

FIELD GUIDE TO THE AQUATIC PLANTS OF LAKE ONOTA ***(2003 LAKE ONOTA AQUATIC VEGETATION ASSESSMENT – APPENDIX 1)***



Prepared By:

**GEOSYNTEC
CONSULTANTS**
629 Massachusetts Avenue
Boxborough, MA 01719
(978) 263-9588 www.geosyntec.com

Funded By:

**Massachusetts
Department
of
ENVIRONMENTAL
PROTECTION**
DEP Project # 2003-15/MWI

This *Field Guide to the Aquatic Plants of Lake Onota* has been developed to assist volunteers in conducting regular monitoring of Lake Onota's vegetation. The field guide includes plant species that have been previously identified in Lake Onota during both volunteer and professional vegetation surveys conducted over the past several years.

Massachusetts lakes and ponds host a great variety of aquatic plants. If you find a plant in your lake which is not included in this field guide, there are a number of more comprehensive field guides that can be used as a reference for species identification. Some recommended references include the following:

A Guide to Aquatic Plants in Massachusetts. New England Aquarium and the Massachusetts Department of Environmental Management. 1999.

C.B. Hellquist and Massachusetts Department of Environmental Management.
A Guide to Invasive Non-native Aquatic Plants in Massachusetts. (Available free of charge from DEM)

G.E. Crow and C.B. Hellquist. 2000. *Aquatic and Wetland Plants of Northeastern North America.* The University of Wisconsin Press.

Fassett, N.C. 1940. *A Manual of Aquatic Plants.* The University of Wisconsin Press.

Line drawings for this field guide have been reprinted with permission from Crow, G.E. and Hellquist, C.B. 1982. *Aquatic Vascular Plants of New England.* New Hampshire Agricultural Experiment Station.

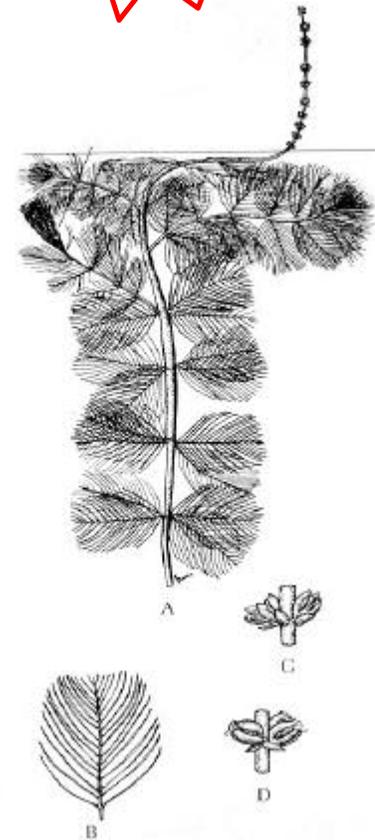
Plant Index		
Common Name	Latin Name	Page
Eurasian milfoil	<i>Myriophyllum spicatum</i>	2
Coontail	<i>Ceratophyllum demersum</i>	2
Stonewort	<i>Nitella sp.</i>	3
Musk Grass	<i>Chara vulgaris</i>	3
Bushy Pondweed	<i>Najas flexilis</i>	4
Bushy Pondweed	<i>Najas guadalupensis</i>	4
European Pondweed	<i>Najas minor</i>	5
Waterweed	<i>Elodea nuttallii</i>	5
Yellow Water Lily	<i>Nuphar variegata</i>	6
White Water Lily	<i>Nymphaea spp.</i>	6
Waterstar Grass	<i>Heteranthera dubia</i>	7
Wild Celery	<i>Valisneria americana</i>	7
Bigleaf Pondweed	<i>Potamogeton amplifolius</i>	8
Robbin's Pondweed	<i>Potamogeton robbinsii</i>	8
Flatstem Pondweed	<i>Potamogeton zosteriformis</i>	9
Curlyleaf Pondweed	<i>Potamogeton crispus</i>	9
Illinois Pondweed	<i>Potamogeton illinoensis</i>	10
Floatingleaf Pondweed	<i>Potamogeton natans</i>	10
Grassy Pondweed	<i>Potamogeton gramineus</i>	11
Clasping Pondweed	<i>Potamogeton Richardsonii</i>	11
Broad-leaved Cattail	<i>Typha latifolia</i>	12
Arrowhead	<i>Sagittaria latifolia</i>	12
Water Chestnut	<i>Trapa natans</i>	13

Eurasian Milfoil (*Myriophyllum spicatum*)

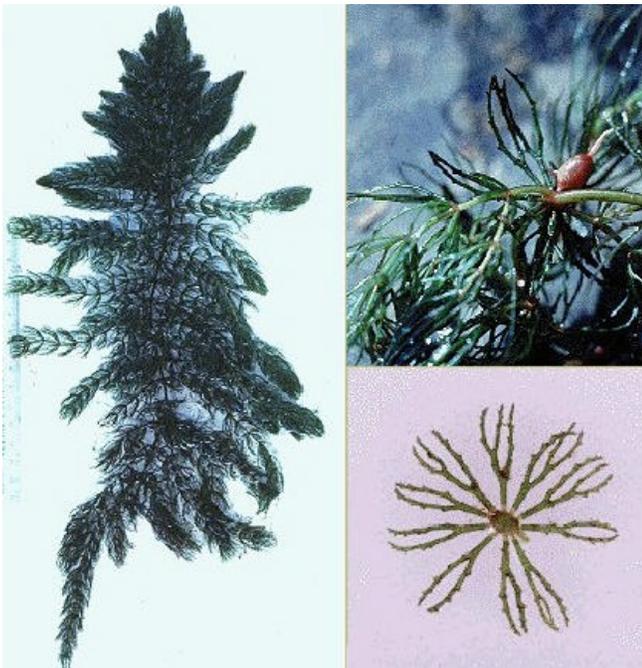
EXOTIC!



Note: This aggressive non-native plant grows in long ropey strands with widely-spaced whorled leaves that have blunt tips (see line drawing B). Growing tips of plants tend to be reddish in color.



Coontail (*Ceratophyllum demersum*)



Note: Named for its appearance similar to a raccoon tail, the leaves of this plant have conspicuous teeth on one side. This plant is commonly confused with the structured algae, particularly Muskgrasses.

Stonewort (*Nitella* sp.)



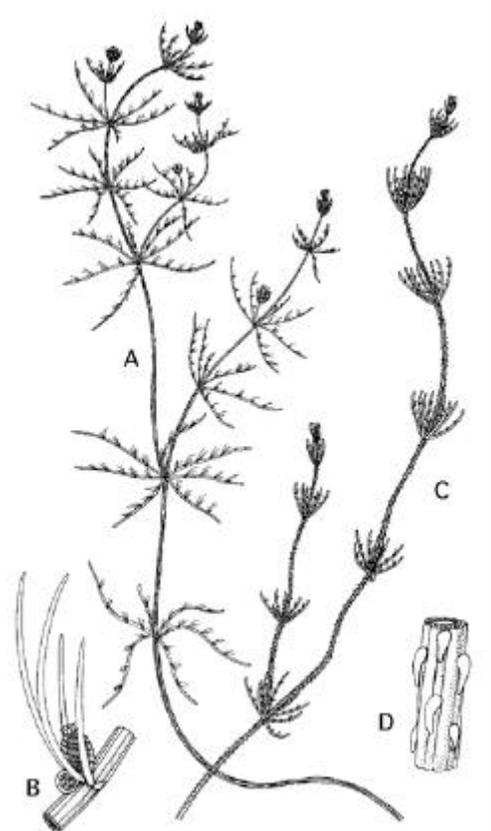
Note: Although similar in appearance to the Muskgrasses (*Chara* spp.), *Nitella* is smooth and flexible and lacks the distinct musky odor of *Chara*. Both *Nitella* spp. and *Chara* spp. are structured forms of algae rather than true vascular aquatic plants.



Musk Grass (*Chara vulgaris*)



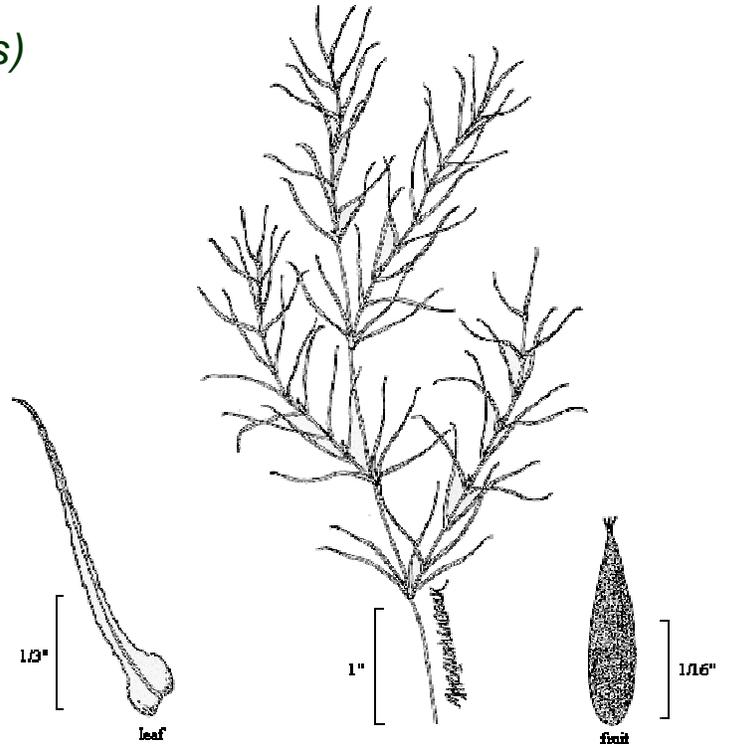
Note: Musk grasses have a distinct musky odor and are brittle when crushed between two fingers. Similar-looking vascular plants such as Bushy pondweeds (*Najas* spp.) and Coontail (*Ceratophyllum demersum*) do not produce an odor when crushed.



Bushy Pondweed (*Najas flexilis*)



Robert H. Mohlenbrock. USDA NRCS. 1995. *Northeast wetland flora: Field office guide to plant species.*

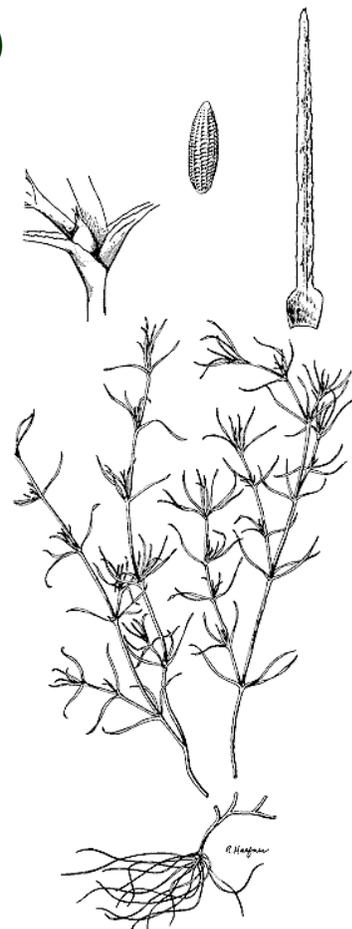


Note: *Najas flexilis* can be distinguished from the similar-looking *Najas quadalupensis* by its pointed leaf tips.

Bushy Pondweed (*Najas quadalupensis*)



Note: *Najas quadalupensis* can be distinguished from *Najas flexilis* by its blunt leaf tips.

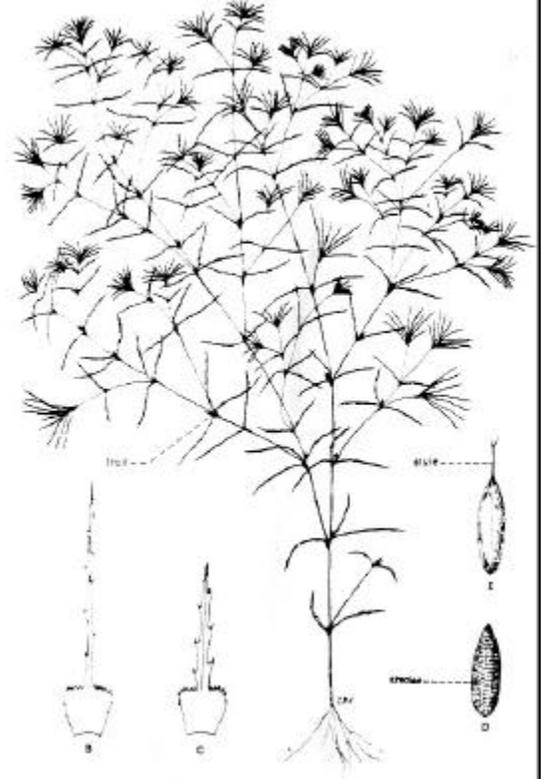


European Pondweed (*Najas minor*)

EXOTIC



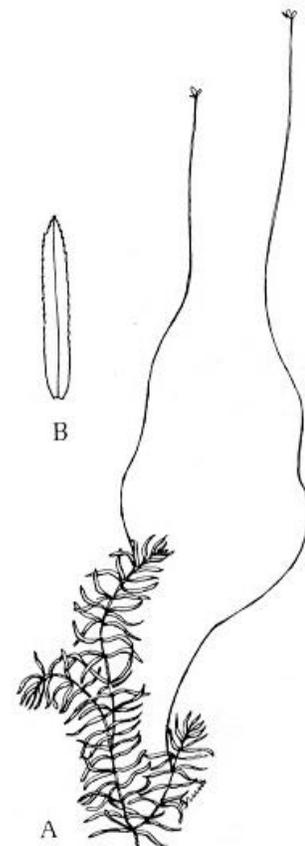
Note: *Najas minor* can be distinguished from other *Najas* species by its conspicuous leaf serrations.



Waterweed (*Elodea nuttallii*)



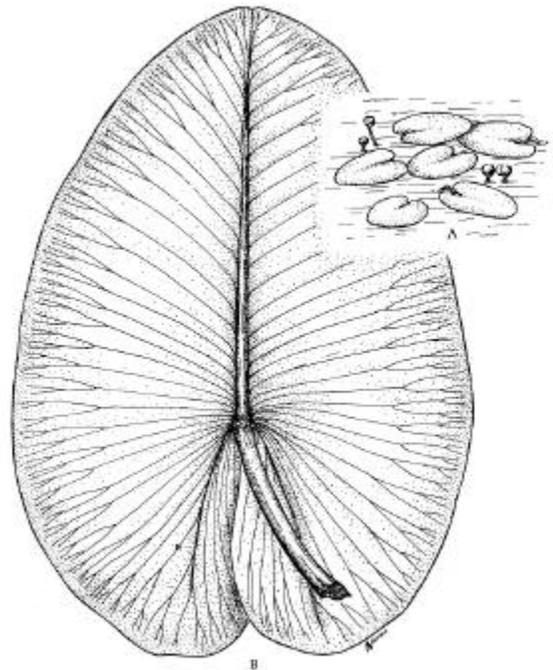
Note: This *Elodea* species has leaves with pointed tips that whorl around the stem (3 or 4 leaves per whorl). This plant can be confused with the *Najas* species, which have opposite leaves rather than whorled leaves.



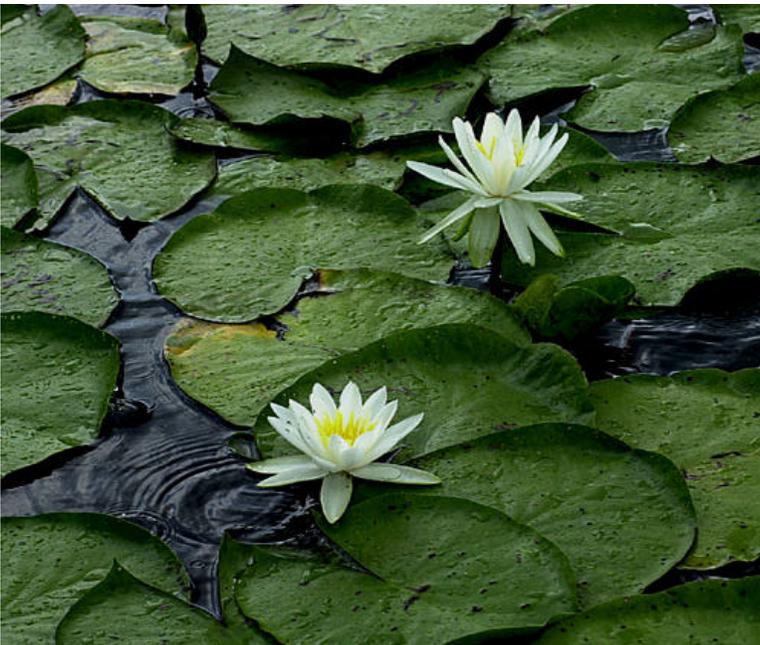
Yellow Water Lily (*Nuphar sp.*)



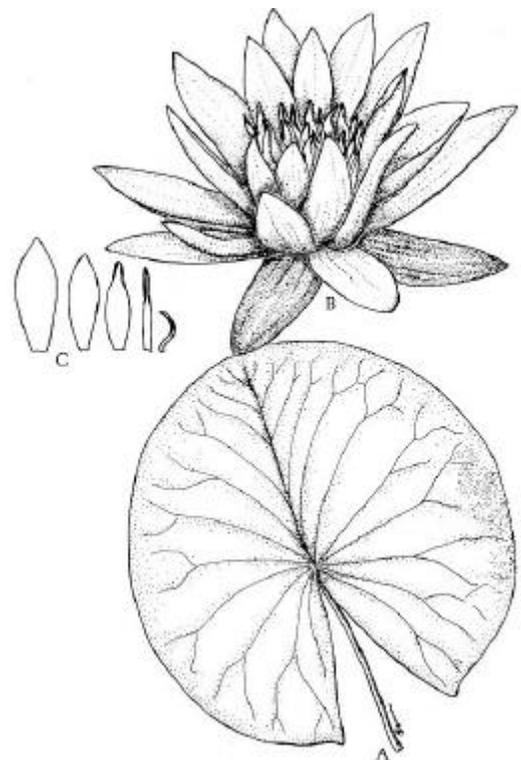
Note: Yellow water lilies have yellow flowers and large floating leaves with rounded lobes that frequently overlap.



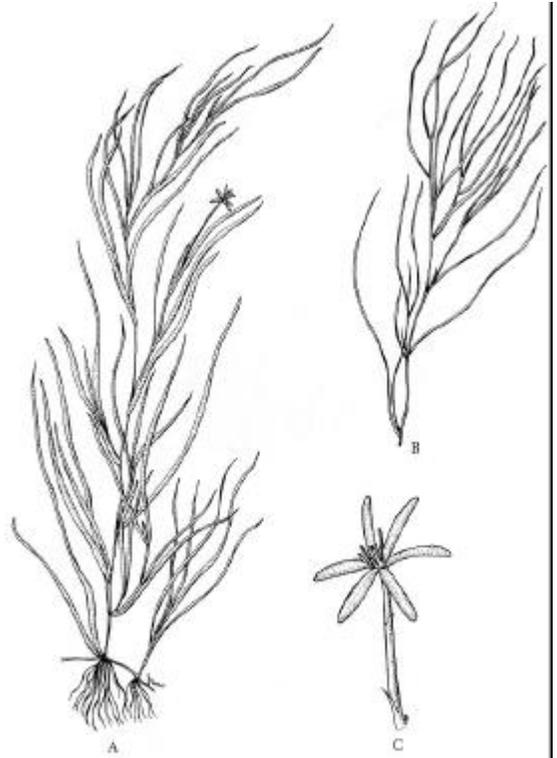
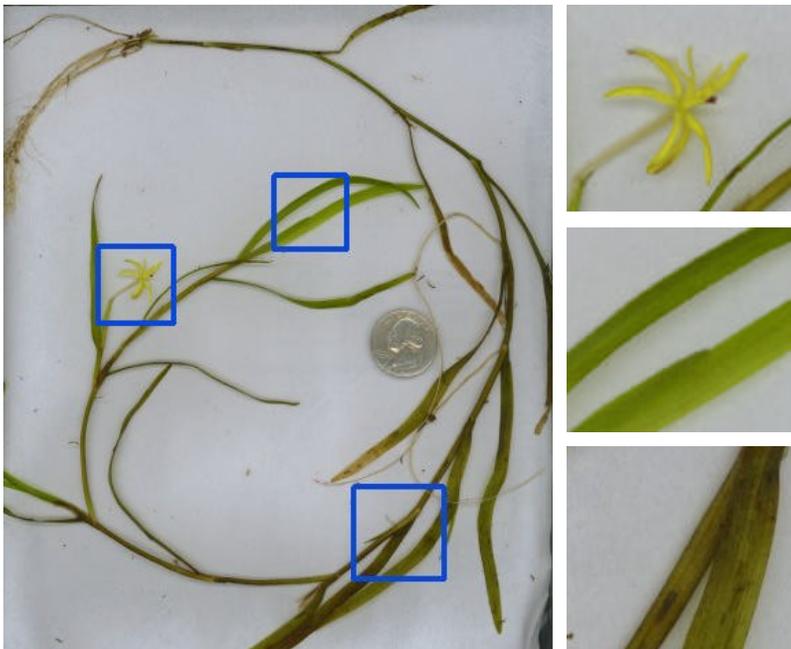
White Water Lily (*Nymphaea sp.*)



Note: White water lilies have white flowers and floating leaves with pointed lobes that rarely overlap. Lake Onota also has a cultivated hybrid of the white water lily that has a pink flower.

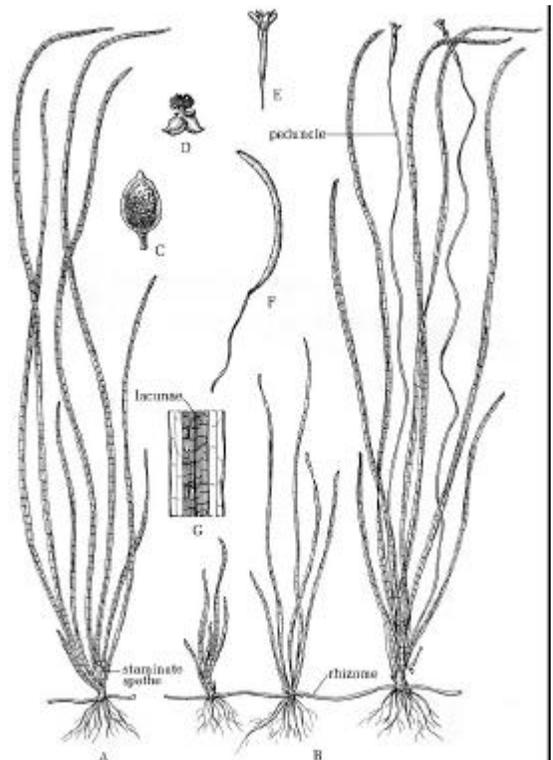


Waterstar Grass (*Heteranthera dubia*)



Note: This plant has limp reddish-green submerged leaves that are 3-4 inches long and approximately 1/8-inch thick. Although similar in appearance to *Potamogeton*, Waterstar Grass leaves lack a distinct midvein. Flowers (when present) are yellow.

Wild Celery (*Vallisneria americana*)



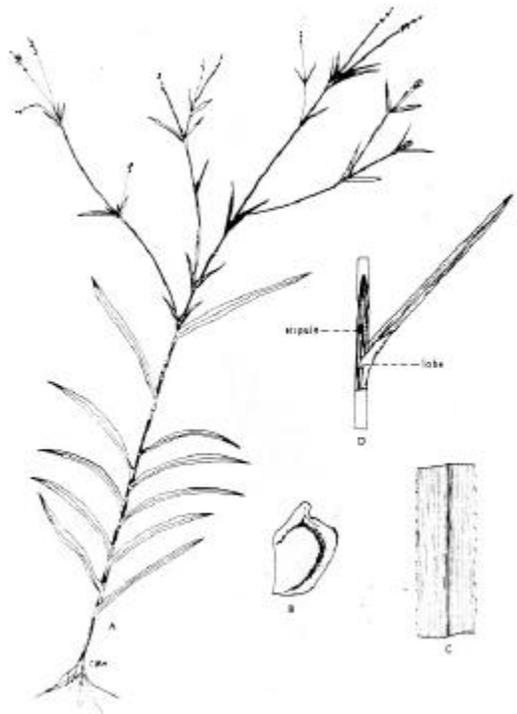
Note: Wild celery has ribbon-like leaves with bluntly rounded tips. A distinct light green stripe runs down the center of the leaves, which is most visible when the leaf is held up to light.

Bigleaf Pondweed (*Potamogeton amplifolius*)



Note: This common pondweed species is distinguished by its large, curved submerged leaves which are typically 3-7cm wide.

Robbin's Pondweed (*Potamogeton robbinsii*)

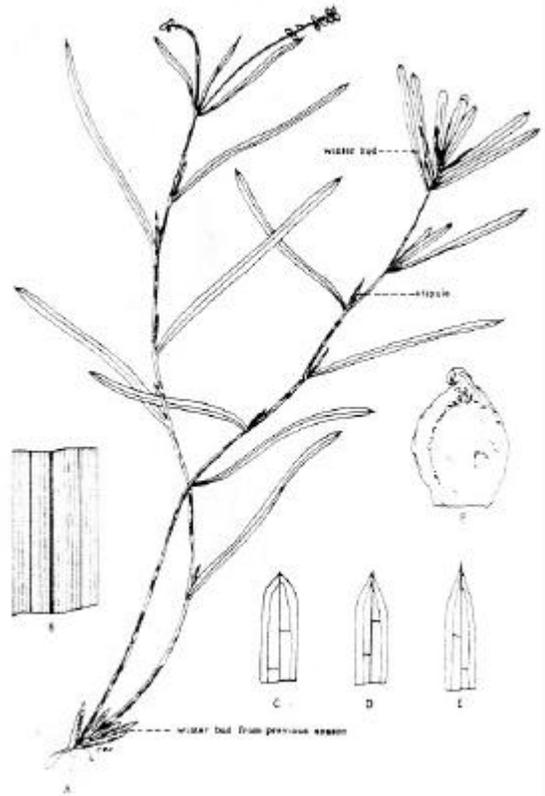


Note: Also known as Fern-leaf Pondweed, this *Potamogeton* species has a fern-like appearance and submerged leaves that are up to 6 mm wide.

Flatstem Pondweed (*Potamogeton zosteriformis*)



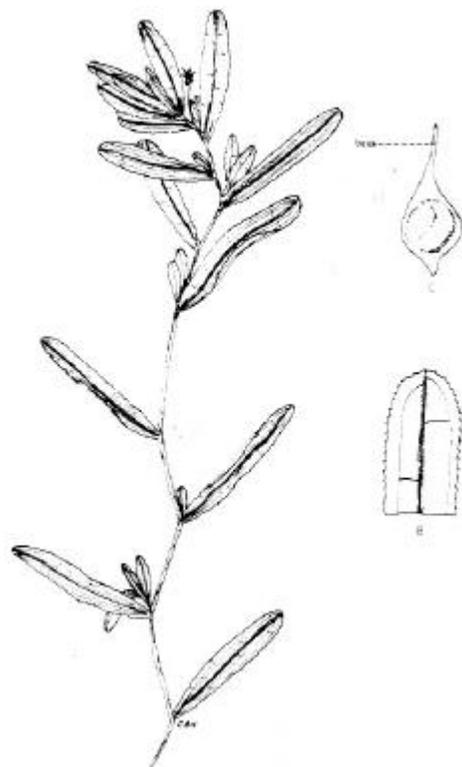
Note: This pondweed has leaves that are 2-5mm wide and are abruptly narrowed at the tip.



Curlyleaf Pondweed (*Potamogeton crispus*)



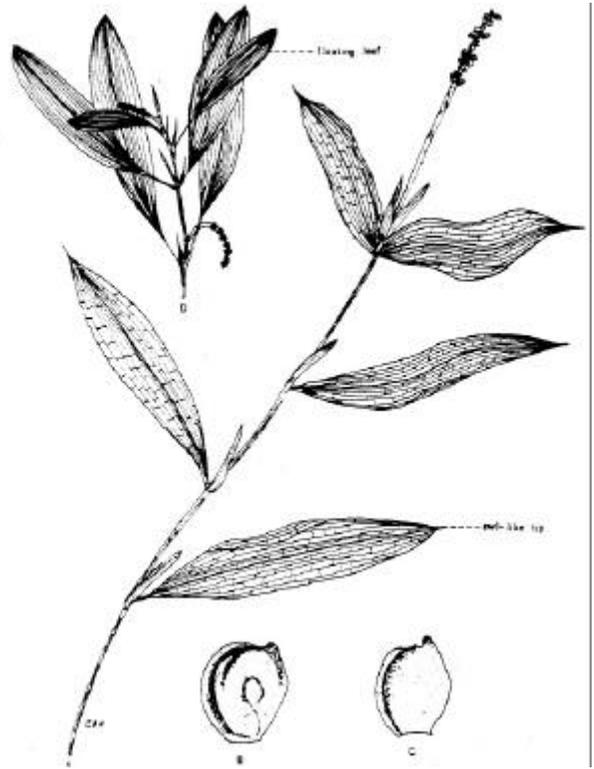
Note: This non-native pondweed can be identified by its wavy leaves (up to 3 inches long and 3/4-inch wide) and toothed leaf margins.



Illinois Pondweed (*Potamogeton illinoensis*)



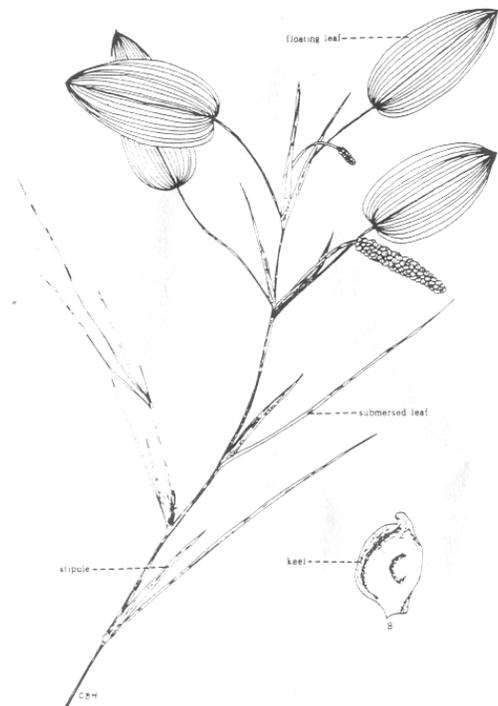
Note: Submersed leaves (6-20 cm long, up to 5 cm wide) are on short leaf stalks. Floating leaves (4-13 cm long, 2-6 cm wide) are not always present and have stalks shorter than the leaf blade.



Floatingleaf Pondweed (*Potamogeton natans*)



Note: Submersed leaves are narrow (1-2mm wide, 10-20 cm long), often disintegrating with age, tapering to an obtuse tip. Floating leaves are ovate-lanceolate to ovate-elliptic, 3-10 cm long, 1-5 cm wide, mostly 19- to 35-nerved.

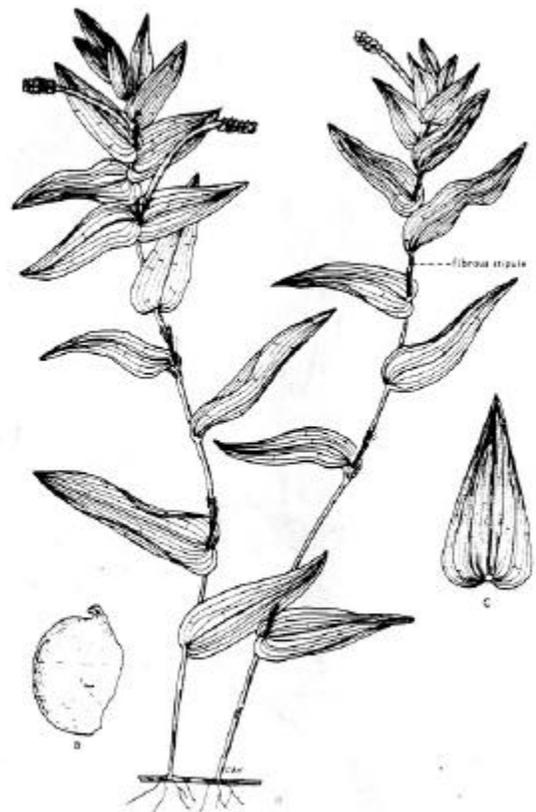


Grassy Pondweed (*Potamogeton gramineus*)



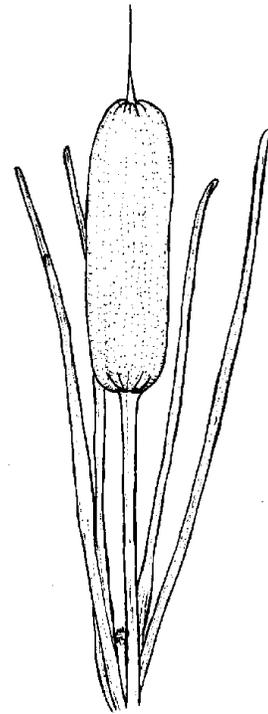
Note: This pondweed has a highly variable appearance and may look differently depending on water depth. Floating leaves (1.5-7 cm long, 1-3 cm wide) are similar to Illinois Pondweed, but are on stalks longer than the leaf blades.

Clasping Pondweed (*Potamogeton Richardsonii*)



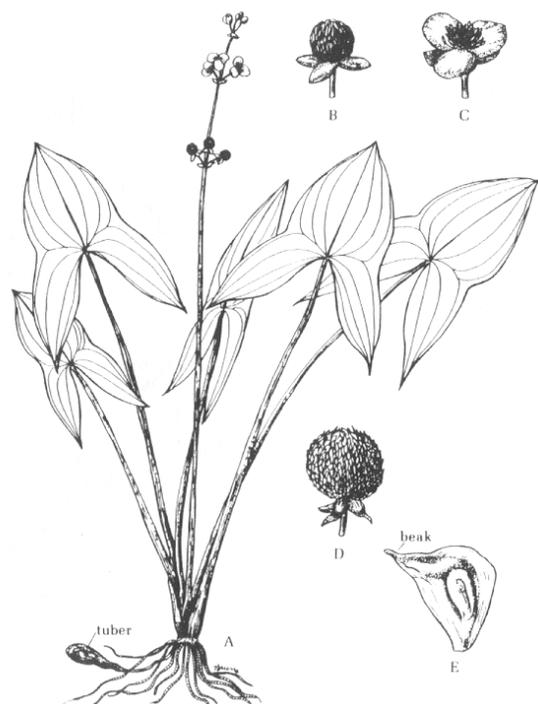
Note: Clasping pondweed has submerged leaves (2-13 cm long, 1-3 cm wide) that wrap part way around the stem. The lance-shaped leaves are often green and white banded and have wavy or crinkled margins.

Broad-leaved Cattail (*Typha latifolia*)



Note: Cattails are easily identified by their tall, sword-shaped leaves and fruiting spikes. Broad-leaved Cattail is distinguished from Narrow-leaved Cattail (*Typha angustifolia*) by its broader leaves and fruiting spikes with no separation between the male and female sections.

Arrowhead (*Sagittaria latifolia*)



Note: Arrowhead grows in shallow water on the fringe of ponds, lakes, and streams. It has distinctive arrow shaped leaves and an inflorescence of white flowers. The submerged leaves are lance-shaped or even bladeless and linear.

Water Chestnut (*Trapa natans*)



Note: Water chestnut is an invasive non-native plant that can spread rapidly. Small pioneer infestations have been observed (and pulled out of) the upper northern basin of Lake Onota (north of Dan Casey Memorial Drive). Future monitoring efforts should carefully watch for the re-introduction or spread of this plant.

EXOTIC!

