



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

Most of the swamps in the Southern Lower Peninsula are considered to be in fair or good condition (~75%). About 20% of the remaining swamps are considered to be degraded or very degraded. Most swamp natural communities are classified as rare or uncommon in the State and some are rare or uncommon globally.

Associated Natural Communities

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

Rich Conifer Swamp
Southern Floodplain Forest
Southern Swamp
Wooded Dune and Swale Complex

Associated Species of Greatest Conservation Need

CRAYFISH

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

INSECTS

melodious ground cricket (*Eunemobius melodius*)
tamarack tree cricket (*Oecanthus laricis*)
Dukes' skipper (*Euphyes dukesi*)
Henry's elfin (*Callophrys henrici*)
swamp metalmark (*Calephelis mutica*)
gold moth (*Basilodes pepita*)
golden borer (*Papaipema cerina*)
regal fern borer (*Papaipema speciosissima*)
Riley's lappet moth (*Heteropacha rileyana*)
small heterocampa (*Heterocampa subrotata*)

AMPHIBIANS

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

REPTILES

black rat snake (*Elaphe obsoleta obsoleta*)
copperbelly water snake (*Nerodia erythrogaster neglecta*)

REPTILES cont.

eastern massasauga (*Sistrurus catenatus catenatus*)
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*)
Red-headed Woodpecker (*Melanerpes erythrocephalus*)
Northern Flicker (*Colaptes auratus*)
Wood Thrush (*Hylocichla mustelina*)
Golden-winged Warbler (*Vermivora chrysoptera*)
Northern Parula (*Parula americana*)
Yellow-throated Warbler (*Dendroica dominica*)
Prothonotary Warbler (*Protonotaria citrea*)
Louisiana Waterthrush (*Seiurus motacilla*)

MAMMALS

Indiana bat or Indiana myotis (*Myotis sodalis*)

Associated Threats

MODIFICATION OF NATURAL PROCESSES

- Altered fire regime
- Altered hydrologic regimes: Extreme water level flushing and water level changes may affect swamps in the Southern Lower Peninsula.

HABITAT CONVERSION

- Wetland modifications
- Conversion to agriculture
- Dredging and channelization

POLLUTION

- Urban, municipal, and industrial: Dumping degrades swamps in the Southern Lower Peninsula.

CONSUMPTIVE BIOLOGICAL RESOURCE USE

- Forestry practices: Some forestry practices, including the use of heavy equipment, degrade swamps.

BIOLOGICAL INTERACTIONS

- Invasive plants and animals

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 prescribed fire and restoration of natural water flow patterns. [Altered fire regime; Altered hydrologic regimes; Dredging and channelization]
- Institute invasive species monitoring, prevention and control programs. [Invasive plants and animals]
- Coordinate trash and litter collection efforts to remove illegally dumped waste materials. [Urban, municipal, and industrial pollution]
- Ensure that wetland best management practices applied on timber harvests include consideration of potential impacts to wildlife habitat quality. [Forestry practices]
- 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. [Wetland modifications; Conversion to agriculture; Dredging and channelization]
- Develop new legislation and ordinances, where necessary, to regulate or limit draining or development of swamps. Enforce existing regulations concerning draining and development of wetlands. [Altered hydrologic regimes; Wetland modifications; Dredging and channelization]
- Enforce regulations concerning dumping waste material into swamps. [Urban, municipal, and industrial pollution]

EDUCATION & AWARENESS

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

Research and Survey Needs

- Conduct a statewide wetlands inventory.
- 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.
- 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)*.
- An inventory needs to be conducted to determine the location, condition, and classification of swamps and of the opportunities for restoration.
- 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 quality trends.