval Method Name Density Objective Status Age Range Type d 73009083-Cut 42120 - Planted 1-50 Clearcut with 42120 - Planted 83 51 High 62 Harvest Cmpt. Review Density Proposal Jack Pine Reserves Jack Pine Pole Prescription Clear cut with reserves followed by planting jack pine for KW habitat. Leave scattered red pine. Leave two to three trees per acre favoring red pine of average diameter and greater, leave trees should be left individually and in small groups. Follow retention guidelines as they pertain to Specs: KW harvests. Stand is within LKW block 117. Defer treatment to the 2018 plan-of-work, target plant year is 2021. Other Stand is within LKW block 117 - 2018 POW - target plant year 2021. Old 1937 hand planting. Stand is within the Cranberry Gas Storage Field; pipelines, wells and service roads are within the area. Comments: Following harvest trench and plant jack pine for KW habitat. <u>Next</u> Steps: Proposed 10/01/2017 Start Date: 73009086-Cut 7.9 42110 - Planted 171-200 42120 - Planted 86 High 59 Harvest Clearcut with Cmpt. Review Density Red Pine Reserves Jack Pine Proposal Pole Prescription Clear cut with reserves followed by planting jack pine for KW habitat. Leave scattered red pine. Leave two to three trees per acre favoring red Specs: pine of average diameter and greater, leave trees should be left individually and in small groups. Follow retention guidelines as they pertain to KW harvests. Stand is within LKW block 117. Defer treatment to the 2018 plan-of-work, target plant year is 2021. Stand is within LKW block 117 - 2018 POW - target plant year 2021. Stand is within the Cranberry Gas Storage Field; pipelines, wells and Other_ service roads are within the area. Planted in 1958, never been thinned yet. Small diameter and short. Comments: Next Following harvest trench and plant jack pine for KW habitat. Steps: Proposed Start Date: 10/01/2017 87 73009087-Cut 12.0 4123 - Red Oak High 88 111-140 Harvest Single Tree 4123 - Red Oak Cmpt. Review Density Selection Proposal Pole Prescription Selection harvest reduce residual BA/AC down to 60 to 80 sq, ft. Do not eliminate any one species. Specs: Age was taken on a 12.6 in red oak, 87 feet total height. Diameters vary in renge. Some 26"+ oak scattered throughout stand. Other Comments: <u>Next</u> Monitor natural regeneration until adequate regeneration is achieved. A mix of mixed oak and red maple regeneration is acceptable. Steps: Proposed Start Date: 10/01/2013 89 73009089 JF 10.3 42110 - Planted 73 141-170 Shelter Wood 3302 - Low Density Cmpt. Review High Harvest Red Pine with Reserves Conifer Trees Proposal B-Cut Density Log Prescription Create and maintain as fuelbreak stand. Shelterwood with reserves 2" spec. Leave 50 BA/AC of wind firm red pine. Require chip harvest. Specs: Other Stand is within LKW block 117 - 2018 POW - target plant year 2021. Old 1937 hand planting. Rows are indistinguishable; jack pine is on decline. Comments: Stand is within the Cranberry Gas Storage Field; pipelines, wells and service roads are within the area. Following harvest create and maintain as fuel break stand. <u>Next</u> Steps: Proposed [Variable] Start Date: 10/01/2013

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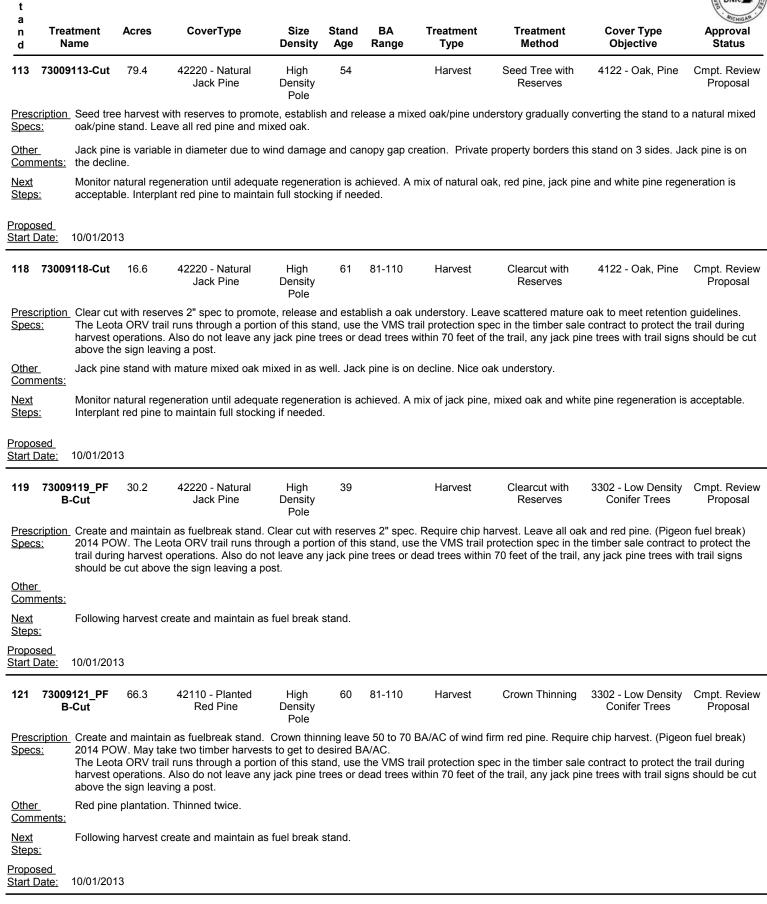
| S t | | | Glady | vin Mgt. Unit | Tabl | | | ents Prescri ting Factor | bed | Compartment: 009 Year of Entry 2014 | DNR DNR |
|--|---------------|-----------------------|---|--|--------------------------------|-----------------------|--------------------------|--------------------------------------|----------------------------|--|--------------------------|
| a n d | Treat Nai | | Acres | CoverType | Size Density | Stand Age | BA Range | Treatment Type | Treatment Method | Cover Type Objective | Approval Status |
| 89 | | 89_KW Sut | 18.3 | 42110 - Planted Red Pine | High Density Log | 73 | 141-170 | Harvest | Clearcut with Reserves | 42120 - Planted Jack Pine | Cmpt. Reviev Proposal |
| Presci Specs | <u>.</u> | pine of av | /erage diar | | eave trees sho | ould be | left individu | ally and in smal | l groups. Follow ret | to three trees per acre rention guidelines as th s 2021. | |
| <u>Other</u> Comm | | | | block 117 - 2018 P Cranberry Gas Stora | | | | | | listinguishable; jack pin | e is on decline |
| <u>Vext</u> Steps: | | Following | harvest tre | ench and plant jack | pine for KW ł | abitat. | | | | | |
| ropos tart D | | 0/01/201 | 7 | | | | | | | | |
| 90 | 730090 | 990-Cut | 39.1 | 42110 - Planted Red Pine | High Density Log | 74 | 81-110 | Harvest | Shelter Wood with Reserves | 42221 - Natural Jack Pine, Mixed Deciduous | Cmpt. Revie Proposal |
| Presci Specs | | Shelterwo 115. 201 | | 30 to 40 BA/AC of re | ed pine. Mana | age for a | a mix of na | tural regeneratio | n of mixed oak and | jack pine. Stand is wit | hin LKW block |
| Other Comm lext Steps: Copos Cart D | <u>nents:</u> | Oak unde Monitor n | erstory just atural rege gen fails to | starting to come in. | Stand is with ate regenerat | in the C tion is a | ranberry G chieved. A | as Storage Field mix of jack pine | d; pipelines, wells a | cut. Red pine residual i nd service roads are w ion is acceptable. Plan | ithin the area. |
| 92 | | 92_KW Sut | 226.6 | 42220 - Natural Jack Pine | High Density Pole | 63 | 51-80 | Harvest | Clearcut with Reserves | 42220 - Natural Jack Pine | Cmpt. Revie Proposal |
| resci pecs | <u>3:</u> | KW harve regenerat | ests. Stand tion. (Leave | is within LKW block | < 114. Ž2014 F | POW. S | ale specs i | need to include s | specs that ensure th | etention guidelines as t ne best possible chanc fails to produce suitabl | e for natural |
| Other Comm | | | | block 114. Jack pir age Field; pipelines, | | | | | high amounts of re | egeneration. Stand is w | ithin the |
| lext iteps: | | | atural rege r would be | | late regenerat | tion is a | chieved. P | lant jack pine if r | natural regen fails to | o produce suitable KW | habitat. Targe |
| opos art D | | 0/01/201 | 3 | | | | | | | | |
| 92 | 730090 B-0 | 92_MF Cut | 54.5 | 42220 - Natural Jack Pine | High Density Pole | 63 | 51-80 | Harvest | Seed Tree with Reserves | 3302 - Low Density Conifer Trees | Cmpt. Revie Proposal |
| Presci Specs | | | | as fuelbreak stand be on the 2018 PO | | th rese | rves 2" spe | c all jack pine. L | eave all red pine a | nd oak. Require chip ha | arvest. Fuel |
| 1 | _ | | | block 114. Jack pir age Field; pipelines, | • | | - | • • | high amounts of re | egeneration. Stand is w | ithin the |
| | | | hanvoet or | eate and maintain a | s fuel break s | stand. | | | | | |
| Other Comm Jext Steps: | | Following | naivest ci | | | | | | | | |

| S t | | | Glad | win Mgt. Unit | Tabl | | | ents Prescril ting Factor | bed | Compartment: 009 Year of Entry 2014 | DNR DNR |
|---------------------------|---------------------|--------------------------------------|---|--|--|------------------------------|--|--|---|---|---|
| a n d | | ment me | Acres | CoverType | Size Density | Stand Age | BA Range | Treatment Type | Treatment Method | Cover Type Objective | Approval Status |
| 93 | | 93_OP- ut | 15.0 | 4122 - Oak, Pine | Medium Density Pole | 90 | 51-80 | Harvest | Clearcut with Reserves | 42111 - Planted Red Pine, Mixed Deciduous | Cmpt. Review Proposal |
| Pres Spec | | Clear cut | with reser | ves followed by inter | planting to re | d pine. | FTP # C73 | 3-869. | | | |
| <u>Othe</u> <u>Com</u> | <u>r</u> ments: | | part of solo both poor. | d timber sale, under o | contract. Otte | r Pines; | 73-001-09 | -01. Northern pir | n oak, jack pine mi | x. Oak salvage in 2005 | . Oak and jack |
| <u>Next</u> Step | | Following | ı harvest ir | nterplant red pine. FT | P # C73-869 | has bee | en submitte | ed. | | | |
| Propc Start | | 10/01/200 | 8 | | | | | | | | |
| 94 | | 94_KW Cut | 14.9 | 42110 - Planted Red Pine | High Density Log | 77 | 141-170 | Harvest | Clearcut with Reserves | 42120 - Planted Jack Pine | Cmpt. Review Proposal |
| Pres Spec | | pine of a | verage dia | | ave trees sho | uld be l | left individu | ally and in small | groups. Follow ret | to three trees per acre ention guidelines as the s 2021. | |
| <u>Othe</u> Com | <u>r</u> ments: | | | / block 117 - 2018 P Cranberry Gas Storag | | | | | | listinguishable; jack pin | e is on decline. |
| <u>Next</u> Step | | Following | ı harvest tr | ench and plant jack p | pine for KW h | abitat. | | | | | |
| Propo Start | | 10/01/201 | 7 | | | | | | | | |
| 94 | | 94_OP- ut | 30.6 | 42110 - Planted Red Pine | High Density Log | 77 | 141-170 | Harvest | Crown Thinning | 42110 - Planted Red Pine | Cmpt. Review Proposal |
| Pres Spec | | Stand is BA/AC. | part of solo | timber sale, under c | contract. Otte | r Pines; | 73-001-09 | -01. Removing a | all jack pine and red | ducing residual red pine | e down to 72 |
| <u>Othe</u> Com | <u>er</u> ments: | hand plai | | s are indistinguishabl | | | | | | oth gradually and in ste ge Field; pipelines, wel | |
| <u>Next</u> Step | | | | | | | | | | | |
| Propo Start | | 10/01/200 | 8 | | | | | | | | |
| 95 | 73009 |)95-Cut | 113.9 | 42220 - Natural Jack Pine | High Density Pole | 65 | 51-80 | Harvest | Clearcut with Reserves | 42121 - Planted Jack Pine, Mixed Deciduous | Cmpt. Review Proposal |
| Pres Spec | | | | ves, 2" spec. To mee should be 5 to 10 BA/ | | | | | | e and scattered northe | rn pin oak. |
| <u>Othe</u> Com | | the age of block 118 size. Sca | of the jack 3 rolls arou ttered (10 | pine consistantley at nd again. Understory BA/AC) of large DBH | 60 to 70 year varies from northern pin | s. Stan O3 to O oak 10 | d is within 1 1/W2/W4. 0 + years c | LKW block 118 t Scattered areas old. The white pir | hat was planted in s in which the white ne understory is de | em correct. Recent cor 1997. This stand will n e pine understory is or v nser along the west en Ils and service roads a | ot hold until very near pole d of stand |
| | | area. | | | | | | | | | |
| <u>Next</u> Step | | Following | | nonitor natural regene red pine. Trench and | | | | | | generaion is acceptable eration after 4 years. | e; jack pine, |

s

Table 3 -- Treatments Prescribed with No Limiting Factor

Compartment: 009 Year of Entry 2014



| S t | | Glady | win Mgt. Unit | Tab | | | ients Prescril iting Factor | bed | Compartment: 009 Year of Entry 2014 | ANTINE CONTRACTOR |
|------------------------------|-------------------------|--------------|---|------------------------------|--------------|-------------|--------------------------------|-------------------------------|---|--------------------------|
| | atment ame | Acres | CoverType | Size Density | Stand Age | BA Range | Treatment Type | Treatment Method | Cover Type Objective | Approval Status |
| 123 73009 | 9123-Cut | 20.1 | 4122 - Oak, Pine | Medium Density Pole | 93 | 51-80 | Harvest | Clearcut with Reserves | 42111 - Planted Red Pine, Mixed Deciduous | Cmpt. Review Proposal |
| Prescription Specs: | L Clear cu | t with reser | ves followed by inter p | lanting to r | ed pine. | Leaving a | ll white pine (mos | stly saps) and 28 g | reen painted oak trees. | |
| <u>Other</u> Comments: | Stand is | part of sold | l timber sale, under co | ontract. Otte | er Pines; | 73-001-09 | 9-01. Northern piı | n oak, jack pine mi | x. Oak salvage in 2005 | |
| <u>Next</u> <u>Steps:</u> | Followin | g harvest in | terplant red pine. | | | | | | | |
| Proposed Start Date: | 10/01/200 |)8 | | | | | | | | |
| 135 73009 | 9135-Cut | 48.1 | 42220 - Natural Jack Pine | High Density Pole | 90 | 81-110 | Harvest | Clearcut with Reserves | 42250 - Pine, Oak | Cmpt. Review Proposal |
| Prescription Specs: | guideline trail duri | es. The Leo | ta ORV trail runs throu | ugh a portio It leave any | on of this | stand, us | e the VMS trail p | rotection spec in th | nd white pine to meet n e timber sale contract t , any jack pine trees wi | o protect the |
| <u>Other</u> Comments: | Nautural | jack pine v | vith scattered mixed of | ak and whit | e pine. | | | | | |
| <u>Next</u> <u>Steps:</u> | | • | eneration until adequation maintain full stocking | • | | chieved. A | mix of jack pine, | , mixed oak and wh | ite pine regeneration is | acceptable. |
| Proposed Start Date: | 10/01/20 ⁻ | 13 | | | | | | | | |
| 146 73009 | 9146-Cut | 15.7 | 42210 - Natural Red Pine | High Density Pole | 70 | 111-140 | Harvest | Shelter Wood with Reserves | 4122 - Oak, Pine | Cmpt. Review Proposal |
| Prescription Specs: | 60 BA/A | | e density varies. Addre | | | | | | educe red pine residual e residual. Gradually co | |
| <u>Other</u> Comments: | | | ip for harvest in 1996 service roads are with | | | The jack p | ine is declining. S | Stand is within the | Cranberry Gas Storage | Field; |
| <u>Next</u> <u>Steps:</u> | | | eneration until adequat g if needed. | te regenera | ition is ad | chieved. A | mix of natural oa | ak/pine regeneratio | n is acceptable. Interpl | ant red pine to |
| Proposed Start Date: | 10/01/20 ⁻ | 13 | | | | | | | | |
| 147 73009 | 9147-Cut | 108.6 | 42290 - Natural Mixed Pine | High Density Log | 76 g | 141-170 | Harvest | Seed Tree with Reserves | 4122 - Oak, Pine | Cmpt. Review Proposal |
| Prescription Specs: | stand. M | ark 10 to 40 | | leave and | leave all | l red pine | and white pine 4" | inches DBH and le | stand to a natural mixed ess. The residual red pi d white pine. | |
| <u>Other</u> Comments: | | | up for harvest in 1996 ines, wells and service | | | | | specially the jack p | pine. Stand is within the | Cranberry Gas |
| <u>Next</u> <u>Steps:</u> | | | eneration until adequat g if needed. | te regenera | tion is a | chieved. A | mix of natural oa | ak/pine regeneratio | n is acceptable. Interpl | ant red pine to |
| Proposed Start Date: | 10/01/20 ⁻ | 13 | | | | | | | | |

Table 3 - Treatments Prescribed with No Limiting Factor

Compartment: 009 Year of Entry 2014



| S t a | | | | | with | No Limit | ting Factor | | Year of Entry 2014 | DNR DNR |
|----------------------------------|-------------------|------------|-------------------------------------|-------------------------|--------------|-------------|-------------------|----------------------------|---|--------------------------|
| | Treatment Name | Acres | CoverType | Size Density | Stand Age | BA Range | Treatment Type | Treatment Method | Cover Type Objective | Approval Status |
| 148 73 | 3009148-Cut | 39.5 | 42210 - Natural Red Pine | High Density Pole | 74 | 141-170 | Harvest | Shelter Wood with Reserves | 4122 - Oak, Pine | Cmpt. Review Proposal |
| <u>Prescrip</u> <u>Specs:</u> | 60 BA/A | | e density varies. Addr | | | | | | duce red pine residual residual. Gradually co | |
| <u>Other</u> <u>Comme</u> i | nts: The sout | hern 1/3 h | • | I, and white | | | | | rea is heavier to red pi ⁻ ield; pipelines, wells a | |
| <u>Next</u> <u>Steps:</u> | | | eneration until adequang if needed. | ite regenera | ition is a | chieved. A | mix of natural oa | ak/pine regeneratior | n is acceptable. Interpla | ant red pine to |
| Proposed Start Date | | 3 | | | | | | | | |

| 149 73009 | 9 149-Cut 15.9 | 42110 - Planted Red Pine | High Density Log | 75 | 141-170 | Harvest | Shelter Wood with Reserves | 4122 - Oak, Pine | Cmpt. Review Proposal |
|------------------------------|---|---|---------------------|--------|----------------|------------------|----------------------------|------------------------|--------------------------|
| Prescription Specs: | residual down to 5 | ease and establish a io BA/AC. Red pine do ope leading down to th | ensity varies, in | some | e places not r | nuch red pine v | vill need marking to | hit the desired residu | • |
| <u>Other</u> Comments: | | y level, but starts to sl prage Field; pipelines, | | | | | | he east. Stand is with | in the |
| <u>Next</u> <u>Steps:</u> | Monitor natural re maintain full stock | generation until adequing if needed. | late regeneratio | n is a | chieved. A m | ix of natural oa | k/pine regeneration | is acceptable. Interpl | ant red pine to |
| Proposed Start Date: | 10/01/2013 | | | | | | | | |
| | Treatment Proposed: 176 | 2.4 | | | | | | | |

| S t | | Gladwi | n Mgt. Unit | Table 4 | | atments imiting | s Prescribed Factor | Compartment: 009 Year of Entry 2014 | DE NATURA EN LOURA | |
|-----------------------------|---------------------------------|------------|-------------|-----------------|--------------|--------------------|------------------------|--|-------------------------|--------------------|
| a n d | Treatment Name | Acres | CoverType | Size Density | Stand Age | BA Range | Treatment Type | Treatment Method | Cover Type Objective | Approval Status |
| | | | #Error | | | | | | | |
| Presc Specs | ription s: | | | | | | | | | |
| <u>Other</u> Comn | | | | | | | | | | |
| <u>Next</u> <u>Steps</u> | <u>:</u> | | | | | | | | | |
| <u>Propos</u> Start D | | | | | | | | | | |
| | ng Factor and N ment Reason | <u>lo_</u> | | | | | | | | |
| Ac | Total Treatme creage Propose | - | | | | | | | | |

| | | | | | | eatments imiting Facto | | Year of Entry: 2014 | DP NATURAL PLANE |
|---------------------------------------|---------------------------|--|---------------------------------|--------------|-------------|---------------------------|---------------------------|---|--------------------------|
| Treatment Name | Acres | CoverType | Size Density | Stand Age | BA Range | Treatment Type | Treatment Method | Cover Type Objective | Approval Status |
| 73010274-Cut | 26.5 | 42260 - Natural Pine, Mixed Deciduous | High Density Log | 105 9 | | Harvest | Clearcut with Reserves | 42110 - Planted Red Pine | Cmpt. Review Proposal |
| Prescription The sta Specs: | nd is to be | harvested as a 2" spe | ec final harve | st. The | retention s | hould be focused | d along the snowmo | obile trail. | |
| <u>Other</u> <u>Comments:</u> | | | | | | | | | |
| <u>Next</u> After th <u>Steps:</u> | e harvest re | eplant the stand to ree | d pine, expan | d the un | planted are | ea around the Le | ota Weather Statio | n. | |
| Proposed Start Date: 10/01/2 | 009 | | | | | | | | |
| 73010290-Cut | 17.1 | 42110 - Planted Red Pine | High Density Pole | 56 | | Harvest | Systematic Thinning | 42110 - Planted Red Pine | Cmpt. Review Proposal |
| Prescription The sta | nd needs to | o be thinned by a sys | tematic thinni | ing indivi | dual tree r | narking taking th | e residual BA down | n to 110. | |
| Other Comments: | | | | | | | | | |
| <u>Next</u> <u>Steps:</u> | | | | | | | | | |
| Proposed Start Date: 10/01/2 | 009 | | | | | | | | |
| 73010295-Cut | 28.0 | 4122 - Oak, Pine | High Density Pole | 83 | | Harvest | Clearcut with Reserves | 4129 - Mixed Oak | Cmpt. Review Proposal |
| | | be harvested as a 2" s ald be focused along | | | ne harvest | should retain all | red and white pine | as well as marked oak | for retention. |
| <u>Other</u> Comments: | | | | | | | | | |
| <u>Next</u> After th <u>Steps:</u> | e stand is h | narvested interplant w | ith red pine. | | | | | | |
| Proposed Start Date: 10/01/2 | 009 | | | | | | | | |
| 73010296-Cut | 39.4 | 42260 - Natural Pine, Mixed Deciduous | High Density Pole | 68 | | Harvest | Clearcut with Reserves | 42111 - Planted Red Pine, Mixed Deciduous | Cmpt. Review Proposal |
| Prescription The sta Specs: should | nd is to be be concent | harvested as a 2" spe rated along the snow | ec final harve mobile trail. | st. The | retention s | hould be a mixtu | re of individually m | ark oak and pine. The | retention |
| <u>Other</u> <u>Comments:</u> | | | | | | | | | |
| <u>Next</u> After th <u>Steps:</u> | e stand is h | narvested plant to red | pine. | | | | | | |
| Proposed Start Date: 10/01/2 | 000 | | | | | | | | |

<u>Start Date:</u> 10/01/2009

OF NATURA

Out of YOE -- Treatments Prescribed with No Limiting Factor

| | tment ame | Acres | CoverType | Size Density | Stand Age | BA Range | Treatment Type | Treatment Method | Cover Type Objective | Approval Status |
|----------------------------------|--------------|-------------|--|-------------------------|--------------|--------------|-------------------|---------------------------|---|--------------------------|
| 73010 | 299-Cut | 15.5 | 4122 - Oak, Pine | High Density Log | 105 9 | | Harvest | Clearcut with Reserves | 42111 - Planted Red Pine, Mixed Deciduous | Cmpt. Reviev Proposal |
| Prescription Specs: | The star | id is to be | harvested to 2" DBH | but do not cu | it any rec | d or white p | oine. Focus any | addition retention to | o the area along the s | nowmobile trail. |
| <u>Other</u> <u>Comments:</u> | | | | | | | | | | |
| <u>Next</u> Steps: | After ha | vest interp | plant red pine this will | lead to a mix | ked oak/p | oine stand. | | | | |
| Proposed Start Date: | 10/01/20 | 09 | | | | | | | | |
| 73010 | 308-Cut | 21.7 | 42211 - Natural Red Pine, Mixed Deciduous | High Density Pole | 73 | | Harvest | Clearcut with Reserves | 42110 - Planted Red Pine | Cmpt. Reviev Proposal |
| Prescription Specs: | | | final harvested to 2" I Id be marked along th | | | | | | or visual consideratio | n. In addition |
| <u>Other</u> Comments: | | | | | | | | | | |
| <u>Next</u> Steps: | After ha | vest repla | nt the stand to red pir | ne. | | | | | | |
| Proposed Start Date: | 10/01/20 | 09 | | | | | | | | |
| 73010 | 310-Cut | 6.8 | 42211 - Natural Red Pine, Mixed Deciduous | High Density Pole | 73 | | Harvest | Clearcut with Reserves | 42110 - Planted Red Pine | Cmpt. Review Proposal |
| Prescription Specs: | Harvest | the stand | as a 2" spec final har | vest. The rete | ention sh | ould be pla | aced to address | visual concerns. | | |
| <u>Other</u> Comments: | | | | | | | | | | |
| <u>Next</u> Steps: | After the | harvest p | lant the stand to red p | oine. | | | | | | |
| Proposed Start Date: | 10/01/20 | 09 | | | | | | | | |
| 73010 | 312-Cut | 34.7 | 42110 - Planted Red Pine | High Density Log | 73 9 | | Harvest | Systematic Thinning | 42110 - Planted Red Pine | Cmpt. Reviev Proposal |
| Prescription Specs: | | | harvested as a thinni dead oak. Focus the | ng taking the | BA dow | | | centrated the remov | al on damaged trees | |
| <u>Other</u> Comments: | | | | | | | | | | |
| <u>Next</u> Steps: | | | | | | | | | | |
| Proposed Start Data: | 10/01/20 | 00 | | | | | | | | |

Start Date: 10/01/2009

| | | | | | | | eatments imiting Factor | | Year of Entry: 2014 | DNR DNR |
|----------------------------------|---------------|----------------------------|--|-------------------------|--------------|-------------|----------------------------|---------------------------|------------------------------------|--------------------------|
| | atment ame | Acres | CoverType | Size Density | Stand Age | BA Range | Treatment Type | Treatment Method | Cover Type Objective | Approval Status |
| 73010 |)314-Cut | 9.2 | 42140 - Planted Mixed Pine | High Density Pole | 73 | | Harvest | Clearcut with Reserves | 42110 - Planted Red Pine | Cmpt. Review Proposal |
| Prescription Specs: | | id should I and for ret | | nd to 2" DB | H. The s | stand shou | ld have red pine ar | nd oak marked to | o met retention or leave | the SE corner |
| <u>Other</u> <u>Comments:</u> | | | | | | | | | | |
| <u>Next</u> <u>Steps:</u> | After the | stand is h | arvested replant the s | tand to red | pine. | | | | | |
| Proposed Start Date: | 10/01/20 | 09 | | | | | | | | |
| 73010 |)323-Cut | 160.2 | 42220 - Natural Jack Pine | High Density Pole | 63 | | Harvest | Clearcut with Reserves | 42120 - Planted Jack Pine | Cmpt. Review Proposal |
| Prescription Specs: | | | established KW Block uld be approximatly 33 | | | | | | in strip going from the | southwest to |
| <u>Other</u> <u>Comments:</u> | | | | | | | | | | |
| <u>Next</u> <u>Steps:</u> | After the | harvest tr | ench and replant to jac | ck pine. | | | | | | |
| Proposed Start Date: | 10/01/20 | 09 | | | | | | | | |
| 73010 |)324-Cut | 34.3 | 42220 - Natural Jack Pine | High Density Pole | 59 | | Harvest | Clearcut with Reserves | 42120 - Planted Jack Pine | Cmpt. Review Proposal |
| Prescription Specs: | | | established KW Block t to northeast going thr | | | | | | ne stand should be left i wide. | n strip going |
| <u>Other</u> Comments: | | | | | | | | | | |
| <u>Next</u> <u>Steps:</u> | After the | harvest tr | ench and plant jack pi | ne. | | | | | | |
| Proposed Start Date: | 10/01/20 | 09 | | | | | | | | |
| 73010 |)325-Cut | 86.7 | 42221 - Natural Jack Pine, Mixed Deciduous | High Density Pole | 59 | | Harvest | Clearcut with Reserves | 42120 - Planted Jack Pine | Cmpt. Review Proposal |
| Prescription Specs: | | | established KW Block t to northeast going thr | | | | | | ne stand should be left i wide. | n strip going |
| <u>Other</u> Comments: | | | | | | | | | | |
| <u>Next</u> <u>Steps:</u> | After the | harvest tr | ench and plant jack pi | ne | | | | | | |
| Proposed Start Data: | 10/01/20 | na | | | | | | | | |

Start Date: 10/01/2009

| | | | | | | | eatments imiting Facto | | Year of Entry: 2014 | AND |
|----------------------------------|----------------------|--------------|---|-------------------------|--------------|---------------|---------------------------|---------------------------|------------------------------|---|
| | tment ime | Acres | CoverType | Size Density | Stand Age | BA Range | Treatment Type | Treatment Method | Cover Type Objective | Approval Status |
| 73010 | 334-Cut | 7.3 | 42121 - Planted Jack Pine, Mixed Deciduous | High Density Pole | 72 | | Harvest | Clearcut with Reserves | 42120 - Planted Jack Pine | Cmpt. Review Proposal |
| Prescription Specs: | The stan | d is to be l | harvested as a 2" Spec | final harve | st. | | | | | |
| <u>Other</u> Comments: | | | | | | | | | | |
| <u>Next</u> <u>Steps:</u> | After the | harvest re | eplant the stand to jack | pine. | | | | | | |
| Proposed Start Date: | 10/01/20 | 06 | | | | | | | | |
| 73010 | 336-Cut | 32.5 | 4122 - Oak, Pine | High Density Log | 94 | | Harvest | Clearcut with Reserves | 4121 - Oak, Aspen | Cmpt. Review Proposal |
| Prescription Specs: | Harvest retention | | as a 2" spec, except for | r oak which | is to be | cut to 4" D | BH and white pi | ine to be cut to 6" D | BH. In addition mark | some trees for |
| <u>Other</u> <u>Comments:</u> | | | | | | | | | | |
| <u>Next</u> Steps: | The stan | d is expec | ted to regenerate to a | mixture of a | spen, oa | ak, maple, a | and jack pine. | | | |
| Proposed Start Date: | 10/01/20 | 06 | | | | | | | | |
| 73010 | 338-Cut | 86.7 | 42290 - Natural Mixed Pine | High Density Pole | 74 | | Harvest | Clearcut with Reserves | 42120 - Planted Jack Pine | Cmpt. Review Proposal |
| Prescription Specs: | | | established KW Block. to northeast going three | | | | | | | n strip going |
| <u>Other</u> <u>Comments:</u> | | | | | | | | | | |
| <u>Next</u> <u>Steps:</u> | After the | harvest tro | ench and plant jack pin | e for KW. | | | | | | |
| Proposed Start Date: | 10/01/20 | 09 | | | | | | | | |
| 73010 | 344-Cut | 22.8 | 4125 - Black, N. Pin Oak | High Density Pole | 96 | | Harvest | Clearcut with Reserves | 4121 - Oak, Aspen | Cmpt. Review Proposal |
| Prescription Specs: | Harvest | the stand a | as a 2" spec final harve | st, except t | ne oak v | which is to b | pe cut to 4" DBH | I. In addition, do no | t harvest any white an | d red pine. |
| <u>Other</u> <u>Comments:</u> | | | | | | | | | | |
| <u>Next</u> <u>Steps:</u> | The stan | d is expec | ted to regenerate to a | nixture of o | ak and a | aspen. | | | | |
| Proposed Start Date: | 10/01/20 | 06 | | | | | | | | |

Year of Entry: 2014

Out of YOE -- Treatments Prescribed with No Limiting Factor

| Treatment Name | Acres | CoverType | Size Density | Stand Age | BA Range | Treatment Type | Treatment Method | Cover Type Objective | Approval Status |
|-----------------------|-------|------------------------------|-------------------------|--------------|-------------|-------------------|---------------------------|------------------------------|--|
| 73010420-Cut | 1.5 | 42220 - Natural Jack Pine | High Density Pole | 66 | | Harvest | Clearcut with Reserves | 42120 - Planted Jack Pine | Cmpt. Review Proposal - Incomplete |

<u>Prescription</u> The stand should be harvested as a 2" spec final harvest. The retention should be kept in a small patch. <u>Specs:</u>

<u>Other</u>

Comments:

Next The stand is to be replanted to jack pine after it is harvested. Steps:

Proposed Start Date: 10/01/2012

> Total Treatment Acreage Proposed: 630.9

| Gladwi | n Mgt. Unit | | 5 – Fo | prested Sta | nds Compartment: 009 Year of Entry: 2014 |
|------------------------------------|---|--|---|-------------------------------|---|
| Level 4 Cover Type | Size Density | Acres | Stand Age | BA Range | General Comments: |
| 4130 - Aspen | High Density Sapling | 33.3 | 4 | | Clear cut 2007. Aspen regen with red maple and oak mixed in. |
| 4126 - White, Black, N. Pin Oak | High Density Pole | 5.8 | 92 | 81-110 | Mixed oak stand with aspen and red pmaple. Oak diameters very. |
| 42110 - Planted Red Pine | High Density Pole | 14.8 | 61 | 111-140 | Red pine stand thinned in 1996. |
| 4130 - Aspen | High Density Sapling | 26.2 | 26 | | Clear cut 1986. Aspen regen with oak through out. |
| 42220 - Natural Jack Pine | High Density Sapling | 38.0 | 16 | | Natural jack pine regen with scattered oak. |
| 42110 - Planted Red Pine | High Density Pole | 7.3 | 78 | 51-80 | Planted red pine. Has been thinned heavy allowing jack pine and oak to become established. Stand acts as buffer and corridor between Cranberry Creek/floodplain and KW cut to the south. |
| 42120 - Planted Jack Pine | High Density Sapling | 154.3 | 5 | | Clear cut and planted to jack pine in 2007. KW habitat planted in opposing weave pattern. LKW block 116. |
| 42110 - Planted Red Pine | High Density Pole | 5.7 | 52 | 200+ | Planted red pine. Stand is within the Cranberry Gas Storage Field; pipelines, wells and service roads are within the area. |
| 42290 - Natural Mixed Pine | High Density Pole | 31.4 | 98 | 51-80 | Mixed pine stand with some oak. Stand is within the Cranberry Gas Storage Field; pipelines, wells and service roads are within the area. |
| 42200 - Natural White Pine | High Density Pole | 25.7 | 90 | 51-80 | White pine dominated stand with scattered oak and aspen. White pine is most prevelant at all stand layers. Pockets of stand are dominated by red maple. |
| 42120 - Planted Jack Pine | High Density Sapling | 64.8 | 24 | | Clear cut and planted to jack pine in 1988. KW habitat planted in opposing weave pattern. LKW block 118 |
| 42120 - Planted Jack Pine | High Density Sapling | 8.9 | 15 | | Clear cut and planted to jack pine in 1997. KW habitat planted in opposing weave pattern. LKW block 118 |
| 42220 - Natural Jack Pine | High Density Pole | 27.2 | 15 | | Jack pine dominated stand with scattered red pine and mixed oak. |
| 42110 - Planted Red Pine | High Density Log | 40.1 | 68 | 51-80 | Red pine stand with natural jack pine and oak in the understory. Jack pine and oak were harvested in 1996. |
| 42220 - Natural Jack Pine | High Density Pole | 25.9 | 98 | | Old jack pine stand with oak. Stand is within the Cranberry Gas Storage Field; pipelines, wells and service roads are within the area. |
| | Level 4 Cover Type 4130 - Aspen 4126 - White, Black, N. Pin Oak 42110 - Planted Red Pine 42220 - Natural Jack Pine 42220 - Natural Jack Pine 42110 - Planted Red Pine 42290 - Natural Mixed Pine 42200 - Natural Mixed Pine 42200 - Natural Mixed Pine 42220 - Natural Mixed Pine 42220 - Natural Jack Pine | Cover TypeDensity4130 - AspenHigh Density Sapling4126 - White, Black, N.High Density Pole42110 - Planted RedHigh Density Pole4130 - AspenHigh Density Sapling42220 - Natural JackHigh Density Pole42110 - Planted Red PineHigh Density Sapling42120 - Planted Jack PineHigh Density Pole42110 - Planted Red PineHigh Density Pole42120 - Natural Mixed PineHigh Density Pole42200 - Natural Mixed PineHigh Density Pole42200 - Natural Mixed PineHigh Density Pole42120 - Planted Jack PineHigh Density Pole42220 - Natural Mixed PineHigh Density Pole42120 - Planted Jack PineHigh Density Sapling42120 - Planted Jack PineHigh Density Sapling42120 - Planted Jack PineHigh Density Sapling42120 - Planted Jack PineHigh Density Sapling42120 - Planted Jack PineHigh Density Sapling42220 - Natural Jack PineHigh Density Sapling42220 - Natural Jack PineHigh Density Pole42220 - Natural Jack PineHigh Density Pole42220 - Natural Jack PineHigh Density Pole | Level 4 Cover TypeSize DensityAcres4130 - AspenHigh Density Sapling33.34126 - White, Black, N. Pin OakHigh Density Pole5.842110 - Planted Red PineHigh Density Sapling14.84130 - AspenHigh Density Sapling26.242220 - Natural Jack PineHigh Density Sapling38.042110 - Planted Red PineHigh Density Pole7.342120 - Planted Jack PineHigh Density Sapling5.742100 - Natural Mixed PineHigh Density Pole5.742200 - Natural Mixed PineHigh Density Pole31.442120 - Planted Jack PineHigh Density Pole31.442120 - Planted Jack PineHigh Density Pole35.742220 - Natural Mixed PineHigh Density Sapling64.842120 - Planted Jack PineHigh Density Sapling8.942120 - Planted Jack PineHigh Density Sapling8.942120 - Planted Jack PineHigh Density Sapling8.942120 - Planted Jack PineHigh Density Sapling27.242110 - Planted Mede PineHigh Density Sapling27.242110 - Planted Red PineHigh Density Sapling27.242110 - Planted Red PineHigh Density Sapling27.242120 - Natural Jack PineHigh Density Sapling27.242110 - Planted Red PineHigh Density Sapling27.242110 - Planted Red PineHigh Density <td>Level 4 Cover TypeSize DensityAcresStand Age4130 - AspenHigh Density33.344130 - AspenHigh Density5.8924126 - White, Black, N. Pin OakHigh Density5.89242110 - Planted RedHigh Density26.2264130 - AspenHigh Density26.22642220 - Natural Jack PineHigh Density38.01642110 - Planted Red PineHigh Density7.37842120 - Planted Jack PineHigh Density5.75242100 - Planted Red PineHigh Density5.75242200 - Natural Mixed PineHigh Density31.49842200 - Natural White PineHigh Density Pole25.79042120 - Planted Jack PineHigh Density Pole25.79042120 - Planted Jack PineHigh Density Sapling8.91542120 - Planted Jack PineHigh Density Sapling24.2202442120 - Planted Jack PineHigh Density Sapling25.79042120 - Planted Jack PineHigh Density Sapling27.21542220 - Natural Jack PineHigh Density Sapling27.21542110 - Planted Red PineHigh Density Sapling27.21542220 - Natural Jack PineHigh Density Sapling27.21542220 - Natural Jack PineHigh Density Sapling25.998</br></td> <td>Level 4 Cover Type Size Density Acres Stand Age BA Range 4130 - Aspen High Density Sapling 33.3 4 4126 - White, Black, N. Pin Oak High Density Pole 5.8 92 81-110 42110 - Planted Red Pine High Density Pole 14.8 61 111-140 4130 - Aspen High Density Pole 26.2 26 </td> | Level 4 Cover TypeSize | Level 4 Cover Type Size Density Acres Stand Age BA Range 4130 - Aspen High Density Sapling 33.3 4 4126 - White, Black, N. Pin Oak High Density Pole 5.8 92 81-110 42110 - Planted Red Pine High Density Pole 14.8 61 111-140 4130 - Aspen High Density Pole 26.2 26 |

| S t | Gladwi | n Mgt. Unit | 5 – Forested Stands | | | Inds Compartment: 009 Year of Entry: 2014 |
|-------------|--|-------------------------|---------------------|--------------|-------------|---|
| a n d | Level 4 Cover Type | Size Density | Acres | Stand Age | BA Range | General Comments: |
| 22 | 42220 - Natural Jack Pine | High Density Pole | 16.3 | 50 | | Stand is within LKW block 115. Jack pine stand with scattered red pine, white pine and oak. Red pine is found in northern portion of stand. Stand is within the Cranberry Gas Storage Field; pipelines, wells and service roads are within the area. |
| 23 | 42120 - Planted Jack Pine | High Density Sapling | 229.8 | 13 | | Clear cut and planted to jack pine in 1997. KW habitat planted in opposing weave pattern. LKW block 118. |
| 24 | 42110 - Planted Red Pine | High Density Log | 19.7 | 73 | 51-80 | Planted red pine stand. Oak and jack pine are rgenerating in the understory. |
| 25 | 42120 - Planted Jack Pine | High Density Sapling | 218.5 | 26 | | Clear cut and planted to jack pine in 1986. KW habitat planted in opposing weave pattern. LKW block 115. |
| 26 | 42120 - Planted Jack Pine | High Density Sapling | 96.8 | 5 | | Clear cut and planted to jack pine in 2007. KW habitat planted in opposing weave pattern. LKW block 116. |
| 27 | 4134 - Aspen, Spruce/Fir | High Density Pole | 31.3 | 84 | 1-50 | Stand is dominated by quaking aspen, red maple and balsam fir. Scattered oak of all size classes. Mostly an upland stand, with pockets of low wet soils. Aspen and balam have reached maturity. Deer browse present through out stand on oak less than 2' ft. Large CWD through out entire stand (aspen/balsam) |
| 30 | 42220 - Natural Jack Pine | High Density Pole | 66.6 | 50 | | Stand is within LKW block 115. Natural mixed pine stand with some oak mixed in. Jack pine age varies from 50 - 67. Most of the jack pine is in the 50 yr age class. Species composition remains comparable through out stand. Stand is within the Cranberry Gas Storage Field; pipelines, wells and service roads are within the area. |
| 31 | 42110 - Planted Red Pine | High Density Pole | 24.6 | 57 | 111-140 | Red pine plantation. First time 3rd row thinned in 2008. All scattered oak was left. |
| 32 | 42220 - Natural Jack Pine | High Density Pole | 82.0 | 49 | | Jack pine dominated stand with a white pine component at all levels. Stand is within LKW block 115. Stand is within the Cranberry Gas Storage Field; pipelines, wells and service roads are within the area. |
| 33 | 42260 - Natural Pine, Mixed Deciduous | High Density Pole | 51.3 | 61 | 1-50 | White pine dominated stand with mixed deciduous scattered throughout stand, mainly located in gaps in the canopy. There are cut stumps present in the areas dominated by maple regeneration. Evidence of a partial harvest are present dating back 10-15 years ago. |
| 34 | 6117 - Lowland Deciduous, Mixed Coniferous | High Density Pole | 10.4 | 55 | | |
| 35 | 4130 - Aspen | High Density Pole | 15.1 | 25 | | Aspen dominated stand with log size pine scattered throughout. Majority of pine is located on west edge of stand along the cranberry creekflooedplain. Some lowland pockets can be found within stand boudary. |

| S t | Gladwi | | 5 – Fo | prested Sta | rnds Compartment: 009 Year of Entry: 2014 | |
|-------------|--|-------------------------|--------|--------------|--|---|
| a n d | Level 4 Cover Type | Size Density | Acres | Stand Age | BA Range | General Comments: |
| 37 | 42120 - Planted Jack Pine | Medium Density | 32.9 | 15 | | Jack pine planted area with oak regeneration throughout. |
| 38 | 42120 - Planted Jack Pine | High Density Sapling | 932.6 | 13 | | Clear cut and planted to jack pine in 1997. KW habitat planted in opposing weave pattern. LKW block 118. |
| 40 | 42220 - Natural Jack Pine | High Density Sapling | 11.0 | 16 | | Stand is within LKW block 115. Clear cut 1996 natural regen. |
| 41 | 42120 - Planted Jack Pine | High Density Sapling | 32.6 | 12 | | Clear cut and planted to jack pine in 2000. Buffer was left along Cranberry Creek. Not planted in oppossing weave pattern. Uncut area at NW corner of stand was left out of sale to protect foundation. |
| 42 | 4199 - Other Mixed Upland Deciduous | Medium Density Pole | 36.3 | 62 | 1-50 | Mixed stand mainly composed of oak and maple. Mainly upland gorund, with lowland areas in the southern portion of stand. Stand has evidence of partial harvest sometime within the past 20 years. Advanced aspen regeneration pockets are present throughout the stand. |
| 44 | 4130 - Aspen | High Density Sapling | 43.3 | 16 | | Stand was harvested in 1996. |
| 45 | 42220 - Natural Jack Pine | High Density Pole | 33.6 | 65 | | Stand is within LKW block 115. Stand is within the Cranberry Gas Storage Field; pipelines, wells and service roads are within the area. |
| 47 | 42110 - Planted Red Pine | High Density Pole | 46.9 | 65 | 111-140 | Stand is within LKW block 115. Good red pine ground. Stand is within the Cranberry Gas Storage Field; pipelines, wells and service roads are within the area. |
| 51 | 42120 - Planted Jack Pine | High Density Sapling | 24.4 | 12 | | Clear cut and planted to jack pine in 2000. Buffer was left along Cranberry Creek. Not planted in oppossing weave pattern. Stand is within LKW block 117. |
| 52 | 42140 - Planted Mixed Pine | High Density Sapling | 70.9 | 22 | | Clear cut and planted to red pine in 1990. A fair amount of natural jack pine and northern pin oak mixed in as well. Stand is within LKW block 117. Inclusion of small pocket of mature timber at north end of stand. Inclusion is a mix of natural red pine, jack pine and northern pin oak. (jp 50%, rp 40%, npo 10%) |
| 53 | 42220 - Natural Jack Pine | High Density Pole | 100.0 | 60 | | Stand is within LKW block 115. Storm damage present in stand. Somewhat variable diameters in the jack pine (3-12 inches). Jack pine dominated stand with scattered oak. Stand is within the Cranberry Gas Storage Field; pipelines, wells and service roads are within the area. |
| 55 | 6119 - Mixed Lowland Deciduous Forest | Medium Density Pole | 26.4 | 78 | | Muskegon River flood plain stand, down over a bank. Seasonally flooded. Wet mucky soils. |
| 57 | 4130 - Aspen | Medium Density Pole | 9.4 | 80 | | |

| S t | Gladwir | n Mgt. Unit | | 5 – Fo | prested Sta | nds Compartment: 009 Year of Entry: 2014 |
|-------------|--|-------------------------|-------|--------------|-------------|---|
| a n d | Level 4 Cover Type | Size Density | Acres | Stand Age | BA Range | General Comments: |
| 58 | 4130 - Aspen | High Density Pole | 17.3 | 25 | | |
| 59 | 42220 - Natural Jack Pine | High Density Pole | 95.8 | 43 | | Stand is within LKW block 115. Stand is within the Cranberry Gas Storage Field; pipelines, wells and service roads are within the area. |
| 61 | 42110 - Planted Red Pine | High Density Pole | 37.2 | 77 | 111-140 | Stand is within LKW block 117 - 2018 POW - target plant year 2021. Old 1937 hand planting. Rows are indistinguishable; jack pine is on decline. Stand is within the Cranberry Gas Storage Field; pipelines, wells and service roads are within the area. |
| 62 | 4121 - Oak, Aspen | High Density Sapling | 29.7 | 25 | | Mixed aspen-oak stand. |
| 63 | 42220 - Natural Jack Pine | High Density Pole | 4.4 | 45 | 1-50 | Small pocket of jack pine left on back side of private line (house) when LKW block 118 was cut. |
| 64 | 42220 - Natural Jack Pine | High Density Pole | 89.8 | 74 | | Stand is within LKW block 115. Good red pine ground. Natural jack pine stand with oak and red pine present. Stand is within the Cranberry Gas Storage Field; pipelines, wells and service roads are within the area. |
| 65 | 42220 - Natural Jack Pine | High Density Pole | 47.2 | 70 | 81-110 | Stand is within LKW block 117 - 2018 POW - target plant year 2021. Stand is within the Cranberry Gas Storage Field; pipelines, wells and service roads are within the area. Jack pine is mature and at risk of blowdown and/or bud worm. Oak is already in decline. Some nice red pine mixed in mainly in a narrow strip along the north edge of stand. To confirm age I cored two jack pine trees and got 65 - 70 years old. |
| 66 | 4125 - Black, N. Pin Oak | High Density Sapling | 41.4 | 15 | | Mixed oak, aspen, cherry, and pine stand. |
| 67 | 42110 - Planted Red Pine | High Density Log | 46.5 | 75 | 81-110 | Planted red pine stand with scattered oak. Stand gaps have high density of jack pine regeneration. Oak regeneration found throughout. |
| 68 | 42220 - Natural Jack Pine | High Density Pole | 29.4 | 33 | | Stand is within LKW block 115. Stand is within the Cranberry Gas Storage Field; pipelines, wells and service roads are within the area. |
| 69 | 42110 - Planted Red Pine | High Density Pole | 19.0 | 77 | 171-200 | Stand is within LKW block 117 - 2018 POW - target plant year 2021. Old 1937 hand planting. Rows are indistinguishable; jack pine is on decline. Stand is within the Cranberry Gas Storage Field; pipelines, wells and service roads are within the area. |
| 70 | 6117 - Lowland Deciduous, Mixed Coniferous | High Density Log | 3.5 | 75 | | Steep slope leading down to Muskegon River flood plain. Narrow stand between PVT and large KW block, the KW harvest went up to the drop off. |
| 72 | 42110 - Planted Red Pine | High Density Pole | 5.1 | 77 | 141-170 | Old 1938 hand planting. Rows are indistinguishable; jack pine is on decline. Stand is within the Cranberry Gas Storage Field; pipelines, wells and service roads are within the area. |

| S t | Gladwi | Gladwin Mgt. Unit | | | prested Sta | rinds Compartment: 009 Year of Entry: 2014 |
|-------------|--|-------------------------|-------|--------------|-------------|--|
| a n d | Level 4 Cover Type | Size Density | Acres | Stand Age | BA Range | General Comments: |
| 73 | 42120 - Planted Jack Pine | High Density Sapling | 9.5 | 10 | | Stand is within LKW block 117. Clear cut and planted to jack pine in 2000. Not planted in opposing weave pattern. |
| 74 | 42110 - Planted Red Pine | High Density Log | 61.7 | 75 | 51-80 | |
| 75 | 42120 - Planted Jack Pine | High Density Pole | 30.5 | 23 | | Stand is within LKW block 115. Stand is within the Cranberry Gas Storage Field; pipelines, wells and service roads are within the area. |
| 76 | 42110 - Planted Red Pine | High Density Pole | 24.9 | 77 | 111-140 | Old 1938 hand planting. Rows are indistinguishable; jack pine is on decline. Stand is within the Cranberry Gas Storage Field; pipelines, wells and service roads are within the area. Very visable stand, Otter Drive bi-sects stand. Part off stand is a long/skinny arm pniched between KW block 117 and the Muskegon River flood plain with Otter Drive down the middle. |
| 77 | 4122 - Oak, Pine | High Density Pole | 39.7 | 88 | 51-80 | Stand is within LKW block 117 - 2018 POW - target plant year 2021. Stand is within the Cranberry Gas Storage Field; pipelines, wells and service roads are within the area.N. pine oak/ jack pine stand, poor quality oak. jack pine appears to be younger than the oak however, both jack pine and oak are on the delcline on this very well drained site. Not much in the understory J1/O1 at best. |
| 78 | 42110 - Planted Red Pine | High Density Log | 5.7 | 77 | 111-140 | Stand is within LKW block 117 - 2018 POW - target plant year 2021. Old 1937 hand planting. Rows are indistinguishable; jack pine is on decline. Stand is within the Cranberry Gas Storage Field; pipelines, wells and service roads are within the area. All jack pine and marked red pine were removed in 2000. North/south rows were created. At desired BA for red pine sawlogs, high quality red pine. |
| 79 | 4131 - Aspen, Oak | High Density Pole | 59.8 | 23 | | |
| 80 | 4119 - Mixed Northern Hardwoods | High Density Pole | 12.9 | 73 | 81-110 | Mixed deciduous stand with a few scattered red and white pin. A lowland draw runs through the stand with a few cedars present. Low levels of regeneration in the understory. |
| 81 | 42220 - Natural Jack Pine | High Density Pole | 35.0 | 60 | 81-110 | Stand is within LKW block 117 - 2018 POW - target plant year 2021. Almost a pure jack pine stand, not much in the understory O1/J1 at best. Jack pine is OK but at the age of decline and budworm risk. Stand is within the Cranberry Gas Storage Field; pipelines, wells and service roads are within the area. |
| 82 | 42220 - Natural Jack Pine | High Density Pole | 3.7 | 63 | 1-50 | Small narrow strip between PVT and LKW block 118. Stand is the start of the drop off down to the Muskegon River flood plain. |
| 83 | 42120 - Planted Jack Pine | High Density Pole | 5.1 | 62 | 1-50 | Stand is within LKW block 117 - 2018 POW - target plant year 2021. Old 1937 hand planting. Stand is within the Cranberry Gas Storage Field; pipelines, wells and service roads are within the area. |
| 85 | 6128 - Lowland Coniferous, Mixed Deciduous | High Density Pole | 20.3 | 109 | | Muskegon River flood plain stand, down over a bank. Seasonally flooded. Wet mucky soils. |

| S t | Gladwin Mgt. Unit | | | 5 – Fo | orested Sta | nds Compartment: 009 Year of Entry: 2014 |
|-------------|------------------------------|------------------------|-------|--------------|-------------|---|
| a n d | Level 4 Cover Type | Size Density | Acres | Stand Age | BA Range | General Comments: |
| 86 | 42110 - Planted Red Pine | High Density Pole | 7.9 | 59 | 171-200 | Stand is within LKW block 117 - 2018 POW - target plant year 2021. Stand is within the Cranberry Gas Storage Field; pipelines, wells and service roads are within the area. Planted in 1958, never been thinned yet. Small diameter and short. |
| 87 | 4123 - Red Oak | High Density Pole | 12.0 | 88 | 111-140 | Age was taken on a 12.6 in red oak, 87 feet total height. Diameters vary in renge. Some 26"+ oak scattered throughout stand. |
| 88 | 4310 - Pine, Oak Mix | High Density Pole | 36.3 | 75 | 51-80 | |
| 89 | 42110 - Planted Red Pine | High Density Log | 28.6 | 73 | 141-170 | Stand is within LKW block 117 - 2018 POW - target plant year 2021. Old 1937 hand planting. Rows are indistinguishable; jack pine is on decline. Stand is within the Cranberry Gas Storage Field; pipelines, wells and service roads are within the area. |
| 90 | 42110 - Planted Red Pine | High Density Log | 39.1 | 74 | 81-110 | Stand is within LKW block 114. Shelterwood harvest in 2009. All jack pine, oak and marked red pine were cut. Red pine residual is 80 BA/AC. Oak understory just starting to come in. Stand is within the Cranberry Gas Storage Field; pipelines, wells and service roads are within the area. |
| 91 | 6127 - Lowland Pine | High Density Pole | 13.5 | 80 | | Muskegon River flood plain stand, down over a bank. Seasonally flooded. Wet mucky soils. Access issue, only access is across private. |
| 92 | 42220 - Natural Jack Pine | High Density Pole | 281.1 | 63 | 51-80 | Stand is within LKW block 114. Jack pine is broke up in areas, creating stand gaps with high amounts of regeneration. Stand is within the Cranberry Gas Storage Field; pipelines, wells and service roads are within the area. |
| 93 | 4122 - Oak, Pine | Medium Density Pole | 15.0 | 90 | 51-80 | Stand is part of sold timber sale, under contract. Otter Pines; 73- 001-09-01. Northern pin oak, jack pine mix. Oak salvage in 2005. Oak and jack pine are both poor. |
| 94 | 42110 - Planted Red Pine | High Density Log | 45.5 | 77 | 141-170 | Split stand into two treatments. 1/3 of stand (north of Otter Drive) is within LKW block 117 - 2018 POW - target plant year 2021. Old 1937 hand planting. Rows are indistinguishable; jack pine is on decline. Stand is within the Cranberry Gas Storage Field; pipelines, wells and service roads are within the area. |
| | | | | | | South 2/3 of stand is part of sold timber sale, under contract. Otter Pines; 73-001-09-01. In sold contract part of stand, removing all jack pine and reducing residual red pine down to 72 BA/AC. Stand changes as you move south towards the river. The elevation drops as you move towards the river both gradually and in steps. |

| S t | Gladwi | Gladwin Mgt. Unit | | | prested Sta | Ands Compartment: 009 Year of Entry: 2014 |
|-------------|--|-------------------------|-------|--------------|-------------|--|
| a n d | Level 4 Cover Type | Size Density | Acres | Stand Age | BA Range | General Comments: |
| 95 | 42220 - Natural Jack Pine | High Density Pole | 113.9 | 65 | 51-80 | Recentley aquired from Consumers Energy. Past inventory has age of jack pine at 35 to 45, this did not seem correct. Recent core samples has the age of the jack pine consistantley at 60 to 70 years. Stand is within LKW block 118 that was planted in 1997. This stand will not hold until block 118 rolls around again. Understory varies from O3 to O1/W2/W4. Scattered areas in which the white pine understory is or very near pole size. Scattered (10 BA/AC) of large DBH northern pin oak 100 + years old. The white pine understory is denser along the west end of stand (creeping out of the Clam River flood plain). Stand is within the Cranberry Gas Storage Field; pipelines, wells and service roads are within the area. |
| 96 | 6117 - Lowland Deciduous, Mixed Coniferous | High Density Pole | 40.1 | 92 | | Muskegon River flood plain stand, down over a bank. Seasonally flooded. Wet mucky soils. Areas of open water and tag alder. |
| 97 | 4131 - Aspen, Oak | High Density Sapling | 5.0 | 23 | | Aspen habitat cut 1989. Decent regen. |
| 98 | 6119 - Mixed Lowland Deciduous Forest | High Density Pole | 22.4 | 80 | | Muskegon River flood plain stand, down over a bank. Seasonally flooded. Wet mucky soils. |
| 100 | 6139 - Mixed Lowland Forest | High Density Log | 33.7 | 108 | | Stand is down over a bank in the Clam River floodplain. Stand is a mix of pine areas and lowland hardwood areas with tag alder mixed in. Some larger diameter white pine and red pine. |
| 101 | 42110 - Planted Red Pine | High Density Log | 42.6 | 74 | 51-80 | |
| 102 | 6117 - Lowland Deciduous, Mixed Coniferous | Medium Density Pole | 17.2 | 104 | | Muskegon River flood plain stand, down over a bank. Seasonally flooded. Wet mucky soils. Mix of swamp hardwood, small red pine pocket, old oxbows, lowland brush, cedar and balsam. Small red pine pocket is 118 yrs old as per past inventory. |
| 103 | 42200 - Natural White Pine | High Density Pole | 9.6 | 35 | 51-80 | Most of stand is the slope leading down to the Muskegon River flood plain. All upland species however most of the stand is the slope between LKW block 118 and the flood plain. Stand is converting to white pine. |
| 104 | 6119 - Mixed Lowland Deciduous Forest | High Density Log | 8.1 | 80 | | Muskegon River flood plain stand, down over a bank. Seasonally flooded. Wet mucky soils. |
| 105 | 42250 - Pine, Oak | High Density Sapling | 27.5 | 16 | | Clear cut in 1996 all white pine left. Residual white pine is 35 to 40 yrs old, 10 to 20 BA/AC of white pine poles. 1996 harvest has produced a nice mix of natural regen jack pine, oak and white pine. |
| 106 | 42200 - Natural White Pine | High Density Pole | 35.7 | 35 | 51-80 | All but white pine harvested in 1995. 50 to 60 BA/AC of residual white pine in the 6" to 8" DBH class. Harvest has produced a nice mix of natural regen. Nice understory of oak/white pine. Residual white pine poles are 30 to 35 yrs old. |

| S t | Gladwin Mgt. Unit | | | 5 – Fo | prested Sta | Ands Compartment: 009 Year of Entry: 2014 |
|-------------|--|-------------------------|-------|--------------|-------------|---|
| a n d | Level 4 Cover Type | Size Density | Acres | Stand Age | BA Range | General Comments: |
| 107 | 42110 - Planted Red Pine | High Density Log | 71.9 | 78 | 81-110 | Fire scares present in southern portion of stand. All jack pine and oak were removed from stand in 1996. Red pine density is variable. Well established jack pine/oak understory is a direct result of partial harvest in the past. |
| 108 | 6117 - Lowland Deciduous, Mixed Coniferous | Medium Density | 11.3 | 14 | | Muskegon River flood plain, down over a bank, wet mucky soils. Some type of treatment in the past. There is an old dug road road down over the bank into this stand. Possible habitat cut in the past. |
| 110 | 6119 - Mixed Lowland Deciduous Forest | High Density Pole | 24.1 | 75 | | Muskegon River flood plain stand, down over a bank. Seasonally flooded. Wet mucky soils. The Clam River and Muskegon River come together along this stand. Stand is mostly under water today |
| 111 | 42120 - Planted Jack Pine | High Density Sapling | 49.1 | 22 | | Clear cut and planted to jack pine in 1990. Several rows of red pine planted along south edge of stand for visual along adjacent subdivision. |
| 113 | 42220 - Natural Jack Pine | High Density Pole | 79.4 | 54 | | |
| 114 | 42110 - Planted Red Pine | High Density Log | 150.5 | 78 | 81-110 | Nice red pine with large amount of oak in the understory. Deer browse is present. Evidence of fire in southwest portion of stand. All jack pine, oak and marked red pine were cut in 2008. Red pine residual is at 100 BA/AC. Well established oak understory is a direct result of the 2008 partial harvest. Stand is within the Cranberry Gas Storage Field; pipelines, wells and service roads are within the area. |
| 115 | 4119 - Mixed Northern Hardwoods | Medium Density | 22.9 | 16 | | |
| 116 | 42110 - Planted Red Pine | High Density Log | 17.7 | 75 | 111-140 | Partial harvest last year of entry. |
| 117 | 42290 - Natural Mixed Pine | High Density Pole | 10.0 | 75 | 111-140 | Narrow strip of upland timber between steep bank of the Muskegon River flood plain and intensley managed timber to the north. Stand was coded as O6 in the past, most of the oak has died off. Stand has converted to white pine/red pine. Dense W3/W4 understory. Scattered pockets of pole/sawlog red pine, the red pine is spill over planting from red pine stand to the north. Stand varies in species and density. Scattered red pine was planted in 1937. Removed some dead oak under misc. wood permit in 2007. |
| 118 | 42220 - Natural Jack Pine | High Density Pole | 16.6 | 61 | 81-110 | |
| 119 | 42220 - Natural Jack Pine | High Density Pole | 30.2 | 39 | | |
| 120 | 42220 - Natural Jack Pine | High Density Pole | 22.3 | 22 | | |
| 121 | 42110 - Planted Red Pine | High Density Pole | 162.9 | 60 | 81-110 | Red pine plantation. |

| S t | Gladwir | Gladwin Mgt. Unit | | | prested Sta | Ands Compartment: 009 Year of Entry: 2014 |
|-------------|--|-------------------------|-------|--------------|-------------|--|
| a n d | Level 4 Cover Type | Size Density | Acres | Stand Age | BA Range | General Comments: |
| 122 | 6117 - Lowland Deciduous, Mixed Coniferous | High Density Log | 20.1 | 82 | | Muskegon River flood plain stand, down over a bank. Seasonally flooded. Wet mucky soils. Beaver activity. |
| 123 | 4122 - Oak, Pine | Medium Density Pole | 20.1 | 93 | 51-80 | Stand is part of sold timber sale, under contract. Otter Pines; 73- 001-09-01. Northern pin oak, jack pine mix. Oak salvage in 2005. |
| 125 | 6127 - Lowland Pine | High Density Log | 9.8 | 127 | 1-50 | Muskegon River flood plain, down over a bank, wet mucky soils. Some big diameter white pine. Pockets of lowland hardwood, swamp conifer and cedar. Pretty wet stand. |
| 126 | 6128 - Lowland Coniferous, Mixed Deciduous | High Density Log | 20.5 | 87 | | Muskegon River flood plain, down over a bank, wet mucky soils. |
| 127 | 4122 - Oak, Pine | High Density Pole | 31.9 | 90 | 51-80 | Northern pin oak stand converting to white pine. Heavy understory of white pine W3/W5. Any type of treatment in this stand would damage a high % of the white pine understory. Scattered big diameter white pine and red pine. |
| 128 | 6131 - Hemlock, White Pine, Maple, Birch | High Density Pole | 18.2 | 25 | | Winter deer range cut was done in 1987. Appears to have a mix of pole size red maple, spruce, fir, and white pine regeneration. |
| 129 | 42221 - Natural Jack Pine, Mixed Deciduous | Medium Density Pole | 71.3 | 14 | | Mix of natural regen jack pine, mixed oak, white pine with trace amounts of aspen and cherry. Scattered mature jack pine, white pine and mixed oak were left when cut. Stand is within LKW block 113. |
| 130 | 6117 - Lowland Deciduous, Mixed Coniferous | Medium Density Pole | 62.9 | 72 | | Muskegon River flood plain stand, down over a bank. Seasonally flooded. Wet mucky soils. |
| 132 | 6113 - Lowland Maple | High Density Log | 36.6 | 105 | | Muskegon River flood plain stand, down over a bank. Seasonally flooded. Wet mucky soils. |
| 134 | 6119 - Mixed Lowland Deciduous Forest | High Density Pole | 1.0 | 82 | | Muskegon River flood plain, down over a bank, wet mucky soils. Very small stand, surrounded by water, no access. |
| 135 | 42220 - Natural Jack Pine | High Density Pole | 48.1 | 90 | 81-110 | Nautural jack pine with scattered mixed oak and white pine. Stand is within LKW block 113. |
| 136 | 4125 - Black, N. Pin Oak | Medium Density | 38.1 | 3 | 1-50 | Seed tree harvest in 2009. Harvest has produced a nice O3 understory. Leave seed trees. |
| 137 | 42120 - Planted Jack Pine | High Density Sapling | 380.3 | 31 | | Stand is within LKW block 113. Clear cut and planted to jack pine in 1981 following large wildfire. KW habitat planted in opposing weave pattern. Stand includes areas that the fire skipped these skips contain older jack pine, red pine and white pine. |
| 138 | 6117 - Lowland Deciduous, Mixed Coniferous | High Density Pole | 37.2 | 107 | | Muskegon River flood plain stand, down over a bank. Seasonally flooded. Wet mucky soils. |

| S t | Gladwin Mgt. Unit | | | 5 – Fe | prested Sta | nds Compartment: 009 Year of Entry: 2014 |
|-------------|--|-------------------------|-------|--------------|-------------|---|
| a n d | Level 4 Cover Type | Size Density | Acres | Stand Age | BA Range | General Comments: |
| 139 | 6117 - Lowland Deciduous, Mixed Coniferous | High Density Pole | 105.2 | 97 | | Muskegon River flood plain stand, down over a bank. Seasonally flooded. Wet mucky soils. |
| 141 | 4125 - Black, N. Pin Oak | Medium Density | 21.3 | 24 | | Semi open oak regen with scattered jack pine and red pine mixed in. Clear cut 1988. |
| 144 | 42120 - Planted Jack Pine | High Density Sapling | 9.9 | 22 | | Clear cut and planted to jack pine in 1990. Mixed oak and red maple natural regen mixed in as well. |
| 145 | 42120 - Planted Jack Pine | High Density Sapling | 114.2 | 18 | | The stand was harvested in 1995. It was later planted for Kirtland's warbler using an opposing weave pattern. The amount of galling is low as well as weevil attacks. The oak stump sprouts are scattered through out the stand. |
| 146 | 42210 - Natural Red Pine | High Density Pole | 15.7 | 70 | 111-140 | The stand was set up for harvest in 1996 but it was not cut. The jack pine is declining. Stand is within the Cranberry Gas Storage Field; pipelines, wells and service roads are within the area. |
| 147 | 42290 - Natural Mixed Pine | High Density Log | 105.0 | 76 | 141-170 | The stand was set up for harvest in 1996 but it was not cut. The overstory is declining, especially the jack pine. The stand appears to have a more diverse age class distribution then pre- inventory stand 2. Stand is within the Cranberry Gas Storage Field; pipelines, wells and service roads are within the area. Survey corners? |
| 148 | 42210 - Natural Red Pine | High Density Pole | 39.5 | 74 | 141-170 | The stand was set up for harvest in 1996 but it was not cut. The stand is denser in the northern 2/3. This area is heavier to red pine and oak. The southern 1/3 has more oak; jack, red, and white pines in it. Stand is within the Cranberry Gas Storage Field; pipelines, wells and service roads are within the area. Survey corners? |
| 149 | 42110 - Planted Red Pine | High Density Log | 15.9 | 75 | 141-170 | The terrain is fairly level, but starts to slope going east. There is a significant drop just before the L-type to the east. Stand is within the Cranberry Gas Storage Field; pipelines, wells and service roads are within the area. Survey corners? |

6 – Nonforested Stands

Compartment: 009

Year of Entry: 2014

NATURA

| Stand | Cover Type | Acres | Managed Site | Management Priority (Objective) | General Comments: |
|-------|-------------------------------|-------|-----------------|------------------------------------|--|
| 1 | 6239 - Mixed Emergent Wetland | 15.9 | No | Unspecified | |
| 10 | 3102 - Grass | 4.3 | No | Unspecified | Old oil well pad. |
| 13 | 6225 - Bog | 2.5 | No | Unspecified | |
| 16 | 6229 - Mixed lowland shrub | 172.0 | No | Unspecified | |
| 19 | 3102 - Grass | 7.8 | No | Unspecified | Trans Canada Pipeline. |
| 20 | 6225 - Bog | 8.1 | No | Unspecified | |
| 28 | 3102 - Grass | 34.6 | No | Unspecified | Trans Canada Pipeline. |
| 29 | 3102 - Grass | 1.5 | No | Unspecified | Gas well. |
| 36 | 6233 - Wet Meadow | 28.8 | No | Unspecified | |
| 39 | 3102 - Grass | 1.1 | No | Unspecified | Gas well. |
| 43 | 6220 - Alder/willow | 59.0 | No | Unspecified | No treatment. mostly tag alder and willow. |
| 46 | 3102 - Grass | 1.2 | No | Unspecified | Gas well. |
| 48 | 3102 - Grass | 1.3 | No | Unspecified | Gas well. |
| 49 | 3102 - Grass | 1.6 | No | Unspecified | Gas well. |
| 50 | 50 - Water | 47.9 | No | Unspecified | |
| 54 | 6229 - Mixed lowland shrub | 30.9 | No | Unspecified | Lowland shrub, beaver activity. |
| 56 | 3102 - Grass | 2.2 | No | Unspecified | Gas well. |
| 60 | 3102 - Grass | 2.3 | No | Unspecified | Old storage tanks. |
| | | | | | |

Compartment: 009 Year of Entry: 2014



| Stand | Cover Type | Acres | Managed Site | Management Priority (Objective) | General Comments: |
|-------|--------------------------------|-------|-----------------|------------------------------------|--|
| 71 | 6220 - Alder/willow | 7.6 | No | Unspecified | Cranberry Creek flood plain / corridor. Includes flood plain, steep banks, the creek, and buffers left along the creek corridor from adjacent timber sales. Serves as natural filtration strip for the creek. |
| 84 | 3102 - Grass | 3.4 | No | Unspecified | Stand is within LKW block 117 - 2015 POW - plant year 2019. Stand is within the Cranberry Gas Storage Field; pipelines, wells and service roads are within the area. |
| 99 | 50 - Water | 4.0 | No | Unspecified | Water, oxbow of the Muskegon River |
| 109 | 6225 - Bog | 7.7 | No | Unspecified | |
| 112 | 3102 - Grass | 1.2 | No | Unspecified | |
| 124 | 50 - Water | 8.4 | No | Unspecified | Muskegon River oxbow |
| 131 | 50 - Water | 5.8 | No | Unspecified | Muskegon River oxbow |
| 133 | 50 - Water | 2.1 | No | Unspecified | Muskegon River oxbow |
| 140 | 50 - Water | 7.9 | No | Unspecified | Oxbow. |
| 142 | 50 - Water | 7.3 | No | Unspecified | Oxbow. |
| 143 | 3102 - Grass | 21.4 | No | Unspecified | Grassy opening with high ORV use. Scattered red pine. |
| 150 | 3105 - Mixed Upland Herbaceous | 3.0 | No | Low (NonForested) | This stand is a well site. |
| 151 | 3105 - Mixed Upland Herbaceous | 3.6 | No | Low (NonForested) | This stand has high pressure gas pipelines under it. |
| 152 | 6220 - Alder/willow | 2.5 | No | Low (NonForested) | Flood plain of the Cranberry creek. |



7 – 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.

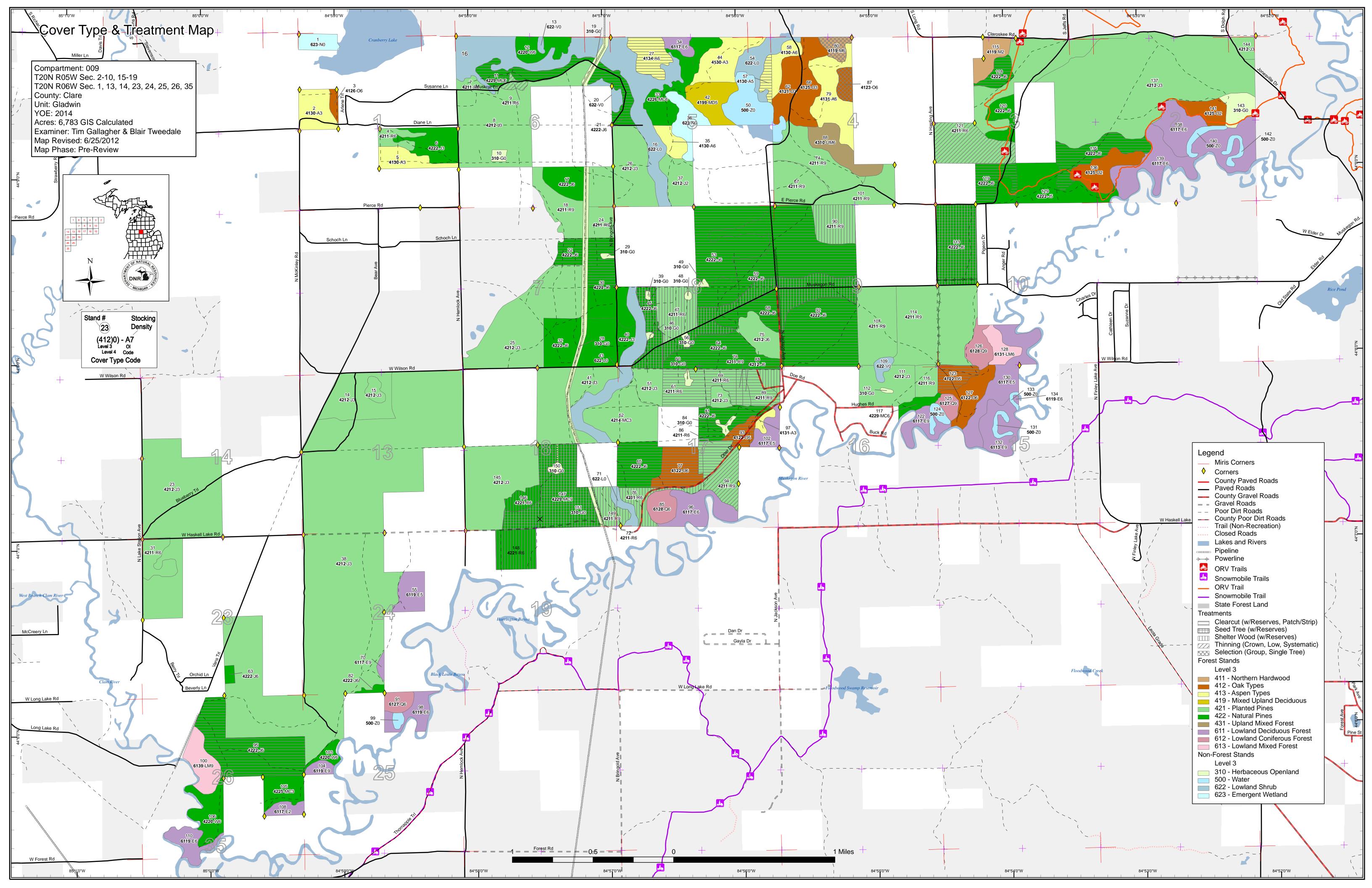
| Stand | SCA Type | SCA Name | Acres | Comments |
|-------|----------|----------|-------|----------|
| | | | | |



8 – DEDICATED CONSERVATION AREA DETAILS

* This is a list of Dedicated Biodiversity Areas for this compartment along with a 1/4 mile buffer surrounding the compartment. Refer to Dedicated Conservation Area Map for areas that the below listed Conservation Areas are located.

| Conservatior Area | п Туре | 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 con- stocked trout populations and those of other coldwater fish spec year to year. Coldwater streams in Michigan typically provide th contributions of groundwater to their stream flows. Such stream designated as trout resources by Fisheries Order 210. | cies (e.g., slimy sculpin) to persist from ese conditions due to substantial |
| HCVA | Designated Critical Habitat | Critical habitat areas are established via a consultative and coo U.S. Fish and Wildlife service for the recovery of threatened and 365, Endangered Species Protection, of the Natural Resources PA 451, and the Federal Endangered Species Act of 1973. This species plans in various stages of review. As of now only two e Plover Habitat. | d endangered species, as governed by Part and Environmental Protection Act, 1994 is an active program, with proposed |



Stand Boundary Map

Compartment: 009 T20N R05W Sec. 2-10, 15-19 T20N R06W Sec. 1, 13, 14, 23, 24, 25, 26, 35 County: Clare Unit: Gladwin YOE: 2014 Acres: 6,783 GIS Calculated Examiner: Tim Gallagher & Blair Tweedale Map Revised: 6/25/2012 Map Phase: Pre-Review

MICHIGAN

> Stand # Stocking 23 Density (412)0) - A7 Level 3 OI Level 4 Code Cover Type Code

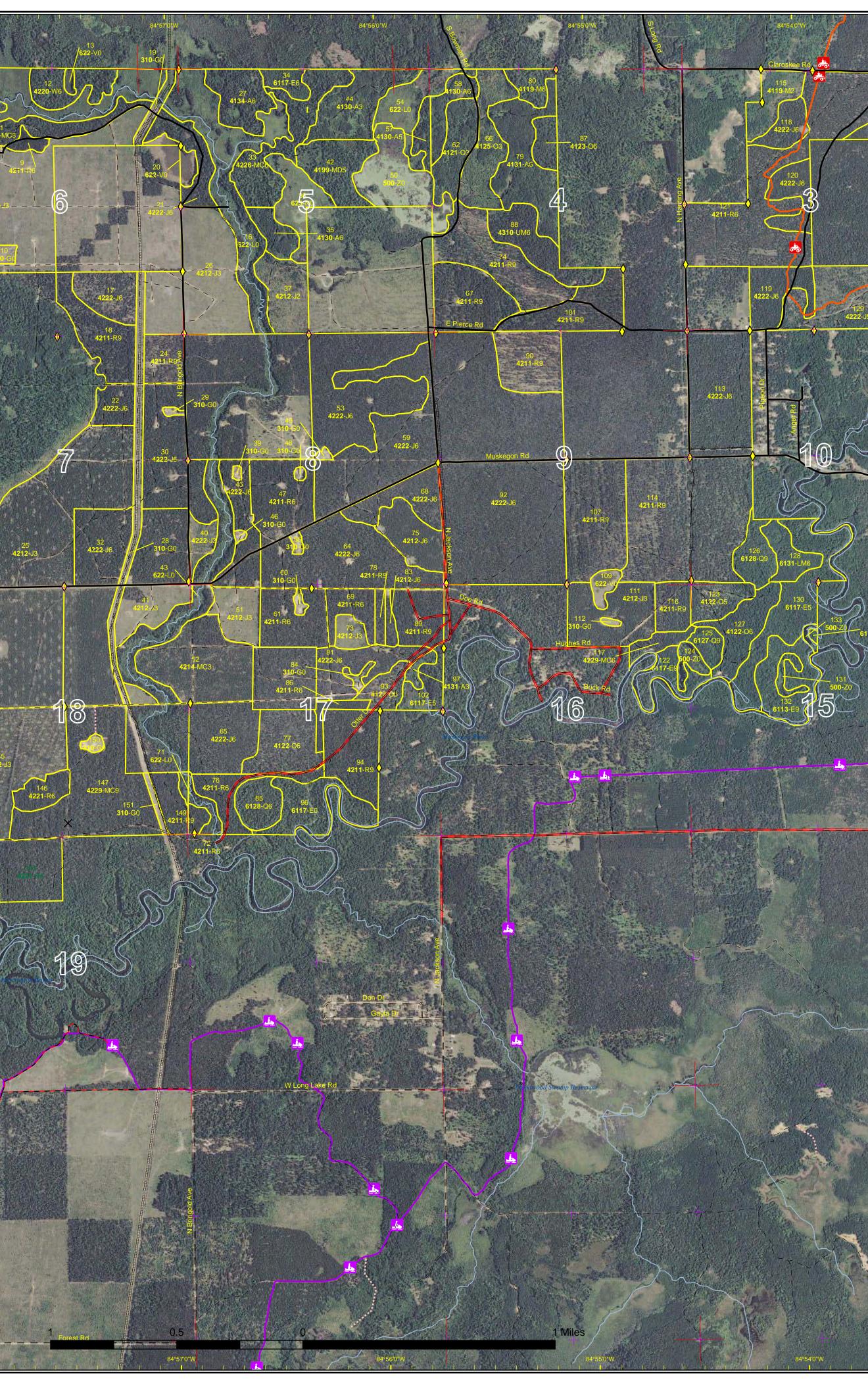
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10.35 17

| | Legend | |
|--------|---|--------|
| | — Miris Corners | |
| | Corners | |
| 1 | — County Paved Roads | |
| R | Paved Roads | |
| Ŧê | County Gravel Roads | 5 1 |
| | = Gravel Roads - Poor Dirt Roads | |
| | County Poor Dirt Roads | |
| | Trail (Non-Recreation) | |
| | Closed Roads | |
| | Stream | |
| 語の | Intermittent Stream | 1 |
| | Pipeline | 加速電 |
| | | |
| 1008 - | ORV Trails Snowmobile Trails | 1 |
| | | |
| | — ORV Trail | 4 |
| | — Snowmobile Trail | in the |
| 1 | Stand Boundaries | |
| | Forest Stands | |
| | Level 3 | |
| 40 | 411 - Northern Hardwood | |
| in a | 412 - Oak Types 413 - Aspen Types | |
| | 419 - Mixed Upland Deciduous | d. A |
| | 421 - Planted Pines | |
| | 422 - Natural Pines | |
| | 431 - Upland Mixed Forest | |
| 1 | 611 - Lowland Deciduous Forest 612 - Lowland Coniferous Forest | |
| | 613 - Lowland Mixed Forest | |
| | Non-Forest Stands | |
| 29 | Level 3 | |
| | 310 - Herbaceous Openland | |
| A SA | 500 - Water | 1 |
| | 622 - Lowland Shrub | 3 |
| 教 | 623 - Emergent Wetland | |
| 31 | | ~ |

