



MICHIGAN'S WILDLIFE ACTION PLAN
AQUATIC SYSTEMS: LAKE SUPERIOR BASIN

Wetlands: 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

This habitat is considered 95% in good to excellent condition, 5% in fair condition, and 0% in degraded to very degraded condition.

Associated Natural Communities

Bog
Intermittent Wetland
Muskeg

Associated Species of Greatest Conservation Need

INSECTS

sedge darner (*Aeshna juncea*)
spatterdock darner (*Aeshna mutata*)
zigzag darner (*Aeshna sitchensis*)
muskeg darner (*Aeshna subarctica*)
incurvate emerald dragonfly (*Somatochlora incurvata*)
ebony boghaunter (*Williamsonia fletcheri*)
ringed boghaunter (*Williamsonia lintneri*)
Subarctic bluet (*Coenagrion interrogatum*)

FISH

brassy minnow (*Hybognathus hankinsoni*)

FISH cont.

finescale dace (*Phoxinus neogaeus*)

AMPHIBIANS

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

REPTILES

eastern box turtle (*Terrapene carolina carolina*)

MAMMALS

water shrew (*Sorex palustris*)

Associated Threats

MODIFICATION OF NATURAL PROCESSES

- Altered hydrologic regimes: Hydrologic alterations; Draining (low threat)
- Climate change: Water levels dropping due to climate change (low threat)

POLLUTION

- Altered sediment loads: Sedimentation (low threat)

HABITAT CONVERSION

- Riparian modifications: Road construction; Development; Shoreline development and filling (low threat)
- Wetland modifications: Draining

BIOLOGICAL INTERACTIONS

- Invasive plants and animals: (low threat)

Conservation Actions Needed (Threats addressed)

LAND & WATER PROTECTION

- Create and expand conservation easements (variety of threats)
- Support land conservancy purchase of undeveloped land (variety of threats)
- Support landowner incentive programs to foster conservation on private land (variety of threats)

LAND, WATER & SPECIES MANAGEMENT

- Close roads during breeding seasons or install tunnels along migration pathways to allow amphibians and reptiles access to breeding areas (riparian modifications, species issue)
- Control and prevent invasive aquatic species introductions and establishments (invasive plants and animals)
- Maintain or establish riparian buffers of at least 50 ft., but 500 ft. or wider maximizes conservation benefits (riparian modifications)
- Maintain or rehabilitate natural corridors between bogs and other significant habitats to amphibians and reptiles (riparian modifications, species issue)
- Maintain or rehabilitate natural hydrology (altered hydrologic regimes)
- Protect existing natural wetlands and rehabilitate degraded wetlands (wetland modification)
- Rehabilitate native flora (wetland modification)

LAW & POLICY

- Encourage clustered development and green space planning (riparian modifications)
- Include wetland protections in zoning and planning ordinances (wetland modification)
- Limit water withdrawals in flow limited or groundwater fed systems (altered hydrologic regimes)
- Protect and rehabilitate groundwater recharges by requiring that all development-related runoff be captured by infiltration basins (altered hydrologic regimes)
- Restrict dredging and draining of bogs (wetland modification)
- Strengthen wetland regulations, mitigation requirements, and enforcement (wetland modification)
- Work with local governments to develop and refine planning and zoning regulations and ordinances that consider natural processes (variety of threats)
- Work with local ordinances on setback and buffer ordinances (riparian modifications)

EDUCATION & AWARENESS

- Educate legislators, other policy makers, and the public on the benefits and ecological services provided by wetlands and the species that use them, especially bogs (variety of threats)

Research and Survey Needs

- Determine migration pathways of amphibians and reptiles at high quality or productive sites
- Determine the number of peat mining operations in the basin
- Determine unknown life history requirements for SGCN associated with bogs
- Develop alternatives to current drainage practices
- Investigate alternatives to water withdrawals and diversions
- Model hydrologic flow of each watershed
- Survey bogs and determine condition

Monitoring

- Draining and channelization
- Hydrologic changes
- Peat mining operations
- Riparian modifications
- Water withdrawals
- Wetland modification