

Root Lakes Northern Fen ERA Plan

Administrative Information:

- Location within state forest (MA, FMU, compartment, stand, etc.)
 - Traverse City Forest Management Area
 - Williamsburg Moraine Management Area
 - Compartment 61040, Stand 110
- Geo-political location info (county; township, range and section (TRS))
 - Grand Traverse County
 - T27N R09W Sections 13, 14, 23, 24
- Contact information (local plan writer(s), other staff assisting with plan, conservation partners)
 - Plan Writer: Steve Griffith, Wildlife Biologist
 - Local FRD Staff: Patrick Ruppen, TCFMU Forester
- Ownership information
 - State of Michigan
- Existing infrastructure/facilities
 - None
- Other documents related to this ERA:
 - A draft Root Lake Wildlife Area Management (WMA) Plan dated 11/21/2008.
 - Root Lake: Results of 2006 Survey, dated September 2008.
 - Element occurrence record.

Conservation Values

- Description of the natural community occurrence for Root Lake Northern Fen:
 - MNFI Element Occurrence #9558, Rank BC, and LASTOBS date 8/22/2006. This ERA is approximately 47.2 acres in size.
 - The ERA is recognized for being a good or fair example of a rare natural community.
 - The Northern Fen is characterized by three primary vegetative zones characterize the site: a floating sedge peat mat, submergent marsh, and marl flats. Floating mat, which is extensive in the eastern kettle depression, is dominated by twig-rush (*Cladium mariscoides*) with wiregrass sedge (*Carex lasiocarpa*) and hardstem bulrush (*Schoenoplectus acutus*). Submergent marsh is prevalent in the western depression, which has a higher portion of open water. Prevalent vegetation in the submergent marsh zone includes sweet-scented water-lily (*Nymphaea odorata*), stoneworts (*Chara* spp.), and pondweeds

(*Potamogeton* spp.). The marl flats are dominated by silverweed (*Potentilla anserina*), sedge (*Carex viridula*), Kalm's St. John's-wort (*Hypericum kalmianum*), and goldenrods (*Solidago* spp.). The low shrub layer, which is patchy and limited to drier marl flats, is dominated by Kalm's St. John's-wort with some patches of shrubby cinquefoil (*Potentilla fruticosa*). Bluejoint grass (*Calamagrostis canadensis*) is prevalent in areas of northern wet meadow.

- High conservation value (HCV) attributes: Northern Fen (Alkaline Shrub/herb Fen, Upper Midwest Type)
- Other values for consideration:
 - Recreation: There are several old roads that people use to hike to the lakes edge and several adjacent small grassy openings are used to land small boats.

Threats Assessment for Northern Fen

- Currently, fens are threatened by peat mining, logging, quarrying, agricultural runoff and nutrient enrichment, draining, flooding, off-road vehicle (ORV) activity, development (Bedford and Godwin 2003) and invasive species.
- Perhaps the greatest threat to northern fens comes from off-road vehicle (ORV) traffic, which can destroy populations of sensitive species and drastically alter fen hydrology through rutting. Controlling access will help decrease detrimental impacts caused by ORVs. By implementing Riparian Zone Best Management Practices, resource managers will minimize the impacts of management to hydrologic regimes, especially increased surface flow and reduction in groundwater recharge.
- Specific exotic invasive species noted in the ERA are spotted knapweed (*Centaurea maculosa*). Other invasive species threatening the diversity and community structure of northern fens include: glossy buckthorn (*Rhamnus frangula*), multiflora rose (*Rosa multiflora*), autumn olive (*Elaeagnus umbellata*), purple loosestrife (*Lythrum salicaria*) hybrid cat-tail (*Typha xglauca*), reed canary-grass (*Phalaris arundinacea*), narrow-leaved cattail (*Typha angustifolia*), reed (*Phragmites australis*) and Canada thistle (*Cirsium palustre*). Reducing well established populations of invasive plants typically requires long-term commitments by managers to repeatedly apply control treatments, over multiple years, and carryout sustained monitoring efforts. The use of herbicides with mechanical methods for controlling invasive species can be very effective. Sole use of mechanical treatments such as pulling, mowing, and cutting generally have poor results.

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. 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. 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. 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.

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.

Management Goals for Northern Fen

- Restoration of northern fen ERA where applicable
- Invasive Species: Eliminate invasive species (or maintain an absence of invasive species)
- Reduce encroachment of woody vegetation
- Monitoring should be conducted to limit and repair damage from ORVs and other vehicles, if it should occur.
- Maintain and promote representation of native plants, indicator species, and rare species
- Allow natural processes to occur

Management Objectives for Northern Fen

- Identify and eliminate illegal ORV access points
- Identify and prioritize critical areas to treat for invasive species
- Assess EO quality every 10-20 years
- Determine if there are impacts to hydrological system
- Work with adaptation specialist to determine threats associated with climate change

Management Actions

M=Maintenance action, R=Restoration action)

- Conduct a plant and resource damage survey by the end of 2021 to assess current conditions (M, R)
- Identify vectors of invasive species and reduce their introduction to the site (M, R)
- Remove invasive plants using appropriate control methods for that particular species (hand-pull, herbicide, Rx) using partnerships where appropriate, develop FTP's and PAP's (M, R)
- Use periodic burning to maintain presence of native plant species, reduce invasives, and to reduce woody encroachment (M, R)
- To reduce woody encroachment selective cutting can occur in winter using techniques to avoid impacting hydrology
- Write a wildfire plan to incorporate a "let it burn" policy where safety concerns allow. (M, R)
- Avoid establishment of new fire lines to reduce invasive species encroachment (M, R)
- Retain an intact 100-foot buffer of natural vegetation surrounding the ERA to reduce the threat of negative hydrologic impacts. Minimize clearcuts adjacent to ERAs with existing significant deer browse pressure
- Close illegal roads and trails (M, R)

- Avoid creating new roads adjacent to ERA
- Install culverts under roads as needed and ensure that current culverts are functioning
- Work with LED to increase patrols for illegal ORV activity and enforce state land use rules (M,R)
- Work with MNFI and other experts to update EO inventory (M, R)
- Update plan with additional knowledge as it becomes available (M)

Monitoring

- Site assessment should occur at least once during every 10-year planning cycle. Some issues may need to be addressed in a shorter time period.
- Monitoring needs:
 - Representative and rare species occurrences
 - Presence of rare animals
 - Populations of invasive species – number and scope by species
 - Effects of invasive species treatment – growing year post treatment and for two successive years thereafter.
 - Change in EO rank
 - Any illegal ORV activity
 - Any changes in hydrology
- Explore potential to partner with GTRLC and MNFI for monitoring efforts, along with local staff

Signatures & Approval Date:

- Each plan will require formal approval from all relevant resource divisions
- Date of final approval

