



GRAYLING FOREST MANAGEMENT UNIT COMPARTMENT REVIEW PRESENTATION

COMPARTMENT # 253 ENTRY YEAR: 2013

GIS Compartment Acreage: 1851 County: Crawford

Revision Date: August 23, 2011

Stand Examiner: Joan Charlebois

Legal Description: T27N R02W Sections 7, 8, 9
Grayling Township – northeast part

Management Goals: To provide an area that allows for National Guard training while maintaining forest health, productivity, sustainability, species diversification, and structural diversity throughout the compartment.

Soils and Topography: Upland soils are predominantly Graycalm-Grayling sands, with less than a quarter of the area in Grayling sands. The few small wetlands are on Tawas-Lupton and Leafriver mucks. There is steep terrain associated with the lakes and kettlehole wetlands.

Ownership Patterns, Development, and Land Use in and Around the Compartment: The compartment is surrounded by State ownership within the Military Reservation. The area is under the 1935 long-term lease agreement L-1479 (Act 154 P.A. 1935) with the Michigan National Guard, Department of Military Affairs. The agreement provides for use by the military during their encampment, with no permanent buildings or improvements to be erected. Military needs take precedence over resource management needs on long-term lease lands. The DNR will coordinate all prescribed activities with the National Guard to ensure they are compatible with military training needs.

Unique, Natural Features (include only non-site specific and non-sensitive information): Pine barrens and intermittent wetlands have been identified within the compartment. There is the potential for rare dry prairie plants, animals and insects to occur within the compartment, as well as reptile and avian species around the lakes.

Archeological, Historical, and Cultural Features (include only non-site specific and non-sensitive information): The area has a long history of Military use and two large fires burned across much of the compartment in 1958 and 1965.

Special Management Designations or Considerations: The Military Reservation is considered a Special Conservation Area (SCA). Five small intermittent wetlands were identified as Ecological Reference Areas (ERA's). The compartment is part of the North Camp Grayling Pine Barrens Management Area, which is guided by a formal management plan.

Watershed and Fisheries Considerations: Duck Lake and the south part of the Frog Lakes complex lie within the compartment. These lakes are small and shallow and offer pan fishing opportunities.

Wildlife Habitat Considerations: The compartment's barrens and wetland habitats have the potential to support several rare species.

Mineral Resource and Development Concerns and/or Restrictions: Surface sediments consist of ice-contact outwash sand and gravel. The glacial drift thickness varies between 600 and 800 feet. Beneath the glacial drift are the Coldwater Shale and Marshall Sandstone. The Marshall was used as a building stone in the past. The nearest gravel pit is one-half mile to the west and potential appears to be good. This is part of the State Military leased land. There has been no drilling and there are no leases in this compartment. The closest production is the Conners Marsh, Field five miles to the southeast, which produces gas from the Ordovician Prairie du Chien.

Vehicle Access: County roads include Stephan Bridge, Lewiston Grade and Bucks E-W Roads. Additional access is by way of section line two-tracks.

Survey Needs: None at this time.

Recreational Facilities and Opportunities: The area's primary use is for Military training. Dispersed recreation in the form of hunting, fishing and snowmobiling are the most common recreational uses.

Fire Protection: Access is good for fire protection. Duck Lake is the nearest water point.

➤ **The following reports are available:**

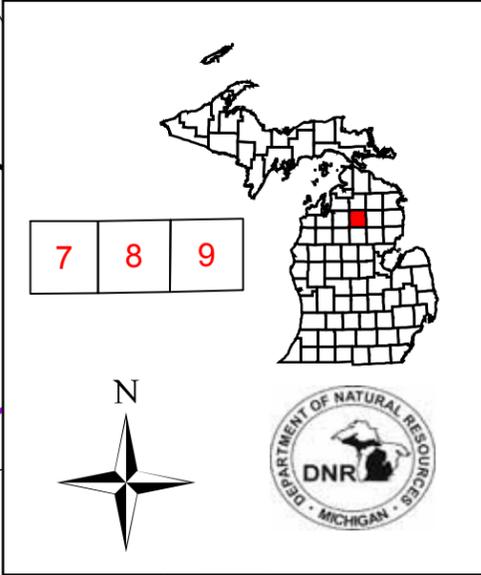
- ◆ **Total Acres by Cover Type and Age Class**
- ◆ **Proposed Treatment Summaries**
- ◆ **Dedicated Conservation Area Details**
- ◆ **Listing of Forested Stands**
- ◆ **Listing of Non-Forested Stands**
- ◆ **Proposed Treatments with No Limiting Factor**
- ◆ **Proposed Treatments with Limiting Factors**

➤ **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**
- ◆ **Dedicated & Proposed Special Conservation Areas**

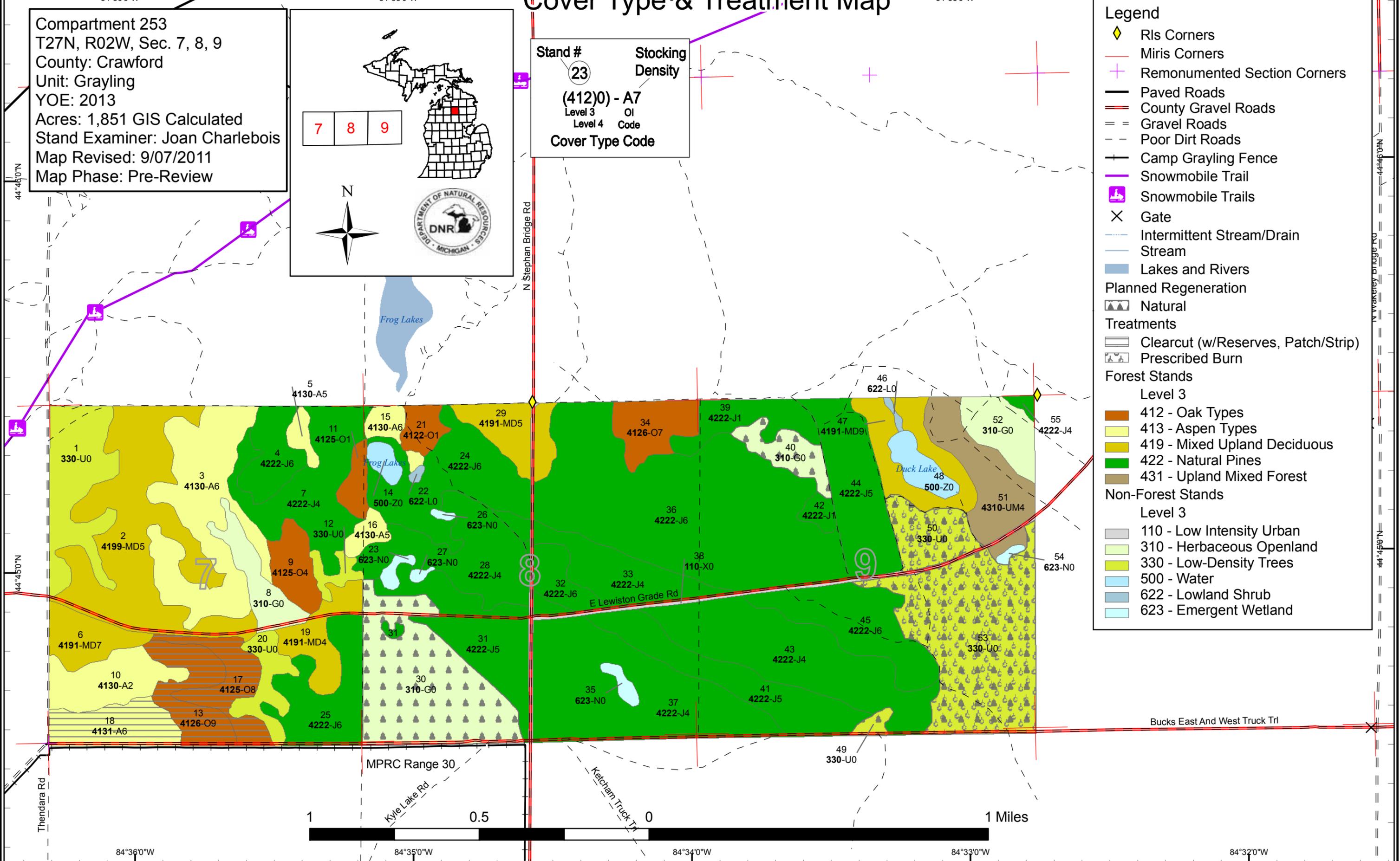
Cover Type & Treatment Map

Compartment 253
 T27N, R02W, Sec. 7, 8, 9
 County: Crawford
 Unit: Grayling
 YOE: 2013
 Acres: 1,851 GIS Calculated
 Stand Examiner: Joan Charlebois
 Map Revised: 9/07/2011
 Map Phase: Pre-Review



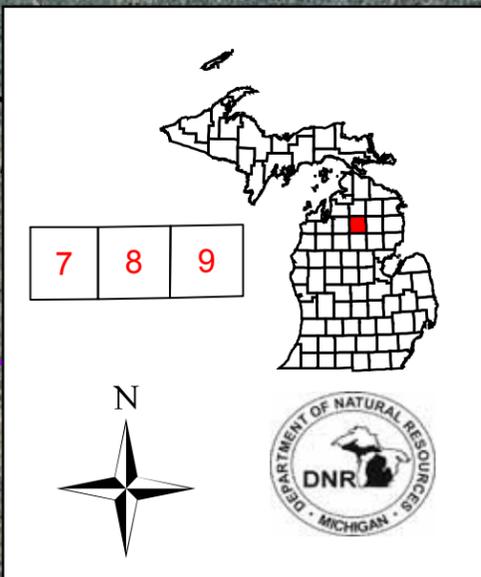
Stand #
 23
Stocking Density
 (4120) - A7
 Level 3 OI
 Level 4 Code
Cover Type Code

- ### Legend
- RIs Corners
 - Miris Corners
 - Remonumented Section Corners
 - Paved Roads
 - County Gravel Roads
 - Gravel Roads
 - Poor Dirt Roads
 - Camp Grayling Fence
 - Snowmobile Trail
 - Snowmobile Trails
 - Gate
 - Intermittent Stream/Drain
 - Stream
 - Lakes and Rivers
 - Planned Regeneration**
 - Natural
 - Treatments**
 - Clearcut (w/Reserves, Patch/Strip)
 - Prescribed Burn
 - Forest Stands**
 - Level 3**
 - 412 - Oak Types
 - 413 - Aspen Types
 - 419 - Mixed Upland Deciduous
 - 422 - Natural Pines
 - 431 - Upland Mixed Forest
 - Non-Forest Stands**
 - Level 3**
 - 110 - Low Intensity Urban
 - 310 - Herbaceous Openland
 - 330 - Low-Density Trees
 - 500 - Water
 - 622 - Lowland Shrub
 - 623 - Emergent Wetland



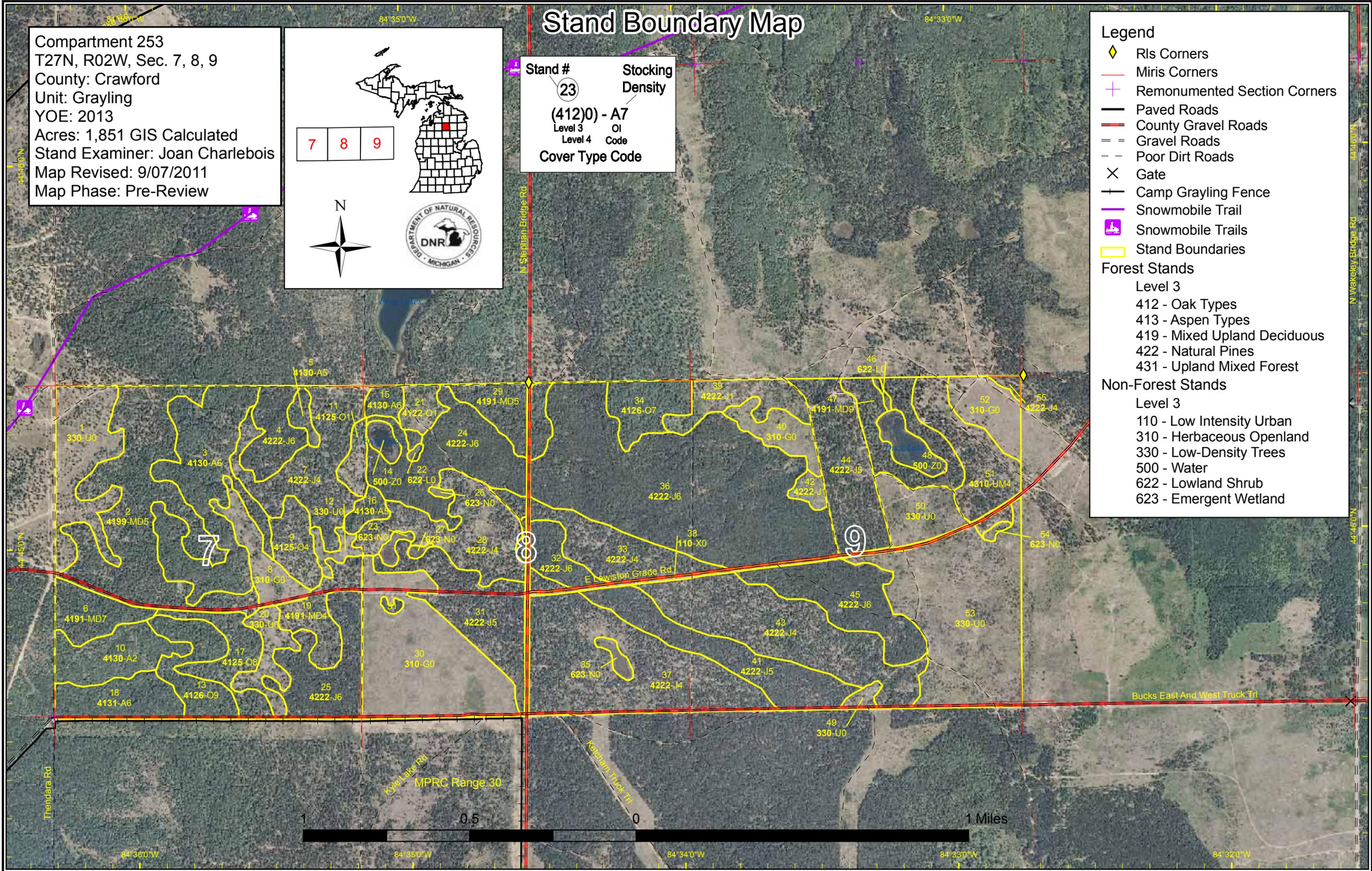
Stand Boundary Map

Compartment 253
 T27N, R02W, Sec. 7, 8, 9
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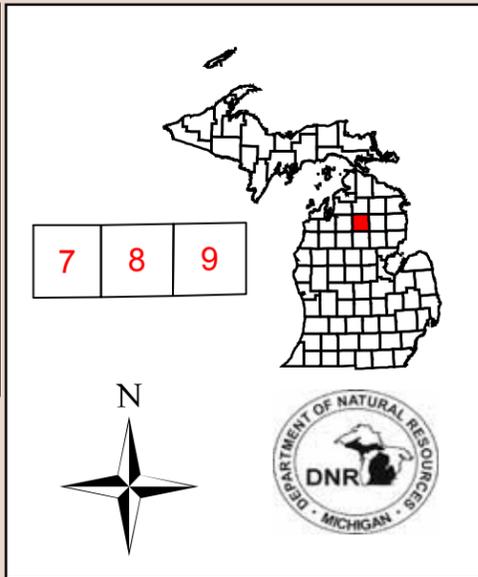


Stand #
 23
Stocking Density
 (4120) - A7
 Level 3 OI
 Level 4 Code
Cover Type Code

- Legend**
- ◆ RIs Corners
 - Miris Corners
 - ⊕ Remonumented Section Corners
 - Paved Roads
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 - - Poor Dirt Roads
 - ⊗ Gate
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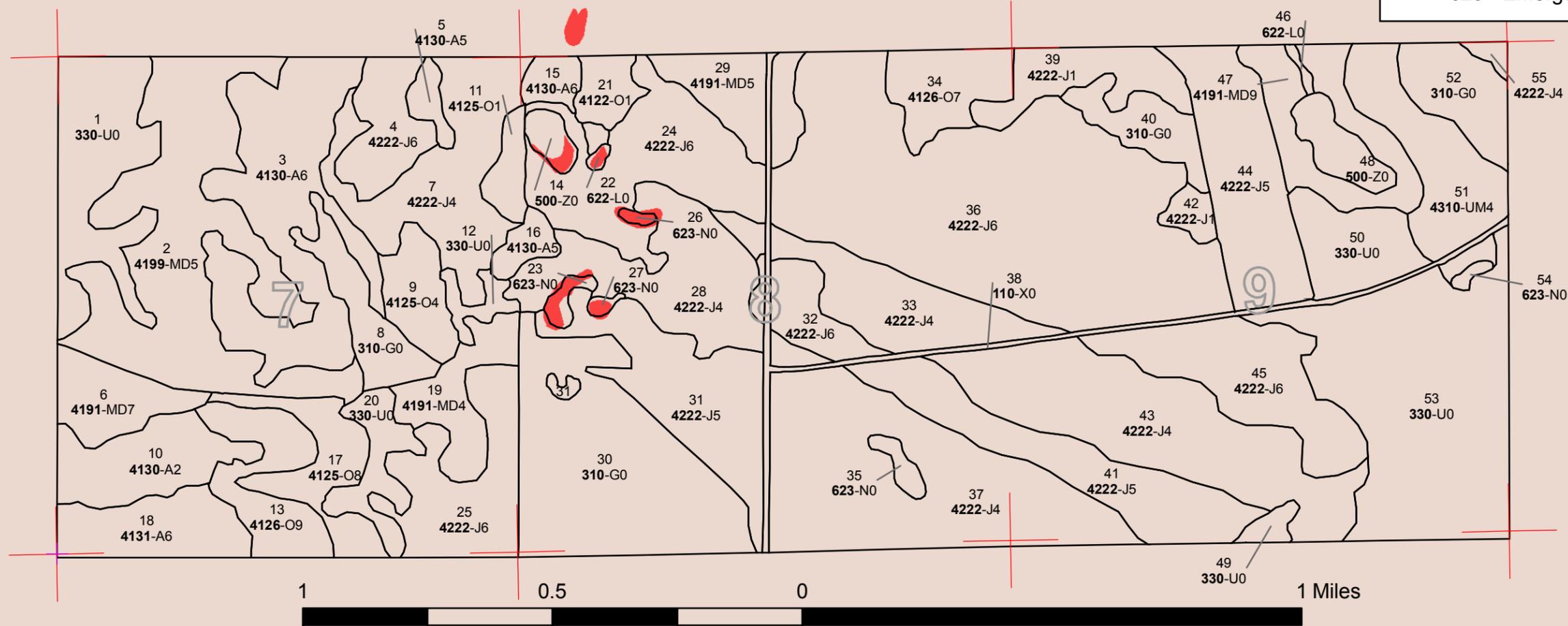
Compartment 253
 T27N, R02W, Sec. 7, 8, 9
 County: Crawford
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 Map Revised: 9/07/2011
 Map Phase: Pre-Review



Dedicated & Proposed Special Conservation Area Map

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

- Legend**
- Miris Corners
 - Stand Boundaries
 - Dedicated Special Conservation Areas
 - Ecological Reference Areas
 - Research, Development, and Military Lands
- Forest Stands**
- Level 3
- 412 - Oak Types
 - 413 - Aspen Types
 - 419 - Mixed Upland Deciduous
 - 422 - Natural Pines
 - 431 - Upland Mixed Forest
- Non-Forest Stands**
- Level 3
- 110 - Low Intensity Urban
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44°46'0"N

44°45'0"N

44°46'0"N

44°45'0"N

84°36'0"W

84°35'0"W

84°34'0"W

84°33'0"W

84°32'0"W

84°36'0"W

84°35'0"W

84°34'0"W

84°33'0"W

84°32'0"W



	Age Class														Total	
	Non-Forested	1-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100-109	110-119	120 +		Unre/en Age
Aspen	0	0	31	0	12	117	0	0	0	0	0	0	0	0	0	160
Herbaceous Openland	151	0	0	0	0	0	0	0	0	0	0	0	0	0	0	151
Jack Pine	0	0	29	0	104	775	0	0	2	0	0	0	0	0	0	911
Low-Density Trees	217	0	0	0	0	0	0	0	0	0	0	0	0	0	0	217
Lowland Shrub	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Marsh	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11
Mixed Upland Deciduous	0	0	0	0	48	108	0	0	32	0	21	0	0	0	0	210
Oak	0	0	0	0	18	18	0	0	0	54	23	0	0	0	0	113
Upland Mixed Forest	0	0	0	0	0	41	0	0	0	0	0	0	0	0	0	41
Urban	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17
Water	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18
Total	417	0	60	0	183	1059	0	0	34	54	44	0	0	0	0	1851



Table 2 – Proposed Treatment Summaries

Grayling Mgt. Unit
Year of Entry 2013

Compartment 253
Total Compartment Acres: 1851

Acres by Treatment Type

Commercial Harvest - 82	Site Prep - 0	Tree Planting - 0	Prescribed Burn - 141	Other - 0
Habitat Cut - 0	Opening Maintenance - 0	Tree Seeding - 0	Pesticide - 0	

Cover Type by Harvest Method

	<i>Clearcut</i>	<i>Selection</i>	<i>Seed Tree</i>	<i>Shelterwood</i>	<i>Thinning</i>	<i>Other - Specify</i>	<i>Total Acres</i>
Aspen	28	0	0	0	0	0	28
Oak	54	0	0	0	0	0	54
Total	82	0	0	0	0	0	82



S t a n d	Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
13	72253013-ccr	28.4	4126 - White, Black, N. Pin Oak	High Density Log	83	Harvest	Clearcut with Reserves	4199 - Other Mixed Upland Deciduous	Cmpt. Review Proposal
<p><u>Prescription:</u> Cut the aspen & red maple >2" DBH, & the oak >10" DBH, except for retention also leave: a total of roughly 3% by area in pine (leave all) & mature oak (ie: clumps of 3-5 trees, associated with the pine where possible, & where they will not negatively impact the oak or aspen regen). Uneven distribution of leave oak is expected. WBHG: military area, don't leave tops.</p> <p><u>Specs:</u></p> <p><u>Other Comments:</u> Treatment Objective is to secure stump origin regen by cutting the mature oak, and to release & give the younger oak a head start by cutting the aspen & red maple.</p> <p><u>Next Steps:</u> Oak is the primary management species, but a mixture of oak, aspen & RM regen is expected and accepted. Follow-up with natural regen check.</p>									
17	72253017-ccr	25.2	4125 - Black, N. Pin Oak	Medium Density Log	80	Harvest	Clearcut with Reserves	4199 - Other Mixed Upland Deciduous	Cmpt. Review Proposal
<p><u>Prescription:</u> Cut the aspen & red maple >2", & the oak >10", except for retention also leave: a total of roughly 3% by area in pine (leave all) & mature oak (ie: clumps of 3-5 trees, associated with the pine where possible, & where they will not negatively impact the oak or aspen regen). Uneven distribution of leave oak is expected. WBHG: military area, don't leave tops.</p> <p><u>Specs:</u></p> <p><u>Other Comments:</u> Treatment Objective is to secure stump origin regen by cutting the mature oak, and to release & give the younger oak a head start by cutting the aspen & red maple.</p> <p><u>Next Steps:</u> Oak is the primary management species, but a mixture of oak, aspen & RM regen is expected and accepted. Follow-up with natural regen check.</p>									
18	72253018-ccr	28.0	4131 - Aspen, Oak	High Density Pole	43	Harvest	Clearcut with Reserves	4139 - Aspen, Mixed Deciduous	Cmpt. Review Proposal
<p><u>Prescription:</u> Cut the aspen & red maple >2" DBH, and the oak >10" DBH, except for retention also leave: the pine, and roughly a dozen large cull aspen (in association with the pine where possible). WBHG: military area, don't leave tops.</p> <p><u>Specs:</u></p> <p><u>Other Comments:</u> Treatment objective is to regenerate the aspen and red maple, and secure stump sprout regen from the mature oak that will be cut, while retaining the younger oak component until the aspen is ready for re-entry in 40-50 years.</p> <p><u>Next Steps:</u> Covertypes goal is aspen/mixed deciduous (oak & RM). Follow-up with natural regen check.</p>									
50	NF_72253050-Burn	24.8	Non-Forested		0	Prescribed Burn	Unspecified	3303 - Mixed Low Density Trees	Cmpt. Review Proposal
<p><u>Prescription:</u> Burn per the North Camp Grayling Pine Barrens Management Plan. The Plan's goal is to restore and maintain the pine barrens ecosystem through reintroduction of periodic fire. Don't exclude the stand's small kettlehole wetland from the burn area.</p> <p><u>Specs:</u></p> <p><u>Other Comments:</u> Is part of Sub-Unit 3A of the North Camp Grayling Pine Barrens Management Area.</p> <p><u>Next Steps:</u> Natural regen survey. The long-term goal is to maintain scattered, low-density pine barrens tree cover. Monitor for invasive exotic plants, particularly spotted knapweed.</p>									
53	NF_72253053-Burn	116.6	Non-Forested		0	Prescribed Burn	Unspecified	3302 - Low Density Conifer Trees	Cmpt. Review Proposal
<p><u>Prescription:</u> Burn per the North Camp Grayling Pine Barrens Management Plan. The Plan's goal is to restore and maintain the pine barrens ecosystem through reintroduction of periodic fire.</p> <p><u>Specs:</u></p> <p><u>Other Comments:</u> Is mainly within Sub-Unit 3B of the North Camp Grayling Pine Barrens Management Area. A large portion of 3B in comp 262 to the east is currently prescribed for burning under FTP C72-641.</p> <p><u>Next Steps:</u> Natural regen survey. The long-term goal is to maintain scattered, low-density pine barrens tree cover. Monitor for invasive exotic plants, particularly spotted knapweed.</p>									

**Total Treatment
Acreage Proposed: 223.0**

Table 4 -- Treatments Prescribed with a Limiting Factor



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Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
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#Error

Prescription Specs:

Other Comment:

Next Steps:

Limiting Factor and No Treatment Reason

Total Treatment Acreage Proposed: 0

Out of YOE -- Treatments
Prescribed with No Limiting Factor

Year of Entry: 2013



Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
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Prescription
Specs:

Other
Comments:

Next
Steps:

**Total Treatment
Acreage Proposed: 0**



S t a n d	Grayling Mgt. Unit		5 – Forested Stands			Compartment: 253 Year of Entry: 2013
	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
2	4199 - Other Mixed Upland Deciduous	Medium Density Pole	108.4	43	51-80	Old notes indicate that this area burned within a large wildfire in 1958. Cores consistently point to a more recent regen event. The stand is primarily stump-sprout origin oak poles/saps in their early 40's, with significant RM & aspen components that regenerated around the same time. Large woody NPO & WO saw and RP saw/poles that pre-date the fire occur as scattered individuals and in small clumps. Brushy JP poles are concentrated along the W edge. Some nice RO sprout poles at the N end, but vast majority of the oak is in NPO sprouts clumps that have characteristic limby form. Aspen clones scattered throughout, with TA more common & generally less vigorous than the BTA. This stand & the adjacent aspen stand to the E do not have a clear covertype boundary: they resulted from the same regen event, the two types grade into each other & contain inclusions of each other. This stand is oak-dominated with RM/aspen, while the adjacent stand is aspen-dominated with oak/RM.
3	4130 - Aspen	High Density Pole	80.7	42	81-110	Old notes indicate that this area burned within a large 1958 wildfire. Cores consistently point to a more recent regen event. Majority of cover is in the early 40's: dense BTA clones & thinner TA clones, with RM & oak sprout poles/saps in the same cohort, & oak saw that pre-dates the fire scattered at varying densities across the stand. TA not as vigorous or healthy as the BTA. One TA clone found with large black canker burls encircling the boles from 2 to 5 feet above ground level; BTA stems mixed into that clone not affected; see OFS point. Stand cut with shallow valley inclusions from the E with lower stocking, more oak & RM. This stand & the adjacent stand to the W do not have a clear covertype boundary: they resulted from the same regen event, the two types grade into each other, & contain inclusions of each other. This stand is aspen-dominated with oak/RM while the adjacent stand is oak-dominated with RM/aspen.
4	42220 - Natural Jack Pine	High Density Pole	22.0	42	51-80	Two-three stick JP poles around 40 years old with low-density representation in JP saw & breaking up NPO saw that pre-dates a noted 1958 wildfire. Good stocking & form overall in the JP, but the poorer-stocked areas have brushy open-grown JP. Patches of NPO stump sprout saps & struggling aspen occur within the stand.
5	4130 - Aspen	Medium Density Pole	5.5	34	51-80	Stand encompasses two BTA clones and a smaller TA clone. Mixed within the clones and filling in between them are NPO & RM stump origin poles/saplings, JP poles, WO saw & NPO saw (terrible health). Noted to have been within a 1958 wildfire area. The aspen cores, while difficult to age precisely, point to a much more recent regen event (mid-1970's).
6	4191 - Mixed Upland Deciduous with Conifer	Low Density Log	21.1	91	1-50	Cut in Dec 2009 under 726520601 by Pinney. Contracted sale prep by Muntz: oak shelterwood (stated cruise residual of 34 sq. ft.) with WO favored for residual over the hybridized RO/NPO, and all RP & WP left. Variable cover in WO, NPO & RO saw; RP & WP logs, poles & saps. RM sap/pole stump clumps, and a few BTA & JP. Sprout-origin regen from the harvest showing moderate browse, RM & aspen hit the hardest.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
7	42220 - Natural Jack Pine	Low Density Pole	55.8	47	1-50	Very open-grown, limby 1-2 stick JP dotted with small clumps of better-stocked 2-3 stick JP. Scattered throughout the stand is a mosaic of grassy openings filling in with JP saplings. NPO stump origin saplings occur in the subcanopy & canopy. The stand has scattered breaking up NPO saw. Small pockets of aspen mixed in along stand margins. The stand is within a large swath noted to have burned in a 1958 wildfire. The stand established progressively over time, but there appears to be two main age classes in the canopy: mid-40's & mid-30's.
9	4125 - Black, N. Pin Oak	Low Density Pole	17.7	45	1-50	Stump-origin NPO poles and saps, with RM stump sprouts, JP poles/saps, and a little aspen along the margins. Noted to have been within a 1958 wildfire, but the two dominant age classes of stump-origin oak are in their mid-40's and mid-30's, indicating more recent regen events (fires and/or salvages). Slightly better quality oak than adjacent stands, better dominant stems, some reaching small saw diameters.
10	4130 - Aspen	Medium Density	31.1	16		Cut in 1994 under 720559301, 2" & up except 5" & up on the RP. Sprout-origin regen from the cut: aspen with RM & oak. Scattered RP & WP small pole residual from the cut. The stand's small amount of trembling aspen is hit by black canker; the majority BTA cover is healthy. The dense BTA clones are separated by poorer-stocked areas with largely RM & shrub cover. The stump sprout red oak within the denser clones is competitive with the aspen and is weeding down to fewer stems per clump than the NPO.
11	4125 - Black, N. Pin Oak	Low Density Sapling	8.6	36		Scrubby, poor quality NPO stump sprout saplings; short, branches to ground JP, clumps of quaking aspen to S & BTA to N; colonizing grassy opening (big & little bluestem, sweetfern). A handfull of terrible quality breaking up NPO saw along N margin.
13	4126 - White, Black, N. Pin Oak	High Density Log	28.4	83	81-110	Mixed oak stand (RO, NPO & WO) with lesser components of BTA & RM. Stems with the strongest NPO characteristics are losing vigor and dropping out of the stand. There is more NPO along the stand's east side, adjacent to a predominantly NPO stand. The best quality RO is in the SW. The stand's N end has more WO and also saw more recent disturbance: there is younger RM & BTA in the canopy & subcanopy. The N end is also where there's most of the oak & pine subcanopy. There is a scattering of RP logs & poles. Regarding the BA swings: the RM stump-clumps account for a disproportionate amount of the BA relative to it's canopy percentage. One "in" clump of RM poles can account for up to 40% of the BA, while the clump itself is intermediate in the canopy, at best.
15	4130 - Aspen	High Density Pole	8.0	44	81-110	Two-aged stand within area noted to have burned in 1965 wildfire. Younger component of aspen (majority transitioned into the pole class) sharing the canopy with mature to overmature WO, NPO, JP and some overmature cull aspen. The north edge of the stand is where the older aspen is concentrated; this strip was not killed in the 1965 fire -- it's on the backside of the hill where fire intensity likely punked out. Stand age is set to the majority younger aspen component (core difficult to age, came up with 44 years old). Didn't age the mature oak, but it is likely in the same 80-90 year old bracket as similar vintage oak cored in the compartment.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
16	4130 - Aspen	Medium Density Pole	6.8	33	51-80	Small trembling aspen stand, most of stems transitioned into pole class, a minority already moved past into the saw class. Some breaking up occurring due to hypoxylon. JP mixed in at margins. Noted to have been within a 1958 wildfire area, but there appears to have been a more recent regen event. Aspen cores not easy to age, but coming out around 30-36 years old.
17	4125 - Black, N. Pin Oak	Medium Density Log	25.2	80	51-80	Two-aged canopy: mature-overmature oak, RM & aspen, and a second age class of pole/sapling RM, aspen & oak that sprouted after an undocumented regen event in the early 1970's. Stems in that younger cohort are largely intermediate in the canopy. The subcanopy has oak & RM that seeded in more recently. The mature NPO is limby, with a high degree cull, and is breaking up. The WO is maintaining decent vigor.
18	4131 - Aspen, Oak	High Density Pole	28.0	43	51-80	Two-aged stand. Most of the merchantable aspen, red maple & oak were cut in 1968 under sale #85-67. Per the contract, all pine were left along with oaks marked with green paint. The designated-cut species were not uniformly removed across the sale area -- that, combined with the merchantable and up spec, has resulted in a mature-overmature component of saw-sized red maple and large cull aspen occurring as scattered individual stems and in half-acre patches within the stand. The primary age class resulting from the harvest includes BTA, RM & RO poles. The second canopy age class is represented by mature RO, WO, RM, BTA & RP. The RO is good quality for this area. The stump-origin RO poles are weeding down nicely to 1-2 dominant stems per clump and some are just into the saw class. The RP, including super-canopy stems, is concentrated in the stand's west & center.
19	4191 - Mixed Upland Deciduous with Conifer	Low Density Pole	23.0	37	1-50	Sparse, 3-aged stand that was noted to have burned within a 1958 wildfire. Majority of cover is in small pole/large sapling stems around 40 years old (stump-origin oak, JP, trembling aspen & a trace of BTA). Poor quality NPO sawtimber that survived the fire are scattered across the stand (second age on that mature oak is from the previous inventory). The youngest component is the sapling JP & small patches of aspen that have been filling in this stand's numerous openings. Open grown form predominates.
21	4122 - Oak, Pine	Low Density Sapling	9.8	35		Cut in 2004 under 720240401 by Chris Muma, 5" DBH and up. Stand has two age classes: patchy distribution in large sapling/small pole NPO & JP residual from the cut, and oak & JP that regenerated after the cut. A trace of aspen regen along the west edge. As the seedlings continue to recruit, the stand will make at least medium stocking.
24	42220 - Natural Jack Pine	High Density Pole	59.4	44	51-80	Old notes indicate that this was within a large swath burned by a 1965 wildfire. Relatively uniform cover in small pole/large sapling JP (35 to 45 years old). Full- to over-stocked conditions resulting in good self-pruning & height growth. Suppressed/stagnating stems weeding out. Poor quality NPO stump origin stems in the canopy. Trace of mature JP poles/saw that pre-date the fire. Understory oaks combines WO & NPO to make "low" threshold. Rolling to steeply rolling terrain with small kettlehole depressions.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
25	42220 - Natural Jack Pine	High Density Pole	41.5	42	81-110	Fully-stocked pockets of JP (not all transitioned into pole class, suppressed sapling stems weeding out, poles 1-3 sticks tall) separated by poorer-stocked inclusions of >/< open-grown JP. Breaking-up NPO saw, NPO stump origin saplings & poles, and small patches of struggling aspen are scattered within the stand. While noted to have burned within a 1958 wildfire, the stand's JP age trends in early- to mid-40's. There is a trace of older JP that pre-dates the fire.
28	42220 - Natural Jack Pine	Low Density Pole	52.2	36	1-50	Limby, open-grown JP that has been filling in across part of an area noted to have burnt in a 1958 wildfire. There are poor quality NPO stump sprout clumps in the canopy, as well as a younger age class in the sub-canopy. Terrain is rolling to steeply rolling, with numerous kettlehole depressions. The holes tend to be poorly stocked frost pockets, often with small wetlands at the bottom (see Non-Forest & OFS layers). Given the stand's progressive establishment over time - the '58 fire not being the most recent regen event - there is more than one age class of JP, with the most common age band being 35-40 years old.
29	4191 - Mixed Upland Deciduous with Conifer	Medium Density Pole	25.3	35	51-80	Mixed oak, JP, aspen & RM stand. Majority of canopy stems are small pole/large sapling in size, with scattered mature oak saw above. The aspen occurs in small clones. Oak & RM are mostly stump origin. Noted to have burned in 1965 wildfire, but cores point to more recent regen event(s).
31	42220 - Natural Jack Pine	Medium Density Pole	51.6	41	1-50	Part of large swath noted to have burnt in 1958 wildfire. Variable canopy closure: poorly stocked areas (with branches to ground JP) alternating with fully-stocked patches of self-pruning JP. Predominantly small pole/large sapling in size. Scattered poor quality NPO stump sprout stems in the canopy. Stand's NW edge borders steep kettlehole wetlands. Multi-part stand: the small western polygon encompasses JP in a steep kettlehole that was excluded from the surrounding 2004 harvest.
32	42220 - Natural Jack Pine	High Density Pole	17.1	43	51-80	Old notes indicate that this was within a large swath burned in a 1958 wildfire. Relatively uniform cover in small pole/large sapling JP, clean-boled with narrow crowns. Full- to over-stocked conditions predominate; slower growth where stem densities highest; suppressed stems weeding out. NPO stump-origin poles & saplings mixed in.
33	42220 - Natural Jack Pine	Low Density Pole	39.8	40	1-50	Generally open-grown, branches-to-ground JP that have been filling in across an area noted to have burned in a 1958 wildfire. JP in late 30's to early 40's, short, limby, high taper. Poor quality NPO stump-origin poles. JP continuing to colonize the poorly-stocked areas. Dotted with small kettleholes, no wetlands encountered.
34	4126 - White, Black, N. Pin Oak	Low Density Log	23.1	92	1-50	Cut in Dec 2009 under 726520601 by Pinney. Contracted sale prep by Muntz: oak shelterwood (stated cruise residual of 27 sq. ft.) with WO favored for residual over the hybridized RO/NPO. A handful of RP & JP in the canopy. Regen makes full stocking by stem densities but not by canopy percentages since the oak, RM & aspen sprouts are so new -- just single, unbranched spikes. Some of the RM & oak stump sprouts are above 3'; the rest are likely to move there this growing season. Deer browse relatively light, considering the winter's low snow depths.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
36	42220 - Natural Jack Pine	High Density Pole	194.4	43	51-80	Notes indicate that this stand was part of a large swath burned in a 1965 wildfire. The stand has relatively uniform coverage in small pole/large sapling JP, with high stem densities resulting in good self-pruning & straight form, but slow growth where overstocked. Suppressed JP stems weeding out. NPO stump sprouts from the fire are moving into the pole class. Mature overstory oak are mixed in along the transition zone with adjacent oak types to the north & northwest. Older JP poles that pre-date the fire occur scattered at low densities, and there is also a three-acre pocket of mature JP poles/saw along the west edge of stand 34. OFS point in stand's NE is a steep-sided kettlehole with a small wetland at the bottom (grasses, sedge, juncus, spiraea, salix).
37	42220 - Natural Jack Pine	Low Density Pole	108.7	44	1-50	Variable distribution of JP poles that have been filling in following the 1958 wildfire. JP is generally open-grown, limby & 1-stick tall, but denser pockets have cleaner, 2-stick tall stems. Scattered NPO stump-sprout clumps. Stand is dotted with poorly-stocked frost pocket depressions. Ages found in the JP & NPO (topping out in the mid-40's) indicate that there were undocumented regen event(s) later than the noted 1958 fire. This area, just outside of Range 30, has seen periodic fires.
39	42220 - Natural Jack Pine	Low Density Sapling	23.9	15		Cut in 1994 under 722019301 by Stagg, 4" DBH & up. JP sapling regen from the cut predominates, along with oak stump sprouts & small patches of struggling trembling aspen sprouts. The largest aspen clone (~1.5 acres, hit by black canker) borders the two-track near the stand's west side. The harvest left a scattered residual of mostly large sapling/small pole JP & NPO, as well as a trace of trembling aspen & red pine.
41	42220 - Natural Jack Pine	Medium Density Pole	49.2	45	51-80	Small pole/large sap JP noted as having been within a 1958 wildfire area. JP is one to two sticks tall, self-pruning in fuller-stocked areas, but branches-to-ground form where stocking is lower. Occasional NPO stump sprout saps. Ages found in the JP (topping out in the mid-40's) indicate that there were undocumented regen event(s) later than the noted 1958 fire. This area, just outside of Range 30, has seen periodic fires.
42	42220 - Natural Jack Pine	Low Density Sapling	5.5	15		Cut in 1994 under 722019301 by Stagg, 4" DBH & up. Patchy JP sapling & NPO stump sprout regen from the harvest.
43	42220 - Natural Jack Pine	Low Density Pole	87.4	45	1-50	Generally open-grown, branches-to-ground JP that have been filling in across an area noted to have burned in a 1958 wildfire. One to two stick poles ranging from late 30's to mid-40's, with slowly-recruiting saplings below.
44	42220 - Natural Jack Pine	Medium Density Pole	51.6	38	1-50	Previous inventory noted stand as having been within old range area; has parallel series of grown-over roads. JP in three main age/size classes: 1 to 2 stick poles around 40 years old, 2 to 4 stick poles/small saw 50+ years old, and saplings 20-30 years old. Also a minor amount of poor-quality NPO saw, poles and saplings. Ground that saw the most disturbance is still being colonized. Open-grown form common.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
45	42220 - Natural Jack Pine	High Density Pole	48.4	41	51-80	Notes indicate that this stand was part of a large swath burned in a 1965 wildfire. JP stand still transitioning from sapling to pole class, with roughly half of the stems barely making a stick. Full stocking condition has produced relatively straight, self-pruning stems, with some stagnation occurring where stem densities are high. There is also a minority component of older JP poles in small pockets that survived the fire.
47	4191 - Mixed Upland Deciduous with Conifer	High Density Log	32.0	75	51-80	NPO & JP on sideslopes down to Duck Lake. Majority of the cover is mature to overmature, with younger age-classes of JP & oak progressively filling in below. NPO is limby, relatively short, in stump-origin clumps (first age is from previous inventory on the oak). The stand's small amount of trembling aspen is concentrated along the lake margin. Trace canopy representation in white oak & red pine.
51	4310 - Pine, Oak Mix	Low Density Pole	40.9	46	1-50	Mixed JP & NPO stand. Patchy, variable cover in small pole/large sapling JP (30-40 years old), mature JP poles/saw (50+ years old), limby poor-quality NPO (70+ years old), and seedlings/saplings filling in between. First age is an average between the pole/sap JP cohort and the pole/saw JP cohort. Given how the JP has been slowly colonizing an area that had only scattered oak cover, open-grown form predominates. NPO cover increases to N. Aspen clone at N end almost entirely broken up. East edge spreading into old range area.
55	42220 - Natural Jack Pine	Low Density Pole	2.4	71	1-50	Small forested corner of the compt; rest of type is in the adjacent compt 252 to the N. Pocket of overmature JP in NE (previous inventory age was on that component), with younger poles, saps & seedlings filling in the old range area to the SW.



Stand	Cover Type	Acres	Managed Site	Management Priority (Objective)	General Comments:
1	3303 - Mixed Low Density Trees	48.7	No	Low (NonForested)	Large upland opening in shallow valley that has seen periodic disturbance, including noted 1958 wildfire. Multiple age-classes of stump origin oak occur throughout, along with brushy open grown JP saplings/poles and the occasional oak saw. Wide transition zone with adjacent forested cover -- this stand has inclusions of that adjacent type. Groundcover above the snow: big & little bluestem, sweetfern, blueberry, & St. Johns Wort.
8	3102 - Grass	20.2	No	Low (NonForested)	JP, NPO & aspen colonizing a large grassy opening. Tree cover is primarily sapling/pole sized, but there are a few oak saw. Open-grown form. Seen above snow: little bluestem, blueberry, sweetfern.
12	3302 - Low Density Conifer Trees	6.3	No	Low (NonForested)	Shallow valley being colonized by JP. Short, shrubby JP scattered across frost pocket opening with little & big bluestem visible above the snow.
14	50 - Water	5.6	No	Low (NonForested)	South body of water in Frog Lakes complex. Rimmed with leatherleaf, bullrush & other sedges. MNFI noted south end as an Intermittent Wetland or infertile pond/marsh, Great Lakes Type.
20	3303 - Mixed Low Density Trees	17.1	No	Low (NonForested)	Oak/pine savannah. Fire exclusion allowing succession toward forested cover, with JP, RP, oak & upland shrubs filling in. Groundcover above the snow: big & little bluestem, blueberry, bearberry.
22	6229 - Mixed lowland shrub	1.0	No	Low (NonForested)	Wetland at bottom of kettlehole. Seen above the snow: leatherleaf & woolgrass. MNFI noted it as an Intermittent Wetland or infertile pond/marsh, Great Lakes Type.
23	6233 - Wet Meadow	3.2	No	Low (NonForested)	Wetland in kettlehole depression. Majority cover in sedge/grasses, with patches of leatherleaf, salix, juncus. MNFI noted it as an Intermittent Wetland or infertile pond/marsh, Great Lakes Type.
26	6233 - Wet Meadow	1.0	No	Low (NonForested)	Wetland at bottom of kettlehole. Mostly sedge/grass cover, with a patch of leatherleaf & clumps of salix. MNFI noted it as an Intermittent Wetland or infertile pond/marsh, Great Lakes Type.
27	6233 - Wet Meadow	1.2	No	Low (NonForested)	Two kettleholes (separated by a low ridge) that contain wetlands. The west wetland has mostly sedge/grass cover & a patch of leatherleaf; the east wetland is very small, higher & drier, with sedge & a little spirea. MNFI noted it as an Intermittent Wetland or infertile pond/marsh, Great Lakes Type.



Stand	Cover Type	Acres	Managed Site	Management Priority (Objective)	General Comments:
30	3101 - Poverty Grass, Cladonia	92.3	Natural Regen	Jack Pine	Previous inventory prescribed cutting the JP followed by burning to manage as a pine barrens area. Cut in 2004 under 720240401 by Chris Muma, 2" DBH and up. Burned 4-21-06 under FTP C72-529. Oak & cherry stumps re-sprouted, JP seedlings establishing in patches. Above the snow & in bare patches can be seen dominant low grass cover (spp?) with patches of big & little bluestem, sweetfern, cladonia, blueberry & bearberry.
35	6233 - Wet Meadow	3.8	No	Low (NonForested)	Above the snow: sparse tufts of wool grass, other sedges, spiraea, willow. Appears to be a drying out marsh. Rimmed with JP & trembling aspen. MNFI noted it as an Intermittent Wetland or infertile pond/marsh, Great Lakes Type.
38	11 - Low Intensity Urban	16.9	No	Low (NonForested)	Cleared county road corridors, gravel & sand.
40	3102 - Grass	17.0	Natural Regen	Jack Pine	Was part of same harvest area with stands to N & S (cut in 1994 under 722019301 by Stagg, 4" DBH & up) but was then burned in a wildfire (old notes indicate Crawford #44, 15.6 acres, gps'd in Nov 1999). Fire left only small patches of JP saps alive. The oak & cherry resprouted. Patches without snowcover have what looks to be cool-season grasses, along with little & big bluestem, blueberry & bearberry. Rolling terrain, with steepest hole in NW hitting the watertable; OFS point there is a small wetland with sedge, grass, juncus, spirea.
46	6220 - Alder/willow	1.2	No	Low (NonForested)	String of two small wetlands separated by a shallow ridge. The south wetland had primarily willow shub cover, the N one appeared to be a marsh (nothing above the snow).
48	50 - Water	12.4	No	Unspecified	Duck Lake. Rimmed with bullrush & other sedge species. Informal lake access point at SE end.
49	3302 - Low Density Conifer Trees	3.9	Natural Regen	Jack Pine	Cut in 2004 under 720240401 by Chris Muma, 5" DBH and up, leaving pockets of large sap/small pole JP residual separated by sparsely-stocked areas with JP, NPO & cherry regen from the cut. Long-range plan for the area is pine barrens management.
50	3302 - Low Density Conifer Trees	24.8	Natural Regen	Jack Pine	Cut in 2004 under 720240401 by Chris Muma, 5" DBH and up. Stand has patches of large sap/small pole JP residual scattered over the post-harvest JP regen. Also NPO stump sprouts from the harvest & older residual saplings. Dense JP regen at landing, sparser elsewhere. As JP seedlings continue growing into recordable height range (>3' tall), this stand will shift into the Forested category -- could even happen this growing season. OFS point is a small kettlehole bog with leatherleaf, juncus, sedge & spiraea.
52	3102 - Grass	21.9	No	Low (NonForested)	Old range area. Grassy opening with big & little bluestem showing above the snow. Slowly being colonized by JP (tumbleweed form). Also scattered NPO stump sprout clumps.



Stand	Cover Type	Acres	Managed Site	Management Priority (Objective)	General Comments:
53	3302 - Low Density Conifer Trees	116.6	Natural Regen	Jack Pine	Cut in 2004 under 720240401 by Chris Muma, 5" DBH and up, leaving patches of small pole/large sap JP scattered across the majority open harvest area. Regen from the cut includes JP seedlings, saplings and NPO stump sprouts. There is heavy JP regen at the landings, but the combined JP cover >3' tall across the sale area doesn't average out to 25%. As the seedling (<3' tall) JP regen continues to recruit, this stand will make the forested benchmark, potentially during the upcoming growing season.
54	6233 - Wet Meadow	1.5	No	Low (NonForested)	Visible above the snow: traces of rush, rattlesnake grass?, spiraea & leatherleaf in frost pocket depression. West end had fill dumped into it in past that is vegetated over. Wetland succession towards upland type, with JP colonizing.



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.

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

Conservation Area	Type	Description
ERA	Ecological Reference Areas	Ecological Reference Areas (ERAs) are high quality examples of natural communities that have been identified as Element Occurrences (EOs) by the Michigan Natural Features Inventory (MNFI) within the context of their natural community classification system. Element Occurrences with viability ranks of A (Excellent) or B (Good) and a Global (G) or State (S) element (rarity) ranking of endangered (1), threatened (2), or rare (3) serve as an initial base of ERAs. They may be located upon any ownership in the State. The system is comprised of individual or associations of natural community types that are managed for restoration and maintenance of natural ecological processes and values. The public may submit recommendations for lands as ERAs using the DNR Conservation Area Recommendation Form.
SCA	Research and Military Areas	These areas provide facilities and lands specifically dedicated for research, or other purposes. They include the 5,847 acre Forest Fire Experiment Station, the 12,000 acre Houghton Lake Wildlife Research Area, the Beaver Islands Archipelago Wildlife Research Area (that includes most of Garden Island, all of High and Hog Islands, all state owned land on Beaver, South Fox and North Fox Islands), the Cusino Wildlife Research Area, the 3,000 acre Hunt Creek Fisheries Research Station, the 125 acre Wyman Nursery, and over 144,000 acres of Military Lands.