



Inland wetlands/water: Submergent wetland

Description

Submergent wetlands are a submerged marsh of deep to sometimes shallow water in lakes and streams. Submergent wetlands are characterized by submerged, floating, and floating-leaved plants, including pondweeds (*Potamogeton* spp.), water milfoil (*Myriophyllum exalbescens*), coontail (*Ceratophyllum demersum*), duckweed (family Lemnaceae), water-lily (*Nymphaea* spp.) and water shield (*Brasenia schreberi*). Submergent wetlands typically transition to emergent wetlands with decreasing water depths along the edges of lakes and streams.

General Condition of Feature

About half of the submergent wetlands in the Northern Lower Peninsula are considered to be in fair to good condition and about 15% are considered to be in excellent condition. The remaining areas are considered degraded or very degraded.

Associated Natural Communities

Submergent Marsh

Associated Species of Greatest Conservation Need

INSECTS

spatterdock damer (*Aeshna mutata*)

AMPHIBIANS

northern leopard frog (*Rana pipiens*)

REPTILES

eastern massasauga (*Sistrurus catenatus catenatus*)

spotted turtle (*Clemmys guttata*)

Blanding's turtle (*Emydoidea blandingii*)

BIRDS

Trumpeter Swan (*Cygnus buccinator*)

Pied-billed Grebe (*Podilymbus podiceps*)

BIRDS cont.

Red-shouldered Hawk (*Buteo lineatus*)

American Coot (*Fulica americana*)

Black Tern (*Chlidonias niger*)

Purple Martin (*Progne subis*)

Yellow-headed Blackbird (*Xanthocephalus xanthocephalus*)

MAMMALS

water shrew (*Sorex palustris*)

northern bat or northern myotis (*Myotis septentrionalis*)

Indiana bat or Indiana myotis (*Myotis sodalis*)

Associated Threats

MODIFICATION OF NATURAL PROCESSES

- 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: Contaminants like lead may impact submergent wetlands.

CONSUMPTIVE BIOLOGICAL RESOURCE USE

- Removal of non-timber flora: Aquatic vegetation control and beach grooming may affect community composition.

NON-CONSUMPTIVE BIOLOGICAL RESOURCE USE

- Non-consumptive recreation: Uncontrolled watercraft use (e.g., jet skis) may impact submergent wetlands.

BIOLOGICAL INTERACTIONS

- Invasive plants and animals: Species like purple loosestrife (*Lythrum salicaria*), Eurasian water milfoil (*Myriophyllum spicatum*), and phragmites (*Phragmites australis*) may affect community composition.
- Other biological interactions: High waterfowl concentrations may contribute to eutrophication.

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 waterfowl densities to prevent eutrophication of submergent wetlands. [Other biological interactions]

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

- 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]
- Discourage stocking fish in fishless lakes and ponds to maintain habitat for aquatic invertebrates and species. [Other biological interactions]
- 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 submergent wetlands 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]
- Develop new and enforce existing regulations restricting deposition of contaminants in submergent wetlands. [Industrial, residential and recreational development; Urban, municipal, and industrial pollution]
- Work with land managers to develop priorities for submergent wetland management, including restrictions in aquatic vegetation control. [Removal of non-timber flora]

RECREATION

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

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.
- Evaluate the role of managed wetlands in contributing to landscape diversity. Is there a difference in wildlife value between intensive wetland management and passive wetland management?
- 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).
- Assess the impact of wetland creation by beavers. Do these impacts vary regionally?
- Quantify differences in wildlife value of restored wetlands and natural wetlands.
- Document the historic and current range of variation between submergent wetlands. This includes variables such as species composition and size.
- Identify invasive species that may degrade the value of submergent wetlands for wildlife. Develop techniques to control invasive species. Common invasive species include Eurasian water milfoil (*Myriophyllum spicatum*), zebra mussel (*Dreissena polymorpha*) and curly leaf pondweed (*Potamogeton crispus*). How significant is the movement of invasive species due to watercraft use? Boat propellers may create cuttings of plants that float to new locations and become established. Plants may become entangled in propellers and be transported to other water bodies.
- Assess the impacts of aquatic plant treatments.

Monitoring

- Track emergent wetland 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.