



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 Southern Lower Peninsula is considered degraded or very degraded (~55%). Most of the remaining fen areas are considered to be in fair or good condition. The prairie fen natural community is classified as rare in the State.

Associated Natural Communities

Prairie Fen

Associated Species of Greatest Conservation Need

SNAILS

six-whorl vertigo (*Vertigo morsei*)

INSECTS

grey petaltail (*Tachopteryx thoreyi*)
spatterdock damer (*Aeshna mutata*)
ringed boghaunter (*Williamsonia lintneri*)
Hoosier locust (*Paroxya hoosieri*)
bog conehead (*Neoconocephalus lyristes*)
red-faced meadow katydid (*Orchelimum concinnum*)
tamarack tree cricket (*Oecanthus laricis*)
angular spittlebug (*Lepyronia angulifera*)
red-legged spittlebug (*Prosapia ignipectus*)
Huron River leafhopper (*Flexamia huroni*)
a leafhopper (*Flexamia reflexus*)
persius duskywing (*Erynnis persius persius*)
poweshiek skipperling (*Oarisma poweshiek*)
swamp metalmark (*Calephelis mutica*)
tawny crescent (*Phyciodes batesii*)
Mitchell's satyr (*Neonympha mitchellii mitchellii*)
Newman's brocade (*Meropleon ambifusca*)
blazing star borer (*Papaipema beeriana*)
golden borer (*Papaipema cerina*)

INSECTS cont.

maritime sunflower borer (*Papaipema maritima*)
Culvers root borer (*Papaipema sciata*)
silphium borer moth (*Papaipema silphii*)
regal fern borer (*Papaipema speciosissima*)

AMPHIBIANS

Blanchard's cricket frog (*Acris crepitans blanchardi*)
pickerel frog (*Rana palustris*)
northern leopard frog (*Rana pipiens*)

REPTILES

Kirtland's snake (*Clonophis kirtlandii*)
blue racer (*Coluber constrictor foxii*)
copperbelly water snake (*Nerodia erythrogaster neglecta*)
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

- Climate change
- Grazing and mowing patterns
- Altered fire regime: A lack of fire leads to woody vegetation encroachment.
- Altered hydrologic regimes: Alteration of groundwater flows through use at municipal wells, farm ponds, and other water diversion activities can affect fens in the Southern Lower Peninsula.
- Fragmentation

HABITAT CONVERSION

- Industrial, residential, and recreational development
- Wetland modifications
- Conversion to agriculture
- Dredging and channelization

NON-CONSUMPTIVE BIOLOGICAL RESOURCE USE

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

BIOLOGICAL INTERACTIONS

- Invasive plants and animals: Species like glossy buckthorn (*Rhamnus frangula*), phragmites (*Phragmites australis*), purple loosestrife (*Lythrum salicaria*), and some dogwoods (*Cornus spp.*) may alter species composition.

EDUCATION

- Social attitudes

MICHIGAN'S WILDLIFE ACTION PLAN
TERRESTRIAL SYSTEMS: SOUTHERN LOWER PENINSULA

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, mowing and restoration of natural water flow patterns. [Grazing and mowing patterns; Altered fire regime; Altered hydrologic regimes]
- Institute invasive species monitoring, prevention and control programs. [Invasive plants and animals]
- 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]
- Use best management practices for development, management, and recreational activities around lakes, streams, and wetlands to maintain natural shoreline stability (thereby reducing the need for restoration or artificial structures). [Industrial, residential, and recreational development, Wetland modifications, 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]
- Maintain and rehabilitate natural corridors between wetlands and to representative upland habitats [fragmentation]

LAW & POLICY

- Work with municipalities to promote planning and zoning insuring adequate protection for fens. [Fragmentation; Industrial, residential, and recreational development; Wetland modifications; Dredging and channelization]
- Develop new legislation and ordinances, where necessary, to regulate or limit draining or development of fens. Enforce existing regulations concerning draining and development of wetlands. [Industrial, residential, and recreational development; Wetland modifications; Conversion to agriculture; Dredging and channelization]
- Develop and enforce regulations to curtail recreational activities that cause significant damage. [Non-consumptive recreation]

EDUCATION & AWARENESS

- Educate the public about the value to wildlife of fens. [Social attitudes]

RECREATION

- Promote responsible recreational vehicle use in and near fens. [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*).
- Develop best management practices for development, management, and recreational activities around lakes, streams, and wetlands to maintain natural shoreline stability (thereby reducing the need for restoration or artificial structures).
- A better understanding is needed of the temporal and spatial distribution of fire and its influence on fens and associated wildlife.
- 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.
- Need to understand resilience of fens to climate change.

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.