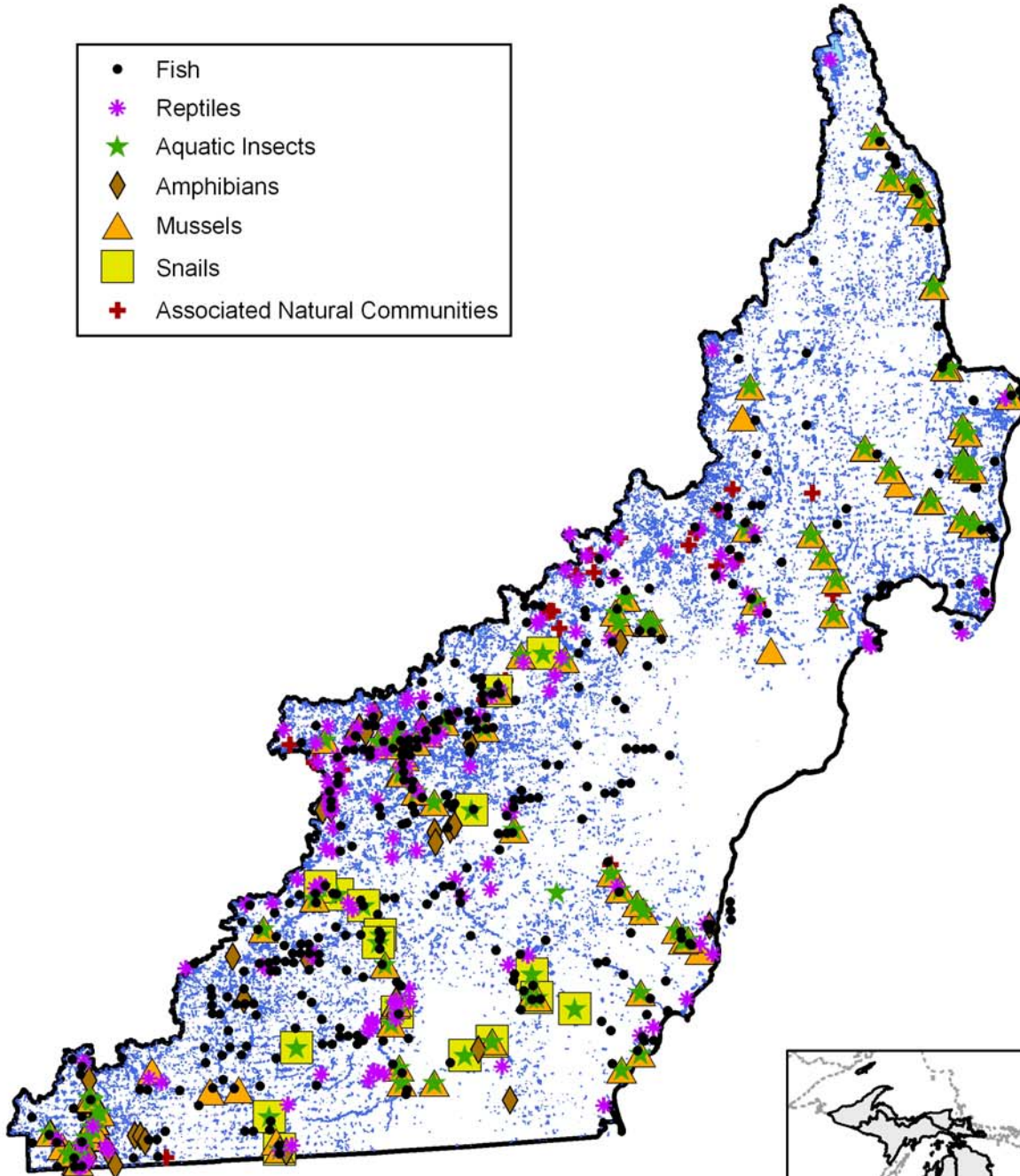


# Wetlands: Swamp

- Fish
- \* Reptiles
- ★ Aquatic Insects
- ◆ Amphibians
- ▲ Mussels
- Snails
- + Associated Natural Communities



0 10 20 40  
Kilometers

0 5 10 20  
Miles



## 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 30% in good to excellent condition, 25% in fair condition, and 45% in degraded to very degraded condition.

### Associated Natural Communities

Hardwood-Conifer Swamp  
Inundated Shrub Swamp  
Poor Conifer Swamp  
Relict Conifer Swamp

Rich Conifer Swamp  
Southern Floodplain Forest  
Southern Shrub-Carr  
Southern 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 darner (*Aeshna mutata*)

#### FISH

pirate perch (*Aphredoderus sayanus*)

#### AMPHIBIANS

smallmouth salamander (*Ambystoma texanum*)  
four-toed salamander (*Hemidactylum scutatum*)  
western chorus frog (*Pseudacris triseriata triseriata*)

#### REPTILES

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

### Associated Threats

#### MODIFICATION OF NATURAL PROCESSES

- Altered hydrologic regimes: Development; Draining; Altered hydrology due to runoff and development
- Fragmentation

#### POLLUTION

- Altered nutrient inflows: Surface runoff, nutrients
- Urban, municipal, and industrial pollution: Surface runoff, contamination

#### HABITAT CONVERSION

- Riparian modification: Development
- Wetland modification

#### BIOLOGICAL INTERACTIONS

- Invasive plants and animals: Especially plants

#### EDUCATION

- Social attitudes: Lack of aquatic resource education, so that society sees the importance of this habitat (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)

#### LAND, WATER & SPECIES MANAGEMENT

- Allow seasonal flooding (altered hydrologic regimes)
- Control aquatic invasive species (invasive plants and animals)
- Maintain natural water levels and fluctuations (altered hydrologic regimes)
- Maintain or establish riparian buffer zones of at least 50 ft., but 500 ft. or wider maximizes conservation benefits (riparian modification, wetland modification)

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

- Maintain or rehabilitate both woody structure and native macrophytes (wetland modification)
- Maintain or rehabilitate natural corridors between other significant wetlands and significant upland areas (fragmentation, riparian modification, species issue)
- Prevent establishment of new aquatic invasive species (invasive plants and animals)
- Protect and rehabilitate wetland and floodplain functions (altered hydrologic regimes, wetland modification)
- Protect and rehabilitate groundwater recharge (altered hydrologic regimes)
- Protect and rehabilitate wetlands (altered hydrologic regimes, wetland modification)
- When removing exotic vegetation, at least 60-80% of native species should be preserved (invasive plants and animals)
- Rehabilitate hydrologic functions (altered hydrologic regimes)

**LAW & POLICY**

- Protect the natural hydrologic regime by protecting wetlands and floodplains (altered hydrologic regimes, riparian modification, wetland modification)
- Reduce effluent flow (Urban, municipal, and industrial pollution)
- Remove unnecessary drainage tiles (altered hydrologic regimes, wetland modification)
- Upgrade septic systems (altered hydrologic regimes, altered nutrient inflows)
- Use Best management practices (variety of threats)
- Use integrated pest management practices (invasive plants and animals)
- Work with and educate Drain Commissioners (variety of threats)
- Work with local officials to decrease the amount of impervious surface in a watershed (altered hydrologic regimes, altered nutrient inflows, Urban, municipal, and industrial pollution)
- Work with road commissions to site and maintain road crossings (altered hydrologic regimes, altered sediment loads, fragmentation)
- Work with road commissions to site and maintain road crossings (altered hydrologic regimes, altered sediment loads)

**EDUCATION & AWARENESS**

- Educate legislators, local planning boards, and other policy makers on the importance of swamps and natural processes (social attitudes)

**Research and Survey Needs**

- Conduct statewide wetlands inventory
- Determine effective prevention, control, and survey techniques for aquatic invasive species
- Conduct inventories of wetlands
- Determine critical pathways between habitats for amphibians and reptiles to prevent vehicular fatalities and fragmentation of habitats
- Determine life history requirements for SGCN associated with swamps or where information is lacking
- Determine most effective bridge and culvert designs to limit fragmentation of individual swamps
- Establish effective methods of communicating with the public and their stewardship role
- Model hydrologic flows
- Explore using prescribe burns as a management tool

**Monitoring**

- Aquatic invasive species
- Dredging and channelization
- Effluent discharges: wastewater treatment plants, septic systems, industrial
- Hydrologic flow
- Indicator species
- Riparian modification
- Storm water
- Water withdrawals