



## GRAYLING FOREST MANAGEMENT UNIT COMPARTMENT REVIEW RESENTATION

COMPARTMENT # 290 ENTRY YEAR: 2014

GIS Compartment Acreage: 2054 County: Crawford

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**Revision Date:** August 23, 2012

**Stand Examiner:** Joan Charlebois

**Legal Description:** T28N R1W Sections 22, 23, 24, 27  
Lovells Township – Northeast Part

**Management Goals:** To maintain forest health, productivity, sustainability, species diversification, and structural diversity throughout the compartment while providing for multiple use and visual management. In addition, to maintain a healthy habitat for the endangered species *Dendroica kirtlandii* (Kirtland's warbler), taking into account warbler management plan directives, species diversity, and visual management.

**Soils and Topography:** The compartment's terrain is primarily outwash plains on Grayling Sands. The swamps and drainages are on organic soils such as Tawas-Leafriver muck.

**Ownership Patterns, Development, and Land Use in and Around the Compartment:** The compartment is part of the Lovells Kirtland's Warbler Management Unit, blocks 55 & 56. The lands adjacent to the compartment are almost entirely in State ownership except for private property interface along the compartment's southwest edge. A recently-acquired parcel in the northwest of section 22 has two cabins that are scheduled for removal.

**Unique, Natural Features:** In addition to the Kirtland's warbler habitat, the Middle Branch of Big Creek flows through the compartment. There is the potential for rare dry prairie plants and insects to occur in upland grassy openings and pine barrens.

**Archeological, Historical, and Cultural Features:** None have been identified.

**Special Management Designations or Considerations:** The compartment is part of the Lovells Kirtland's Warbler Management Unit, a High Conservation Value Area (HCVA). The Middle Branch of Big Creek is also an HCVA, part of the AuSable's Natural Rivers designation.

**Watershed and Fisheries Considerations:** The Middle Branch of Big Creek and a small tributary flow through the compartment and into the Big Creek Impoundment. The Impoundment's dam and water control structure, maintained by Fisheries Division, are located to the south in compartment 289. The west half of Pickerel Lake is within the compartment and is separated from the Impoundment flooding by a sketchy beaver dam.

**Wildlife Habitat Considerations:** Management per the Kirtland's warbler plan not only benefits the warbler, but also provides habitat for other opening-dependent songbirds, hare and white-tailed deer.

**Mineral Resource and Development Concerns and/or Restrictions:** Surface sediments consist of glacial outwash sand and gravel and postglacial alluvium. The glacial drift thickness varies between 200 and 600 feet. Beneath the glacial drift are the Michigan Formation and the Marshall Sandstone. These formations are or have been quarried for gypsum and building stone elsewhere in the State. Gravel pits are located around the tract and potential appears to be good on the upland areas. This area has been sparsely drilled. A few oil and gas leases are located in this large compartment. The nearest production is Hickeys Creek Field, located one mile to the southeast, producing oil from the Richfield and gas from the Prairie du Chien.

**Vehicle Access:** Walsh Road is the only county road within the compartment. The snowmobile trail system and two-track roads provide additional access.

**Survey Needs:** None

**Recreational Facilities and Opportunities:** Two designated snowmobile trails (#4 & #409) run through the compartment, along with the Midland to Mackinac hiking trail and the Shore to Shore horse/hiking trail. The compartment's main forms of dispersed recreation are hunting, fishing, camping and bird watching.

**Fire Protection:** The compartment has jack pine in rotation for Kirtland's warbler habitat. Several mature jack pine stands are proposed for harvest. Vehicle access is adequate along existing roads, and the Creek, Impoundment and lowland types serve as fuelbreaks. The Creek and Impoundment are potential water sources.

➤ **The following reports are available:**

- ◆ **Cover Type by Age Class**
- ◆ **Proposed Treatment Summaries**
- ◆ **Dedicated Conservation Area Details**
- ◆ **Listing of Forested Stands**
- ◆ **Listing of Non-Forested Stands**
- ◆ **Proposed Treatments – No Limiting Factors**
- ◆ **Proposed Treatments – With Limiting Factors**

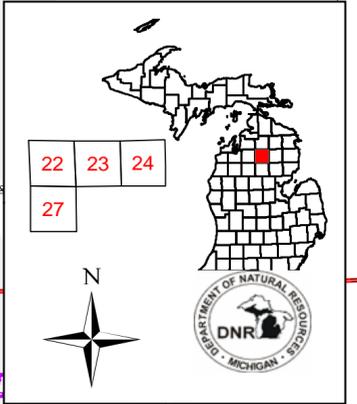
➤ **The following information is displayed, where pertinent, on the attached compartment maps:**

- ◆ **Base feature information, stand numbers, cover types, recreation trails and facilities**
- ◆ **Proposed treatments**
- ◆ **Proposed road access system**
- ◆ **Special Conservation areas**

Compartment: 290  
 T28N R01W Sec. 22, 23, 24, 27  
 County: Crawford  
 Unit: Grayling  
 YOE: 2014  
 Acres: 2,054 GIS Calculated  
 Examiner: Joan Charlebois  
 Map Revised: 09/05/2012  
 Map Phase: Pre-Review

# Cover Type & Treatment Map

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



**Legend**

- Remunemented Section Corners
- PLSS Corner
- Miris Corners
- Highway
- County Paved Roads
- Paved Roads
- County Gravel Roads
- Gravel Roads
- Poor Dirt Roads
- County Poor Dirt Roads
- Trail (Non-Recreation)
- Closed Roads
- Stream
- Intermittent Stream
- Powerlines
- Horse Trail
- Hiking Trail
- Snowmobile Trail
- Hiking Trails
- Horse Trails
- Snowmobile Trails
- Lakes and Rivers
- State Forest Land
- 72272 & 72289 Out of YOE Treatments

**Treatments**

- Clearcut (w/Reserves, Patch/Strip)
- Shelter Wood (w/Reserves)

**Forest Stands**

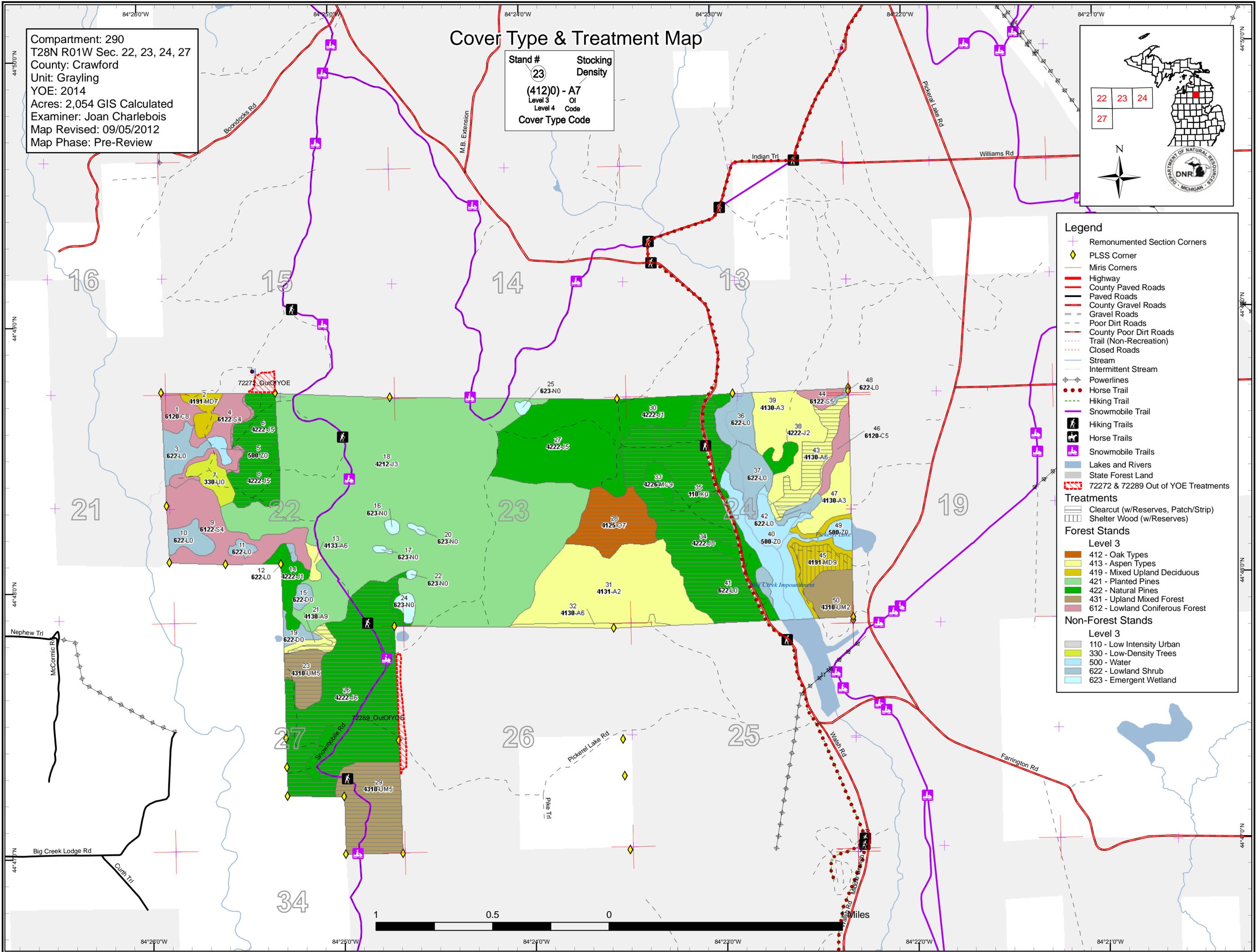
**Level 3**

- 412 - Oak Types
- 413 - Aspen Types
- 419 - Mixed Upland Deciduous
- 421 - Planted Pines
- 422 - Natural Pines
- 431 - Upland Mixed Forest
- 612 - Lowland Coniferous Forest

**Non-Forest Stands**

**Level 3**

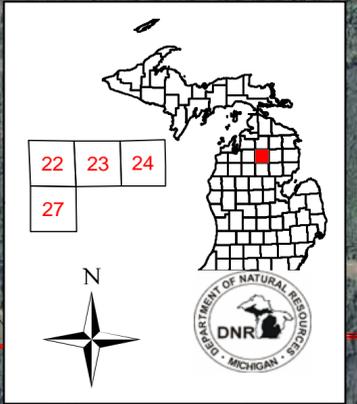
- 110 - Low Intensity Urban
- 330 - Low-Density Trees
- 500 - Water
- 622 - Lowland Shrub
- 623 - Emergent Wetland



# Stand Boundary Map

Compartment: 290  
 T28N R01W Sec. 22, 23, 24, 27  
 County: Crawford  
 Unit: Grayling  
 YOE: 2014  
 Acres: 2,054 GIS Calculated  
 Examiner: Joan Charlebois  
 Map Revised: 09/05/2012  
 Map Phase: Pre-Review

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



### Legend

- Remonumented Section Corners
- PLSS Corner
- Miris Corners
- Highway
- County Paved Roads
- Paved Roads
- County Gravel Roads
- Gravel Roads
- Poor Dirt Roads
- County Poor Dirt Roads
- Trail (Non-Recreation)
- Closed Roads
- Stream
- Intermittent Stream
- Powerlines
- Horse Trail
- Hiking Trail
- Snowmobile Trail
- Hiking Trails
- Horse Trails
- Snowmobile Trails
- Stand Boundaries

### Forest Stands

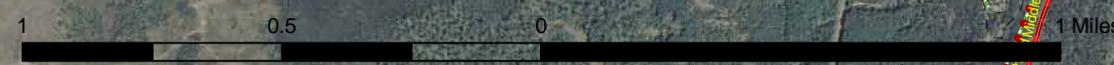
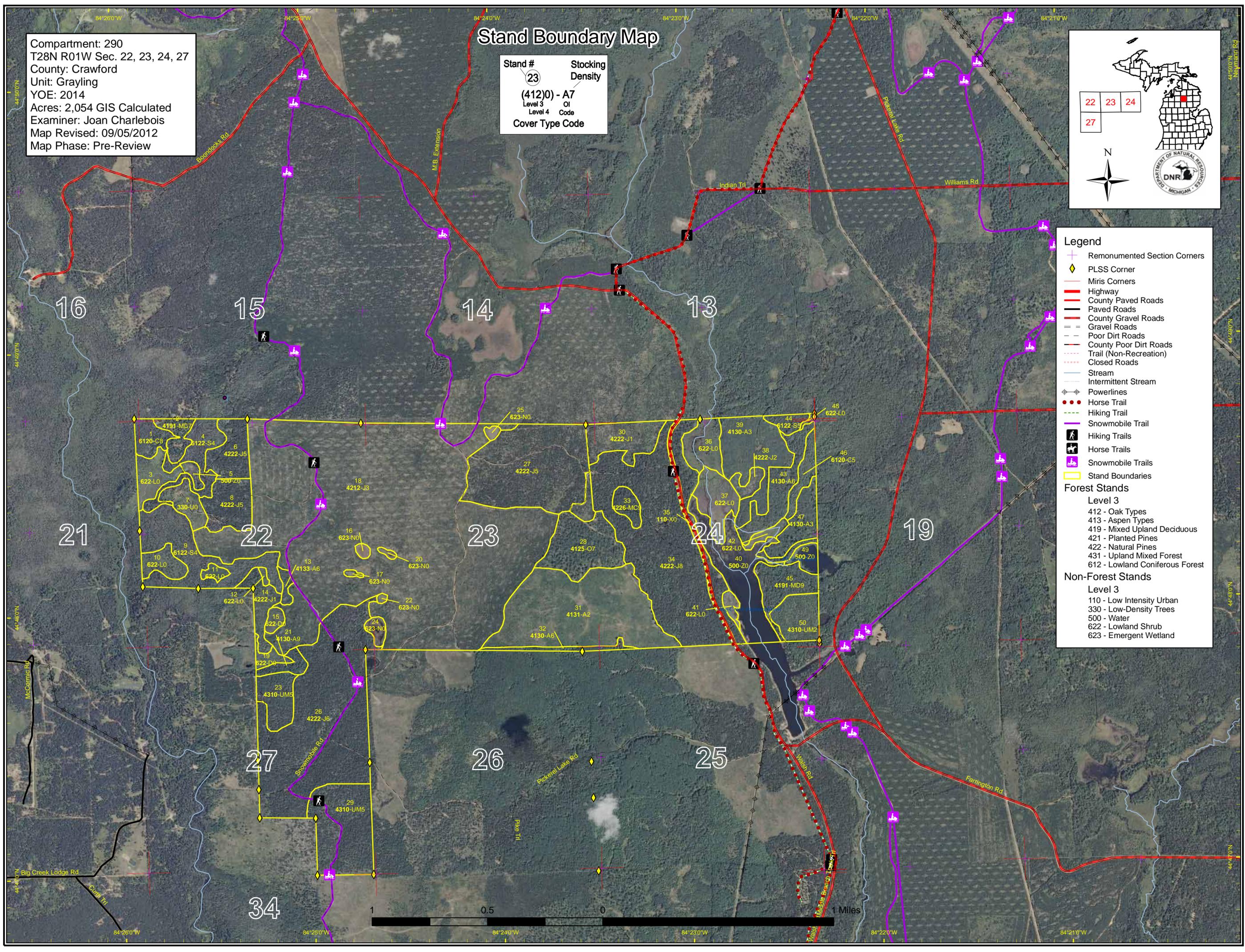
Level 3

- 412 - Oak Types
- 413 - Aspen Types
- 419 - Mixed Upland Deciduous
- 421 - Planted Pines
- 422 - Natural Pines
- 431 - Upland Mixed Forest
- 612 - Lowland Coniferous Forest

### Non-Forest Stands

Level 3

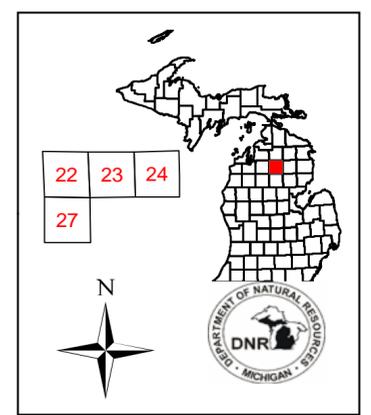
- 110 - Low Intensity Urban
- 330 - Low-Density Trees
- 500 - Water
- 622 - Lowland Shrub
- 623 - Emergent Wetland



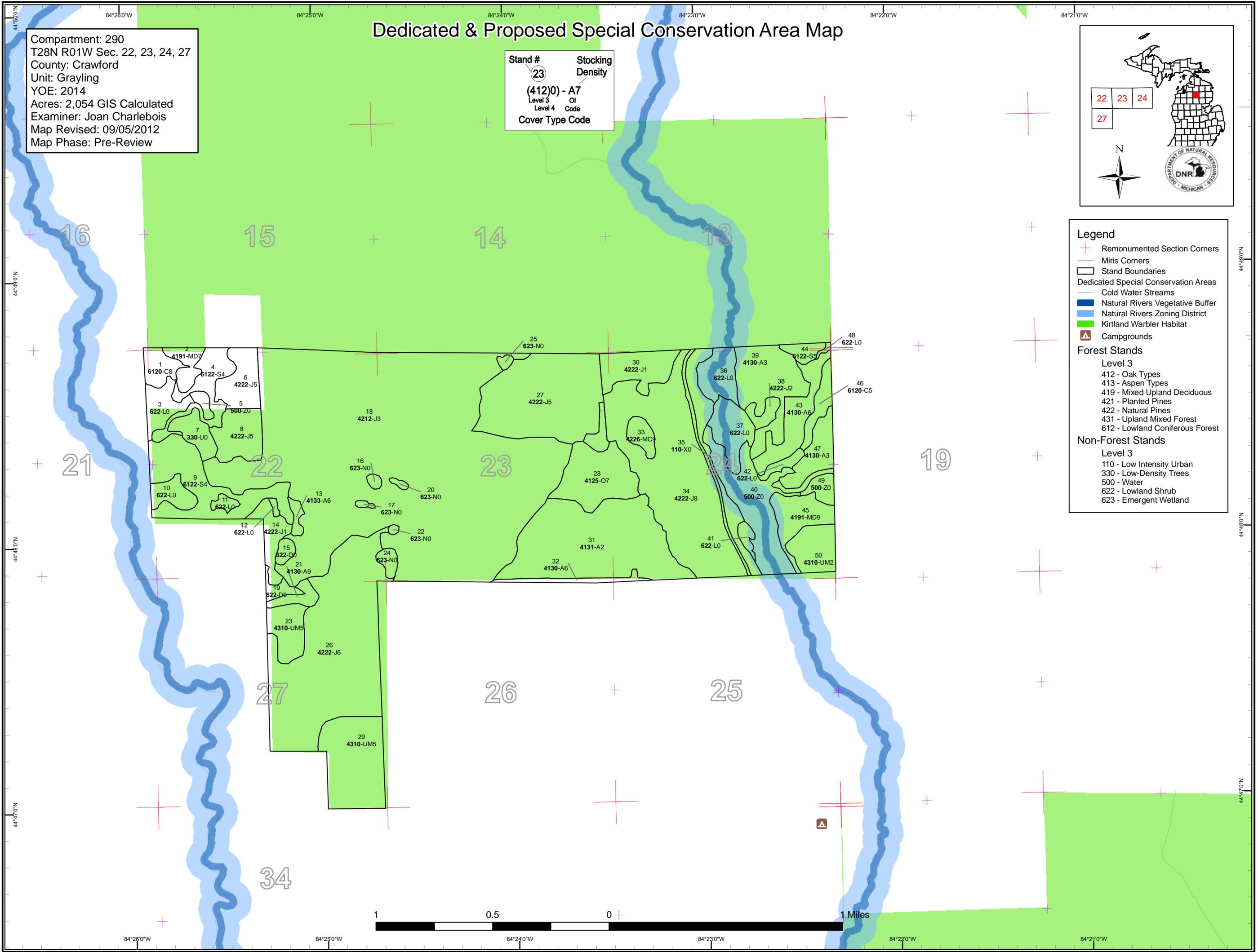
# Dedicated & Proposed Special Conservation Area Map

Compartment: 290  
 T28N R01W Sec. 22, 23, 24, 27  
 County: Crawford  
 Unit: Grayling  
 YOE: 2014  
 Acres: 2,054 GIS Calculated  
 Examiner: Joan Charlebois  
 Map Revised: 09/05/2012  
 Map Phase: Pre-Review

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



- Legend**
- + Remonumented Section Corners
  - Miris Corners
  - Stand Boundaries
  - Dedicated Special Conservation Areas
  - Cold Water Streams
  - Natural Rivers Vegetative Buffer
  - Natural Rivers Zoning District
  - Kirtland Warbler Habitat
  - ▲ Campgrounds
- Forest Stands**
- Level 3
- 412 - Oak Types
  - 413 - Aspen Types
  - 419 - Mixed Upland Deciduous
  - 421 - Planted Pines
  - 422 - Natural Pines
  - 431 - Upland Mixed Forest
  - 612 - Lowland Coniferous Forest
- Non-Forest Stands**
- Level 3
- 110 - Low Intensity Urban
  - 330 - Low-Density Trees
  - 500 - Water
  - 622 - Lowland Shrub
  - 623 - Emergent Wetland



**Table 1 – Total Acres by Cover Type and Age Class**

Joan Charlebois : Examiner



	Age Class													Total	
	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100-109	110-119	120 +		Uneren Age
Aspen	136	74	0	8	4	31	0	0	8	0	0	0	0	0	261
Cedar	0	0	0	0	0	0	0	0	0	0	12	13	0	0	25
Jack Pine	0	711	0	139	0	219	0	193	0	0	0	0	0	0	1262
Low-Density Trees	14	0	0	0	0	0	0	0	0	0	0	0	0	0	14
Lowland Shrub	90	0	0	0	0	0	0	0	0	0	0	0	0	0	90
Lowland Spruce/Fir	0	0	0	0	60	28	0	7	0	0	0	0	0	0	95
Marsh	13	0	0	0	0	0	0	0	0	0	0	0	0	0	13
Mixed Upland Deciduous	0	0	0	0	0	0	0	0	41	0	0	0	0	0	41
Natural Mixed Pines	0	0	0	0	0	9	0	0	0	0	0	0	0	0	9
Oak	0	0	0	0	0	0	0	0	47	0	0	0	0	0	47
Treed Bog	10	0	0	0	0	0	0	0	0	0	0	0	0	0	10
Upland Mixed Forest	0	23	0	0	0	0	0	0	64	21	0	0	0	0	108
Urban	8	0	0	0	0	0	0	0	0	0	0	0	0	0	8
Water	69	0	0	0	0	0	0	0	0	0	0	0	0	0	69
<b>Total</b>	<b>341</b>	<b>809</b>	<b>0</b>	<b>146</b>	<b>64</b>	<b>287</b>	<b>0</b>	<b>200</b>	<b>72</b>	<b>109</b>	<b>0</b>	<b>12</b>	<b>13</b>	<b>0</b>	<b>2054</b>



## Table 2 – Proposed Treatment Summaries

**Grayling Mgt. Unit**  
**Year of Entry 2014**

**Compartment 290**  
**Total Compartment Acres: 2054**

### Acres by Treatment Type

Commercial Harvest - 590	Site Prep - 0	Tree Planting - 0	Prescribed Burn - 0	Other - 0
Habitat Cut - 0	Opening Maintenance - 0	Tree Seeding - 0	Pesticide - 0	

### Cover Type by Harvest Method

		Clearcut	Selection	Seed Tree	Shelterwood	Thinning	Other - Specify	Total Acres
<b>Aspen</b>	33	0	0	0	0	0		33
<b>Jack Pine</b>	407	0	0	0	0	0		407
<b>Mixed Upland Deciduous</b>	0	0	0	17	0	0		17
<b>Oak</b>	47	0	0	0	0	0		47
<b>Upland Mixed Forest</b>	85	0	0	0	0	0		85
<b>Total</b>	<b>572</b>	<b>0</b>	<b>0</b>	<b>17</b>	<b>0</b>	<b>0</b>		<b>590</b>



Stand	Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
6	72290006-ccr	25.8	42220 - Natural Jack Pine	Medium Density Pole	54	51-80	Harvest	Clearcut with Reserves	42120 - Planted Jack Pine	Cmpt. Review Proposal
<p><u>Prescription</u> Final harvest with reserves: leave the RP, WP, and a roughly three-quarter acre retention island that ties into stand 8's island. Run the west boundary to include the operable transition ground (where the densest black spruce cover is) down to the swamp. Cut all JP stems regardless of merchantability in order to not perpetuate a two-aged, budworm-prone condition. Harvest concurrent with the adjacent comp 272 upland pine type (aquired through the same land transaction), and with stand 8 to the south. Add hare habitat improvement spec to fell the red-painted boundary line trees bordering the swamp. Proposed treatment boundary approximates the inclusions/exclusions.</p> <p><u>Specs:</u></p> <p><u>Other</u> Protect the survey monument and any associated witness trees at the north quarter corner of section 22. Borders the Lovells KW Unit, Management Block 56.</p> <p><u>Comments:</u></p> <p><u>Next</u> Trench and plant JP to KW specs. Artificial regen surveys. Acceptable regen is JP at stockings suitable for KW habitat, with minor components of naturally-established oak, pine, spruce &amp; aspen.</p> <p><u>Steps:</u></p> <p><u>Proposed</u></p> <p><u>Start Date:</u> 10/01/2013</p>										
8	72290008_ccr	26.7	42220 - Natural Jack Pine	Medium Density Pole	36	51-80	Harvest	Clearcut with Reserves	42120 - Planted Jack Pine	Cmpt. Review Proposal
<p><u>Prescription</u> Final harvest with reserves: leave the RP, WP, and a roughly 1-acre retention island that ties into stand 6's island. Run the west boundary to include the operable transition ground (where the densest black spruce cover is) down to the swamp. Cut all JP stems regardless of merchantability in order to not perpetuate a two-aged, budworm-prone condition. Harvest concurrent with the adjacent stand 6. Add hare habitat improvement spec to fell the red-painted boundary line trees bordering the swamp.</p> <p><u>Specs:</u></p> <p><u>Other</u> Is within the Lovells KW Unit, Management Block 56.</p> <p><u>Comments:</u></p> <p><u>Next</u> Trench and plant JP to KW specs. Artificial regen surveys. Acceptable regen is JP at stockings suitable for KW habitat, with minor components of naturally-established oak, pine and spruce.</p> <p><u>Steps:</u></p> <p><u>Proposed</u></p> <p><u>Start Date:</u> 10/01/2013</p>										
21	72290021-ccr	4.7	4130 - Aspen	High Density Log	80	81-110	Harvest	Clearcut with Reserves	4130 - Aspen	Cmpt. Review Proposal
<p><u>Prescription</u> Final harvest with reserves: leave the RP and any WP &amp; WO, exclude the perched wetland and slough drain (see OFS point), and exclude the steep north-facing sideslope down to the lowlands. Excluded portions will serve as retention. Harvest the operable portions of the stand when the adjacent mature JP &amp; oak stands are cut. Proposed treatment boundary approximates the inclusions/exclusions.</p> <p><u>Specs:</u></p> <p><u>Other</u></p> <p><u>Comments:</u></p> <p><u>Next</u> Natural regen survey. Natural regen goal is aspen with mixed deciduous and conifer components.</p> <p><u>Steps:</u></p> <p><u>Proposed</u></p> <p><u>Start Date:</u> 10/01/2013</p>										
23	72290023-ccr	21.2	4310 - Pine, Oak Mix	Medium Density Pole	90	51-80	Harvest	Clearcut with Reserves	42121 - Planted Jack Pine, Mixed Deciduous	Cmpt. Review Proposal
<p><u>Prescription</u> Final harvest with reserves: leave all RP, WP &amp; WO. Cut all JP stems regardless of merchantability in order to not perpetuate a two-aged, budworm-prone condition. Harvest stand 21's operable treatment area at the same time. Proposed treatment boundary approximates the inclusions/exclusions.</p> <p><u>Specs:</u></p> <p><u>Other</u> Identified as critical habitat within the Lovells KW Unit but wasn't regenerated with the rest of Management Block 56 in 1998.</p> <p><u>Comments:</u></p> <p><u>Next</u> Trench and plant JP to KW specs. Artificial regen surveys. Acceptable regen is JP at stockings suitable for KW habitat, along with naturally-established oak, aspen and RM.</p> <p><u>Steps:</u></p> <p><u>Proposed</u></p> <p><u>Start Date:</u> 10/01/2013</p>										



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Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
<b>26 72290026-ccr</b>	184.0	42220 - Natural Jack Pine	High Density Pole	58	81-110	Harvest	Clearcut with Reserves	42120 - Planted Jack Pine	Cmpt. Review Proposal

Prescription Final harvest with reserves: leave all RP, WP & WO, buffer the wetland stands 22, 24 and the OFS point pond (leave a minimum width of one chain while not dropping over the edge of the kettleholes), and leave a roughly 6-acre retention vortice. Cut all JP stems regardless of merchantability in order to not perpetuate a two-aged, budworm-prone condition. Harvest stand 21's operable treatment area at the same time, as well as the adjacent OYOE treatment in comp 289. Proposed treatment boundary approximates the inclusions/exclusions.

Other Comments: Protect the survey monument and witness trees associated with the quarter corner common to sections 26 & 27, the northeast corner of section 27, and the corners and witness trees along the private interface (see comp 290 survey corner shapefile). Use applicable snowmobile trail protection specs and consider visual & windthrow concerns relative to the trail. Area was identified as critical habitat within the Lovells KW Unit but wasn't regenerated with the rest of Management Block 56 in the 1990's.

Next Steps: Trench and plant JP to KW specs. Artificial regen surveys. Acceptable regen is JP at stockings suitable for KW habitat, along with naturally-established oak and pine.

Proposed Start Date: 10/01/2013

<b>28 72290028-ccr</b>	46.8	4125 - Black, N. Pin Oak	Low Density Log	90	51-80	Harvest	Clearcut with Reserves	4121 - Oak, Aspen	Cmpt. Review Proposal
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Prescription Final harvest with reserves: remove the oak overstory, except leave xlog oak wildlife trees (open-grown, hollow, etc.) and the scattered pine. Leaving the pine and approximately four-dozen large-crowned oak will provide 3% retention by area. Operational paths will have to be cut through the established aspen, oak and RM regen.

Other Comments:

Next Steps: Natural regen survey. Acceptable regen includes a moderately stocked mix of oak, aspen, maple and pine. If natural regen needs supplementing in order to meet stocking standards, plant JP.

Proposed Start Date: 10/01/2013

<b>29 72290029-ccr</b>	63.8	4310 - Pine, Oak Mix	Medium Density Pole	88	1-50	Harvest	Clearcut with Reserves	42121 - Planted Jack Pine, Mixed Deciduous	Cmpt. Review Proposal
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Prescription Final harvest with reserves: leave the RP, WP & WO. Cut all JP stems regardless of merchantability in order to not perpetuate a two-aged, budworm-prone condition.

Other Comments: Protect the survey corners and witness trees along the private interface and at the southeast corner of section 27 (see comp 290 survey corner shapefile). Use applicable snowmobile trail protection specs and consider visual and windthrow concerns relative to the trail.

Next Steps: Trench and plant JP to KW specs. Artificial regen surveys. Acceptable regen is JP at stockings suitable for KW habitat, along with naturally-established oak and pine.

Proposed Start Date: 10/01/2013

<b>34 72290034-ccr</b>	170.7	42220 - Natural Jack Pine	Medium Density Log	72	51-80	Harvest	Clearcut with Reserves	42120 - Planted Jack Pine	Cmpt. Review Proposal
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Prescription Final harvest with reserves: leave the RP, WO & any WP, in addition to leaving a buffer along the Big Creek Impoundment (excludes the narrower portions of the stand's polygon east of Walsh Road). Create retention islands to buffer the two OFS point wetlands, running the line a chain out from the wetland edge or staying at the top of the kettleholes, whichever is greater, and leave a roughly 5-acre retention vortice in the stand's south half. Cut all JP stems regardless of merchantability in order to not perpetuate a two-aged, budworm-prone condition. Don't chase JP into stand 33's mixed pine-oak type. Include an acre of stand 30 in order to eliminate a dog-leg in the north line. For the polygon east of Walsh Road, keep the east boundary at the top edge of the hill and exclude the NE corner. Proposed treatment boundary approximates the inclusions/exclusions.

Other Comments: Is within the Lovells KW Unit but was not regenerated with the rest of Management Block 55 in the 1990's.

Next Steps: Trench and plant JP to KW specs west of Walsh Road. Artificial & natural regen surveys. Acceptable regen west of Walsh Road is JP at stockings suitable for KW habitat, with minor components of naturally-established oak, pine and aspen. Evaluate the polygon east of Walsh Road post-harvest and don't plant there if reasonable in-growth is expected. That side has more RP, aspen & oak. A variable, lower-stocked mix of oak, aspen and pine and a longer timeframe for achieving that regen will be accepted east of Walsh Road.

Proposed Start Date: 10/01/2013



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Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
43 72290043-ccr	28.8	4130 - Aspen	High Density Pole	50	51-80	Harvest	Clearcut with Reserves	4130 - Aspen	Cmpt. Review Proposal

Prescription Final harvest with reserves: leave the RP, WP and few NWC, and leave at least a 100-foot retention buffer along the Impoundment. Run the east boundary to include the operable transition ground along the swamp edge, but maintain at least a chain set-back from the intermittent drain in stand 46. Proposed treatment boundary approximates the inclusions/exclusions.

Other Comments: Haul route to north has low spots adjacent to wetlands -- best access will be in winter when the road can be frozen down.

Next Steps: Natural regen survey. Acceptable regen includes a mix of aspen, oak, maple and conifers.

Proposed Start Date: 10/01/2013

45 72290045-shwd	17.3	4191 - Mixed Upland Deciduous with Conifer	High Density Log	96	81-110	Harvest	Shelter Wood with Reserves	42260 - Natural Pine, Mixed Deciduous	Cmpt. Review Proposal
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Prescription Shelterwood with reserves: harvest the mixed oak, aspen, RM & JP. Leave all RP, WP and white oak, and exclude as retention at least a 100-foot buffer along the Impoundment, Pickerel Lake and the small pond on the south edge of the lake. Widen out the buffer near the informal campsite on Pickerel Lake (east OFS point). Proposed treatment boundary approximates the inclusions/exclusions.

Other Comments: Operational paths will have to be cut through the pre-commercial stems.

Next Steps: Natural regen check. Acceptable regen includes a moderately-stocked mix of pine, aspen, oak and RM.

Proposed Start Date: 10/01/2013

**Total Treatment  
Acreage Proposed: 589.7**

Table 4 -- Treatments Prescribed with a Limiting Factor



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

Prescription Specs:

Other Comment:

Next Steps:

Proposed Start Date: #Error

Limiting Factor and No Treatment Reason

**Total Treatment Acreage Proposed: 0**

**Out of YOE -- Treatments  
Prescribed with No Limiting Factor**

Year of Entry: 2014



Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
<b>72269_OYOE_cc</b>	2.0					Harvest	Clearcut	4131 - Aspen, Oak	Cmpt. Review Proposal
<u>Prescription Specs:</u> Final harvest except leave any beech, ash, and conifers. No additional retention specified due to small stand size and the proximity of retention in comp 268 stand 28. Set up concurrent with compt 268 (2014 YOE) stand 28.									
<u>Other Comments:</u>									
<u>Next Steps:</u> Natural regen survey. Natural regen goal is a mixture of aspen, oak and hardwoods.									
<u>Proposed Start Date:</u> 10/01/2013									
<b>72272_OYOE_ccr</b>	5.6					Harvest	Clearcut	42120 - Planted Jack Pine	Cmpt. Review Proposal
<u>Prescription Specs:</u> Final harvest except leave the RP & WP. No additional retention due to small stand size. Run the north & west boundary to include the operable transition ground (where the densest black spruce cover is) down to the swamp. Cut all JP & Scotch pine stems regardless of merchantability. Harvest concurrent with the adjacent comp 268 stand 6 (aquired through the same land transaction). When harvesting this stand's planted SP, site a secondary landing immediately adjacent to the plantation so that Scotch pine doesn't get dragged through the general stand area, distributing its weed seed. Add hare habitat improvement spec to fell the red-painted boundary line trees bordering the swamp.									
<u>Other Comments:</u> Protect the survey monument and any witness trees associated with the north quarter corner of section 22. Borders the Lovells KW Unit, Management Block 56.									
<u>Next Steps:</u> Trench and plant JP to KW specs. May need site prep treatments (that could include burning, herbicide, etc.) to control scotch pine regen before planting. Artificial regen surveys. Acceptable regen is JP at stockings suitable for KW habitat, with minor components of naturally-established mixed deciduous and native conifer species.									
<u>Proposed Start Date:</u> 10/01/2013									
<b>72289_OYOE_cc</b>	6.7					Harvest	Clearcut	42120 - Planted Jack Pine	Cmpt. Review Proposal
<u>Prescription Specs:</u> Final harvest, leaving any RP, WP and white oak. No additional retention due to small stand size. Treat concurrent with the adjacent comp 290 stand 26.									
<u>Other Comments:</u> Protect the survey monument and witness trees associated with the quarter corner common to sections 26 & 27.									
<u>Next Steps:</u> Trench and plant JP to KW specs. Artificial regen surveys. Acceptable regen is JP at stockings suitable for KW habitat, along with naturally-established oak and pine.									
<u>Proposed Start Date:</u> 10/01/2013									

**Total Treatment  
Acreage Proposed: 14.3**



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
1	6120 - Lowland Cedar	Medium Density Log	12.9	160	51-80	Northern white cedar with lesser components of spruce, fir, tamarack & aspen. On the stand's slightly drier ground in the SE half, the cedar cover is larger diameter, healthier and more widely scattered. It's park-like and open below, with grass/rubus/fern groundcover. On the wetter ground to the N & W, the cedar cover is denser, smaller diameter and less vigorous, with patches of wind-throw. Balsam fir is starting to fill in below. Most of the overstory tamarack & black spruce are concentrated in the stand's NE, and there's mortality in the sapling black spruce there. The quaking aspen and balsam poplar are mostly on the east side near the uplands.
2	4191 - Mixed Upland Deciduous with Conifer	Low Density Log	11.7	94	1-50	Stand occupies two steep knobs of dry ground surrounded by swamp. A small stream cuts through the east edge. The stand is within a parcel of land purchased from private in 2010. The cover is patchy & variable, with U/G inclusions. The red maple & oak (concentrated on the highest ground) are in their 90's, likely sprouted post-fire. Heavily burnt pine stumps throughout. The JP ranges from immature to overmature, with median poles in their 50's. Aspen and black spruce are concentrated along the swamp margins. Large RP are scattered throughout, with a few WP & white oak. The deciduous component is marginal quality, with cull and decadence common. WP, balsam fir, JP & RP have been seeding in. South OFS point is an abandoned forage plot with rigging in a tree. NW OFS point is a small dump site. There are also several abandoned ground blinds.
4	6122 - Black Spruce	Low Density Pole	27.6	58	1-50	Swamp stand that includes the transition zone to the uplands. The swamp's core lowland type is spindly black spruce on saturated muck soils with sphagnum groundcover. Balsam fir, tamarack (more to NE), aspen & a trace of cedar are mixed in. The black spruce has a wide range of ages. Most of the poles are in the 50's & 60's (ave 1st age), with a minority 80+ years old (2nd age). Black spruce & balsam fir have been filling in below, but there's been significant mortality in that subcanopy layer. Spruce budworm present at time of inventory, but most of the mortality occurred prior to this year. The tamarack is healthy. The swamp has small islands of slightly dryer ground with RP, overmature JP, & RM along with the spruce. The best growth & densest cover is on the sideslope transition ground bordering the uplands (OFS pts there are two former pvt cabins). Small stream flows through the stand. Beaver felling the aspen & flooding the stand around their pond. BS SI 40.
6	42220 - Natural Jack Pine	Medium Density Pole	24.8	54	51-80	Stand has two main classes of JP: poles in their 50's & 60's (1st age, ave), and overmature saw 80+ years old (2nd age). The canopy closure ranges from 75-100% where there's predominantly poles, to 25-50% where the overmature JP has been breaking up. Poor-quality NPO are scattered throughout. The swamp edge is where most of the black spruce, and a trace of aspen and large RP are concentrated. The stand is dotted with sub-acre grassy openings, one of them an abandoned forage plot, and there are numerous ground blinds from when the land was privately owned. JP SI 48.
8	42220 - Natural Jack Pine	Medium Density Pole	27.3	36	51-80	Stand was salvaged in 1969 following JP budworm infestation. That diameter-limit cut left a low-density, variable distribution of JP that is now overmature (2nd age, ave) above the majority small pole/large sapling JP that filled in since (1st age, ave). The stand's west side has more brushy open-grown JP, and along the swamp edge there are a few xlog RP & some black spruce.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
9	6122 - Black Spruce	Low Density Pole	60.2	47	1-50	Spindly black spruce, with tamarack, balsam fir & northern white cedar, on saturated muck soils. Sphagnum groundcover with standing water in holes in the root mat. The spruce has been progressively colonizing a large lowland brush type over the last century. Spruce cored in the 6" diameter class had a wide range of ages (32, 40, 68 & 106 years). One spruce saw cored was 83 years old. The stand's 1st & 2nd ages represent averages for the below 70 & the 80+ cores, but averaging such a wide range down to two ages doesn't capture this stand's complexity. Tag alder, balsam fir & black spruce occupy the subcanopy, with decreasing conifer coverage due to heavy defoliation. Small islands of drier ground within the swamp have overmature JP & quaking aspen. The tamarack & NWC cover is heaviest in the stand's west, switching to predominantly black spruce in the south & east. The densest & healthiest spruce cover is on the transition zone to the uplands. BS SI 42.
13	4133 - Aspen, Mixed Pine	High Density Pole	4.2	43	81-110	Small narrow stand between the upland JP & the swamp. The aspen is mostly represented by mid-40's poles, but there are also breaking-up cull saw stems mixed in to the north, and saplings from the 1993 tornado salvage in the south. JP & a trace of NPO saw are present, and black spruce is concentrated along the swamp edge. OFS point is a small wetland. Most of the stand's WP borders that wetland.
14	42220 - Natural Jack Pine	Low Density Sapling	16.8	19	1-50	Damaged/uprooted trees were salvage cut in 1993 under 72-028-93-02 after a windstorm. The majority JP sapling cover regenerated after the salvage. Low-density residual from the harvest (pole-sized JP, WP, RP, balsam fir, black spruce, RM, aspen & oak) are scattered throughout. The stand has the variable stocking & growth habit of a pine barrens. The stand's NW edge against the swamp has a 2-acre inclusion of overmature root-tipping JP (2nd age) that wasn't part of the tornado salvage.
18	42120 - Planted Jack Pine	High Density Sapling	652.1	14		The stand was planted to JP for KW habitat in 1998. Five harvests and one burn (120 acres in the SE) were completed between 1986 and 1997 in preparation for the KW planting entry. JP sapling cover mainly 6-10' tall with scattered oak & black cherry stump sprouts above them. Trace of aspen mixed in along the stand margins.
21	4130 - Aspen	High Density Log	8.2	80	81-110	Mixed aspen stand on the sideslope down to the lowlands. Associates include red maple, black spruce, oak, paper birch, JP & RP. The east side has quaking aspen, the south side has bigtooth. The south edge drops steeply down to the wetland, where the black spruce is concentrated. The BTA, JP & most of the QA are overmature. OFS point is a perched wetland with an intermittent drain that flows west.
23	4310 - Pine, Oak Mix	Medium Density Pole	21.2	90	51-80	Overmature and budworm-killed JP were cut under salvage permits in the mid-1960's. Stand has poor-quality breaking up NPO, with JP ranging from large saplings to overmature saw. The stand has scattered RP, WP & WO (also declining), and the N edge picks up a little RM & BTA. The understory has patchy oak regen. OFS point in the NW is a 1-acre inclusion of JP planted in 1982. Most of the original plantation is on an adjacent parcel that was sold to private.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
26	42220 - Natural Jack Pine	High Density Pole	194.1	58	81-110	Overmature and budworm-killed JP were removed under salvage permits in the mid-1960's. The stand has relatively uniform mature JP pole cover around 60 years old, along with overmature and immature components. Mortality in the overmature JP opened up canopy gaps that are now filled in with pole/sapling JP. Some gaps remained open, such as in the stand's SW corner. The stand is on shallowly rolling terrain, with JP densest in the valleys and poor-quality oak mixing in on the upper slopes and benchtops. The areas with the most oak drop down to 50-75% canopy closure due to continuing decline in the oak. RP are widely scattered throughout, along with a trace of WP & white oak. OFS point on the east side marks the edge of a small pond. Snowmobile trail runs through the stand, with the hiking pathway following it. JP SI 46.
27	42220 - Natural Jack Pine	Medium Density Pole	111.3	37	1-50	Was part of a larger area cut merch & up by 1986 under 72-005-85-01, with heavy slash & residual noted. This stand had control lines plowed in, but was excluded when the rest of the sale (adjacent stand to south) was burned for slash reduction & then planted to JP for KW. This portion of the sale was excluded from both treatments & natural regen was relied on. Most of the stand's current cover established pre-harvest: that small pole/large sapling JP ranges from 30-40 years old. The JP that established post-harvest is sapling sized and intermediate in the canopy (second age). The stand also contains lower density pine barrens inclusions. The stand is predominantly sapling sized, but just enough is transitioned into the pole class to meet the 30% benchmark.
28	4125 - Black, N. Pin Oak	Low Density Log	46.8	90	51-80	All merch RM, aspen, JP & RP were cut in 2005 under 72-017-04-01, with a stated oak residual of 50 BA. That species removal left variable density mature oak cover above the sapling regen layer. The stand's N end on the flats has mostly poor-quality, declining oak. Grading uphill to the S, the site & oak quality improves, with more black/red oak & white oak than NPO. There are wolfy xlog oak scattered across the stand. The regen from the cut is mostly BTA, with RM & oak stump sprouts from when saplings were cut/damaged during harvesting. Those oak are now above much of the pre-harvest oak seedling layer. Regen is sparse where the canopy is densest, but passes overall. NPO SI 55.
29	4310 - Pine, Oak Mix	Medium Density Pole	63.8	88	1-50	Overmature and budworm-killed JP were cut under salvage permits in the mid-1960's. The stand has poor-quality breaking up northern pin oak along with two main classes of JP: post-harvest regen (now around 40 years old) intermediate in the canopy, & overmature saw residual from the salvage. The stand is on rolling terrain, with oak favoring the upper slopes & JP heavier in the valleys. The oak component is decreasing through breakage & root-tipping. The overmature JP is also dying back, with concentrated windthrow along the S edge bordering a clearcut.
30	42220 - Natural Jack Pine	Low Density Sapling	35.4	19	1-50	Damaged/uprooted trees were salvage cut in the stand's north polygon in 1993 under 72-030-93-01 after a windstorm, leaving widely scattered residual. That residual is now small pole JP & stocky pole-log RP. The regen from the cut (limby JP sapling cover) is the featured canopy layer. The canopy cover varies across the stand from open to full, resembling a pine barrens. The stand's south polygon was cut by 1986 under 72-005-85-01 and later Rx burned, resulting in the same cover type characteristics & age profile, with the exception of more oak stump sprout representation toward the south end.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
31	4131 - Aspen, Oak	Medium Density	135.8	7		Was cut 2" DBH & up in 2005 under 72-017-04-01. Vigorously regenerating sprout-origin aspen, oak & RM, with localized seeding in of JP, RP & WP. Most of the oak stump sprouts are 8-12' tall. The oak seedlings are being browsed. Small amount of lecanium scale (mostly in the seedling oak) & cicada egg-laying damage. Cover varies across the stand from majority aspen to majority oak, with all gradations in between, and averages toward the high end of 50-75% canopy closure. Stand's NE has a small frost pocket where the deciduous regen is sparse but JP is surviving.
32	4130 - Aspen	High Density Pole	7.9	36	1-50	Was cut merch up by 1976 under timbersale permits 10-73A & 48-74A. The bulk of the permit area was in comp 289 to the south. Stand almost through transitioning into the pole class, with larger pole/small saw residual from the cut. BTA with oak & RM associates. Oak is the real stand out in terms of growth & vigor; some of the sprout-origin stems are into the small saw class. Stand has a small opening in the middle & a line of mature trees along the recent harvest boundary to the N.
33	42260 - Natural Pine, Mixed Deciduous	High Density Log	9.3	53	81-110	Stand on a knob of higher ground, surrounded by jack pine. Supercanopy RP seeded in the majority log-pole cover. Associates include poor-quality breaking up NPO, cull BTA, and overmature JP. The RP is densest on the east side. Canopy closure averages toward the low end of the 75-100% category. The first and second ages are both from the majority small saw RP cover, reflecting the stand's progressive establishment over a fairly wide period of time. RP SI 64, 53 (younger, older).
34	42220 - Natural Jack Pine	Medium Density Log	193.3	72	51-80	JP cover in two main age classes: log/poles 70+ years old and poles around 50 years old, with proportions varying across the stand. The overmature JP is breaking up; areas where mortality is heaviest have dropped a canopy class to 25-50%. OFS point on the west side is one of those areas, filling in with oak and red maple. RP (sapling to supercanopy in size) are scattered across the stand, along with poor quality mixed oak. Most of the aspen (quaking, with a trace of big tooth) occurs along the Impoundment edge. Several short turnout roads spur into the stand east of Walsh Road, accessing the Impoundment. The stand's southeast edge experiences periodic flooding. Two OFS points in the stand's north half are small wetlands.
38	42220 - Natural Jack Pine	Medium Density	7.0	16		Was cut 3" DBH & up in 1996 under 72-041-94-01. TCR notes FTP submitted, but found no record of completion. Two furrows cross through the stand but are just part of the pair that lap the Impoundment. Swaths of dense JP regen have the appearance of being broadcast seeded, but could also just be skid-trail regen. The stand varies from low to excessive JP stocking, with QA mixing in along the edges and small grassy opening inclusions.
39	4130 - Aspen	High Density Sapling	52.7	16		Was cut 3" DBH & up in 1996 under 72-041-94-01. Mostly quaking aspen sapling cover with JP regen mixed in & BTA clones in the S end. Black canker & hypoxylon present. Recent beaver cutting w/in a chain of the Impoundment. OFS point in NE is a small wetland inclusion. There's a sub-acre inclusion of RP & WP in the stand's NW corner, with mainly old fire-scarred supercanopy stems, also OFS point.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
43	4130 - Aspen	High Density Pole	31.0	50	51-80	Aspen stand with lowland interface on three sides. Mostly large pole quaking aspen, with a low-density overmature component that's breaking up. Main associates are RP, red maple, BTA & mixed oak. Balsam fir, black spruce & the red maple are concentrated along the lowland edge, as is the conifer regen. The stand's far NE is close to the water table and heavier to red maple, overmature QA, & balsam fir, with a trace of northern white cedar along the lowland brush stand. There's a small upland opening inclusion in the stand's NW.
44	6122 - Black Spruce	Medium Density Pole	7.0	78	51-80	Black spruce bog with a WP component. The saturated ground has a deep sphagnum mat with leatherleaf & labrador tea cover. Standing water in cradle knolls. On a small island of slightly higher ground, there's a pocket of struggling RP, stressed by the high water table. Stand is at the low end of 50-75% canopy cover. Black spruce & WP are filling in the canopy gaps. Older small saw black spruce are scattered across the stand. BS SI 40.
45	4191 - Mixed Upland Deciduous with Conifer	High Density Log	29.6	96	81-110	Dry upland oak-pine-aspen stand bordering the Big Creek Impoundment & Pickerel Lake. The stand is variable, with no single species comprising a majority of the cover. The main canopy layer is made up of hybridized northern pin/black oak, white oak, RP, RM, WP & JP. Above that are supercanopy stature RP. The NPO, aspen & JP are largely overmature & declining, with the exception of some younger BTA near the Impoundment. WP & red maple are filling in below. Branch flagging is starting in the WP saplings near the lakes. The north polygon was left as a buffer for the adjacent harvest & contains most of the supercanopy WP. NPO SI 53. RP SI 63.
46	6120 - Lowland Cedar	Medium Density Pole	12.1	116	51-80	Narrow drainage stand containing a stream (2-6' wide) that flows from the adjacent comp 21 swamp and empties into the Impoundment. A feeder stream branches in from the NE. The stand alternates between cedar & lowland hardwood cover (ash, aspen, elm & red maple), on saturated muck soils. The spindly black ash has largely died out. Decadence & mortality is common in the older components across all species. The cedar is dying back where there's a combination of high stem densities on very low ground. The cedar is healthiest along the stream & on the slightly higher ground in the N end. The only component that is increasing is the balsam fir, dog-hair thick in places.
47	4130 - Aspen	High Density Sapling	21.5	16		Was cut 4" DBH & up, except RP & WP, in 1996 under 72-042-94-01. Sapling regen & small pole residual from the cut is the featured canopy, comprised mostly of QA, with WP, balsam fir & RM. The log/xlog RP & WP that were left form a low-density supercanopy layer. Some beaver cutting near the Z types. OFS points mark wetland inclusions.
50	4310 - Pine, Oak Mix	Medium Density	23.2	15		Was cut 2" DBH and up in 1996 under 72-043-94-01. Sigma seeded in 1997 under C72-388. Stand has roughly equal parts artificial and natural regen. The artificial regen includes JP & RP. The natural regen is largely sprout-origin deciduous (oak, red maple, aspen & cherry). The furrow-seeding resulted in variable stocking densities, and the species mix shifts across the stand, with more JP on the perimeter and more RP toward the interior. The JP is growing better than the RP. Less than half of the RP have reached the break-out growth stage. Stand's east side picks up the edge of a small pond (OFS point).



Stand	Cover Type	Acres	Managed Site	Management Priority (Objective)	General Comments:
3	6229 - Mixed lowland shrub	16.8	No	Unspecified	Swamp birch, tag alder, spiraea, salix & leatherleaf over tussock sedge, with scattered black spruce & tamarack colonizing from edges. Increase in beaver activity on stream; lowland brush dying out in flooded areas. OFS points are beaver dams.
5	50 - Water	4.0	No	Unspecified	Beaver pond, recent expansion has flooded into the adjacent swamp and uplands. Conifers rusting up & lowland shrub cover also dying under the higher water. OFS points are the beaver dam, an abandoned concrete water control structure, and cabins.
7	3302 - Low Density Conifer Trees	14.5	No	Unspecified	Was part of a larger area cut 2" DBH & up in 1995 under 72-013-94-01. The rest of the harvest area was planted to JP for KW habitat in 1998. This portion of the harvest was excluded from the planting and allowed to naturally regenerate to a pine barrens type. JP sapling cover varies from dense patches to scattered open-grown individuals. U/G inclusions common. Residual JP poles occur mostly along the stand's perimeter, along with black spruce, balsam fir, aspen & RP. Black cherry in shrub form occurs throughout. OFS point is a chain gate associated with the former private property. A sub-acre patch of JP on the east side by the beaver pond is being flood-killed.
10	6220 - Alder/willow	12.6	No	Unspecified	Noted during boundary verification. Tag alder with scattered Q and pockets of cattail.
11	6220 - Alder/willow	3.7	No	Unspecified	Tag alder, with scattered black spruce & tamarack poles, being colonized by black spruce regen along the margins.
12	6229 - Mixed lowland shrub	1.3	No	Unspecified	Lowland brush swale with swamp birch, tag alder, labrador tea, leatherleaf & scattered tamarack & black spruce.
15	6224 - Treed Bog	4.6	No	Unspecified	Leatherleaf over a deep sphagnum mat, with spindly top-dying tamarack, black spruce & the occasional JP & WP. The bog is rimmed with swamp birch & a little tag alder.
16	6233 - Wet Meadow	2.1	No	Unspecified	Kettlehole wetland. Marsh grass/sedge cover with a patch of treed bog in the middle (tamarack & black spruce saps over leatherleaf).
17	6233 - Wet Meadow	1.2	No	Unspecified	Two small kettlehole wetlands separated by a shallow ridge. Marsh grass & sedge, rimmed with an uncut buffer of JP & RP.
19	6224 - Treed Bog	5.7	No	Unspecified	Spindly black spruce poles with tamarack & NWC scattered over sphagnum hummocks, labrador tea, marsh grass, tag alder, et al. Standing water between hummocks. Stand gets wetter to the west. The sparse overstory is dying out, but as the spruce & tamarack regen recruits, the stand will move into the forested category, with the sapling cover comprising the main canopy.



Stand	Cover Type	Acres	Managed Site	Management Priority (Objective)	General Comments:
20	6233 - Wet Meadow	1.4	No	Unspecified	Kettlehole wetland. Marsh grass & sedge with a little open water.
22	6233 - Wet Meadow	1.0	No	Unspecified	Small marsh with grass/sedge cover, rimmed with spiraea.
24	6233 - Wet Meadow	5.2	No	Unspecified	Marsh grass/sedge cover with patches of leatherleaf, open water in the middle.
25	6233 - Wet Meadow	2.0	No	Unspecified	Small marsh, ground saturated but with little standing water. Grass/sedge cover rimmed with leatherleaf, salix & spiraea.
35	11 - Low Intensity Urban	8.3	Yes	Unspecified	Cleared corridor of Walsh Road. JP, oak and cherry filling in from edges.
36	6220 - Alder/willow	20.9	No	Unspecified	Tag alder, salix & spiraea over tussock sedge and marsh grass. Widely-scattered JP, tamarack, WP & spruce, with a denser Q inclusion (BF, WP & NWC) in the far NE corner. OFS point is a beaver lodge on Big Creek.
37	6220 - Alder/willow	24.1	No	Unspecified	Area of inundated salix shrub cover. No marsh grass below and the shrub cover is receding due to the higher water levels.
40	50 - Water	56.6	No	Unspecified	Big Creek Impoundment. Earthen dam & water control structure are in comp 289 to the south. Water level was near its maximum level.
41	6220 - Alder/willow	4.4	No	Unspecified	Inundated lowland brush bordering the Big Creek Impoundment. Salix shrub cover over standing water with a perimeter of jack pine pole/sapling trees. Snags common and continued flood-killing of the perimeter JP.
42	6220 - Alder/willow	5.4	No	Unspecified	Lowland brush type on the Impoundment. Mostly salix, with tag alder & spiraea. Currently inundated.
48	6229 - Mixed lowland shrub	1.0	No	Unspecified	Narrow swale wetland with variable lowland brush cover: tag alder, leatherleaf, salix, spiraea, & a small patch of sedge, cattail & open water. Currently inundated.
49	50 - Water	8.0	No	Unspecified	West half of Pickerel Lake; the rest is in Oscoda County. The only thing separating the lake from the Big Creek Impoundment is a sketchy beaver dam (low-profile, lacking recent maintenance).



### 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
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**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.

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

Conservation Area	Type	Description
SCA	Cold Water Stream	A coldwater stream has temperature and dissolved oxygen conditions that allow naturally-reproduced or stocked trout populations and those of other coldwater fish species (e.g., slimy sculpin) to persist from year to year. Coldwater streams in Michigan typically provide these conditions due to substantial contributions of groundwater to their stream flows. Such streams are established by Director's action and designated as trout resources by Fisheries Order 210.
HCVA	Designated Critical Habitat	Critical habitat areas are established via a consultative and cooperative process between the DNR and the U.S. Fish and Wildlife service for the recovery of threatened and endangered species, as governed by Part 365, Endangered Species Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, and the Federal Endangered Species Act of 1973. This is an active program, with proposed species plans in various stages of review. As of now only two exist, Kirtland Warbler Habitat and Piping Plover Habitat.
HCVA	Natural Rivers	There are two Natural Rivers datasets which are derived from spatial buffers set from an established and approved distance from the river centerlines. The Natural Rivers Zoning District is a 400 foot buffer for most Natural Rivers. The Vegetative Buffer ranges from 25 to 100 feet. To view specific Zoning Districts and Vegetative Buffers for each Natural River see the table located on the I:\Documentation\GDSE data folder.