



## Inland wetlands/water: Bog

### Description

Bogs are peat-accumulating, acidic, low nutrient wetlands that receive all or most of their water and nutrients from precipitation. Sphagnum moss (*Sphagnum andersonianum*) mats are characteristic of bogs. Other characteristic vegetation includes carnivorous plants such as sundew (*Drosera sp.*) and pitcher plants (*Sarracenia purpurea*), shrubs from the Heath family, and sedges (*Carex sp.*).

### General Condition of Feature

Many of the bogs in the Western Upper Peninsula are considered to be in good condition (~55%) and another 30% are considered excellent condition. Less than 10% of bogs are considered degraded or very degraded. Bogs include natural communities that are considered rare, uncommon or imperiled in the State.

### Associated Natural Communities

Bog  
Intermittent Wetland [Boggy Seepage Wetland]  
Muskeg

### Associated Species of Greatest Conservation Need

#### SNAILS

eastern flat-whorl (*Planogyra asteriscus*)  
a land snail (*Euconulus alderi*)

#### INSECTS

muskeg darner (*Aeshna subarctica*)  
lake emerald (*Somatochlora cingulata*)  
incurvate emerald dragonfly (*Somatochlora incurvata*)  
ebony boghaunter (*Williamsonia fletcheri*)  
ringed boghaunter (*Williamsonia lintneri*)  
subarctic bluethroat (*Coenagrion interrogatum*)  
frigga fritillary (*Boloria frigga*)  
freija fritillary (*Boloria freija*)  
red-disked alpine (*Erebia discoidalis*)

#### AMPHIBIANS

blue-spotted salamander (*Ambystoma laterale*)  
spotted salamander (*Ambystoma maculatum*)  
four-toed salamander (*Hemidactylium scutatum*)  
pickerel frog (*Rana palustris*)  
northern leopard frog (*Rana pipiens*)

#### REPTILES

blue racer (*Coluber constrictor foxii*)  
smooth green snake (*Liochlorophis vernalis*)  
Blanding's turtle (*Emydoidea blandingii*)

#### REPTILES cont.

wood turtle (*Glyptemys insculpta*)

#### BIRDS

American Bittern (*Botaurus lentiginosus*)  
Sora (*Porzana carolina*)  
American Coot (*Fulica americana*)  
Upland Sandpiper (*Bartramia longicauda*)  
Wilson's Snipe (*Gallinago delicata*)  
Black-backed Woodpecker (*Picoides arcticus*)  
Northern Shrike (*Lanius excubitor*)  
Ruby-crowned Kinglet (*Regulus calendula*)  
Golden-winged Warbler (*Vermivora chrysoptera*)  
Palm Warbler (*Dendroica palmarum*)  
Connecticut Warbler (*Oporornis agilis*)  
Canada Warbler (*Wilsonia canadensis*)

#### MAMMALS

arctic shrew (*Sorex arcticus*)  
pygmy shrew (*Sorex hoyi*)  
water shrew (*Sorex palustris*)  
American marten (*Martes americana*)  
southern red-backed vole (*Clethrionomys gapperi*)  
southern bog lemming (*Synaptomys cooperi*)  
lynx (*Lynx canadensis*)  
snowshoe hare (*Lepus americanus*)

### Associated Threats

#### MODIFICATION OF NATURAL PROCESSES

- Climate change
- Altered hydrologic regimes: Changes in hydrology may alter nutrient loads.
- Fragmentation

#### POLLUTION

- Urban, municipal, and industrial pollution: Atmospheric pollution affects bog pH.

#### CONSUMPTIVE BIOLOGICAL RESOURCE USE

- Forestry practices: Forestry practices adjacent to bogs may pose a threat.

#### NON-CONSUMPTIVE BIOLOGICAL RESOURCE USE

- Non-consumptive recreation: Uncontrolled ATV and ORV use can impact bogs.

#### 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 by restoring water flow patterns. [Altered hydrologic regimes]
- Develop and implement plans for invasive species control and prevention. [Invasive plants and animals]
- Develop and enforce best management practices which address the needs and values of wildlife. [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]
- 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). [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 [variety of threats]
- Maintain and rehabilitate natural corridors between wetlands and to representative upland habitats [fragmentation]

*LAW & POLICY*

- Work with municipalities to promote planning and zoning insuring the retention of larger parcel sizes in wetland complexes which contain bogs. [Fragmentation]
- Develop new and enforce existing regulations to reduce airborne pollutants which may contribute to acid precipitation. [Urban, municipal, and industrial pollution]
- 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]

Research and Survey Needs

- Conduct a statewide wetlands inventory.
- Evaluate the impacts of modifications of natural hydrologic regimes and local water chemistry.
- Evaluate the potential for restoration and creation of bogs. What is the time frame required for the successful establishment of a bog? What management techniques are appropriate for bog creation and maintenance? Are any agencies or non-governmental organizations currently attempting to restore or create bogs?
- 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).
- Examine variability among bog systems and determine whether differences are meaningful to wildlife. Should there be more "bog" natural communities in MNFI's classification?

Monitoring

- Track bog acreage and distribution across the landscape.
- Identify and track floristic composition and diversity.
- Track successional stage in wetlands to identify potential bog systems.