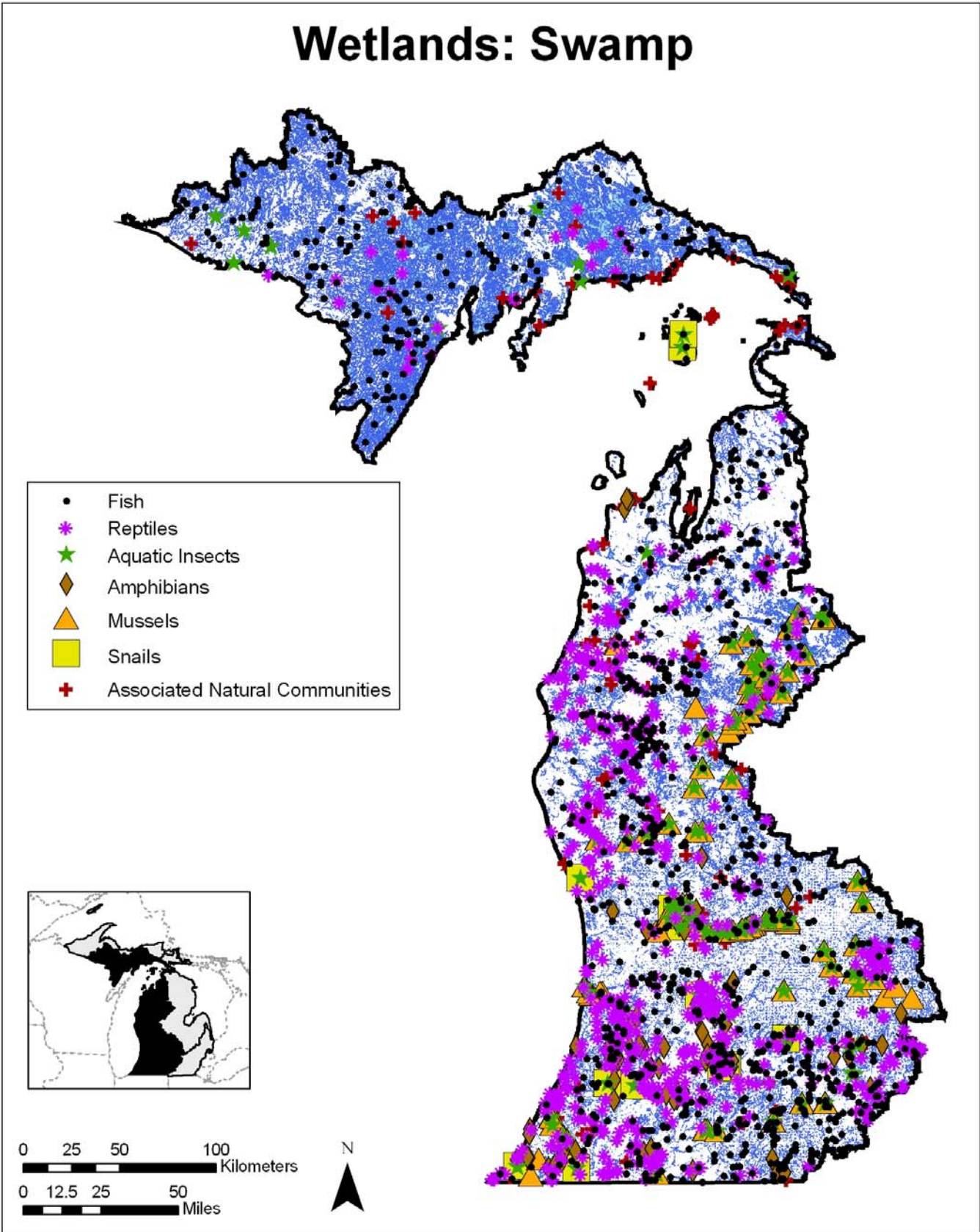


# Wetlands: Swamp



## Wetlands: Swamp

### Description

Swamps are wetlands dominated by trees or shrubs with saturated soils during the growing season and standing or slowly moving water during certain times of the year. Swamps can be dominated by trees such as red maple (*Acer rubrum*), black ash (*Fraxinus nigra*), yellow birch (*Betula alleghaniensis*), northern white cedar (*Thuja occidentalis*) and tamarack (*Larix laricina*), or shrubs such as buttonbush (*Cephalanthus occidentalis*), willow (*Salix sp.*), and dogwood (*Cornus sp.*). Composition and structure are influenced by disturbance factors such as flooding regime, windthrow, insect outbreak, and beaver (*Castor canadensis*).

### General Condition of Feature

This habitat is considered 50% in good to excellent condition, 20% in fair condition, and 30% in degraded to very degraded condition.

### Associated Natural Communities

Hardwood-Conifer Swamp	Rich Conifer Swamp
Inundated Shrub Swamp	Southern Floodplain Forest
Northern Shrub-Thicket	Southern Shrub-Carr
Northern Swamp	Southern Swamp
Poor Conifer Swamp	Wooded Dune and Swale Complex
Relict Conifer Swamp	

### Associated Species of Greatest Conservation Need

#### MUSSELS

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

#### SNAILS

spindle lymnaea (*Acella haldemani*)

#### CRAYFISH

devil crawfish (*Cambarus diogenes*)  
 digger crayfish (*Fallicambarus fodiens*)

#### INSECTS

spatterdock damer (*Aeshna mutata*)  
 muskeg damer (*Aeshna subarctica*)

#### FISH

pirate perch (*Aphredoderus sayanus*)  
 starhead topminnow (*Fundulus dispar*)

#### AMPHIBIANS

four-toed salamander (*Hemidactylium scutatum*)  
 western lesser siren (*Siren intermedia nettingi*)  
 western chorus frog (*Pseudacris triseriata triseriata*)

#### REPTILES

copperbelly water snake (*Nerodia erythrogaster neglecta*)  
 spotted turtle (*Clemmys guttata*)  
 Blanding's turtle (*Emydoidea blandingii*)  
 wood turtle (*Glyptemys insculpta*)

#### MAMMALS

water shrew (*Sorex palustris*)

### Associated Threats

#### MODIFICATION OF NATURAL PROCESSES

- Altered hydrologic regimes: Altered hydrology; Altered flow regimes; Development; Change in drainage patterns; Roads bisecting swamps which lack of good under-road drainage, thus sheet water flow is hindered and one half of the swamp dies
- Climate change: (low threat)
- Fragmentation

#### POLLUTION

- Altered sediment loads: (low threat)
- Pesticides and herbicides: (low threat)
- Thermal changes: (low threat)
- Urban, municipal, and industrial pollution: (low threat)

#### HABITAT CONVERSION

- Dams: Beaver dams
- Dredging and channelization: Dredging
- Incompatible natural resources management:
- Riparian modification: Riparian development; Unregulated development
- Wetland modification: Filling; Draining

#### BIOLOGICAL INTERACTIONS

- Disease, pathogens, and parasites:
- Invasive plants and animals: Buckthorn invasion; Exotic insects

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

*CONSUMPTIVE BIOLOGICAL RESOURCE USE*

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

*NON-CONSUMPTIVE BIOLOGICAL RESOURCE USE*

- Macrophyte removal: (low threat)

*EDUCATION*

- Lack of scientific knowledge
- 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*

- Allow seasonal flooding (altered hydrologic regimes)
- 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 (forestry practices, riparian modification, thermal changes)
- Maintain or rehabilitate natural corridors between swamps 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 swamps (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)
- Work with road commissioners and forest management agencies on problem culverts to ensure protection of swamps because long term flooding caused by clogged culverts can kill trees (altered hydrologic regimes, wetland modification)
- Work with road commissioners and forest management agencies on road placement so as not to fragment or change water flows of swamp habitats (altered hydrologic regimes, fragmentation)

*LAW & POLICY*

- Continue to work on forest certification endeavors (forestry practices)
- 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)
- 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 swamps (variety of threats)
- Work with local governments to develop and refine planning and zoning regulations and ordinances that consider natural processes (variety of threats)

*EDUCATION & AWARENESS*

- Educate legislators, land owners, other policy makers, and the public on swamps and the species that rely on them (social attitudes)
- Provide information to forest management agencies and personnel on swamps and the species that rely on them (forestry practices, social attitudes)

Research and Survey Needs

- Determine effective prevention, control, and survey techniques for aquatic invasive species
- Conduct statewide inventories of wetlands

- Determine critical pathways between habitats for amphibians and reptiles to prevent vehicular fatalities and fragmentation of habitats
- Determine Disease, pathogens, and parasites threats and develop strategies to address threats
- Determine life history requirements for SGCN associated with swamps
- Determine most effective bridge and culvert designs to limit fragmentation of individual swamps
- Determine the number of road crossings and their condition
- Establish effective methods of communicating with the public and their stewardship role
- Model hydrologic flows
- Use prescribe burns as a management tool where appropriate

#### Monitoring

- Aquatic invasive species
- Dredging and channelization
- Forestry practices
- Hydrologic flow
- Indicator species
- Riparian modification
- Water withdrawals
- Wetland modification