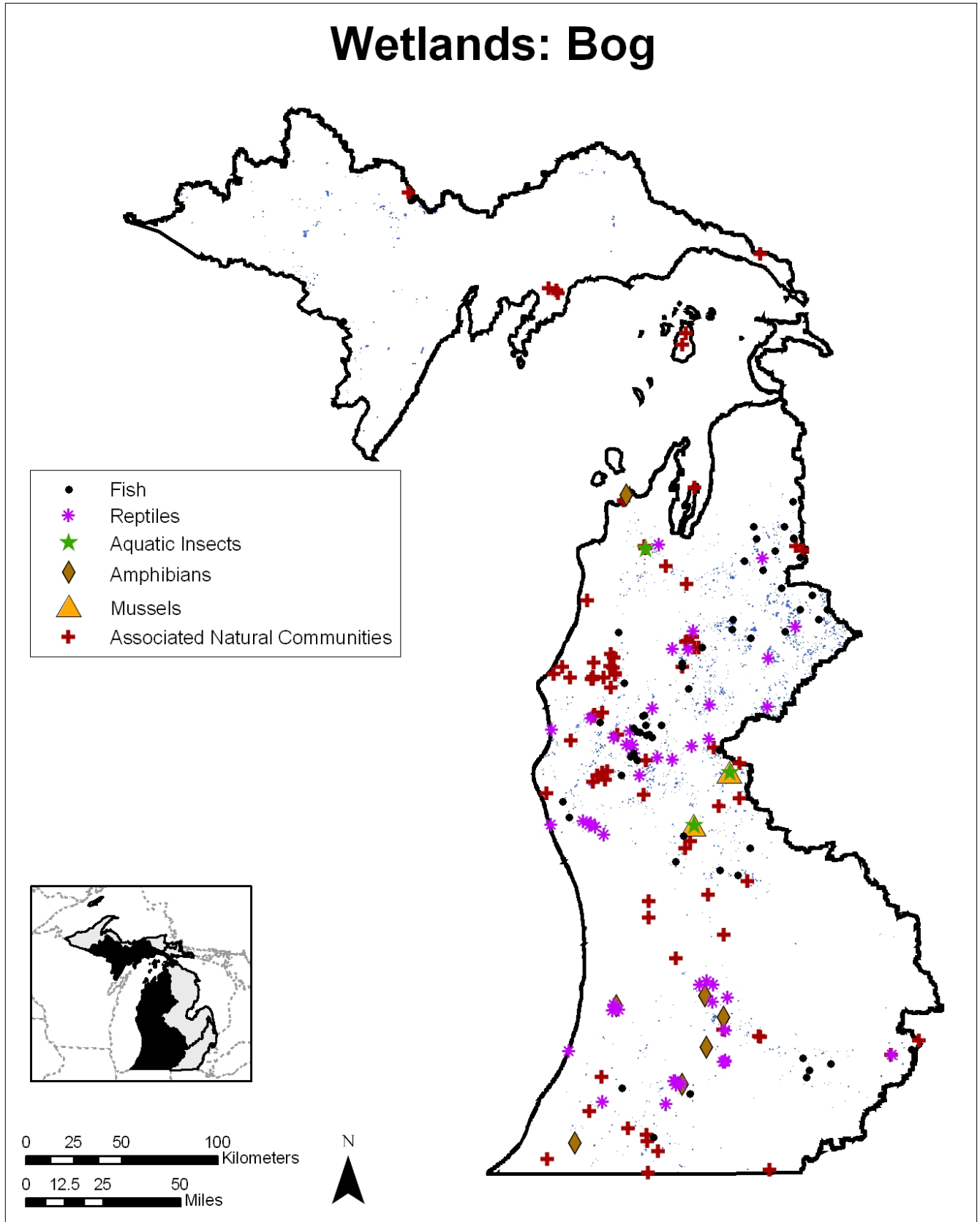


Wetlands: Bog



MICHIGAN'S WILDLIFE ACTION PLAN
AQUATIC SYSTEMS: LAKE MICHIGAN 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 50% in good to excellent condition, 25% in fair condition, and 25% in degraded to very degraded condition.

Associated Natural Communities

Bog
Intermittent Wetland
Muskeg

Associated Species of Greatest Conservation Need

MUSSELS

Specific associations with this landscape feature were not found in the literature

INSECTS

grey petaltail (*Tachopteryx thoreyi*)
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*)
finescale dace (*Phoxinus neogaeus*)

AMPHIBIANS

blue-spotted salamander (*Ambystoma laterale*)
four-toed salamander (*Hemidactylum scutatum*)
Blanchard's cricket frog (*Acris crepitans blanchardi*)
pickerel frog (*Rana palustris*)
northern leopard frog (*Rana pipiens*)

REPTILES

copperbelly water snake (*Nerodia erythrogaster neglecta*)
spotted turtle (*Clemmys guttata*)

MAMMALS

water shrew (*Sorex palustris*)

Associated Threats

MODIFICATION OF NATURAL PROCESSES

- Altered hydrologic regimes: Water level control; Water withdrawal; Draining
- Fragmentation

POLLUTION

- Altered nutrient inflows
- Altered sediment loads: Sedimentation from logging roads, culverts, and other roads
- Pesticides and herbicides: (low threat)
- Urban, municipal, and industrial pollution: (low threat)

HABITAT CONVERSION

- Dredging and channelization: Dredging
- Riparian modification: Changes in riparian could lead to alterations in drainage patterns; Development; Timber harvest (to a small degree)
- Wetland modification: Filling; Draining

BIOLOGICAL INTERACTIONS

- Disease, pathogens, and parasites
- Invasive plants and animals: Purple loosestrife

NON-CONSUMPTIVE BIOLOGICAL RESOURCE USE

- Macrophyte removal: (low threat)

CONSUMPTIVE BIOLOGICAL RESOURCE USE

- Forestry practices: Timber harvest (low threat)
- Mining practices: Peat mining
- Removal of wildlife: (low threat)

EDUCATION

- Social attitudes

Conservation Actions Needed (Threats addressed)

LAND & WATER PROTECTION

- Create and/or 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 (fragmentation, species issue)
- Control and prevent aquatic invasive 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 modification)
- Maintain or rehabilitate natural corridors between bogs and other significant habitats to amphibians and reptiles (fragmentation, species issue)
- Maintain or rehabilitate natural hydrology and hydrologic functions, i.e., throughflow, wetlands (altered hydrologic regimes)
- Protect or rehabilitate bog habitats (wetland modification)
- Removal of invasive vegetation needs to preserve 60-80% of native vegetation (invasive plants and animals, macrophyte removal)
- Rehabilitate native flora (wetland modification)

LAW & POLICY

- Continued vigilance and cooperation on preventing more aquatic invasive species establishments (invasive plants and animals)
- Encourage green space planning (riparian modification)
- 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 recharge by requiring that development-related runoff be captured by infiltration basins (altered hydrologic regimes)
- Restrict dredging and channelization (dredging and channelization)
- Restrict peat mining (dredging and channelization, mining practices)
- Strengthen wetland regulations, mitigation requirements, and enforcement (wetland modification)
- Use best management practices (variety of threats)
- Work with and educate Drain Commissioners on the importance of bog systems (variety of threats)
- Work with local governments to develop and refine planning and zoning regulations and ordinances that consider natural processes (variety of threats)
- Work with local officials on setback and buffer ordinances (riparian modification)

EDUCATION & AWARENESS

- Educate legislators, land owners, other policy makers, and the public on bog systems and the species that rely on them (social attitudes)

Research and Survey Needs

- Determine effective prevention, control, and survey techniques for aquatic invasive species
- Determine Disease, pathogens, and parasites threats and develop strategies to address
- Determine migration pathways of amphibians and reptiles at high quality or productive sites
- Determine the amount of abandoned tiled farmland and ways to return it to the original condition
- Determine the amount of impervious in a watershed
- Determine the number of peat mining operations in each watershed in the basin
- Determine unknown life history requirements for SGCN associated with bogs
- Develop alternatives to current drainage practices
- Identify effective restoration techniques
- Investigate alternatives to water withdrawals and diversions
- Model hydrologic flow of each watershed
- Survey bogs and determine condition

Monitoring

- Amount of impervious surface in watersheds
- Draining and channelization
- Hydrologic changes
- Peat mining operations
- Riparian modification
- Storm water flows
- Stream modification

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

- Water withdrawals
- Wetland modification