Escanaba Forest Management Unit
Compartment Review Presentation
Compartment 23 Entry Year: 2012
Compartment Acreage: 257 County: Menominee

Revision Date: August 25, 2010

Stand Examiner: Joe Durbin, Forester, FMD; Bill Rollo and Craig Albright, Wildlife Division

Legal Description: T35N R29W Sections 1 and 12**.**

Identified Planning Goals: Menominee End Moraine

Management Goals: This compartment is part of a block of land located about 12 miles west of Stephenson, Michigan near the Menominee River and Wisconsin border in west-central Menominee County. It is within Eco-Region 9.1 Spread Eagle-Dunbar Barrens. It is a mostly upland forest with minor areas of non-forested types. The uplands are primarily oak and aspen types with some white pine types. Non-forested types are mainly low-density trees and wet grassy areas. Proposed for treatment are about 140 acres which include 7 stands. No prescribed stands are factor limited. Of the proposed treatments, about 91 acres (4 stands) are select cut and 52 acres (3 stands) are final harvest with reserves.

Soil and Topography: The topography is mostly level to gently rolling. The soils are primarily well-drained sands. The major soil series are Pemene and Rubicon.

Ownership Patterns, Development, and Land Use in and Around the Compartment: This compartment is a small compartment of two blocks—one of 5 forty-acre blocks and one block of one forty with a government lot on the Menominee River. The in-holding between the blocks is a forty on which an underground/open-pit mine for metallic minerals is proposed. Future nearby development and land-use may include mining. Private land near this compartment is used for permanent and part-time residence and recreation--mainly summer homes and hunting camps. Several private landowners reside near the compartment, however, there are also many absentee owners. Adjacent to and southwest of this compartment is other state-owned land which is part of the Shakey Lakes Oak-Pine Barrens Natural Area.

Unique, Natural Features: The Michigan Natural Features Inventory GIS layer indicates that no known element occurrences are within this compartment. However, potential habitat exists along the Menominee River riparian corridor. Many plant species unique to the Upper Peninsula can be found in southern and western Menominee County. The Shakey Lakes Oak-Pine Barrens Ecological Reference Area (ERA) and proposed Biodiversity Stewardship Area (BSA) are adjacent to this compartment.

Archeological, Historical, and Cultural Features: There are known sites within this compartment along the riparian corridor.

Special Management Designations or Considerations: Stands along the Menominee River are considered for Special Conservation Areas – Menominee River riparian corridor and habitat for wildlife species that utilize mature forest conditions. Also, the Shakey Lakes Oak and Pine Barrens ERA and proposed BSA is adjacent to this compartment.

Watershed and Fisheries Considerations: Stands along the Menominee River are designated as SCA—riparian corridor.

Wildlife Habitat Considerations: This tiny compartment is the site of intensive exploration activity for potential development of a metallic-mineral mine. During this exploration phase, state land use permits are being written in a manner that emphasize safeguarding the vegetation, wildlife, and threatened and endangered species. As was the case in nearby Compartment 17, the main wildlife habitat issue in this tiny compartment is management of oak. Oak is relatively uncommon on the Escanaba Forest Unit, and it provides valuable food for wildlife in the form of mast (acorns). Unfortunately, much of the oak is reaching maturity, and oak wilt disease is causing some mortality as well. There is a need to preserve mature oak trees for mast and den sites while also regenerating the type. In this compartment, 4 stands are typed as oak, and 10 additional stands have oak as a component species. During this decade, about half of the stands containing oak will receive harvest treatment to promote regeneration through seed or stump sprouting, and to control the spread of oak wilt disease. The other half of oak-containing stands will be deferred from treatment. Stands located adjacent the Menominee River are designated as a Special Conservation Area to promote mature forest conditions along the water course.

Mineral Resource and Development Concerns and/or Restrictions: Surface sediments consist of an end moraine of medium textured glacial till and glacial outwash sand and gravel and postglacial alluvium. There is approximately 60 feet of relief in the compartment. The glacial drift thickness varies between 10 and 50 feet. The Cambrian Munising Formation underlies the glacial drift. The Munising does not have an economic use presently. Two old gravel borrow pits exist in section 01 but are not foreseen to be reopened this entry. Private lands adjacent to this compartment are currently being explored for metallic mining. The portion of this compartment in section 12 is also currently being explored for metallic mining. No economic oil and gas production has been found in the UP.

Vehicle Access: Access into this compartment is from the north and south using the paved Menominee River Road (county road).

Survey Needs: One survey corner is needed for the recommended treatments.

Recreational Facilities and Opportunities: Popular recreation includes boating, hunting, trapping and fishing. The Sixty Islands Access Site is located on the Menominee River in section 01. The potential for developed recreational activities within this compartment may include cross-country skiing, snowmobiling and ORV trail riding or boating/canoeing on the Menominee River.

Fire Protection: The compartment has a low risk for wildfire due to the current timber types. However, if wildfires do occur, access to and within the compartment is very good.

Additional Compartment Information: None.

- **The following reports from the Inventory are attached:**
  - **Total Acres by Cover Type and Age Class**
  - **Proposed Treatment Summary**
  - **Proposed Treatments – No Limiting Factors**
  - **Proposed Treatments – With Limiting Factors**
  - **Stand Details (Forested and Nonforested)**
  - **Dedicated and Proposed Special Conservation Areas**

- **The following information is displayed, where pertinent, on the attached compartment maps:**
  - **Base feature information, stand boundaries, cover types, and numbers**
  - **Proposed treatments**
  - **Details on the road access system**

Cover Type & Treatment Map

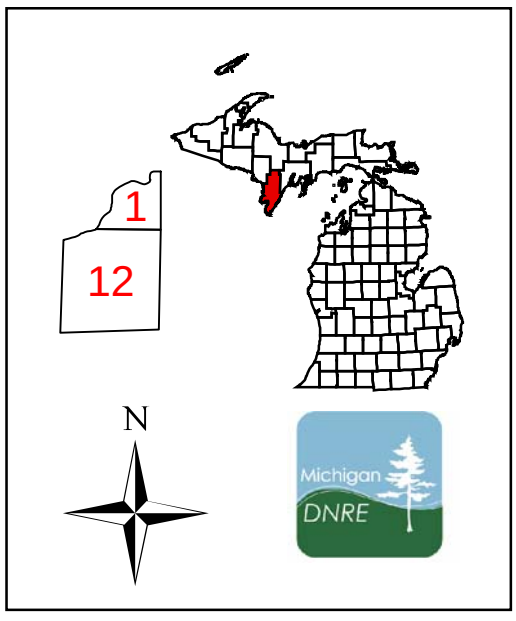
Compartment 23
T35N, R29W, Sec. 1, 12
County: Menominee
Unit: Escanaba
YOE: 2012
Acres: 257 GIS Calculated
Stand Examiner: Joe Durbin
Map Revised: 8/26/2010
Map Phase: Pre-Review

Stand # 23

Stocking Density

(412)0) - A7
Level 3 Level 4 OI Code

Cover Type Code



Legend

- Miris Corners
- Paved Roads
- Poor Dirt Roads

Treatments
- Clearcut (w/Reserves, Patch/Strip)
- Selection (Group, Single Tree)

Forest Stands
Level 3
- 411 - Northern Hardwood
- 412 - Oak Types
- 413 - Aspen Types
- 422 - Natural Pines
- 612 - Lowland Coniferous Forest

Non-Forest Stands
Level 3
- 110 - Low Intensity Urban
- 310 - Herbaceous Openland
- 320 - Upland Shrub
- 330 - Low-Density Trees
- 623 - Emergent Wetland
- 710 - Sand, Soil

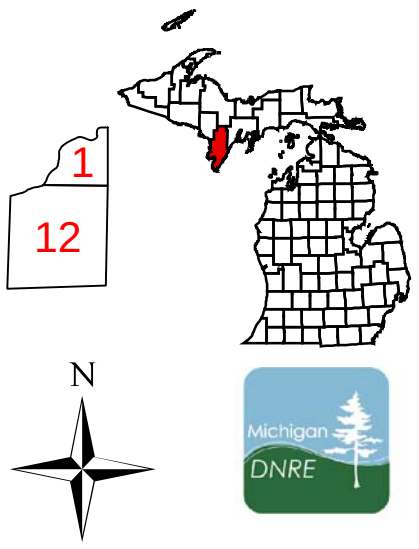
Stand Boundary Map

Compartment 23
T35N, R29W, Sec. 1, 12
County: Menominee
Unit: Escanaba
YOE: 2012
Acres: 257 GIS Calculated
Stand Examiner: Joe Durbin
Map Revised: 8/26/2010
Map Phase: Pre-Review

Stand # 23

Stocking Density

(412)0) - A7
Level 3 Level 4 OI Code
Cover Type Code



Legend

- Miris Corners
- Paved Roads
- Poor Dirt Roads
- Stand Boundaries

Forest Stands

Level 3

- 411 - Northern Hardwood
- 412 - Oak Types
- 413 - Aspen Types
- 422 - Natural Pines
- 612 - Lowland Coniferous Forest

Non-Forest Stands

Level 3

- 110 - Low Intensity Urban
- 310 - Herbaceous Openland
- 320 - Upland Shrub
- 330 - Low-Density Trees
- 623 - Emergent Wetland
- 710 - Sand, Soil

2 4119-M9
4 110-X0
5 4130-A6
1 4119-M9
6 623-N0
3 330-U0
7 4123-O8
10 4130-A6
15 4220-W8
8 4131-A6
9 320-U0
12 4123-O7
14 310-G0
17 623-N0
18 4220-W8
13 4131-A6
16 710-Y0
21 4130-A3
11 4123-O9
20 6124-Q5
19 4123-O7

1 12

Menominee River
Unknown 12.1
River Rd
Y Rd
Santosa Ln
Spring Lake
Johnson Lake Rd
Becker Lake
Resort Lake

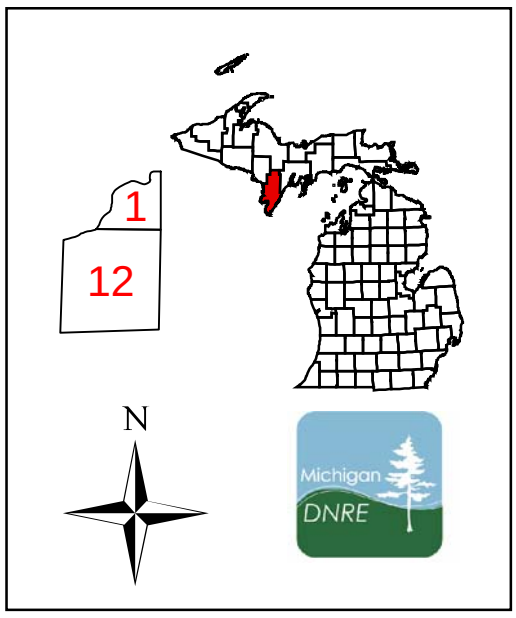
87°51'0"W 87°50'0"W 87°49'0"W
45°28'0"N 45°27'0"N 45°26'0"N

0 0.5 1 Miles

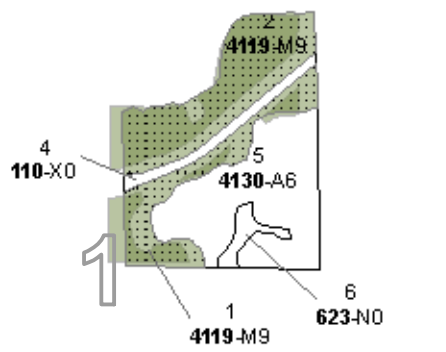
Dedicated & Proposed Special Conservation Area Map

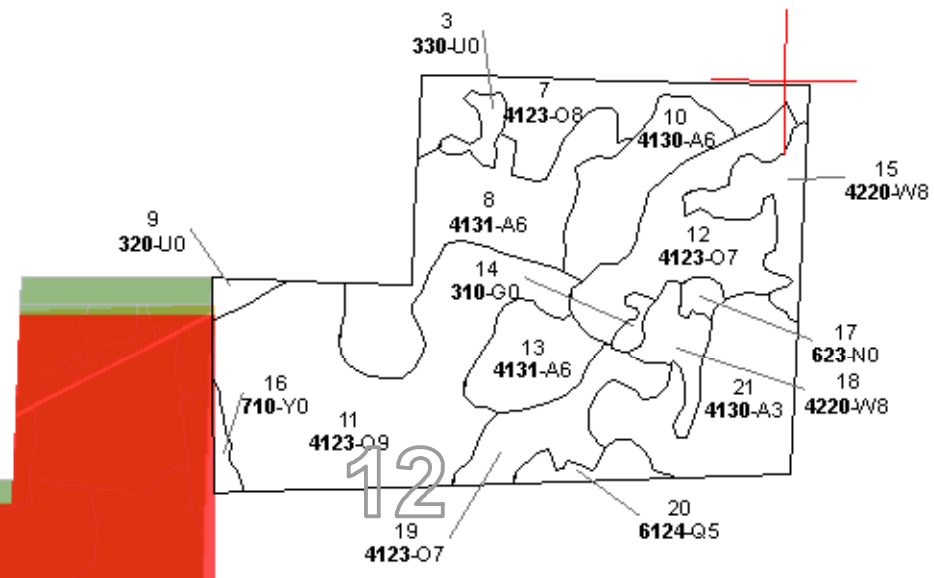
Compartment 23
T35N, R29W, Sec. 1, 12
County: Menominee
Unit: Escanaba
YOE: 2012
Acres: 257 GIS Calculated
Stand Examiner: Joe Durbin
Map Revised: 8/26/2010
Map Phase: Pre-Review

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



Legend
- Miris Corners
- Stand Boundaries
- Ecological Reference Areas
- Non_Dedicated Natural Areas and National Natural Landmarks
- Potential Old Growth Stands





1 0.5 0 1 Miles

87°51'0"W 87°50'0"W 87°49'0"W
45°28'0"N 45°27'0"N 45°26'0"N

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.

Data updated before 10:00 AM

Stand	SCA Type	SCA Name	Acres	Comments
1	**Unique Site - SCA**	33023001	8.0	SCA--River Road scenic corridor. Manage for archeological interests, manage for late successional mesic northern forest, manage for old growth forest, manage for scenic highway corridor along River Road.
2	**Unique Site - SCA**	33023002	13.6	SCA-Menominee River riparian corridor. Manage for late successional mesic northern forest, manage for old growth forest, manage for scenic highway corridor along River Road. Stand contains Sixty Islands boat access site.

6 – Nonforested Stands

Data updated before 10:00 AM

Compartment: 023
Year of Entry: 2012

Stand	Cover Type	Acres	Gen Cmts:
3	3301 - Low Density Deciduous Tree	2.5	
4	11 - Low Intensity Urban	2.5	Menimonee River Road right-of-way.
6	6230 - Cattail	1.5	a low swale between two hills. Center portion is a lowland type.
9	3204 - Mast Producing Shrub	1.9	Menimonee River Road right-of-way. - J. Durbin
14	3105 - Mixed Upland Herbaceous	1.4	Area is partly lowland and partly high ground. The north portion is a low area and is grassy covered but due to drought, the area is dry now. During normal years the area would be under water. The south part is high ground with upland brush/grassy opening - J. Durbin.
16	710 - Sand, Soil	1.8	Old sand pit, with scattered trees, mostly grass covered now.
17	6233 - Wet Meadow	1.5	Dry now but during normal years the area would have surface water - J. Durbin

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
1	4119 - Mixed Northern Hardwoods	High Density Log	8.0	90	111-140	SCA-Menominee River riparian corridor. sedge ground cover. maple seedlings <6" high. Other species found: white pine.
2	4119 - Mixed Northern Hardwoods	High Density Log	13.6	90	111-140	SCA-Menominee River riparian corridor. Sixty Island river access site is in this stand. Stand has some unique tree species--bitternut hickery, silver maple. Other species present: hemlock, white pine, quaking aspen.
5	4130 - Aspen	High Density Pole	18.1	28		Stand last treated in 1982--final harvest except no cut oak and cherry. Balsam in sub-canopy is patchy--some areas are very dense and other areas have none. Other species found: beech, white spruce, sugar maple.
7	4123 - Red Oak	Medium Density Log	19.8	94	81-110	Well-drilling for mine in this stand. Other species found: white pine, beech, red pine, jack pine, white spruce, balsam fir. Found oakwilt pocket and red oak that died last year with pressure pads. Parts of stand last treated in 1976. This stand is a composite of several stands along the north line of the ownership south of the proposed mining site. A swale runs se-nw in the northeast corner of stand.
8	4131 - Aspen, Oak	High Density Pole	26.6	42	81-110	
10	4130 - Aspen	High Density Pole	14.0	34	81-110	Stand last treated in 1976--final harvest except no cut oak and cut marked pine, only. Other species found: white pine, white oak, thornapple.
11	4123 - Red Oak	High Density Log	55.8	85	81-110	Some open areas within the stand. Understory is very park-like in many places. No regeneration of canopy species--only musclewood and some pin cherry. Lots of grass and/or sedge as ground cover. Other species found: red pine, white pine, aspen, paper birch, hemlock, butternut.
12	4123 - Red Oak	Low Density Log	21.3	101		Some 1-2+ acre pockets of aspen regen. Also, some areas are heavy to pine regen less than 6 feet tall.
13	4131 - Aspen, Oak	High Density Pole	11.1	42	81-110	Other species found: white pine, sugar maple, balsam fir.
15	42200 - Natural White Pine	Medium Density Log	9.2	113	81-110	Stand last treated in 1995. Understory mostly open with a carpet of grass/sedge and some pockets of white pine and big-toothed aspen regen. Other species found: hemlock.
18	42200 - Natural White Pine	Medium Density Log	5.9	115	81-110	Stand last treated in 1995. Understory is mostly park-like with grass/sedge ground cover and occasional pockets of white pine regen < 3 feet tall.
19	4123 - Red Oak	Low Density Log	11.8	85		Stand last treated in 1982--final harvest except oak, pine and cherry. Cut marked pine. Other species found: balm, big-toothed aspen, cedar, paper birch, red, white and jack pine.

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
20	6124 - Lowland Spruce-Fir	Medium Density Pole	3.9	48		Most of stand is mixed lowland conifer with some pockets of cedar poles. Some pockets are mostly regen 20-30 years old. Other species found: tamarack, hemlock, white pine.
21	4130 - Aspen	High Density Sapling	24.7	15		Nicely regenerated mixed aspen stand with super-canopy pine and oak. Stand last treated in 1995--final harvest except oak, pine, cedar and hemlock. Cut marked pine. Other species found: hemlock, cedar, white spruce, red pine.

Table 4 -- Treatments Prescribed with a Limiting Factor

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

Prescription Specs:

Other Comment:

Next Steps:

Limiting Factor and No Treatment Reason

Total Treatment Acreage Proposed: **0**

Table 3 -- Treatments Prescribed with No Limiting Factor

Stand	Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
7	33023007-SC	19.8	4123 - Red Oak	Medium Density Log	94	Harvest	Single Tree Selection	Red Oak	Cmpt. Review Proposal

Prescription Specs: Selection cut to 40-50 residual BA, maintain species diversity, create canopy gaps to encourage seedling and stump sprout regeneration. Cut all aspen, paper birch and balsam fir. After Pre-Review: treat as Rx.

Other Comments: O8. Treat the oak wilt pockets in this stand. Pre-inventory cruise indicates about 50 BA of red oak and 7 BA of white oak with trace amounts of beech and pine.

Next Steps: Acceptable regeneration includes seedling and stump sprouting of oak and maple with aspen, balsam fir and pine. If natural regeneration is unsuccessful, scarification and/or seeding or planting might be required.

Stand	Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
8	33023008-CC	26.6	4131 - Aspen, Oak	High Density Pole	42	Harvest	Clearcut with Reserves	Aspen, Oak	Cmpt. Review Proposal

Prescription Specs: Final harvest. Clearcut with reserves. Cut all aspen, maple, balsam fir, spruce and paper birch. Mark some of the pine and oak. Retain most of the oak and beech. After Pre-Review: treat as Rx.

Other Comments: A6/O7. Pre-inventory cruise indicates about 28 BA of red oak and 5 BA of white and red pine.

Next Steps: Acceptable regeneration includes aspen with a mixture of maple, fir, spruce, oak and pine.

Stand	Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
10	33023010-CC	14.0	4130 - Aspen	High Density Pole	34	Harvest	Clearcut with Reserves	Aspen, Oak	Cmpt. Review Proposal

Prescription Specs: Final harvest. Clearcut with reserves. Cut all aspen, maple, balsam fir, spruce and paper birch. Mark some of the pine and oak. Retain most of the oak and beech. After Pre-Review: treat as Rx.

Other Comments: A6/O7. Pre-inventory cruise indicates about 20 BA of red oak, 2 BA of white oak and 2 BA of white pine. The stand contains some sub-merchantable aspen and maple that may be suitable for a chip operation.

Next Steps: Acceptable regeneration includes aspen with a mixture of maple, fir, spruce, oak and pine.

Stand	Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
11	33023011-SC	55.8	4123 - Red Oak	High Density Log	85	Harvest	Single Tree Selection	Red with White Oak	Cmpt. Review Proposal

Prescription Specs: Select cut to residual BA of 70-80 square feet. Maintain species diversity. Create some canopy gaps to encourage seedling and stump sprout regeneration. Cut all aspen, paper birch, balsam fir and spruce. Retain some of the pine and beech and all hemlock, butternut and hickory, where present. After Pre-Review: treat as Rx except cut to residual BA of 60-70.

Other Comments: O9. No oak wilt pockets were observed in early spring before leaf-out, but area should be monitored for occurrence of any existing or new pockets.

Next Steps: Acceptable regeneration includes a mixture of seedlings and stump sprouts of oak and maple in the canopy gaps with aspen, birch, balsam and pine, where present. If natural regeneration is unsuccessful, scarification and/or seeding or planting might be required.

Stand	Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
13	33023013-CC	11.1	4131 - Aspen, Oak	High Density Pole	42	Harvest	Clearcut with Reserves	Aspen, Oak	Cmpt. Review Proposal

Prescription Specs: Final harvest. Clearcut with reserves. Cut all aspen, maple, balsam fir, spruce and paper birch. Mark some of the oak and pine retaining most of the oak and beech. After-pre-review: treat as Rx.

Other Comments: A6/O7. Pre-inventory cruise indicates about 13 BA of red oak.

Next Steps: Acceptable regeneration includes aspen with a mixture of maple, fir, spruce, oak and pine.

Table 3 -- Treatments Prescribed with No Limiting Factor

Stand	Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
15	33023015-SC	9.2	42200 - Natural White Pine	Medium Density Log	113	Harvest	Single Tree Selection	Natural Pine, Mixed Deciduous	Cmpt. Review Proposal

Prescription Specs: Shelterwood with reserves. Mark trees of oak and pine to leave. Retain about 30-40 residual basal area. After Pre-Review: change Rx to selection cut, retain 30-40 BA and leave 50% of oak BA.

Other Comments: W9/O7. Pre-inventory cruise indicates basal areas for white pine 63, red pine 7, red oak 27 and white oak 7.

Next Steps: Acceptable regeneration will include a mixture of pine with seedling and stump sprouts of oak and maple with aspen, birch and balsam fir. If natural regeneration is unsuccessful, scarification and/or seeding or planting might be required.

Stand	Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
18	33023018-SC	5.9	42200 - Natural White Pine	Medium Density Log	115	Harvest	Single Tree Selection	Natural Pine, Mixed Deciduous	Cmpt. Review Proposal

Prescription Specs: Shelterwood with reserves. Mark trees of oak and pine to leave. Retain about 30-40 residual basal area. After Pre-Review: change Rx to selection cut, retain 30-40 BA but cut no oak.

Other Comments: W9/O7. Pre-inventory cruise indicates basal areas for white pine 53, red pine 20, and red oak 17.

Next Steps: Acceptable regeneration will include a mixture of pine with seedlings and stump sprouts of oak and maple with aspen, birch and balsam fir. If natural regeneration is unsuccessful, scarification and/or seeding or planting might be required.

Total Treatment Acreage Proposed: 142.4

Table 2 – Proposed Treatment Summaries

Data updated before 10:00 AM

Escanaba Mgt. Unit
Year of Entry 2012

Compartment 023
Total Compartment Acres: 256.8

Acres by Treatment Type

Commercial Harvest - 142	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
Aspen	52	0	0	0	0	0	**52**
Oak	0	76	0	0	0	0	**76**
White Pine	0	15	0	0	0	0	**15**
Total	**52**	**91**	**0**	**0**	**0**	**0**	**142**

Table 1 – Total Acres by Cover Type and Age Class

Escanaba Mgt. Unit **Compartment 023 Year of Entry 2012**

Data updated before 10:00 AM

Age Class

	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 +	Uneven Age	Total
Aspen	0	0	25	18	14	38	0	0	0	0	0	0	0	0	0	**94**
Herbaceous Openland	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**
Low-Density Trees	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**3**
Lowland Conifers	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	**4**
Marsh	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**3**
Northern Hardwood	0	0	0	0	0	0	0	0	0	0	22	0	0	0	0	**22**
Oak	0	0	0	0	0	0	0	0	0	68	20	21	0	0	0	**109**
Sand, Soil	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**2**
Upland Shrub	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**2**
Urban	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**2**
White Pine	0	0	0	0	0	0	0	0	0	0	0	0	15	0	0	**15**
Total	**13**	**0**	**25**	**18**	**14**	**42**	**0**	**0**	**0**	**68**	**41**	**21**	**15**	**0**	**0**	**257**

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.

Data updated before 10:00 AM

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	Non-Dedicated Natural Areas and National Natural Landmarks	This category is comprised of those Natural, Wilderness and Wild Areas that have been nominated or proposed for legal dedication, but for which legal dedication by legislature has not occurred. The nomination process is defined by Part 351, Wilderness and Natural Areas, of the Natural Resources and Environmental Protection Act, 1994 PA 451. The program is administered by the DNR. Nominations require the submittal of a Natural Areas Nomination Packet to the DNR. This is an active program, with proposed sites in various stages of review. Final dedication of nominated Natural, Wilderness and Wild Areas is accomplished through legislative action.