



Inland wetlands/water: 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 speckled alder (*Alnus rugosa*), 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

About 55% of the swamp areas in the Northern Lower Peninsula are considered to be in fair or good condition. Most of the remaining swamp areas are considered to be degraded or very degraded (~40%). Swamp includes natural communities that are considered rare or uncommon in the State.

Associated Natural Communities

Hardwood-Conifer Swamp
Inundated Shrub Swamp
Northern Swamp
Poor Conifer Swamp

Rich Conifer Swamp
Southern Floodplain Forest
Wooded Dune and Swale Complex

Associated Species of Greatest Conservation Need

SNAILS

eastern flat-whorl (*Planogyra asteriscus*)
widespread column (*Pupilla muscorum*)
tapered vertigo (*Vertigo elatior*)
deep-throat vertigo (*Vertigo nylanderii*)
spike-lip crater (*Appalachina sayana*)

CRAYFISH

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

INSECTS

Henry's elfin (*Callophrys henrici*)

AMPHIBIANS

blue-spotted salamander (*Ambystoma laterale*)
spotted salamander (*Ambystoma maculatum*)
four-toed salamander (*Hemidactylium scutatum*)
western chorus frog (*Pseudacris triseriata triseriata*)

REPTILES

black rat snake (*Elaphe obsoleta obsoleta*)
eastern massasauga (*Sistrurus catenatus catenatus*)

REPTILES cont.

spotted turtle (*Clemmys guttata*)
Blanding's turtle (*Emydoidea blandingii*)
wood turtle (*Glyptemys insculpta*)
eastern box turtle (*Terrapene carolina carolina*)

BIRDS

American Black Duck (*Anas rubripes*)
American Bittern (*Botaurus lentiginosus*)
Great Blue Heron (*Ardea herodias*)
Green Heron (*Butorides virescens*)
Black-crowned Night-heron (*Nycticorax nycticorax*)
Osprey (*Pandion haliaetus*)
Sora (*Porzana carolina*)
Golden-winged Warbler (*Vermivora chrysoptera*)
Northern Parula (*Parula americana*)
Prothonotary Warbler (*Protonotaria citrea*)
Louisiana Waterthrush (*Seiurus motacilla*)

MAMMALS

pygmy shrew (*Sorex hoyi*)
Indiana bat or Indiana myotis (*Myotis sodalis*)
snowshoe hare (*Lepus americanus*)

Associated Threats

MODIFICATION OF NATURAL PROCESSES

- Climate change
- Altered hydrologic regimes

HABITAT CONVERSION

- Industrial, residential, and recreational development: Development in adjacent uplands may alter water flow and affect runoff. A lack of buffer zones exacerbates this effect.
- Wetland modifications

POLLUTION

- Urban, municipal, and industrial

NON-CONSUMPTIVE BIOLOGICAL RESOURCE USE

- Non-consumptive recreation

BIOLOGICAL INTERACTIONS

- Invasive plants and animals

MICHIGAN'S WILDLIFE ACTION PLAN
TERRESTRIAL SYSTEMS: NORTHERN LOWER PENINSULA

- Other biological interactions: White-tailed deer (*Odocoileus virginianus*) browse may hinder regeneration. Construction of dams by beavers (*Castor canadensis*) may modify water levels in swamps.

Conservation Actions Needed [Threats addressed]

LAND & WATER PROTECTION

- Expand conservation easement programs [variety of threats]
- Support and expand conservation purchase of high quality occurrences [variety of threats]

LAND, WATER & SPECIES MANAGEMENT

- Manage to approximate natural disturbance regimes using restoration of water flow patterns. [Altered hydrologic regimes]
- Institute invasive species monitoring, prevention and control programs. [Invasive plants and animals]
- Manage beaver densities to control water levels. [Other biological interactions]
- Use best management practices for development, management, and recreational activities around lakes, streams, and wetlands to maintain natural shoreline stability (thereby reducing the need for restoration or artificial structures). [Industrial, residential, and recreational development, Wetland modifications, Non-consumptive recreation]
- Avoid motorized trail construction in cedar swamps and hardwood-conifer swamps [Industrial, residential, and recreational development]
- Wetland roads and trail crossings should preserve cross drainage [Industrial, residential, and recreational development]
- Support Landowner Incentive Programs to foster conservation on private land [variety of threats]
- Maintain or establish riparian buffers of at least 50 ft., but 500 ft. or wider maximizes conservation benefits [wetland modifications]

LAW & POLICY

- Work with municipalities to promote planning and zoning insuring adequate protection for swamps and adjacent uplands. [Industrial, residential, and recreational development; Wetland modifications]
- Develop and enforce regulations to curtail recreational activities that cause significant damage. [Non-consumptive recreation]

RECREATION

- Promote responsible ATV and ORV use. [Non-consumptive recreation]

Research and Survey Needs

- An inventory needs to be conducted to determine the location, condition, and classification of swamps and of the opportunities for restoration.
- Evaluate the impacts of modifications of natural hydrologic regimes and local water chemistry.
- A common classification system to define wetlands is needed.
- Determine the effects of microtopography on wetland function and its impact on wetland restoration.
- Determine the value to wildlife of intermittently flooded timber.
- Develop best management practices for development, management, and recreational activities around lakes, streams, and wetlands to maintain natural shoreline stability (thereby reducing the need for restoration or artificial structures).
- Document the historic and current range of variation between swamps. This includes variables such as species composition and size.
- Identify invasive species and diseases that may degrade the value of swamps for wildlife. Develop techniques to control invasive species. Develop treatments for diseases that threaten swamps. Common invasive species include *common carp* (*Cyprinus carpio*).
- Identify the characteristics of swamps that provide benefits to wildlife and which species may be affected by changes in these characteristics.
- Develop a classification system for lowland forest types (based on characteristics such as soil nutrients, moisture regimes, and successional pathways) similar to John Kotar's classification of upland forest types.

Monitoring

- Track swamp acreage and distribution across the landscape.
- Identify and track floristic composition and diversity.
- Track water level and flow fluctuations and its impacts on vegetation and wildlife.
- Track water chemistry and quality trends.