EGLE

Common Aquatic Plants of Michigan

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COMMON AQUATIC PLANTS OF MICHIGAN

Following is a description of some of the most commonly occurring aquatic plants in Michigan. Some of the plants included in this guide are identified as invasive or non-native plants of concern. These plants can spread easily and may quickly reach nuisance density levels. They have the potential to negatively impact the native plant community and the overall health of the aquatic community.

This guide is divided into two sections: The first section contains the **submergent plants and algae.** Submergent plants are usually rooted or attached to the bottom. Their stems and leaves are located below the water surface (some plants may produce a few small floating or aerial leaves found at the water's surface). Algae may be free floating or attached to the bottom. The second group is the **emergent and floating plants**. Emergent plants grow in shallow water, with most of the plant protruding above the water surface. Floating plants are free floating on the water's surface.

If you have an aquatic plant not included here and are having difficulty identifying it, you may refer to a professional consultant. You may also consider using the internet to find dedicated websites for aquatic plant identification, or you may contact department staff by telephone at 517-284-5593 or email at egle-wrd-anc@michigan.gov for instruction on sending a small sample to our office.

Submergent Plants and Algae

Chara spp.; muskgrass

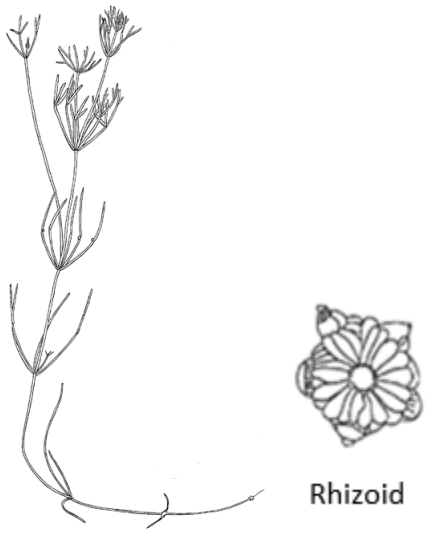
Cross Section

Chara is an advanced form of algae which resembles higher plants. It is easily identified by its musky odor and gritty texture due to mineral deposits on its surface. Chara rarely

creates a nuisance as it usually grows in low, dense mats, or grows sparsely where nutrient levels are low. The water is clear where chara grows densely because, like other algae, it filters nutrients out of the water instead of the sediments. In this respect, chara is highly beneficial vegetation.

Starry stonewort; *Nitellopsis obtusa*

**Invasive plant of concern*



(illustrations from http://www.kranswieren.nl/afbeeldingen.html)

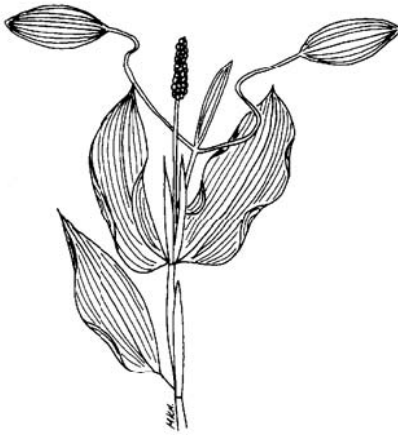
An exotic Charoid species often confused with other native macroalgae species, such as Chara spp. and Nitella spp. Compared to similar species, starry stonewort is a brighter green and the filament branching pattern is more irregular. The star-shaped rhizoid is the feature that sets starry stonewort apart from other macroalgae species. Compared to Chara spp. it can grow to greater height and greater depth. The filaments feel smooth instead of crusty and ridged like Chara. Starry stonewort can form dense mats and outcompete native vegetation.

***Potamogeton spp.*; pondweeds**

Of the submergent plants, the pondweeds, genus *Potamogeton*, are highly variable in form and are difficult to identify. Therefore, only a few representative types are described here.

***Potamogeton natans;* Floating-leaf pondweed**

Floating leaves are slightly heart-shaped, 2 to 4 inches long. Submerged leaves long and narrow or absent. Stem attaches to leaf at right angle. Flower stalks if present, protrude above water surface.



***Potamogeton amplifolius;* Large-leaf pondweed**

Floating leaves oval in shape and not more than 2 inches. wide, submerged leaves large, wavy, recurved up to 3 inches. wide. Plants seldom branched.

***Potamogeton illinoensis;* Illinois pondweed**

Submerged leaves are lance to oval shaped (1 to 7 inches long and 0.5 to 2.5 inches wide) and often end in a sharp point. There is a narrow leaf-like structure above each leaf node (called a stipule) with two prominent ridges. Floating leaves are smaller and rounder with a thick, short stalk.

Potamogeton richardsonii; Clasping-leaf pondweed

Leaves are all submerged. They are wide and wavy with a broad base that clasps the stem. Base of each leaf is heart-shaped and wraps one-half to three-fourths around the stem circumference. Plant often branches toward tip.

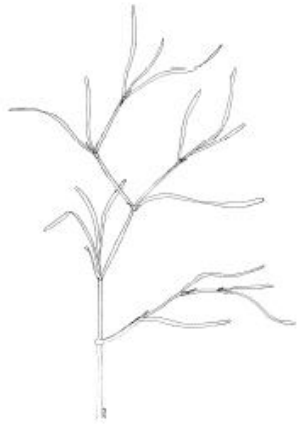
Potamogeton crispus; **Curly-leaf pondweed**
**Invasive plant of concern*

Leaves are narrow and crinkled and all submerged. They are arranged alternately around stem, becoming denser toward the end of branches. Flower stalks, if present, protrude above water surface. Curly-leaf pondweed can be distinguished from clasping leaf pondweed by the presence of small teeth on the edge of the leaf.

Potamogeton robbinsii; **Robbins pondweed, Fern pondweed**

Leaves are all submerged (1.5 to 4 inches long) and closely spaced apart. Leaves are alternating on stem, creating a fan or fern-like appearance. Stem may branch.

***Zosterella dubia*; Water stargrass**

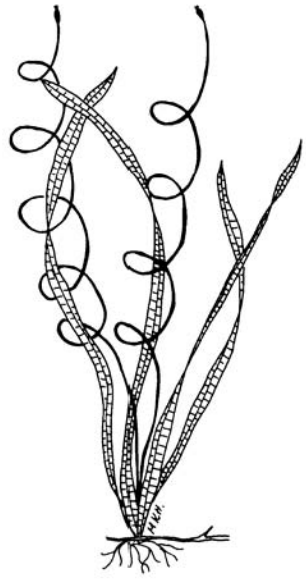


Leaves are narrow, slender, and lack a prominent midvein. Leaves alternate on freely branching stem. Produces an individual yellow star-shaped flower. Similar in appearance to Flat stem pondweed, this species has an oval shaped stem rather than a flat stem.

***Stuckenia pectinatus*; Sago pondweed**

Leaves are long and thread or needle-like, arranged alternately on stem. Leaves form dense clumps on branches, each branch may fork several times into a fan- or broom-like appearance. Flower stalks, if present, may be submerged or floating on the water surface. The flowers and fruit are arranged in small whorls, slightly spaced apart on the stalk.

Vallisneria americana; **wild celery, eel grass**

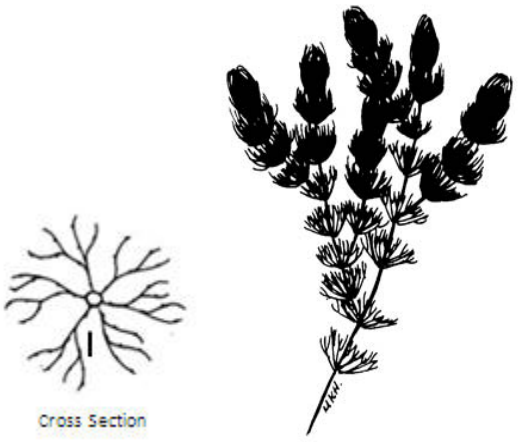


Roots buried in bottom material. Leaves are long and grass-or ribbon-like. Leaves emerge from a single cluster and appear transparent with prominent linear veins. Rhizomes (horizontal stem system) connects tufts or clusters of leaves. Flower stalks if present, spiral toward surface of water, with a small delicate white flower. A fruit pod may develop at the floating at the end of a flower stalk.

Naja flexilis; **Slender naiad**

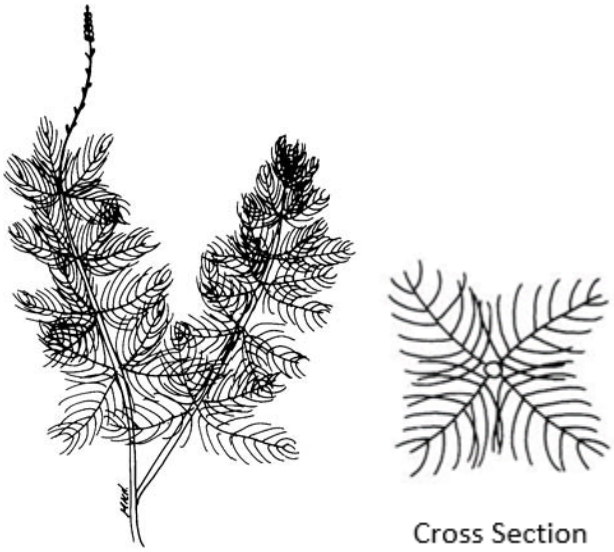
Slender naiad has fine branched stems. Nodes (swelling) present at base of leaf whorls. Leaves tapered to fine point with minute spines or serrations on the leaf margins. Spacing between whorls of leaves is highly variable.

Certophyllum demersum; **Coontail**



Coontail is a submerged plant without roots. The leaves are arranged in whorls around the stem. Leaflets are forked, not feather-like as in milfoil (see cross-section illustration). Plants may be long and sparse, but are often bushy, especially toward the tips of branches, resembling a raccoon's tail, hence the common name "coontail."

Myriophyllum spp.; **water milfoil**



Milfoil is a submerged plant, however, the flower stalk, when present, protrudes above the water surface. Leaves are arranged in whorls around stem. Leaflets are un-forked and arranged in a feather-like pattern (see cross-section illustration). Native milfoils typically have 5-10 leaflet pairs. Spacing between whorls varies so that plants

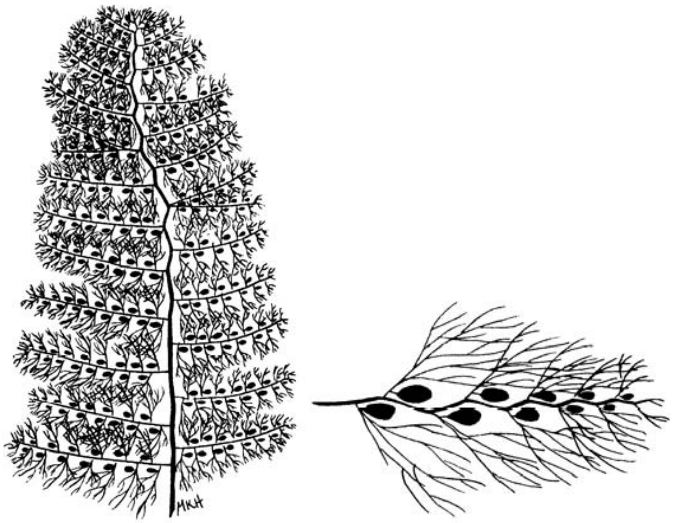
may appear long and sparse or bushy.

Myriophyllum spicatum; **Eurasian watermilfoil***
**Invasive plant of concern*

Cross Section

Eurasian watermilfoil is an exotic species of milfoil found in Michigan. This plant begins to grow early in the spring. It is fast growing and often forms a thick canopy shading out other aquatic plants. Leaves are feather-like and arranged in whorls. Leaflet pairs closest to the stem are approximately half the length of the midrib. Eurasian watermilfoil typically has more than 14 leaflet pairs while native milfoils typically have less than 14 leaflet pairs. The Eurasian form also exhibits branching stems near the surface which is not typical of the native species.
*(cross section illustration from: https://www.seagrant.umn.edu/)

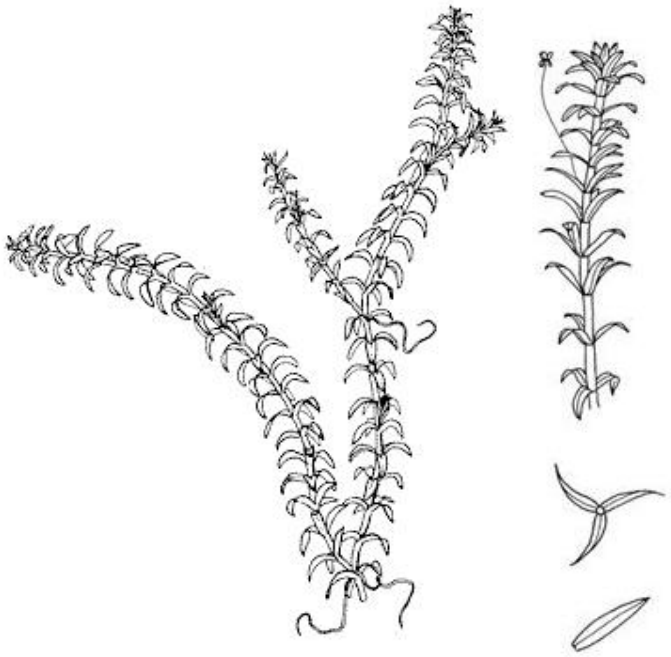
Utricularia spp.**; Bladderwort**



Although bladderwort is not as common as other aquatic plants presented in this article,

it is sometimes confused with milfoil. A closer look reveals that the leaflets are branched, not feather-like as on milfoil (see detail illustration). The most distinguishing feature, however, is the presence of bladder-like structures which trap small aquatic invertebrates. The "bladders" may be large and dark in color or small and inconspicuous.

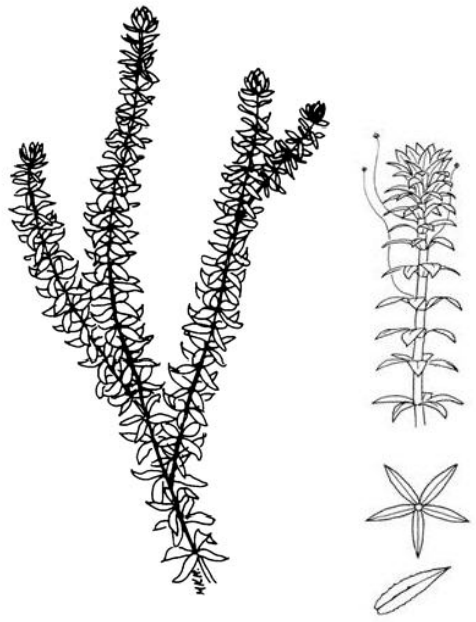
Elodea Canadensis; **American elodea**



Leaves are oval or lance-shaped, attached directly to stem (no leaf stalk), and arranged in whorls around stem. Each whorl consists of two or three leaves with smooth edges and a smooth leaf vein. Whorls densely compacted at tips of branches. Stems may branch. Commonly used as an aquarium plant.

Hydrilla verticillata; **Hydrilla***

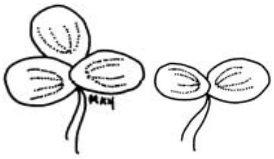
**Invasive plant of concern*



Hydrilla is not currently known to be present in the state of Michigan. However, it is a highly invasive plant that can quickly overwhelm waterways where it spreads. **Early identification of this plant in the state is critical to stopping or slowing its spread.** Hydrilla is similar to elodea in that is has oval shaped leaves arranged in whorls around the stem. Hydrilla, however, typically has four or five leaves at one node. The leaves also have small teeth and the leaf vein has small spines. If you believe you have found Hydrilla, please contact the Aquatic Nuisance Control Program by telephone at 517-284-5593 or e-mail EGLE-WRD-ANC@Michigan.gov.

Floating and Emergent Plants

Lemna minor; **duckweed**



5x actual size

Duckweed is a floating plant so small that a teaspoon could hold a dozen or more plants. At a distance, a congregation of duckweed plants may resemble algae on the water surface. This plant is common in ponds and quiet water of lakes and streams.

Typha spp.; **cattail**

Cattail is an emergent plant commonly found on the edges of lakes and wetland habitats. It has dark green sword-like leaves that are 3 feet or more tall. The flower is a cylindrical spike found at the top of the plant.

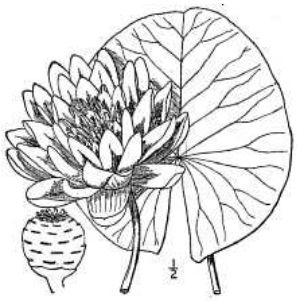
***Sagittaria latifolia*; common arrowhead**

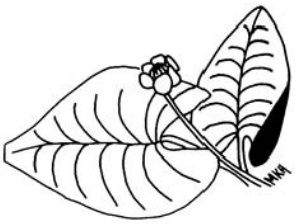
Common arrowhead is an emergent that grows from 1’ to 4’ tall. The plant derives its name from the distinctive arrowhead shape leaves. The flowers are white and have three petals. They are located in whorls at the end of a leafless stem. This plant, also known as “duck potato”, has thick white or blue tubers that form at the end of the underground roots.

***Pontederia cordata;* Pickerelweed**

Pickerelweed is an emergent plant typically 2-4 feet tall. It has large glossy heart shaped leaves. The plant is most easily recognized by the showy spike of blue flowers located at the end of a leafless stem.

Nuphar spp. & Nymphea spp.; **Spatterdock, Water lily**





Water Lilies have thick fleshy stems that end in large floating leaves or pads. White water lilies (*Nymphea*) have nearly rounded leaves and have showy white flowers. Spatterdock (*Nuphar*), have oblong leaves with a more distinct point and yellow flowers.

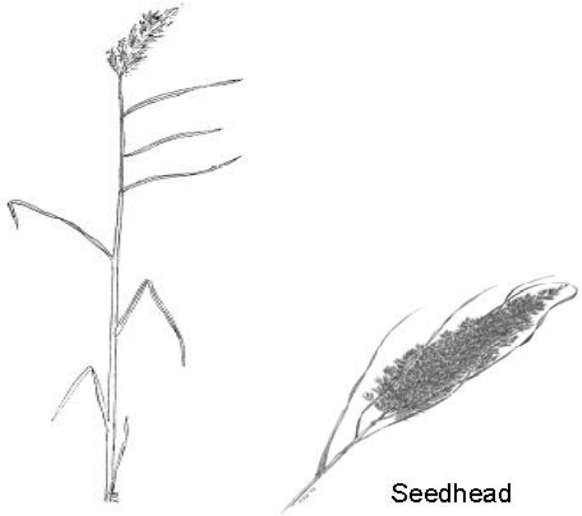
(white water lily illustration from: https://plants.sc.egov.usda.gov/)

***Scirpus spp.;* Bulrush**

Bulrushes are tall slender plants that can grow as tall as five to ten feet outside of the water. The stems appear grass like and, in most cases, are triangular in cross section. Clusters of brown flowers or spikelets are located at near the end of the stems.

Phragmites australis.;* Giant Reed

*Invasive Plant of Concern



Giant or common reed is a large perennial grass that can grow up to sixteen feet tall. It is typically found in wet areas, but also can be found in disturbed sites such as road shoulders. The leaves are long (up to 2 feet), strap like, and have a tapered point. When present, the flowers are found at the top of the plant in clusters or spikelets with long silky hairs. Although the giant reed may be in part native to Michigan, in recent years the plant has become invasive and aggressive. It can form dense monoclonal stands and spreads primarily through its rhizomes.

***Lythrum salicaria;* Purple loosestrife**
*Invasive Plant of Concern

Purple loosestrife is an exotic plant frequently found in wetlands, fringing lakes and ponds, and in roadside ditches. The plant grows from 3 – 7 feet tall from a woody root crown. There are multiple stems per plant which are ridged and typically four sided. The leaves are downy with smooth edges. They are most often arranged in pairs around the stem. The plant has a striking long spike of pinkish purple flowers. Purple loosestrife has prolific seed production and spreading rhizomes which allows it to form dense stands crowding out native plants.

Illustrations by: Maureen K. Houghton, formerly of Michigan Department of Environment, Great Lakes, and Energy , Environmental Science and Services Division; Eric Bacon, Michigan of Environment, Great Lakes, and Energy, Water Resources Division. (unless otherwise noted)

References:

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Fassett, N.C. revision appendix by E.C. Ogden. 1969. *A Manual of Aquatic Plants*. University of Wisconsin Press, Madison, Wisconsin.

Pullman D. and Crawford G. 2010. A Decade of Starry Stonewort in Michigan: Observations and Operational Management Considerations 1999 to 2009. *Lakeline*, 36 Summer 2010.

Riemer, D. 1993. *Introduction to Freshwater Vegetation*. Krieger Publishing Company, Melbourne, Florida.

Additional Resources:

Aquatic Plants of the Upper Midwest: A photographic field guide to our underwater forests by Paul M. Skawinski.

Aquatic Plant (SM50), or *Grasses, Sedges and Rushes of Wetlands* (SP255) Identification Decks, University of Florida, IFAS Extension, www.IFASbooks.com or 1-800-226-1764.

Bay Grass Key Identify SAV, Maryland Department of Natural Resources: https://dnr.maryland.gov/waters/bay/Documents/SAV/complete_sav_key.pdf.

Center for Aquatic and Invasive Plants, University of Florida, IFAS Extension: http://plants.ifas.ufl.edu.

A Citizen's Guide for the Identification, Mapping and Management of the Common Rooted Aquatic Plants of Michigan (WQ-55), Michigan State University Extension, https://www.canr.msu.edu/resources/guide_for_the_identification_mapping_and_management_of_aquatic_plants_of_mi
To purchase: *(The link provided was broken and has been removed)*

Natural Resources Conservation Service, U. S. Department of Agriculture: *(The link provided was broken and has been removed)*

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