



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

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 98% in good to excellent condition, 1% in fair condition, and <1% in degraded to very degraded condition.

Associated Natural Communities

Hardwood-Conifer Swamp
Northern Shrub Thicket
Northern Swamp
Poor Conifer Swamp

Rich Conifer Swamp
Southern Floodplain Forest
Wooded Dune and Swale Complex

Associated Species of Greatest Conservation Need

SNAILS

spindle lymnaea (*Acella haldemani*)

CRAYFISH

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

INSECTS

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

FISH

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

AMPHIBIANS

four-toed salamander (*Hemidactylium scutatum*)
boreal chorus frog (*Pseudacris triseriata maculata*)

REPTILES

Blanding's turtle (*Emydoidea blandingii*)
wood turtle (*Glyptemys insculpta*)
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 changes (low threat)
- Fragmentation: Development can cause fragmentation (low threat)

HABITAT CONVERSION

- Riparian modifications: Over-browsing by deer populations; Road construction; Development; Limited threat by riparian development; Riparian development and filling
- Wetland modifications: Draining; Filling

BIOLOGICAL INTERACTIONS

- Invasive plants and animals: (low threat)

CONSUMPTIVE BIOLOGICAL RESOURCE USE

- Forestry practices: Logging (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

- 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, 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 (forestry practices, riparian modifications)

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- Maintain or rehabilitate natural corridors between swamps and other significant habitats to amphibians and reptiles (fragmentation, riparian modifications, species issue)
- Maintain or rehabilitate natural hydrology (altered hydrologic regimes)
- Protect existing natural wetlands and rehabilitate degraded wetlands (wetland modification)
- Restore native flora (wetland modification)

LAW & POLICY

- Continue to work on forest certification (forestry practices)
- Encourage clustered development and green space planning (variety of threats)
- 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 swamps (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)
- Work with road commissions and forest management agencies on problem culverts to insure protection of swamps because long term flooding caused by clogged culverts can kill trees (altered hydrologic regimes, fragmentation)

EDUCATION & AWARENESS

- Educate legislators, other policy makers, landowners, and the public on swamps, the ecological services they provide, the species that use them, and their fragile nature (variety of threats)

Research and Survey Needs

- Conduct statewide wetlands inventory
- 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
- 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
- Explore the use of prescribe burns as a management tool

Monitoring

- Forestry practices
- Hydrologic flow
- Indicator species
- Riparian modifications
- Water withdrawals
- Wetland modification