



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 exallescens*), 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 55% of the submergent wetlands in the Eastern Upper Peninsula are considered to be in fair to good condition. Most of the remaining areas are considered degraded or very degraded (~40%).

Associated Natural Communities

Submergent Marsh

Associated Species of Greatest Conservation Need

AMPHIBIANS

northern leopard frog (*Rana pipiens*)

REPTILES

eastern massasauga (*Sistrurus catenatus catenatus*)

Blanding's turtle (*Emydoidea blandingii*)

BIRDS

Trumpeter Swan (*Cygnus buccinator*)

Pied-billed Grebe (*Podilymbus podiceps*)

Red-shouldered Hawk (*Buteo lineatus*)

BIRDS cont.

American Coot (*Fulica americana*)

Black Tern (*Chlidonias niger*)

Black-backed Woodpecker (*Picoides arcticus*)

Purple Martin (*Progne subis*)

Yellow-headed Blackbird (*Xanthocephalus xanthocephalus*)

MAMMALS

water shrew (*Sorex palustris*)

northern bat or northern myotis (*Myotis septentrionalis*)

Associated Threats

MODIFICATION OF NATURAL PROCESSES

- Altered hydrologic regimes

HABITAT CONVERSION

- Industrial, residential, and recreational development
- Incompatible natural resource management: Lake management goals may conflict with submergent wetland maintenance.

POLLUTION

- Pesticides and herbicides

CONSUMPTIVE BIOLOGICAL RESOURCE USE

- Removal of non-timber flora: Weed management in lakes may impact community composition in adjacent submergent wetlands.

BIOLOGICAL INTERACTIONS

- Invasive plants and animals: Species like mute swan (*Cygnus olor*) and Eurasian water milfoil (*Myriophyllum spicatum*) may impact community composition.

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 by restoring water flow patterns. [Altered hydrologic regimes]
- Institute invasive species monitoring, prevention and control programs. [Invasive plants and animals]
- Work with land and watershed managers to develop priorities for submergent wetland management. [Incompatible natural resource management]
- Develop watershed management best management practices which address the value of submergent wetlands and aquatic vegetation for wildlife. [Incompatible natural resource management; Removal of non-timber flora]
- Discourage stocking fish in fishless lakes and ponds to maintain habitat for aquatic invertebrates and species. [Incompatible natural resource management]
- 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]

MICHIGAN'S WILDLIFE ACTION PLAN

TERRESTRIAL SYSTEMS: EASTERN UPPER PENINSULA

LAW & POLICY

- Work with municipalities to promote planning and zoning insuring adequate protection for submergent wetlands and adjacent uplands. [Industrial, residential and recreational development]

LAND AND WATER PROTECTION

- Promote protection of significant submergent wetland patches through purchase, easement or other economic incentives. [Industrial, residential and recreational development]

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 the value to wildlife between intensive wetland management and passive wetland management?
- Assess the impact of wetland creation by beavers. Do these impacts vary regionally?
- Quantify differences in the value to wildlife 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.