

Northern Fen ERA Plan

Deadman’s Fen



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Administrative Information

- Location:
 - This Ecological Reference Area is located within the Gaylord Forest Management Unit, Compartment 48, Stands 54 and 29 within the Jordan River Management Area .
 - It is in Township 31N, Range 05W, N1/2NW of Section 32; Antrim County, MI.
- Contact Information:
 - Plan Writers: Jennifer Kleitch, Wildlife Biologist, Gaylord Customer Service Center; Zachary Crew, Forester, Gaylord Field Office.
 - Local Forester(s) & Biologist(s): Lucas Merrick, Unit Manager, Jennifer Kleitch, Wildlife Biologist.
- State of Michigan lands – State Forest

Conservation Values

- The EO_ID is 18795, with an EO Rank of “BC-Good to Fair Estimated Viability.” It was last surveyed by Michigan Natural Features Inventory on June 16th, 2020.
- Northern fen is a sedge- and rush-dominated wetland occurring on neutral to moderately alkaline saturated peat and/or marl influenced by groundwater rich in calcium and magnesium carbonates. The community occurs north of the climatic tension zone and is found primarily where calcareous bedrock underlies a thin mantle of glacial drift on flat areas or shallow depressions of glacial outwash and glacial lake plains and also in kettle depressions on pitted outwash and moraines. Optimally, northern fen ERAs are associated with large wetland complexes where, depending on geographic location, they grade into other wetland communities such as poor fen, northern wet meadow, northern shrub thicket and rich conifer swamp and/or high-quality upland communities such as boreal forest, dry-mesic northern forest, dry northern forest and pine barrens. High-quality northern fens should ideally contain a diversity of native plant species as described in the Michigan Natural Features Inventory (MNFI) abstract and exhibit the full range of vegetative zonation (marl flats, shrub thickets, and low peat mounds) appropriate for the landscape. Invasive species populations should be minimal. Hydrology is unimpeded with no evidence of past plowing. Maintaining quality groundwater (chemicals, nutrient levels, etc.) input and in some regions periodic fire disturbance is important.
- Deadman’s Fen is characterized scattered and stunted conifers including *Lar Lar*, *Thuja Occidentallis*, with occasional *Acer Rubrum*. Canopy trees range in DBH from 2-15cm and tree heights range from 1-6m tall. Canopy closure ranges from 5-15%. Saplings of these trees occur in the tall shrub layer along with *Salix Spp* and *Cor Sto*. The low shrub layer is characterized by *Das Fru*, *Rha fra*, *Vac Myr*, and *Lar lar*. Characteristic ground cover species include *Cx spp*, *Sol spp*, *Mue glo*, *Bro cil*, *Par gla*, *Dro rot*, *Sen aur*, *Pot ans*, *Indian Paint*, *Packera aurea*, and *Vac oxy*. Floating *Carex* Mats occur intermittently along the margin of the streams. The soils are characterized by inundated to saturated sapric peats that are alkaline, and occur over wet, medium-textured alkaline sands.
- The Deadman’s Hill Fen includes several indicator species including an occurrence of various *Carex spp* and *Solidago spp*. Scattered *Larix laricina* and *Thuja Occidentalis* are also present but do not contribute to a forested stand. Other indicator species present include *Dasiphora fruticose*, *Muhlenbergia glomerata*, *Rhamnus alnifolia*, and *Drosera Rotundifolia*.

Threats Assessment

- Change in ownership (e.g., from state forest to military lands): if this ERA changes hands from state forest to other ownership, there is potential for hydrological changes to occur, which would threaten species composition.
- Invasive species establishment such as glossy buckthorn (*Rhamnus frangula*), multiflora rose (*Rosa multiflora*), autumn olive (*Elaeagnus umbellata*), purple loosestrife (*Lythrum salicaria*), narrow-leaved cat-tail (*Typha angustifolia*), hybrid cat-tail (*Typha xglauca*), reed canary grass (*Phalaris arundinacea*), reed (*Phragmites australis*) and Canada thistle (*Cirsium palustre*) could

significantly alter this ERA if introduced and not managed. After the last site visit in 2020, there was no recorded invasive species present.

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.

Management Objectives

- Identify and eliminate illegal ORV access points
- Identify and prioritize critical areas within the ERA to treat for invasive species
- High diversity of native and indicator plants is desirable
- Assess EO quality every 10-20 years
- Determine if there are impacts to hydrological system
- Work with local landowners to manage northern fen on private property directly adjacent to ERA
- Work with adaptation specialist to determine threats associated with climate change

Management Actions

Suggested actions or series of actions that would help to achieve the above objectives.

(M= Maintenance action, R= Restoration action)

- If current data/knowledge are not available regarding the management goals, actions may address needed assessments (i.e. surveys may be needed) (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).
- Where northern fen borders fire-dependent upland communities include prescription burning of the marsh and adjacent uplands when possible.
- Reduce woody encroachment via selective cutting 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

- Monitoring is expected to generally occur on a 10-year frequency to match the 10-year planning cycle – deviations to this will be noted in individual plans.
- Control efforts to detect and remove invasive species before they become widespread are critical to the long-term viability this ERA.
- Specific monitoring should include:
 - Documenting representative and rare species occurrences
 - Documenting presence of rare animals
 - Documenting populations of invasive species- number and scope by species
 - Evaluating the effects of invasive species treatment
 - Evaluating for change in EO rank
 - Documenting Illegal ORV activity - Number of new instances and number of citations issued

Pictures



Aerial view of site location



Image of conifers and wetland area



Site image

Site Map

