



Inland wetlands/water: Pond

Description

Ponds are defined as permanent standing water bodies <5 acres in area. This group is highly diverse in terms of chemical and biological variables. Most are shallow, unstratified, generally warmer, and higher in nutrient concentration than larger water bodies, and somewhat likely to have low winter oxygen levels. There are two states that ponds are generally found in. The first is characterized by high nutrients, high wind resuspension, no rooted plants, and turbid water. The second is characterized by low to medium nutrients, low wind resuspension, rooted plants dominant, and clear water. Because of their size, most ponds are privately owned and have no public access points.

Ponds in all Great Lakes Basins can be considered similar, with one exception. Ponds in the Lake Superior basin (particularly in the Western Upper Peninsula) are more likely to have low pH due to acidification and lower buffering capacity.

General Condition of Feature

About 60% of the ponds in the Southern Lower Peninsula are considered to be in fair or good condition for terrestrial wildlife. Most of the remaining ponds are considered degraded or very degraded (~35%).

Associated Natural Communities

N/A – no native natural communities

Associated Species of Greatest Conservation Need

SNAILS

six-whorl vertigo (*Vertigo morsei*)

CRAYFISH

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

INSECTS

spatterdock damer (*Aeshna mutata*)
muskeg damer (*Aeshna subarctica*)
incurvate emerald dragonfly (*Somatochlora incurvata*)
Hoosier locust (*Paroxya hoosieri*)
swamp metalmark (*Calephelis mutica*)

AMPHIBIANS

blue-spotted salamander (*Ambystoma laterale*)
spotted salamander (*Ambystoma maculatum*)
smallmouth salamander (*Ambystoma texanum*)
eastern tiger salamander (*Ambystoma tigrinum tigrinum*)
four-toed salamander (*Hemidactylium scutatum*)
Fowler's toad (*Bufo fowleri*)
Blanchard's cricket frog (*Acris crepitans blanchardi*)
western chorus frog (*Pseudacris triseriata triseriata*)
pickerel frog (*Rana palustris*)
northern leopard frog (*Rana pipiens*)

REPTILES

eastern fox snake (*Elaphe gloydi*)
copperbelly water snake (*Nerodia erythrogaster neglecta*)
queen snake (*Regina septemvittata*)
eastern massasauga (*Sistrurus catenatus catenatus*)
spotted turtle (*Clemmys guttata*)

REPTILES cont.

Blanding's turtle (*Emydoidea blandingii*)

BIRDS

Trumpeter Swan (*Cygnus buccinator*)
American Black Duck (*Anas rubripes*)
Blue-winged Teal (*Anas discors*)
Pied-billed Grebe (*Podilymbus podiceps*)
American Bittern (*Botaurus lentiginosus*)
Least Bittern (*Ixobrychus exilis*)
Green Heron (*Butorides virescens*)
Black-crowned Night-heron (*Nycticorax nycticorax*)
Bald Eagle (*Haliaeetus leucocephalus*)
Common Moorhen (*Gallinula chloropus*)
American Coot (*Fulica americana*)
Killdeer (*Charadrius vociferus*)
Spotted Sandpiper (*Actitis macularia*)
Wilson's Phalarope (*Phalaropus tricolor*)
Black Tern (*Chlidonias niger*)
Common Nighthawk (*Chordeiles minor*)
Purple Martin (*Progne subis*)
Marsh Wren (*Cistothorus palustris*)
Yellow-headed Blackbird (*Xanthocephalus xanthocephalus*)

MAMMALS

silver-haired bat (*Lasiorycteris noctivagans*)
red bat (*Lasiurus borealis*)
northern bat or northern myotis (*Myotis septentrionalis*)
Indiana bat or Indiana myotis (*Myotis sodalis*)
evening bat (*Nycticeius humeralis*)
eastern pipistrelle (*Pipistrellus subflavus*)

Associated Threats

MODIFICATION OF NATURAL PROCESSES

- Altered hydrologic regimes: Excessive flushing of water from the surrounding landscape may impact ponds. Inappropriate hydrologic regimes may foster the establishment of woody vegetation.

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

HABITAT CONVERSION

- Industrial, residential, and recreational development: Residential development contributes to runoff and flushing of water.
- Wetland modifications
- Incompatible natural resource management: Aquatic plant management may be detrimental to some communities.

POLLUTION

- Pesticides and herbicides: Nitrification is a threat. Pesticide use for insect control may alter species composition. Fertilization of lawns increases the likelihood of eutrophication.

CONSUMPTIVE BIOLOGICAL RESOURCE USE

- Removal of non-timber flora: Urbanized pond maintenance in residential subdivisions may include mowing to the water's edge and other vegetation harvesting intended to maintain aesthetic qualities.

NON-CONSUMPTIVE BIOLOGICAL RESOURCE USE

- Non-consumptive recreation: Boat wakes may impact ponds.

BIOLOGICAL INTERACTIONS

- Invasive plants and animals: Invasive species like Eurasian water milfoil (*Myriophyllum spicatum*) and phragmites (*Phragmites australis*) may alter species composition.
- Other biological interactions: Concentrations of Canada geese (*Branta canadensis*) may contribute to eutrophication in the Southern Lower Peninsula.

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 (e.g., maintenance or restoration of natural water levels). [Altered hydrologic regimes]
- Assess management goals to ensure that they provide for a diversity of communities across the landscape. [Incompatible natural resource management]
- Institute invasive species monitoring, prevention and control programs. [Invasive plants and animals]
- Where possible, motorized vehicle trails should be located a minimum of 100 feet (and preferably more than 500 feet) from rivers, streams, lakes and other wetlands except at designated crossings. [Non-consumptive recreation]
- 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]
- Support efforts to reduce use of lead fishing tackle. [Pollution]
- 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 ponds. [Industrial, residential, and recreational development; Wetland modifications]
- Develop new legislation and ordinances, where necessary, to regulate or limit draining or development of ponds. Enforce existing regulations concerning draining and development of wetlands. [Industrial, residential, and recreational development; Wetland modifications]
- Develop and enforce regulations to curtail recreational activities that cause significant damage. [Non-consumptive recreation]

EDUCATION & AWARENESS

- Provide information to landowners on less chemically intensive methods of fertilization and pest management. [Pesticides and herbicides]
- Educate the public and residential developers on the benefits to wildlife of leaving unmaintained areas around ponds (i.e. not mowing to the water's edge). Also address issues of aquatic plant management. [Removal of non-timber flora; Incompatible natural resource management]

RECREATION

- Promote responsible watercraft use. [Non-consumptive recreation]

Research and Survey Needs

- A better understanding is needed of the structural components of ponds and their relationships to the value to wildlife.
- Assess management techniques used in and around ponds to develop management guidelines for landowners.
- Examine the impacts of chemical use, weed control, and fertilization in and around ponds on their value to wildlife.
- Evaluate the impacts of modifications of natural hydrologic regimes and local water chemistry.
- A common classification system to define wetlands is needed.

**MICHIGAN'S WILDLIFE ACTION PLAN
TERRESTRIAL SYSTEMS: SOUTHERN LOWER PENINSULA**

- Document the historic and current range of variation between ponds. This includes variables such as species composition and size.
- 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 pond use by migratory wildlife. Are there characteristics of ponds which increase their value to migratory wildlife?

Monitoring

- Track pond 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.