



Inland wetlands/water: Fen

Description

Fens are peat-accumulating wetlands that receive much of their water and nutrients from groundwater rich in calcium and magnesium carbonates. Fens tend to have relatively high pH and nutrient levels, hence supporting a great diversity of grasses, sedges (*Carex sp.*), rushes (*Juncus sp.*), and wildflowers. Open conditions are maintained by seasonal water fluctuations, fire, and beaver-flooding.

General Condition of Feature

Much of the fen area in the Northern Lower Peninsula is considered to be in fair or good condition (~60%) and about 10% is considered to be in excellent condition. The remaining fen areas are considered degraded or very degraded. Fen natural communities are considered rare, uncommon, or imperiled in the State.

Associated Natural Communities

Northern Fen
Poor Fen

Associated Species of Greatest Conservation Need

SNAILS

eastern flat-whorl (*Planogyra asteriscus*)
tapered vertigo (*Vertigo elatior*)
six-whorl vertigo (*Vertigo morsei*)

INSECTS

spatterdock damer (*Aeshna mutata*)
Hine's emerald dragonfly (*Somatochlora hineana*)
ringed boghaunter (*Williamsonia lintneri*)
subarctic bluethroat (*Coenagrion interrogatum*)
persius duskywing (*Erynnis persius persius*)
tawny crescent (*Phyciodes batesii*)

AMPHIBIANS

pickerel frog (*Rana palustris*)
northern leopard frog (*Rana pipiens*)

REPTILES

blue racer (*Coluber constrictor foxii*)
eastern massasauga (*Sistrurus catenatus catenatus*)
spotted turtle (*Clemmys guttata*)
Blanding's turtle (*Emydoidea blandingii*)
eastern box turtle (*Terrapene carolina carolina*)

BIRDS

Sora (*Porzana carolina*)

Associated Threats

MODIFICATION OF NATURAL PROCESSES

- Altered fire regime
- Altered hydrologic regimes

HABITAT CONVERSION

- Industrial, residential, and recreational development: Development in adjacent uplands may alter water flow and affect runoff. A lack of buffer zones exacerbates this effect.
- Wetland modifications
- Incompatible natural resource management

POLLUTION

- Urban, municipal, and industrial
- Pesticides and herbicides

CONSUMPTIVE BIOLOGICAL RESOURCE USE

- Forestry practices

NON-CONSUMPTIVE BIOLOGICAL RESOURCE USE

- Non-consumptive recreation: Uncontrolled ATV and ORV use may impact fens.

BIOLOGICAL INTERACTIONS

- Invasive plants and animals: Species like glossy buckthorn (*Rhamnus frangula*) may affect community composition.

Conservation Actions Needed [Threats addressed]

LAND & WATER PROTECTION

- Expand conservation easement programs [variety of threats]
- Support and expand conservation purchase of high quality occurrences [variety of threats]

LAND, WATER & SPECIES MANAGEMENT

- Manage to approximate natural disturbance regimes using prescribed fire and restoration of water flow patterns. [Altered fire regime; Altered hydrologic regimes]
- Institute invasive species monitoring, prevention and control programs. [Invasive plants and animals]
- Work with land managers to develop priorities for fen management. [Incompatible natural resource management]

**MICHIGAN'S WILDLIFE ACTION PLAN
TERRESTRIAL SYSTEMS: NORTHERN LOWER PENINSULA**

- Where possible, motorized vehicle trails should be located a minimum of 100 feet (and preferably more than 500 feet) from rivers, streams, lakes and other wetlands except at designated crossings. [Non-consumptive recreation]
- Support Landowner Incentive Programs to foster conservation on private land [variety of threats]
- Maintain or establish riparian buffers of at least 50 ft., but 500 ft. or wider maximizes conservation benefits [wetland modifications]

LAW & POLICY

- Work with municipalities to promote planning and zoning insuring adequate protection for fens and adjacent uplands. [Industrial, residential and recreational development]
- Develop and enforce regulations to curtail recreational activities that cause significant damage. [Non-consumptive recreation]

EDUCATION & AWARENESS

- Promote lawn maintenance and agricultural practices which minimize the use of chemical pesticides and herbicides. [Pesticides and herbicides]

RECREATION

- Promote responsible ATV and ORV use. [Non-consumptive recreation]

Research and Survey Needs

- Conduct a statewide wetlands inventory.
- Evaluate the impacts of modifications of natural hydrologic regimes and local water chemistry.
- A common classification system to define wetlands is needed.
- Document the historic and current range of variation between fens. This includes variables such as species composition and size.
- Identify invasive species that may degrade the value of fens for wildlife. Develop techniques to control invasive species. Common invasive species include glossy buckthorn (*Rhamnus frangula*), reed canary grass (*Phalaris arundinacea*) and phragmites (*Phragmites australis*).
- A better understanding is needed of the temporal and spatial distribution of fire and its impacts of fens.
- A better understanding is needed of fen restoration techniques and results.
- A better understanding is needed of the value to wildlife of mosaics containing upland and wetland communities.

Monitoring

- Track fen acreage and distribution across the landscape.
- Identify and track floristic composition and diversity.
- Track water level and flow fluctuations and its impacts on vegetation and wildlife.
- Track water quality trends.
- Track changes in hydrology.