Whitefish Point Wooded Dune and Swale Complex ERA Management Plan

Contents

Administrative Information:

- The Whitefish Point Wooded Dune and Swale Complex Ecological Reference Area is located on state forest land in the Whitefish/Vermillion Point Management Area of the Newberry Forest Management Unit.
- Chippewa County, T43N R02E S 9-11, 13-16, 21-27, 35, 36; T43N R03E S 30, 31

- Primary plan author: Sherry MacKinnon, Wildlife Division (WLD) Wildlife Ecologist; contributors and reviewers include Tori Irving, acting Forest Resources Division (FRD) EUP Inventory and Planning Specialist; Keith Kintigh, FRD Forest Certification and Conservation Specialist; Kristie Sitar, WLD Wildlife Biologist; Keith Magnusson, FRD Unit Manager; FRD EUP Timber Management Specialist Jason Tokar and FRD Foresters Lester Livermore and Matt Payment.
- ERA boundaries are derived from the underling Natural Community EO boundary which are mapped using NatureServe standards. EO Boundaries are informed by vegetation and other site characteristics including soils, landform, and/or historic aerial imagery. As a result, it is not uncommon for EO/ERA boundaries to differ from forest inventory stand boundaries. If these difference result in potential conflicts with proposed forest activities, consult with the Forest Conservation and Certification Specialist to request a boundary evaluation by Michigan Natural Features Inventory.

Conservation Values

Wooded dune and swale complex is a large complex of parallel wetland swales and upland beach ridges (dunes) found in coastal embayments and on large sand spits along the shorelines of the Great Lakes. The upland dune ridges are typically forested, while the low swales support a variety of herbaceous or forested wetland types, with open wetlands more common near the shoreline and forested wetlands more prevalent further from the lake.

High-quality wooded dune and swale complexes have the full range of natural communities juxtaposed by associated communities with an unaltered natural disturbance regime (windthrow and fire on the forested dunes and hydrology in the swales). The range of communities expected to occur depends on location, with southern and more northerly complexes supporting different community assemblages. Refer to the MNFI Abstract for detailed descriptions of expected communities by location. Refer to the MNFI Community Abstract for more details. http://mnfi.anr.msu.edu/abstracts/ecology/Wooded_dune_and_swale_complex.pdf

Whitefish Point ERA, EO ID 16872, LASTOBS 2020-07-09

EORANK B- Good estimated viability; 6,154 acres in size

High Conservation Value (HCV) Attributes:

This ERA is part of a large landscape level forest in northwest Chippewa County. This landscape is recognized as being important habitat for migratory birds. The surrounding land and water features create a natural corridor, funneling thousands of birds directly to the point each spring and fall as they travel through the Great Lakes region. The point has been designated by the American Bird Conservancy as being a globally Important Bird Area (IBA). The majority of the shoreline within the ERA is considered critical habitat for the federally endangered Piping Plover and other rare Great Lakes endemic species. A Director's order is in place to help protect nesting plovers and other shorebirds within this High Conservation Value Area.

The ERA contains at least eleven natural community types including muskeg, bog, poor fen, northern shrub thicket, and intermittent wetland within the swales. Submergent marsh and emergent marsh occur locally within swales that have ponded water. Hardwood-conifer swamp occurs along the upland margin of the complex and is characterized by diverse canopy and understory. Forested swales dominated by poor conifer swamp also occur. Dry northern forest characterizes most of the upland sand spits and dune ridges, while the dune ridges closer to the Lake Superior shoreline are dominated by dry-mesic northern forest and a band of open dunes is along the lakeshore.

Groundwater movement and beaver activity shape wetland succession in these swales. Beaver dens, channels, and trails were numerous throughout the area. Signs of other wildlife, including moose tracks, bear tracks, and sandhill cranes were noted. Dynamic natural processes continue to operate throughout the area and strongly influence the wetland communities. The upland sand spits are comprised primarily of fire-dependent dry northern forest. GLO surveyor notes indicated evidence of fire on many of these sand spits. Fire scars were noted on several cut stumps and on the boles of canopy pines, suggesting post-logging slash fires and/or wildfires in the early 1900s. Lack of recent fire has allowed colonization of some of the sand spits by red maple and other fire-intolerant species. Closer to Lake Superior, increased moisture and perhaps a history of less frequent fires has allowed more mesophytic dry-mesic northern forest to develop on the sand spits.

Most of the sand spits were logged around 1900, and logging roads cross many of these ridges. GLO surveyors noted evidence of pre-logging era fires in the mid-1800s, and scars on cut stumps indicate post-logging fires in the early 1900s, but fire has been suppressed or occurred only very locally since that time, resulting in invasion of dry northern forest by mesophytic species, including balsam fir and modest amounts of red maple. Slash fires and road construction have resulted in erosion on some of the ridges, and many areas are still bare or colonized by reindeer lichen. The primary disturbance to the wetlands has been beaver activity. Beaver dens, channels, and trails are numerous throughout the area, and beaver appear to drive wetland succession over much of the area. No invasive species have been noted, although species typical of disturbed sandy soils likely occur along some of the roads or disturbed uplands.

Michigan Natural Features Inventory documented old-growth red pine dominated dry northern forest. Trees cored in the 2020 field season include old growth red pine that were estimated at 206, 212, 240, 380+ and 385 years old (with a dbh of 20-26 inches); cored jack pine were estimated at over 100 and147 years. Evidence of charring was noted and the canopy red pines have survived multiple fires. This stretch of forest is uneven-aged with super canopy red pine overtopping jack pine. The large diameter trees are being used by black bears as marking posts.

Natural disturbance in the wooded dune and swale community includes windthrow, insect infestations, beaver flooding, and fire.

Species of conservation concern include piping plover (*Charadrius melodus)*, federal and state endangered), and American bittern (*Botaurus lentiginosus*, special concern). Historic

occurrences include Yellow banded bumblebee (*Bombus terricola*), incurvate emerald dragonfly (*Somatochlora incurvate*), Dune cutworm (*Euxoa aurulenta*), and Lake Huron tansy (*Tanacetum huronense*).

Threats Assessment

Upland forests have been impacted by erosion, past logging practices, and lack of recent fire. The surrounding landscape is impacted by residential development and forest clear-cuts. Illegal ORV activity along the open dunes and sand and gravel beach along the Lake Superior shoreline is increasing. No invasive species have been noted, although species typical of disturbed sandy soils likely occur along some of the roads or disturbed uplands.

General Management of ERAs

ERAs will generally not be managed for timber harvest. Management activities or prescriptions in Ecological Reference Areas are limited to low impact activities compatible with the defined attributes and values of the community type, except under the following circumstances:

i. Harvesting activities where necessary to restore or recreate conditions to meet the objectives of the ERA, or to mitigate conditions that interfere with achieving the ERA objectives. In this regard, forest management activities (including timber harvest) may be used to create and maintain conditions that emulate an intact, mature forest or other successional phases that may be under-represented in the landscape.

ii. ii. Road building only where it is documented that it will contribute to minimizing the overall environmental impacts within the FMU and will not jeopardize the purpose for which the ERA was designated.

iii. iii. Existing and new land use activities should be evaluated in the context of whether they detract from achieving the desired future conditions of the natural community for which the ERA was designated. The acceptability of land use activities within DNR administered ERAs will be evaluated using severity, scope, and irreversibility criteria, as established in DNR IC4199, Guidance for Land Use Activities within DNR Administered Ecological Reference Areas.

iv. iv. Threats such as fire, natural or exotic pests or pathogens may warrant other management measures. v. Harvesting and other management activities in presently accessible areas located within the peripheral boundary of an ERA that are NOT the natural community of focus and which may or may not be typed as a separate stand or forest type (e.g. an upland island of previously managed aspen within a bog complex) may be prescribed for treatments, contingent upon a determination of no anticipated direct or indirect adverse impact to the defined attributes and values of natural community for which the ERA was designated. The FRD Biodiversity Conservation

Program leader shall be consulted regarding the determination of any direct or indirect adverse impact.

v. vi. Land management activities immediately adjacent to an ERA should consider any anticipated direct or indirect adverse impact to the defined attributes and values of natural community for which the ERA was designated. Management will be adaptive. ERAs will be monitored to determine if implemented management activities are moving the natural communities forward or maintaining them at their desired future condition. The network of ERAs will be evaluated every five years for their contribution to the overall goal of biodiversity conservation. This review cycle will allow for the potential addition or subtraction of lands from an ERA, designation of new ERAs, or removal of the ERA planning designation.

vi. vii. In the conduct of field operations, FRD staff shall follow FRD Guidelines for Decontamination Methods by Risk Level for Terrestrial Activities and Equipment. For operations accomplished by the DNR contractors, these guidelines shall only apply to work in ecologically sensitive areas where control of invasive species is a specified management objective.

Management Goals

- Allow natural processes (windthrow, flooding, insect epidemics, and fire) to operate unhindered.
- Reduce threats (hydrology)
- Maintain the absence of Invasive Species within the interior of the ERA
- Maintain representation of native plants, indicator species, and rare species
- Restoration of natural communities within the Whitefish Point ERA where applicable

Management Objectives

The following Management Objectives describe the measures necessary to ensure the maintenance and/or enhancement of the ERA site or sites. Objectives and associated actions will be prioritized and implemented based upon available resources.

- Move forward this planning cycle determining how to decrease threats in an impactful manner.
- Allow blowdown/windthrow and insect mortality to occur without salvage harvest
- Identify and eliminate illegal ORV access points
- Identify and prioritize critical areas within the ERA to treat for invasive species
- Assess EO quality every 10 years
- Work with adaptation specialist to determine threats associated with climate change before the next planning cycle.

Management Actions

- Maintain the hydrological integrity of wetlands (M, R)
- If future regeneration of jack pine or red pine requires the introduction of prescribed fire, care must be taken to avoid soil disturbances in uplands and especially wetlands. (M, R)
- If wildfire occurs or prescribed fire implemented, use existing fire breaks and avoid establishment of new fire lines to reduce invasive species encroachment. (M, R)
- Minimal Impact Suppression Tactic (MIST) practices should be used for wildfire response when practical and commensurate with values at risk. (M, R)
- Install culverts where water is pooling along roads, if necessary, to restore natural hydrological flow. (R)
- Work with LED to increase patrols for illegal ORV activity and enforce state land use rules (M,R)
- Work with local CISMA to address any invasive species issues. (R)
- Work with MNFI and other experts to update EO inventory. (M, R)
- Update plan with additional knowledge as it becomes available. (M)

Monitoring

Metric	Current Status	Desired Future Status	Assessment
Representative and rare species – species occurrences	Baseline EO Records; updated when EO's are updated	No decreases	TBD
Presence of rare animals	Baseline EO records	No decrease	TBD
Populations of invasive species – number and scope of species	Currently zero species noted within the interior of the ERA. Some species may occur along roadways.	No increase in species within interior. Species along roadways either decreasing or stable.	TBD
Continued presence of large diameter, over-mature, super-canopy red pine	Red pine between ~200-400 years old; DBH >= 20 inches	Increasing age and size class	TBD
Changes in EO rank	B	No decrease	TBD

Images

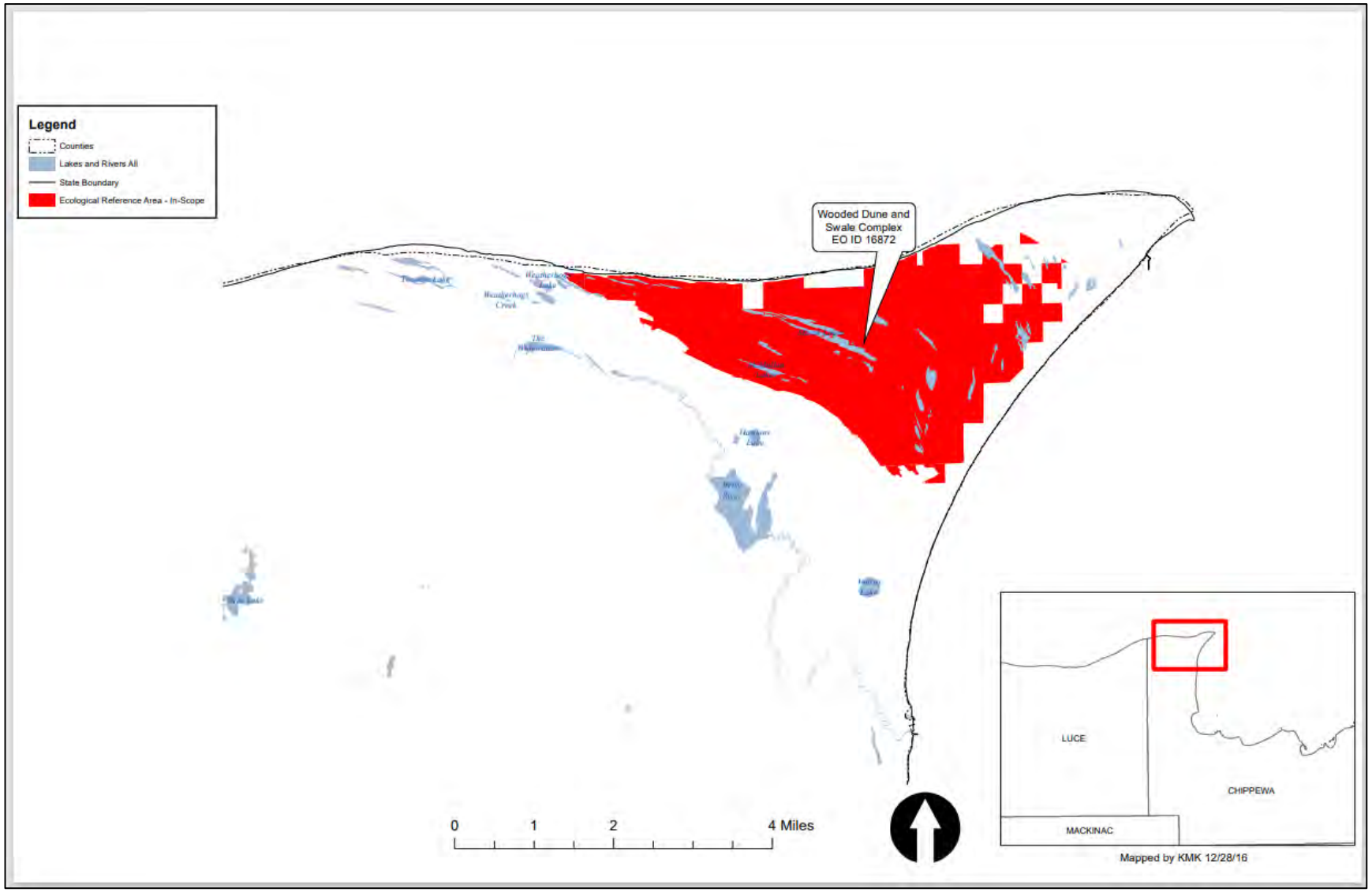

Figure 1. Whitefish Point Wooded Dune and Swale ERA plan locator map.

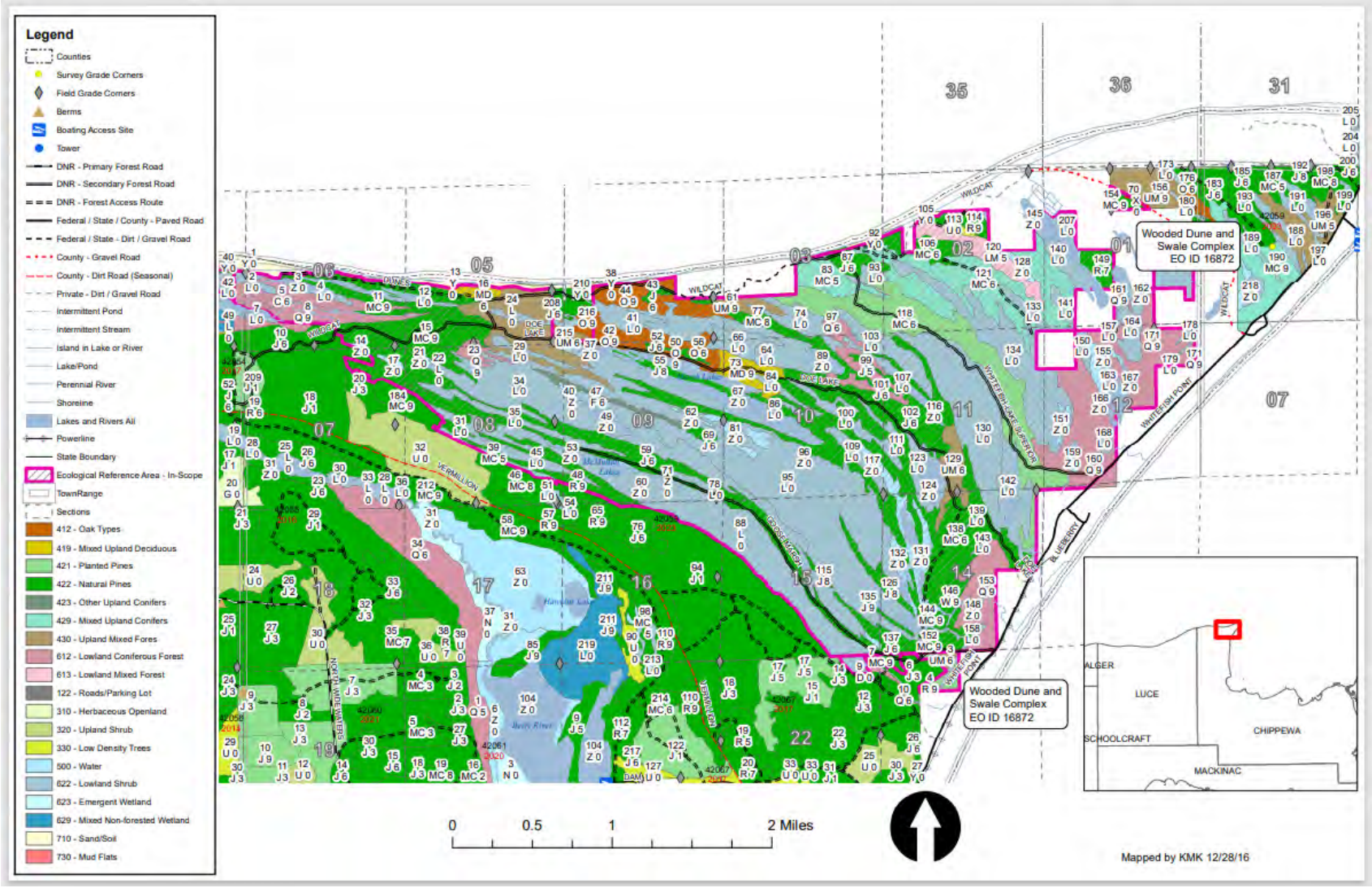

Figure 2. Whitefish Point Wooded Dune and Swale Complex ERA cover type map

Figure 3. Whitefish Point Wooded Dune and Swale ERA 2016 photo.

Additional Resources:

Wooded Dune and Swale Complex Element Occurrence Record, EO ID 16872, Michigan Natural Features Inventory

Michigan Department of Natural Resources Forest Certification Work Instruction 1.4:
http://www.michigan.gov/documents/dnr/WI_1.4BiodMgt_320943_7.pdf

Michigan Natural Features Inventory Wooded Dune and Swale Natural Community Abstract
http://mnfi.anr.msu.edu/abstracts/ecology/Wooded_dune_and_swale_complex.pdf