

HIGH CONSERVATION VALUE AREA (HCVA) AND ECOLOGICAL REFERENCE AREA (ERA) MANAGEMENT AND MONITORING FORMS PACKET

Portions of this information are exempt from Michigan's Freedom of Information Act, 1976 PA 442, MCL 15.243



BACKGROUND AND INSTRUCTIONS

Prior to using this packet material and forms please refer to Work Instruction 1.4 Biodiversity Management on State Forestlands and the Conservation Area Management Guidelines available on line at:

http://www.michigan.gov/dnr/0,1607,7-153-30301_33360-144865--,00.html.

Identified HCVA's and ERAs will be managed to conserve, protect, maintain, and/or enhance their defined conservation objectives or values. The management methods used will vary depending on the objective and type of designation. On DNR-managed lands, Ecological Reference Areas may be protected through a variety of mechanisms (refer to Conservation Area Management Guidance). Management activities or prescriptions in Ecological Reference Areas are highly restricted to those that maintain or enhance the defined attributes and values and protect the immediate natural resource values or human health and safety.

This packet is for each High Conservation Value Area (HCVA) without an existing management plan and all Legally Dedicated State Natural Areas, Ecological Reference Areas (ERA), Critical Dunes and Coastal Environmental Areas on state forest land. Its purpose is to: 1.) document baseline information on each area and its conservation values, threats, management goals and objectives, and 2.) to track changes in threats, when management activities are carried out, monitor if they are effective, and capture needed changes in management determined not to be effective.

Keep the original copies of these forms in the Compartment/Stand File within each FMU and send copies to respective DEQ and DNR program managers and the DNR, FMFM Forest Resource Management Section, Monitoring Specialist.

PART I: HCVA BASELINE INFORMATION, GOALS AND OBJECTIVES

- COMPLETE FOR EACH HCVA WITHOUT AN EXISTING MANAGEMENT PLAN
- PART I TO ACCOMPANY PART II

SECTION 1: SITE INFORMATION

- A. HCVA TYPE
- B. SITE, CONTACT AND ADMINISTRATIVE INFORMATION
- C. OWNERSHIP INFORMATION
- D. CONSERVATION PARTNERS
- E. OTHER DOCUMENTS RELATED TO THIS HCVA

SECTION 2: CONSERVATION VALUES (TARGETS)

- A. BIODIVERSITY VALUES
- B. SOCIAL/ECONOMIC VALUES
- C. INFRASTRUCTURE/FACILITIES VALUES

SECTION 3: CURRENT CONDITIONS (THREATS)

- A. VALUE OR TARGET VIABILITY (POOR, FAIR, GOOD, VERY GOOD)
- B. CURRENT PRIMARY THREATS

SECTION 4: MANAGEMENT GOALS AND OBJECTIVES

PART II: HCVA MONITORING

SECTION 5: COMPLIANCE MONITORING (WERE TASKS COMPLETED?)

SECTION 6: EFFECTIVENESS MONITORING AND RECOMMENDATIONS (HOW WELL DID MANAGEMENT WORK OR WERE OBJECTIVES ACHIEVED? WHAT ARE NEXT THE STEPS?)

SECTION 7: THREATS MONITORING FIELD FORM – STAND ALONE FORM (WHAT IS THE STATUS OF VALUES OR TARGETS?)

- MAY BE COMPLETED BY ANYONE FOR ANY HCVA
- OR PART OF MONITORING PACKET TO ACCOMPANY PART I AND PARTS II, SECTIONS 6, 7 AND PART III.

Helpful References:

Marqoluis, R. and N. Salafsky. 1998. Measures of Success. Island Press, Washington, DC.362 pp.

The Nature Conservancy. 2005. CAP (Conservation Action Planning) Toolkit - version 08-23-05.

See 2007 overview at <http://sites-conserveonline.org/dcs/projects/art10152.html> and the workbook at http://www.conserveonline.org/2003/07/s/ConPrjMgmt_v4

PART I: HCVA BASELINE INFORMATION , GOALS AND OBJECTIVES**SECTION 1: SITE INFORMATION****A: HCVA TYPE – CHECK ALL THAT APPLY**

- | | |
|--|---|
| <input type="checkbox"/> Critical Dune as defined by DEQ | <input type="checkbox"/> Environmental Area as defined by DEQ |
| <input type="checkbox"/> Legally Dedicated State Natural Area | <input type="checkbox"/> State Natural or Scenic River |
| <input checked="" type="checkbox"/> Ecological Reference Area:
Little Presque Isle Pt. Wooded Dune and Swale | <input checked="" type="checkbox"/> Quiet Area: Little Presque Isle Point and Wetmore Landing Quiet Area |
| <input type="checkbox"/> Endangered Species Management Area | <input checked="" type="checkbox"/> Other: Little Presque Isle State Forest Area Recreation Area |
| <input type="checkbox"/> Kirtland Warbler | |
| <input type="checkbox"/> Piping Plover | |
| <input type="checkbox"/> Other: | |

SPECIAL CONSERVATION AREA (SCA) - LIST OTHER CATEGORIES BELOW

Presque Isle Tract - Little Presque Isle State Forest Recreation Area _ MDNR. 1991. Escanaba River State Forest Comprehensive Resources Management Plan – Final Draft, Lansing, MI p.122 and 123. (3040 acres total on both sides of Co. Road 550)

Nominated State Natural Area – March 27, 1996 Michigan Wilderness and Natural Areas Nomination Form Little Presque Isle State Forest Recreation Area (@ 430 acres on east side of Co. Road 550 and continuing south of ERA)

Nominated State Wilderness Area (Adjacent) – March 27, 1996 - Michigan Wilderness and Natural Areas Nomination Form Little Presque Isle State Forest Recreation Area (8.6 acre island outside of ERA).

SCA – Part of the Echo/Harlow Lake Winter Deer Complex (All within ERA is on state land + 3,207 acres in private ownership)

SCA – Trout Streams – Harlow Creek

SCA - Stands 1-6, 14, 15, 16, 19, 20, 21, 23-32, 46-77 are either already recognized or proposed for Special Conservation Area designation through 2009 Year of Entry (YOE) Compartment Review based on a variety of considerations. Refer to stand comments in the MDNR 2009 YOE Gwinn Forest Management Compartment Review packet.

SCA/HCVA/ERA – Harlow Lake Mesic Northern Forest immediately adjacent to the LPI Wooded Dune and Swale ERA (refer to draft Harlow Lake Mesic Northern Forest ERA Management plan)

B: SITE CONTACT AND ADMINISTRATIVE INFORMATION

Site Name: Little Presque Isle Point		Other Names: Little Presque Isle Tract Little Presque Isle Forest Recreation Area	
Report Date 6/29/2007 Revised 11/01/2007	Forest Mgt Unit Gwinn	Compartment Number: 204 - 2009 YOE Stand Number(s): 2, 3, 4, 5, 7, 8, 9, 10	<input type="checkbox"/> Map Attached <input checked="" type="checkbox"/> Shape File in OI/IFMAP GDSE Draft until after Compartment Review File Location/Name ; FMU Ishpeming Office Compartment File and Lansing Office
County(ies) Marquette	Township(s) Range(s) Section(s) ¼ Sec. Optional if mapped T49NR25W Sections 18, 19, 20 T49NR26W Sections 13, 24		
Name of individual completing this form (first and last) <input checked="" type="checkbox"/> Check if DNR Employee Kim Herman, Monitoring Specialist, Forest, Mineral, Fire Management Division (FMFMD) Dean Wilson, Forester, FMFMD Terry MacFadden, Wildlife Biologist, Wildlife Division Brian Gunderman, Fisheries Biologist, Fisheries Division		Telephone (906) 786-2351, Escanaba (906) 485-1031 Ishpeming (906)228-6561 Marquette (906) 353-6651 Baraga	Email Address hermank@michigan.gov wilsond@michigan.gov mcfaddet@michigan.gov gunderb@michigan.gov
Additional contact information Name of individual providing information (first and last), if applicable Bill Brondyke, FMU Manager, Gwinn Mike Koss, Wildlife Ecologist, Wildlife Division Gerald Mohlman, Forester, FMFMD Mark MacKay, Wildlife Technician, Wildlife Division		Telephone (906)346-9201 Gwinn (906)346-9201 Gwinn (906)346-9201 Gwinn (906)228-6561 Marquette	Email Address brondykw@michigan.gov kossm@michigan.gov mohlmang@michigan.gov mackaym@michigan.gov

Name of DNR/DEQ Program Contact if Applicable Forest Mineral Fire Management Division, Trails and Recreation Section • Ron Yesney – Marquette OSC • Jim Radabaugh – Lansing Wildlife Division, State Natural Areas Program • Pat Lederle, Lansing,	Telephone (906) 228-6561 Marquette (517) 373-1276 Lansing (517)373-1263	Email Address yesneyr@michigan.gov radabauj@michigan.gov lederlep@michigan.gov
<input checked="" type="checkbox"/> Volunteer (s) Number of Volunteers: 1 Name of Group: Sierra Club Contact Name: David Allen Monitors the area, monthly trash pick up, reports on status of invasive species such as spotted knapweed.	Telephone 906-228-9453	Email Address
<input checked="" type="checkbox"/> Volunteer (s) - Number of Volunteers: Name of Group: North Country Trail Association Contact Name: Bill Menke, Regional Trail Coordinator, Great Lakes Region Maintains the trail for signage, Working on a couple of re-route alternatives	Telephone 608-441-5610	Email Address
<input checked="" type="checkbox"/> Volunteer (s) Number of Volunteers: 1 Name of Group: n/a Contact Name: Daniel Hornbogen from Middle Island Point Walks and maintain trails	Telephone Not available	Email Address
<input checked="" type="checkbox"/> Volunteer (s) Number of Volunteers: 1 Name of Group: n/a Contact Name: Harry Worth Focus on beach area - Walks trails, policing the area, picking up trash, monitors – unofficial caretaking	Telephone Not available	Email Address
C: OWNERSHIP INFORMATION - CHECK ALL THAT APPLY AND INCLUDE NAME OF THE UNIT:		
<input checked="" type="checkbox"/> State Forest Land: Gwinn Forest Management Unit <input type="checkbox"/> State Game Area: <input type="checkbox"/> State Park/Recreation Area: <input type="checkbox"/> Other or Private Land (describe):		
D: CONSERVATION PARTNERS – FILL IN ALL KNOWN PARTNERS		
Name of Organization: Sierra Club Contact Name: David Allen Email Address: Telephone: (906) 228-9453	Name of Organization: Plum Creek Contact Name: Jack Thomas – real-estate contact Email Address: Jack.Thomas@plumbcreek.com Telephone: 786-1660 ext 2153 Owns land adjacent to state land to the south. State trail system is linked to trails on Plumb Creek Land.	
Name of Organization: North Country Trail Association Contact Name: Bill Menke, Regional Trail Coordinator Email Address: Telephone: (608) 441-5610	Name of Organization: The Nature Conservancy Contact Name: Lisa Niemi, UP Program Director Email Address: lniemi@tnc.org Telephone: 906-225-0399 ext 14	
Name of Organization: UP White Tails Contact Name: Bryan Reynolds 2123 Center St., Marquette, MI 49855 Email Address: Telephone: 906-228-9744	Name of Organization: The Forest Land Group Contact Name: Sean Hagan Email Address: Telephone (906) 288-3380; Cell (906) 281-0616 The forest land group owns large tract land immediately north and west .. Per B. Scullon, purchase by DNR for winter deer range fell through though it is still a high priority and if acquired the land would need significant mesic conifer	
Name of Organization: Little Presque Isle Advisory Committee Contact Name: Representatives from 26 Organizations HISTORICAL INFO ONLY – No Longer Active		

E: OTHER DOCUMENTS RELATED TO THIS HCVA – CITATION AND LOCATION WHERE STORED

- Albert, D.A. 1995. Regional landscape ecosystems of MI, MN, and WI: A working map and classification. North Central Forest Experiment Station. USDA - USFS. - Found on MNFI Website at <http://web4.msue.msu.edu/mnfi/>
- Albert, D.A. and P.J. Comer. 1999. Natural community abstract for wooded dune and swale complex. Michigan Natural Features Inventory, Lansing, MI. 6 pp. – Found on MNFI Website at <http://web4.msue.msu.edu/mnfi/>
- Cleary, G. and S. Haus. 2001-2006 Michigan Breeding Bird Census Data . In prep Marquette County for Michigan Breeding Atlas II Kalamazoo Nature Center.
- Cohen, J. G. 2002. Natural community abstract for dry-mesic northern forest, Michigan Natural Features Inventory, Lansing, MI 12pp. Found on MNFI Website at <http://web4.msue.msu.edu/mnfi/>
- Cohen, J. G. 2007. Site summary for Wooded Dune and Swale Complex EO Num 32 _last surveyed June 12, 2007. Interim report to MDNR Forest, Mineral and Fire Management Division available on MNFI natural community share drive.
- Comer, P. J. and D. A. Albert. 1991. A Survey of Wooded Dune and Swale Complexes in the Northern Lower and Eastern Upper Peninsulas of Michigan. Report to the Michigan Department of Natural Resources, Coastal Zone Management section. Michigan Natural Features Inventory report number 1991-03. 99pp.
- Comer, P. J. and D. A. Albert. 1993. A Survey of Wooded Dune and Swale Complexes in Michigan. Report to Michigan Department of Natural Resources, Land and Water Management Division, Coastal Zone Management Program. Michigan Natural Features Inventory report number 1993-04. 159pp.
- Doepker, R. et al. 2001 Interim State Forest Management Guidelines to Emphasize Mesic Conifers in the Western Upper Peninsula, Michigan Department of Natural Resources.
- Gunderman, B. 2007. ERA Management Gwinn Compt. 204 Wooded Dune and Swale. Email to K. Herman on fisheries status of Harlow, Bismark and Nash Creeks. July 16, 2007.
- Johnson, Johnson and Roy, Inc. 1980. October. Little Presque Isle Recommended Management Plan, Grand Rapids, MI. 99 pp. – In Gwinn FMU files at Ishpeming Office.
- Michigan Department of Natural Resources 1996 Michigan Wilderness and Natural Area Nomination Form Little Presque Isle State Forest Recreation Area. 23 pp. In State Natural Area Program Files, Wildlife Division, Lansing and in Gwinn FMU files at Ishpeming Office
- Michigan Department of Natural Resources Escanaba River State Forest Interdisciplinary Planning Team. 1991. Escanaba River State Forest Comprehensive Resources Management Plan – Final Draft. Lansing, MI p.122 and 123.
- Michigan Department of Natural Resources Escanaba River State Forest Interdisciplinary Planning Team. 1992? Amendment to the Escanaba River State Forest Plan Little Presque Isle State Forest Recreation Area. 9 pp. + map.
- Michigan Department of Natural Resources. 2007. 2009 YOE Gwinn Forest Management Compartment Review packet on line at http://www.michigan.gov/dnr/0,1607,7-153-30301_30505_31025-66188--,00.html or the DNR Gwinn Field Office.
- Michigan Natural Features Inventory. 2007. Pine-drops *Pterospora andromodea* Rare Species Explorer (Web Application). Available online at <http://web4.msue.msu.edu/mnfi/explorer> [Accessed Nov 5, 2007]

SECTION 2: CONSERVATION VALUES/TARGETS - CHECK ALL THAT APPLY

A: BIODIVERSITY VALUES

There are a number of ways to describe biodiversity values - check all that apply.

1. Natural Communities – Based on Michigan Natural Features Inventory Community Classification.

GO to: http://web4.msue.msu.edu/mnfi/data/MNFI_Natural_Communities.pdf; <http://web4.msue.msu.edu/mnfi/pub/abstracts.cfm>

Quality Rank comes from specific MNFI Element Occurrence Records (EOR) in the FMFM IFMAP Biodiversity Data Layer.

Chk Box	Community Name	State Rank	Global Rank	Quality Rank A,B,C,D	Chk Box	Community Name	State Rank	Global Rank	Quality Rank A,B,C,D
<input type="checkbox"/>	Alvar [Alvar grassland]	S1	G2?		<input type="checkbox"/>	Lakeshore cliff			
<input type="checkbox"/>	Bedrock glade				<input type="checkbox"/>	Basalt lakeshore cliff	S1	G3?	
<input type="checkbox"/>	Basalt bedrock glade	S2	G3		<input type="checkbox"/>	Sandstone lakeshore cliff	S2	G3	
<input type="checkbox"/>	Igneous bedrock glade	S2	G3G4		<input type="checkbox"/>	Volcanic conglomerate lakeshore cliff	S1	G3?	
<input type="checkbox"/>	Limestone bedrock glade [Alvar glade]	S2	G2?		<input type="checkbox"/>	Mesic northern forest [Northern hardwood forest, Hemlock-hardwood forest]	S3	G4	AB/B
<input type="checkbox"/>	Sandstone bedrock glade	S2?	G3G4		<input type="checkbox"/>	Mesic prairie	S1	G2	
<input type="checkbox"/>	Volcanic conglomerate bedrock glade	S2	G3		<input type="checkbox"/>	Mesic sand prairie	S1	G1?	
<input type="checkbox"/>	Bedrock lakeshore				<input type="checkbox"/>	Mesic southern forest [Southern hardwood forest]	S3	G3?	
<input type="checkbox"/>	Basalt bedrock lakeshore	S2	G3		<input type="checkbox"/>	Muskeg	S3	G4	
<input type="checkbox"/>	Igneous bedrock lakeshore	S2	G?		<input type="checkbox"/>	Northern bald [Krummholz ridgetop]	S1	GU	
<input type="checkbox"/>	Limestone pavement lakeshore [Alvar pavement]	S2	G3		<input type="checkbox"/>	Northern fen	S3	G3	
<input type="checkbox"/>	Volcanic conglomerate bedrock lakeshore	S2	G3		<input type="checkbox"/>	Northern shrub thicket	S5	G4	
<input type="checkbox"/>	Bog	S4	G3		<input type="checkbox"/>	Northern swamp	S3?	G4	
<input type="checkbox"/>	Boreal forest	S3	GU		<input type="checkbox"/>	Northern wet meadow	S4	G4	
<input type="checkbox"/>	Bur oak plains	SX	G1		<input type="checkbox"/>	Northern wet-mesic prairie	S1	GNR	
<input type="checkbox"/>	Cave	S1	G4?		<input type="checkbox"/>	Oak barrens	S1	G2?	
<input type="checkbox"/>	Cliff				<input type="checkbox"/>	Oak openings	S1	G1	
<input type="checkbox"/>	Dry acid cliff	S2?	G4		<input type="checkbox"/>	Oak-pine barrens	S2	G3	
<input type="checkbox"/>	Dry non-acid cliff	S2	G4		<input type="checkbox"/>	Open dunes	S3	G3	
<input type="checkbox"/>	Moist acid cliff	S2	G4		<input type="checkbox"/>	Patterned fen	S2	GU	
<input type="checkbox"/>	Moist non-acid cliff	S2	G4		<input type="checkbox"/>	Pine barrens	S2	G3	
<input type="checkbox"/>	Coastal plain marsh	S2	G2		<input type="checkbox"/>	Poor conifer swamp	S4	G4	
<input type="checkbox"/>	Cobble beach [Cobble shore]	S3	G3?		<input type="checkbox"/>	Poor fen	S3	G3	
<input type="checkbox"/>	Dry northern forest [Pine forest]	S3	G3?		<input type="checkbox"/>	Prairie fen	S3	G3	
<input type="checkbox"/>	Dry sand prairie	S2	G3		<input type="checkbox"/>	Relict conifer swamp	S3	G3	
<input type="checkbox"/>	Dry southern forest [Oak forest]	S3	G4		<input type="checkbox"/>	Rich conifer swamp	S3	G4	
<input type="checkbox"/>	Dry-mesic northern forest [Pine-hardwood forest]	S3	G4		<input type="checkbox"/>	Sand/gravel beach	S3	G3?	
<input type="checkbox"/>	Dry-mesic southern forest [Oak-hardwood forest]	S3	G4		<input type="checkbox"/>	Sinkhole	S2	G3G5	
<input type="checkbox"/>	Emergent marsh	S4	GU		<input type="checkbox"/>	Southern floodplain forest	S3	G3?	
<input type="checkbox"/>	Great Lakes barrens	S2	G3		<input type="checkbox"/>	Southern shrub-carr	S5	GU	
<input type="checkbox"/>	Great Lakes marsh	S3	G2		<input type="checkbox"/>	Southern swamp	S3	G3	
<input type="checkbox"/>	Hardwood-conifer swamp	S3	G4		<input type="checkbox"/>	Southern wet meadow	S3	G3?	
<input type="checkbox"/>	Hillside prairie	S1	G3		<input type="checkbox"/>	Submergent marsh	S4	GU	
<input type="checkbox"/>	Inland salt marsh	S1	G1		<input type="checkbox"/>	Wet prairie	S2	G3	
<input type="checkbox"/>	Interdunal wetland	S2	G2?		<input type="checkbox"/>	Wet-mesic prairie	S2	G2	
<input type="checkbox"/>	Intermittent wetland [Boggy seepage wetland]	S3	G2		<input checked="" type="checkbox"/>	Wooded dune and swale complex	S3	G3	B/BC
<input type="checkbox"/>	Inundated shrub swamp	S3	GU		<input type="checkbox"/>	Woodland prairie	S2	G3	
<input type="checkbox"/>	Lakeplain mesic sand prairie	S1	G1						

Other information if known.

2. **Ecological Systems** .Check Applicable Regional Landscape Ecosystem (Section), Subsection, and Sub-subsection from Albert, Dennis A. 1995. Regional landscape ecosystems of Michigan, Minnesota, and Wisconsin: a working map and classification. Gen. Tech. Rep. NC-178. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station. 250 pp

Check all that apply	Name	Section Number	Subsection Number	Sub-subsection Number
<input type="checkbox"/>	Section VIII. Northern Lacustrine-Influenced Upper Michigan and Wisconsin	8		
<input type="checkbox"/>	Subsection VIII.1. Niagaran Escarpment and Lake Plain	8	1	
<input type="checkbox"/>	Sub-subsection VIII.1.1. St. Ignace	8	1	8.1.1.
<input type="checkbox"/>	Sub-subsection VIII.1.2. Rudyard	8	1	8.1.2.
<input type="checkbox"/>	Sub-subsection VIII.1.3. Escanaba/Door Peninsula	8	1	8.1.3.
<input type="checkbox"/>	Subsection VIII.2. Luce	8	2	
<input type="checkbox"/>	Sub-subsection VIII.2.1. Seney Sand Lake Plain	8	2	8.2.1.
<input type="checkbox"/>	Sub-subsection VIII.2.2. Grand Marais Sandy End Moraine and Outwash	8	2	8.2.2.
<input type="checkbox"/>	Subsection VIII.3. Dickinson	8	3	
<input type="checkbox"/>	Sub-subsection VIII.3.1. Northern lake Michigan (Hermanville) Till Plain	8	3	8.3.1.
<input type="checkbox"/>	Sub-subsection VIII.3.2. Gwinn	8	3	8.3.2.
<input type="checkbox"/>	Sub-subsection VIII.3.3. Deerton	8	3	8.3.3.
<input checked="" type="checkbox"/>	Section IX. Northern Continental Michigan, Wisconsin, and Minnesota	9		
<input type="checkbox"/>	Subsection IX.1. Spread Eagle-Dunbar Barrens	9	1	
<input checked="" type="checkbox"/>	Subsection IX.2. Michigamme Highland	9	2	
<input type="checkbox"/>	Subsection IX.3. Upper Wisconsin/Michigan Moraines	9	3	
<input type="checkbox"/>	Sub-subsection IX.3.1. Brule and Paint Rivers	9	3	9.3.1.
<input type="checkbox"/>	Sub-subsection IX.3.2. Winegar Moraine	9	3	9.3.2.
<input type="checkbox"/>	Subsection IX.5. Lac Veaux Desert Outwash Plain	9	5	
<input type="checkbox"/>	Subsection IX.6. Bergland	9	6	
<input type="checkbox"/>	Sub-subsection IX.6.1. Gogebic-Penokee Iron Range	9	6	9.6.1.
<input type="checkbox"/>	Sub-subsection IX.6.2. Ewen	9	6	9.6.2.
<input type="checkbox"/>	Sub-subsection IX.6.3. Baraga	9	6	9.6.3.
<input type="checkbox"/>	Subsection IX.7. Keweenaw	9	7	
<input type="checkbox"/>	Sub-subsection IX.7.1. Gay	9	7	9.7.1.
<input type="checkbox"/>	Sub-subsection IX.7.2. Calumet	9	7	9.7.2.
<input type="checkbox"/>	Sub-subsection IX.7.3. Isle Royale	9	7	9.7.3.
<input type="checkbox"/>	Subsection IX.8. Lake Superior Lake Plain	9	8	
<input type="checkbox"/>	Section VII. Northern Lacustrine-Influenced Lower Michigan			
<input type="checkbox"/>	Subsection VII.1. Arenac	7	1	7.1
<input type="checkbox"/>	Sub-subsection VII.1.1. Standish	7	1	7.1.1
<input type="checkbox"/>	Sub-subsection VII.1.2. Wiggins Lake	7	1	7.1.2
<input type="checkbox"/>	Subsection VII.2. Highplains	7	2	7.2
<input type="checkbox"/>	Sub-subsection VII.2.1. Cadillac	7	2	7.2.1
<input type="checkbox"/>	Sub-subsection VII.2.2. Grayling Outwash Plain	7	2	7.2.2
<input type="checkbox"/>	Sub-subsection VII.2.3. Vanderbilt Moraines	7	2	7.2.3
<input type="checkbox"/>	Subsection VII.3. Newaygo Outwash Plain	7	3	7.3
<input type="checkbox"/>	Subsection VII.4. Manistee	7	4	7.4
<input type="checkbox"/>	Subsection VII.5. Leelanau and Grand Traverse Peninsula	7	5	7.5
<input type="checkbox"/>	Sub-subsection VII.5.1. Williamsburg	7	5	7.5.1
<input type="checkbox"/>	Sub-subsection VII.5.2. Traverse City	7	5	7.5.2
<input type="checkbox"/>	Subsection VII.6. Presque Isle	7	6	7.6
<input type="checkbox"/>	Sub-subsection VII.6.1. Onaway	7	6	7.6.1
<input type="checkbox"/>	Sub-subsection VII.6.2. Stutsmanville	7	6	7.6.2
<input type="checkbox"/>	Sub-subsection VII.6.3. Cheboygan	7	6	7.6.3
		7		

3. Ecological Systems

List name(s) of Ecosystems/Natural Communities (based on MNFI Community Classification):

Wooded Dune and Swale Complex: Excerpted from Albert and Comer 1999:

Range: This complex of wetland swales and upland beach ridges (dunes) is found in embayments and on large sand spits along the shoreline of all of the Great Lakes. **Regional Rank justification:** Wooded dune and swale complexes are restricted to the Great Lakes shoreline (Comer and Albert 1991, 1993, Homoya et al. 1985), although there are features of similar geological origin along the shorelines of most oceans and seas as well, the biota of the marine systems is distinctly different (Wiedemann 1984). Residential and recreational development has resulted in disrupted hydrological conditions and wetland destruction across its geographic range. As of 1999, about 95 dune and swale complexes have been identified in the Great Lakes, with 70 located in Michigan. Michigan's 40 highest quality dune and swale complexes total about 70,926 acres in area.

A review of the MNFI data base by Mark McKay in 2007 indicates nine sites in the Western Upper Peninsula with four on state forest land. The Little Presque Isle Point Wooded Dune and Swale complex is ranked in quality as good to fair (B/BC) by MNFI in 2007. The Little Presque Isle Point is one of three known occurrences of the Lake Superior – High Dune subtypes of Wooded Dune and Swale complexes (Albert and Comer, 1993). The predominantly forested landscape is characterized by low road densities and low to moderate management. A high-quality mesic northern forest occurs immediately south/southeast of the complex. A major paved road (County Road 550) passes through this complex but is the only major road in the immediate vicinity. (Cohen 2007)

Left Map

Distribution of Wooded Dune and Swale in Michigan by County (Albert and Comer 1999)



Right Map

Distribution of known high quality Wooded Dune and Swale Complexes in Michigan's Western Upper Peninsula (Mapped by M. McKay from 2007 MNFI data)

From Cohen 2007: The Little Presque Isle Point site features a well-developed, dune and swale complex occurring on 1.5-2 mile stretch of Lake Superior on silty/clay lakeplain backed by shallow bedrock. Swales are primarily dry due to rapid rises of the dune ridges above Lake Superior water levels. Wet swales occur more inland and are of limited extent. Harlow Creek passes through the site and also borders the complex to the south/southeast. Northern shrub thicket with Sweet Gale (*myrica*) and alder occur along the creek. Ridges and dry swales are dominated by uneven-aged red pine forest with white pine, paper birch, red oak, and jack pine as canopy associates. Numerous old-growth canopy trees have survived repeat surface fires. Ecological diversity of the site is increased by large area of blowdown and northern shrub thicket associated with Harlow Creek. Red maple, paper birch, balsam fir, and less frequently white spruce are prevalent in the subcanopy and tall shrub layer with balsam fir most prevalent in areas of blowdown and in more inland portions of the complex. Low shrub layer dominated by blueberries and huckleberry with June-berries also common. Ground cover dominates include bracken fern, wintergreen, starflower, poverty grass, and lichens. Wet swales are either graminoid (grass and sedge) dominated with *Carex stricta* and blue joint grass or are dominated by shrubs: alder, leatherleaf, and/or winterberry.



Little Presque Isle Point Wooded Dune and Swale Ecological Reference Area

Left Photo: Dune Field Zone - beach and foredune;

Middle and Right Photos: Forested Zone – Forested dune ridges and dry swales with northern forest dominated by red pine characteristic of the Lake Superior-High Dune Subtype. (Photos by J. Cohen 2007)

- Ecological processes** – such as connectivity, hydrology, fire, wind events, flooding, pest and disease cycles;

Describe:

Hydrology – Locally Harlow Creek provides a dependable sand source. The combination of along-shore currents, waves and wind form foredunes along the shoreline. The influence of Great Lakes water levels is probably limited to the first few swales inland from the shoreline. With gradual long term drops in water level, combined with post-glacial uplifting of the earth's crust, these low dunes gradually rose above the direct influence of the lake and new foredunes replaced them. Over several thousand years, a series of ridges and swales was created. Along the Lake Superior shoreline, where post-glacial uplift is greatest many of the complexes consist primarily of dry, forested swales. (Albert and Comer 1999)

Fire - The forest beach ridges (dunes) are at Little Presque Isle Point are co-dominated by white and red pine with red maple, balsam fir, white spruce, big tooth and trembling aspen and paper birch. Though not original forest, this community is a dry-mesic northern forest with the primary natural disturbance having been both infrequent catastrophic fire and frequent, low intensity stand perpetuating surface fires (Cohen, J. G. 2002.) Fires in the area historically and currently started from lightning and historically by Native Americans. Evidence of fire circa late 1020's noted by Dean Wilson during 2009 YOE Operations Inventory.

Wind - Small scale blow downs and catastrophic windthrow are part of the natural disturbance regime for dry-mesic northern forests (Cohen, J.G. 2002). Though in the Michigamme Highland Subsection no major areas of windthrow were recorded by early surveyors but small areas of windthrow presently occur (Albert, 1995). Direct observation of August 1988, severe windthrow event from a wind-shear occurred...trees (red pine) affected on the Point were salvaged and also w of 550 also salvaged. More recently small windthrow along the Lake Shore at the Point (Dean Wilson personal communication).

Disease - Bark Beetle infestation is current as of 2007 (YOE 2009 Operations Inventory).

- Underlying environmental features** – such as soils, geology, topography, headwaters:

From Cohen 2007: Well-developed, west/northwest to east/southeast trending dune and swale complex occurring on 1.5-2 mile stretch of Lake Superior on silty/clay lakeplain backed by shallow bedrock. Swales are primarily dry due to rapid rises of the dune ridges above Lake Superior water levels. Wet swales occur more inland and are of limited extent. Dune ridges exhibit mild topography (1-3 meters high) with north-south aspect. Dry swales are typically narrow (2-5 meters wide). Harlow Creek passes through the site and also borders the complex to the south/southeast.

The dune ridges and dry swales are characterized by very acidic sands with shallow needle layer and O horizon overlying fine-textured dune sands. Wet swales are characterized by slightly acidic muck of variable depth over wet acidic sands.

- Environmental gradients** – such as elevation, precipitation, temperature;

Describe: Dune ridges exhibit mild topography (1-3 meters high) with north-south aspect. Proximity to Lake Superior moderates the local climate (Cohen 2007).

- Species and/or community structure** – using during migration, during different life stages, or gradual species turnover across environmental gradients.

Describe:

Wooded dune and swales exhibit successional trends or zones within the sand dune portion of the complexes based on factors such as distance from the lake, amount of soil development and available light (Olson, 1958, Cowles 1899, Lichter 1998 in Albert and Comer 1999). Two zones starting at the Lake Superior beach include: first a dune field zone with an open foredune backed by an initial swale and a low dune field with more advanced plant succession and second zone of a forested series of beach ridges and swales (Comer and Albert. 1999). Red pine dominates the ridges with scattered red oak, white pine, paper birch and balsam fir. Dominant plants in the wet swales were tag alder, leather leaf, Michigan holly, sedges - *Carex stricta*, *C. intumescens*, blue joint grass, and pine drops. There were a total of 75 vascular plants and mosses (MNFI EOR 2007). Cohen (2007) listed 52 native plant species in the following categories: 14 trees (27%), 13 shrubs (25%), 13 forbs (25%), 5 ferns (10%) with the remaining 3 sedges (6%). The native Floristic Quality Index (FQI) from the 2007 inventory was 31. No non-native or invasive plants were noted.

Echo/Harlow Lake Winter Deer Complex has been a deer yard since the 1930's, deer migrate from northern Marquette County during winter and is second in importance to the Huron Mountains deer yard. It is heavily populated during winter, deer use wooded dune and swale as well as hemlock stands in the adjacent Harlow Lake Mesic Northern Forest.

Nested large and small natural communities linked by functional or restorable ecosystems:

Describe:

Harlow Creek represents as high quality brook trout fishery. Researchers from Michigan State University collected the following fish species in the Harlow Creek watershed in 2002: Black bullhead, bluegill, bluntnose minnow, brook stickleback, brook trout, burbot, central mudminnow, fathead minnow, finescale dace, johnny darter, largemouth bass, longnose dace, mottled sculpin, northern redbelly dace, pumpkinseed, rainbow trout (steelhead), rock bass, sea lamprey, slimy sculpin, white sucker, and yellow perch.

High quality natural communities nearby:

Describe:

- Harlow Lake Mesic Northern Forest Ecological Reference Area (ERA) (refer to the 2007 Harlow Lake Mesic Northern Forest ERA management plan). 2009 YOE Compartment 204 Stands
- Several stands adjacent to the Little Presque Isle (LPI) Wooded Dune and Swale ERA are proposed as Special Conservation Areas in Compartment 204 for the 2009 YOE Compartment Review for a variety of ecological reasons including riparian zones, braided waterway (ie. Stand 15), actual or potential old growth of a variety of forest types (ie. Stand 15), winter deer complex, rock outcrops (ie Stands 27-30, 32) and water. Refer to stand comments in 2009 YOE Gwinn Forest Management Compartment Review packet . All stands coded as SCA's include Stands 1-6, 14, 15, 16, 19, 20, 21, 23-32, 38-40, 46-77

Large Block Size:

General Shape and Acres: 604 acres based on the GIS polygon.

4. **Species Assemblages** – List types of species assemblage targets.

- Major groupings of species** - share common natural processes or have similar conservation requirements (e.g., freshwater mussels, forest-interior birds, essential pollinators).

Forest interior birds utilize the wooded dune and swale complex on both sides of County Road 550. The song bird trail has an accompanying interpretive tape that can be checked out covering a range of habitat along the song bird trail. Used to be at the local Bill's 550 Store. Forest interior birds utilize the northern mesic forest on both sides of the road including the wooded dune and swale. The mesic northern forest in the adjacent Harlow Creek Mesic Northern Forest is significant to song birds that key in on super-canopy conifers especially blackburnian warbler.

- Globally significant species aggregations** (e.g. migratory shorebird aggregation).

Seasonally , shore birds may use north end of beach well away from people as the access site is heavily used recreationally. This will need further verification.

5. **Species** - List types of species by common and scientific name.:

- Focal species** - keystone, wide-ranging (regional), providing linkages between ecosystems, and umbrella species.

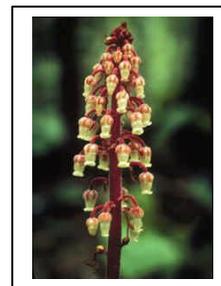
Species: Deer are there consistently throughout the winter as part of the Echo/Harlow Lake Deer Wintering complex.

- Globally imperiled or state endangered or threatened native species** - Ranked G1, G2, G3 by NatureServe, and S1, S2 by MNFI, state and/or federally listed or proposed for listing as Threatened or Endangered (MI and U.S.), and on the IUCN Red List (International).

Species: Pine-drops, *Pterospora andromedea* (photo from MNFI Website 2007)

Status and Rank

- State Status: T - Threatened (legally protected)
- State Rank: S2 – Imperiled -
 - One of two sites known from Marquette County.
- Global Rank: G5 - Secure



- Species of Special Concern** - Due to vulnerability, declining trends, disjunct distributions, or endemic status; Ranked S3 by MNFI

Species:

- Other species of greatest conservation need - Identified as part of Michigan's Wildlife Action Plan due to declining populations or other characteristics that may make them vulnerable.**

The following Species of Greatest Conservation have not been confirmed from but may occur in the Wooded Dune and Swale natural community in the Western Upper Peninsula (Michigan Wildlife Action Plan Terrestrial Systems: Western Upper Peninsula, Great Lakes/Coastal:Coastal Dune/Beach Revised June 27, 2005. pages 99-101)

INSECTS

a tiger beetle (*Cicindela hirticollis rhodensis*)

REPTILES

northern ringneck snake (*Diadophis punctatus edwardsii*)

BIRDS

Bald Eagle (*Haliaeetus leucocephalus*)- no nests are known, though eagles use shoreline habitat adjacent to Lake Superior; Killdeer (*Charadrius vociferus*); Common Nighthawk (*Chordeiles minor*); Savannah Sparrow (*Passerculus sandwichensis*)

MAMMALS

deer mouse (*Peromyscus maniculatus gracilis*) - ubiquitous in the UP

Species B: KNOWN SOCIAL/ECONOMIC VALUES

- Archaeological: – historical Native Am. use is cited
- Historical:
- Recreational:
 - Camping : **dispersed on W side not in ERA, LPI Cabins on Harlow Lake – Cabin 6 in ERA**
 - Canoeing/Kayaking
 - Fishing: **steelhead and brook trout**
 - Hiking/Backpacking: **North Country Trail and extensive network (Mead Trail), song bird trail for birders**
 - Hunting and Trapping
 - Photography
 - Scenic: **Lake Superior Shoreline, Nominated Natural Area**
 - Water (lake, river, stream): **Harlow Creek, Harlow Lake**
 - Wildlife Viewing: **Bird Watching**
 - Cross Country Skiing:
 - ORV Riding and Snowmobiling:
 - Other: **Educational – song bird trail – High Priority Area for Breeding Bird Atlas - Mountain Biking throughout whole ERA**
- Restorative/Spiritual: **Nominated State Natural Area**
- Traditional Use/Gathering: **locals, tourists and Native Americans**

C: EXISTING INFRASTRUCTURE/FACILITIES:

- American Disability Accessibility (ADA) Considerations
- Boat Launch(es): **non motorized at Harlow Lake, not in ERA**
- Bridge(s): **1 Official and Several unofficial - Stand 6 near Co. Road Mt. Bikers have put in their own bridges**
- Campground(s): **Rustic cabins nearby on Harlow Lake**
- Interpretive Displays : **Song bird trail**
- Marked boundaries
- Parking lot(s): **Access at Little Presque Isle Pt. and nearby on Harlow Lake and across Co. Road 550 at**
- Posted use rules: **at parking lot on East Side**
- Scenic Overviews:
- Toilet(s): **Pit toilet**
- Trails/Boardwalks : **several existing recreational trails**
- Other:

SECTION 3: CURRENT CONDITIONS

D. CURRENT STATUS/VIABILITY OF CONSERVATION VALUE/TARGET (FROM TNC CAP TOOL KIT)

STATUS DEFINITIONS – POOR - IMMINENT LOSS, FAIR – VULNERABLE, GOOD – MINIMUM INTEGRITY, VERY GOOD - OPTIMAL INTEGRITY

LIST CONSERVATION VALUE/TARGET FROM SECTION 2 – A, B OR C	LIST CATEGORY OF SIZE, CONDITION, OR LANDSCAPE CONTEXT	LIST KEY ATTRIBUTE	LIST INDICATOR	LIST CURRENT STATUS POOR, FAIR, GOOD, OR VERY GOOD
WOODED DUNE AND SWALE COMPLEX	CONDITION LANDSCAPE CONTEXT	FUNCTIONAL PROCESSES FOREST STRUCTURE	PRESENCE OF FIRE, INTACT HYDROLOGY FOREST REGENERATION	GOOD
<i>PINE-DROPS</i> <i>PTEROSPORA ANDROMEDEA</i>	POPULATION SIZE	PRESENCE	PRESENCE	UNKOWN
WINTER DEER COMPLEX	CONDITION LANDSCAPE CONTEXT	THERMAL COVER	CONIFER OVERSTORY	FAIR WITHIN ERA GOOD OVERALL FOR ENTIRE COMPLEX
BIRDS – SHOREBIRDS, FOREST INTERIOR	LANDSCAPE CONTEXT	CONTIGUOUSNESS TO SHORELINE COMPLEX FOREST STRUCTURE	• SUPER CANOPY CONIFERS • # OF BREEDING BIRD SPECIES (96 SPECIES KNOWN FROM 2001-1006 CENSUS FROM ¼ TWP)	VERY GOOD
PASSIVE RECREATION ▪ HIKING TRAILS ▪ LITTLE PRESQUE ISLE FOREST RECREATION AREA	CONDITION AND LENGTH OF TRAILS	MAINTAINED ESTABLISHED TRAILS	EFFECTS OF OVERUSE MINIMAL EROSION NO NEW TRAILS	GOOD
PASSIVE RECREATION ▪ SHORELINE/BEACH	LANDSCAPE CONTEXT QUALITY OF EXPERIENCE FOR A VARIETY OF PASSIVE USES	SCENIC PHYSICAL AND ECOLOGICAL FEATURES	LITTER SOIL COMPACTION EROSION INVASIVE SPECIES PRESENCE /LACK OF GROUND LAYER	FAIR AT POINT EAST OF HARLOW CREEK GOOD WEST OF HARLOW CREEK.
PASSIVE RECREATION ▪ CABIN ON N. SIDE OF HARLOW CREEK – ON EDGE	CONDITION	EFFECTS OF OVERUSE	LITTER NOISE INCIDENTS SOIL COMPACTION EROSION INVASIVE SPECIES	GOOD – FAIR?
HIGH QUALITY TROUT STREAM- HARLOW CREEK	CONDITION	BANK STABILITY CANOPY COVER	1. EROSION (MINIMAL) 2. SUBSTRATE 3. WATER TEMPERATURE 4. LARGE WOODY DEBRIS IN STREAM CHANNEL	UNKNOWN FOR HARLOW CREEK
EDUCATIONAL	LOCATION AND ACCESS PROXIMITY TO URBAN AREA, UNIVERSITY AND SHOOLS	HISTORICAL AREA UNIQUE ECOSYSTEMS WILDLIFE	CONTINUED LOCAL USE INTERPRETIVE SIGNAGE PRESENCE OF TRAILS	GOOD
NATURAL AREA QUIET AREA	CONDITION	UNIQUE ECOSYSTEM SCENIC SHORELINE RESTORATIVE/SPIRITUAL NON-MOTORIZED ASPECTS	OVERUSE FEW NOISE COMPLAINTS ABSENCE OF LITTER, MAINTENANCE OF NO-MOTORIZED VEHICLES	GOOD

E. : INITIAL PRIMARY THREATS ASSESSMENT TO ESTABLISH BASELINE CONDITION
CHECK ALL THAT THERE IS ACTUAL EVIDENCE FOR AND DESCRIBE THE EVIDENCE BRIEFLY AND/OR ATTACH PHOTOS
DO THIS INITIALLY FROM AERIAL PHOTOS, LOCAL KNOWLEDGE, AND EXISTING DATA FOLLOWED BY A SITE VISIT.

A. Habitat Conversion & Degradation – Complete or substantial loss of or damage to natural habitats.

- Altered Fire Regime -*suppression or increase in fire frequency and/or intensity outside of its natural range of variation:*
DNR Policy is to extinguish wild fires.
- Altered Hydrologic Regime Changing water flow patterns outside their natural range of variation (*surface water diversion, groundwater pumping, dam operations*)
- Commercial & Industrial Development: *factories, stand-alone shopping centers, office parks, train yards, docks, ship yards, airports, landfills*)
- Farms & Plantations Agricultural operations - *commercial farms, industrial plantations, feed lots, aquaculture*
- Housing & Urban Development Expansion of cities, towns, settlements, non-housing development - *urban areas, suburbs, villages, homes, shopping areas, offices, schools, hospitals*
- Military Activities Actions by formal or paramilitary forces (*military bases, defoliation, munitions testing* :
- Natural System Modifications Actions that convert or degrade habitat to “managing” natural systems for human welfare - *dam construction, land reclamation, wetland filling, rip-rap along shoreline, levees and dikes*
- Recreation Areas Recreation sites with a substantial footprint *ski areas, golf courses, resorts, county parks*
- Other:

B. Transportation Infrastructure – Long narrow corridors **altering, fragmenting, and disturbing** natural habitat and species, including soil erosion/sedimentation, and providing routes for invasive or problematic species.

- Flight Paths :
- Railroads :
- Roads and Trails : **County Road 550 provides easy recreational access and increases uses. Harlow Creek Road provides access to Harlow Lake and runs between the LPI Wooded Dune and Swale ERA and the Harlow Lake Mesic Northern Forest ERA.**
- Shipping Lanes :
- Trails: **Several unofficial bridges by mountain bikers**
- Utility Lines.
- Stream Crossings - *culverts, bridges* :
- Other:

C. Energy & Mining – Production of non-biological resources **having negative impacts** to conservation values .

- Mining – *Exploring, developing, and producing. State owns surface only*
- Oil & Gas Drilling
- Renewable Energy – *Exploring, developing, and producing.*

D. Biological Resource Harvesting –Over or under consumption of “wild” resources **resulting in loss** of conservation values.

- Gathering – *Harvesting plants, fungi, and other non-timber/non-animal products for commercial, recreation, or subsistence purposes.*
- Grazing
- Hunting, Trapping & Fishing
- Timber Harvesting:

E. Recreation & Research – Non-consumptive uses of biological resources **resulting in damage** to natural resources .

- Human-Powered Recreation – *mountain bikes, hikers, backpackers, cross-country skiers, rock climbers, canoeists, kayakers, hang-gliders, birdwatchers, photographers*
Heavy human foot traffic to and from the parking lot and the beach in the southeastern portion of the occurrence has severely degraded localized areas with large stretches that are completely devegetated. Usage should be monitored, particularly over use and soil compaction from the parking lot to the beach. Soil erosion from mountain bikes occurs on the both sides of County Road 550. Many unofficial trails have appeared as a result of mountain bike use causing erosion, fragmentation, and invasive sp. corridors. Some incidences of conflicts between hikers and bikers.
- Motor-Powered Recreation - *Traveling outside of established transport corridors: off-road vehicles, motorcycles, motorboats, jet-skis, snowmobiles, ultra-light planes.*
- Scientific Research – *Ecosystem manipulations*
- Other: **Indiscriminant camping. Tickets are written by Conservation Officers routinely.**

F. Pollution – Introduction of exotic and/or excess materials from point and non-point sources with **evidence of resource damage**.

- Chemicals & Toxins
- Greenhouse Gasses – *CO₂, methane*
- Light Pollution
- Noise Pollution
- Nutrient Loads
- Radioactive Materials
- Salt/Brine
- Solid Waste – *garbage, litter*
- Thermal Pollution
- Waste & Residual Materials – *dredge spoil, water treatment residuals, slash, mine tailings, excess sediment loads.*

G. Invasive & Other Problematic Species & Genes – Aquatic or terrestrial non-native and native species or genetic materials that have or are predicted to have harmful effects on biodiversity following their introduction, spread and/or increase in abundance.

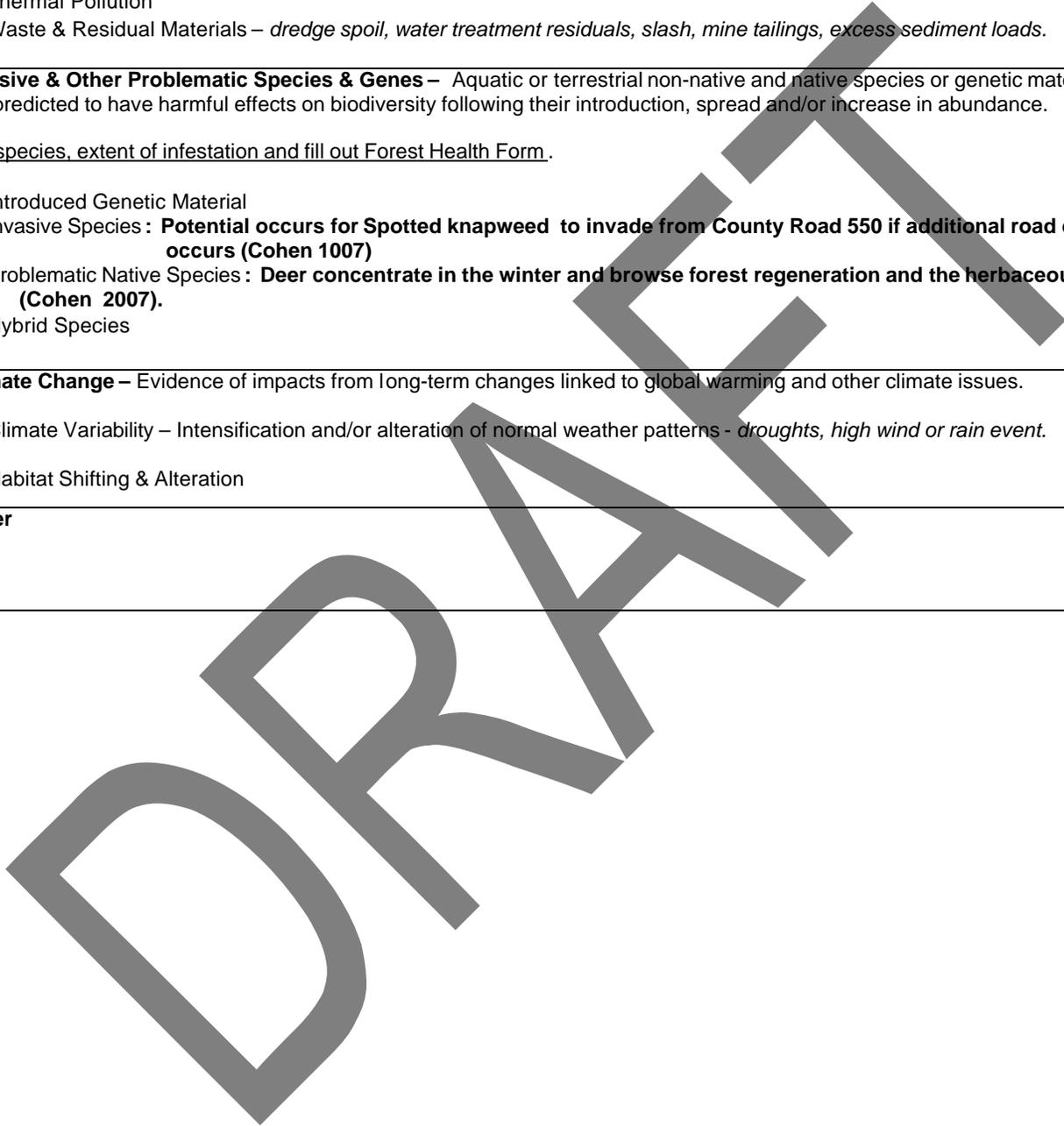
List species, extent of infestation and fill out Forest Health Form.

- Introduced Genetic Material
- Invasive Species : **Potential occurs for Spotted knapweed to invade from County Road 550 if additional road development occurs (Cohen 1007)**
- Problematic Native Species : **Deer concentrate in the winter and browse forest regeneration and the herbaceous layer (Cohen 2007).**
- Hybrid Species

H. Climate Change – Evidence of impacts from long-term changes linked to global warming and other climate issues.

- Climate Variability – Intensification and/or alteration of normal weather patterns - *droughts, high wind or rain event.*
- Habitat Shifting & Alteration

I. Other



SECTION 4: RECOMMENDED MANAGEMENT GOALS AND ACTIVITIES
LIST GOAL(S), FOR EACH VALUE, RELATED THREAT ABATEMENT, MAINTENANCE OR ENHANCEMENT NEEDS
IDENTIFIED IN SECTIONS 2 AND 3

CHECK ALL GOAL CATEGORIES THAT APPLY

- NATURAL COMMUNITY MAINTENANCE OR ENHANCEMENT GOALS**
- ECOLOGICAL SYSTEMS MAINTENANCE OR ENHANCEMENT GOALS**
- SPECIES MAINTENANCE OR ENHANCEMENT GOALS**
- SPECIES RESTORATION GOALS**
- SOCIAL ECONOMIC GOALS**
- INFRASTRUCTURE/FACILITIES GOALS**
- ADMINISTRATIVE GOALS- PROTECTION STATUS; CAPACITY BUILDING; FUNDING, VOLUNTEERS**

GOAL # AND DESCRIPTION FROM SECTIONS 2 AND 3

Goal 1: Maintain Wooded Dune and Swale Community by maintaining natural processes of fire, wind throw, and disease.

Objective 1: ICC to develop a wildfire response plan.

Task 1: Utilize minimum impact suppression techniques utilizing natural fire breaks.

Task 2: If natural fires do not occur in the next decade, implement a prescribed in 10 to 20 years to insure natural red pine regeneration.

Objective 2: No timber removal within the ERA unless for restoration purposes.

Objective 3: Protect or encourage habitat conditions to complement and balance the wintering deer complex and a variety of native fauna and flora.

Task 1: Monitor floristic quality and presence of rare plants - specifically pine drops and possible impacts by recreation if located near trails.

Objective 4: Encourage restoration of mesic conifers, particularly hemlock and white pine, on public and private lands. This may over time (100 years +), provide additional dispersed deer wintering areas and help to reduce browsing pressure on regenerating trees and herbs.

Task 1: Continue implementing the WUP mesic conifer initiative in the interim until a new forest plan is developed.

Task 2: Implement mesic conifer restoration on private lands through existing state private land programs: the Land Owner Incentive Program (LIP) and Forest Stewardship.

Objective 5: Monitor for invasive species.

Goal 2 : Maintain recreational and traditional use opportunities compatible with management of the LPIP wooded dune and swale complex ERA biodiversity values.

Objective 1: Decrease fragmentation and erosion from trails. Minimize trails North West of Harlow Creek.

Task 1: Work with local recreation planner to develop a trail plan with user groups compatible with the ecosystem.

Objective 2: Monitor area for over use impacts. I.e. illegal, new trails.

Task 1: Utilize RDR system to ID and fix erosion problems.

Goal 3: Assess the needs for access sites, parking lot and signage in conjunction with the Little Presque Isle Recreation Area

Objective 1: ADA Walkway to Little Presque Isle Point

Goal 4 : Seek the appropriate legal level protection for the LPIP Wooded Dune and Swale ERA.

Objective 1: Continue to enforce land use rules.

Objective 2: Maintain relationships with local volunteers and conservation partners.

Objective 3: Explore purchase of severed mineral rights.

Objective 4: Determine if Natural Area dedication continues to be feasible considering the amount of mountain bike use that has developed in the area.

Goal 5: Monitor future land use for future threats to the ERA

Goal 6: Procure capacity and funding to carry out management goals and objectives.