



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 85% of the submergent wetland in the Western Upper Peninsula is considered to be in fair to good condition.

Associated Natural Communities

Submergent Marsh

Associated Species of Greatest Conservation Need

AMPHIBIANS

northern leopard frog (*Rana pipiens*)

REPTILES

Blanding's turtle (*Emydoidea blandingii*)

BIRDS

Trumpeter Swan (*Cygnus buccinator*)

Pied-billed Grebe (*Podilymbus podiceps*)

Red-shouldered Hawk (*Buteo lineatus*)

American Coot (*Fulica americana*)

BIRDS cont.

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*)

Associated Threats

MODIFICATION OF NATURAL PROCESSES

- Altered hydrologic regimes: Changes in hydrology may impact the nutrient load.
- Fragmentation

HABITAT CONVERSION

- Industrial, residential, and recreational development: Development along shorelines impacts adjacent submergent wetlands. Roadway run-off contributes to siltation and sedimentation.
- Wetland modifications

POLLUTION

- Urban, municipal, and industrial pollution
- Pesticides and herbicides

NON-CONSUMPTIVE BIOLOGICAL RESOURCE USE

- Non-consumptive recreation

BIOLOGICAL INTERACTIONS

- Invasive plants and animals: Eurasian water milfoil (*Myriophyllum spicatum*) is a threat.
- Other biological interactions

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]
- Develop and implement plans for invasive species control and prevention. [Invasive plants and animals]
- 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 [variety of threats]
- Maintain and rehabilitate natural corridors between wetlands and to representative upland habitats [fragmentation]

LAW & POLICY

- Work with municipalities to promote planning and zoning insuring adequate protection for wetlands and shorelines. Develop local ordinances to retain larger parcel sizes in wetland complexes which contain submergent wetlands. [Fragmentation; Industrial, residential, and recreational development; Wetland modifications]
- Develop new and enforce existing regulations to reduce airborne pollutants which may contribute to acid precipitation. [Urban, municipal, and industrial pollution]
- Develop and enforce regulations to curtail recreational activities that cause significant damage. [Non-consumptive recreation]

EDUCATION & AWARENESS

- Promote agricultural practices which reduce the use of pesticides and fertilizers. [Pesticides and herbicides]

RECREATION

- Promote responsible ATV and ORV 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 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.
- 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 impacts of aquatic plant treatments on native plant populations and wildlife.

Monitoring

- Track submergent 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.