



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 Eastern Upper Peninsula is considered to be in fair or good condition (~55%), and about 10% is considered to be in excellent condition. The remaining fen areas are considered degraded or very degraded. Fen natural communities are classified as rare, uncommon, or imperiled in the State.

Associated Natural Communities

Northern Fen
Patterned Fen
Poor Fen

Associated Species of Greatest Conservation Need

SNAILS

eastern flat-whorl (*Planogyra asteriscus*)
tapered vertigo (*Vertigo elatior*)
six-whorl vertigo (*Vertigo morsei*)
crested vertigo (*Vertigo pygmaea*)
pleistocene catinella (*Catinella exile*)

INSECTS

spatterdock damer (*Aeshna mutata*)
Hine's emerald dragonfly (*Somatochlora hineana*)
incurvate emerald dragonfly (*Somatochlora incurvata*)
ringed boghaunter (*Williamsonia lintneri*)
subarctic bluethroat (*Coenagrion interrogatum*)
northern blue (*Lycaeides idas nabokovi*)
tawny crescent (*Phyciodes batesii*)

AMPHIBIANS

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

REPTILES

eastern massasauga (*Sistrurus catenatus catenatus*)
Blanding's turtle (*Emydoidea blandingii*)

BIRDS

Sharp-tailed Grouse (*Tympanuchus phasianellus*)
Yellow Rail (*Coturnicops noveboracensis*)
Virginia Rail (*Rallus limicola*)
Sora (*Porzana carolina*)
Boreal Chickadee (*Poecile hudsonica*)
Sedge Wren (*Cistothorus platensis*)
Le Conte's Sparrow (*Ammodramus leconteii*)

Associated Threats

MODIFICATION OF NATURAL PROCESSES

- Altered fire regime
- Altered hydrologic regimes: Changes in hydrology may impact fens. Road construction may concentrate flows or increase discharge. Water extraction for sale may pose a potential threat.

HABITAT CONVERSION

- Industrial, residential, and recreational development
- Dredging and channelization: Ditching may alter water flow through fens.
- Incompatible natural resource management: Landowners may convert fens to ponds.

CONSUMPTIVE BIOLOGICAL RESOURCE USE

- Forestry practices: Inappropriate forestry practices may impact fens.
- Mining practices: Peat mining may impact fens.

NON-CONSUMPTIVE BIOLOGICAL RESOURCE USE

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

BIOLOGICAL INTERACTIONS

- Invasive plants and animals

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 hydrologic regimes; Altered fire regime; Dredging and channelization]
- Institute invasive species monitoring, prevention and control programs. [Invasive plants and animals]

MICHIGAN'S WILDLIFE ACTION PLAN
TERRESTRIAL SYSTEMS: EASTERN UPPER PENINSULA

- Work with land managers to develop priorities for fen retention and management. [Incompatible natural resource management]
- Develop and implement forestry best management practices which address the value to wildlife of fens. [Forestry practices]
- 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 fen systems. [Industrial, residential and recreational development]
- Develop new and enforce existing regulations for mitigation of peat mining operations. [Mining practices]
- Develop and enforce regulations to curtail recreational activities that cause significant damage. [Non-consumptive recreation]

RECREATION

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

LAND AND WATER PROTECTION

- Promote protection of significant fens through purchase, easement or other economic incentives. [Industrial, residential and recreational development]

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 on 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.