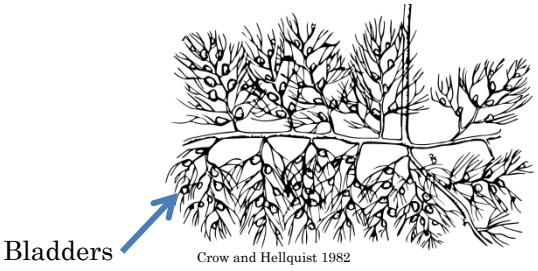
A Steward's Guide to Aquatic Hitchhikers

Differentiating invasive and native aquatic plants with confidence

Sean A. Regalado – Adirondack Watershed Institute

1a The plant has bladders.....**Bladderwort**

1b The plant has no bladders.....2

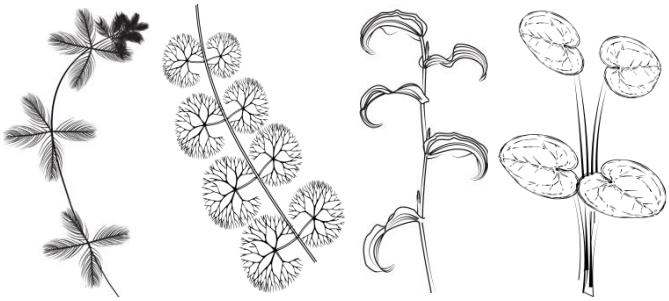


2a The plant is whorled.....3

2b The plant is opposite.....9

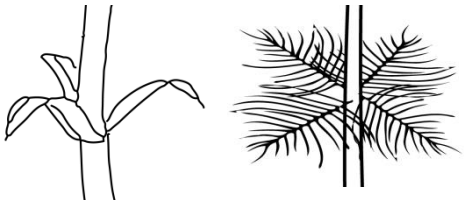
2c The plant is alternate.....10

2d The plant forms a rosette.....11



3a The leaves are simple.....4

3b The leaves are complex.....6



4a The whorl has exactly three simple leaves.....**Elodea**

4b The whorl has four or more simple leaves.....5

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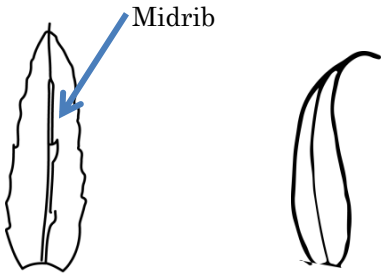
5a The simple leaves have toothed margins and midribs. Four to eight leaves per whorl.....**Hydrilla (invasive)**

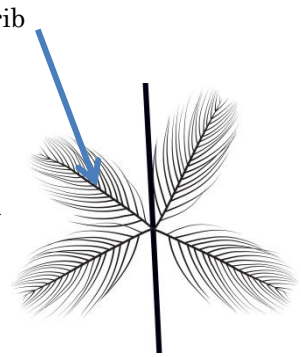
5b The simple leaves are not toothed. Often only four per whorl .....**Brazilian Elodea (invasive)**

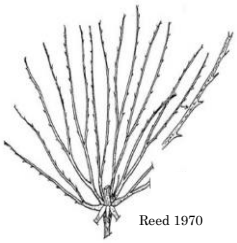


Hydrilla **Brazillian Elodea**

6a Each leaf is complex with many "leaflets" growing only from a midrib.....(Milfoils) 7

6b Each leaf is complex with each leaflet leaf NOT growing from a midrib.....**Other**

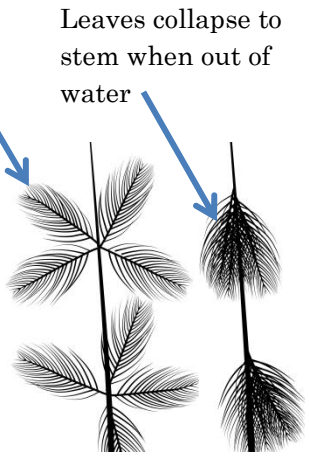


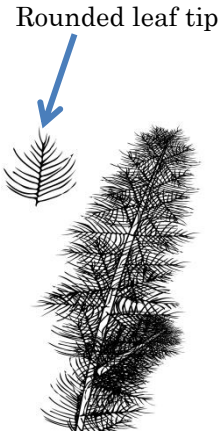


No single midrib (other)

7a The tips of the complex leaves appear clipped, leaflets are 12 or more in number, leaves collapse upon the stem when out of water, and whorls are >1" apart ....**Milfoil, Eurasian (invasive)**

7b The tips are rounded and the leaves remains bushy out of water, and whorls are <1" apart.....8





Eurasian water milfoil **Other Milfoil**

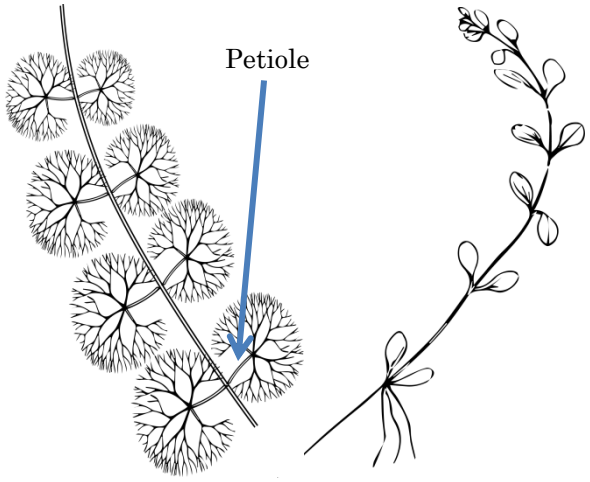
8a Stem robust, thick, and dark red and whorls slightly offset, whorls may contain 4-6 feathery leaves ....**Milfoil, variable (invasive)**

8b Stem not robust, thick, or dark red. Often perfectly whorled with bright green leaflets.....**Milfoil, native**

Variable leaf milfoil **Native Milfoil**

9a Leaves are complex with many forked leaflets attached by a petiole to the stem.....**Fanwort**

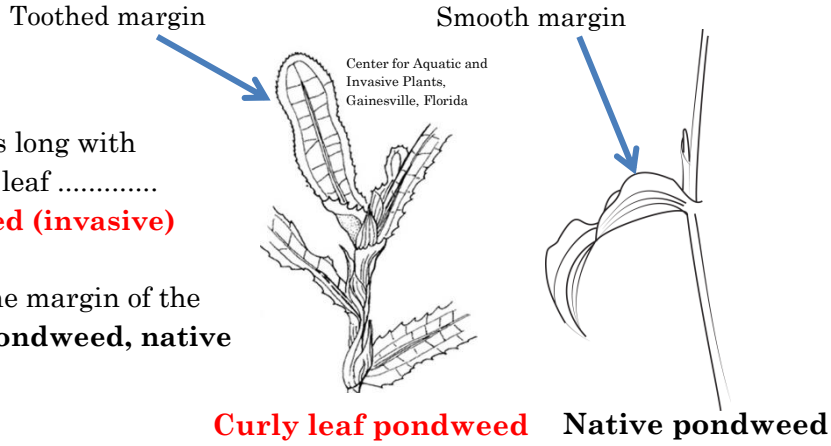
9b Leaves are simple.....**Other**



Fanwort **Other**

10a Leaves are generally ½ inch wide and 2-3 inches long with numberless small teeth along the margin of the leaf ....**Curly leaf pondweed (invasive)**

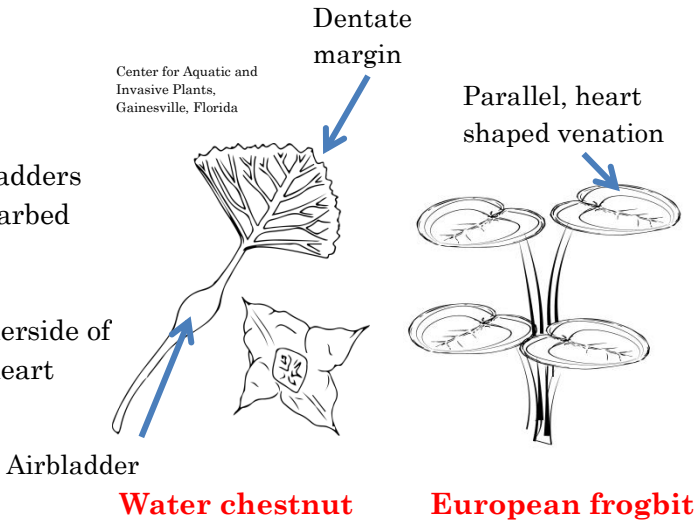
10b Leaves without numberless small teeth along the margin of the leaf.....**Pondweed, native**



Curly leaf pondweed **Native pondweed**

11a Leaves are triangle shaped, clearly dentate with airbladders on stem, and may have a hard nut with four ½ inch barbed spines.....**Water chestnut (invasive)**

11b Leaves are heart shaped with the venation on the underside of the leaf following the margin of the leaf in a parallel heart shape.....**European frogbit (invasive)**



Water chestnut **European frogbit**

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Glossary of Terms

Alternate	Pertaining to an arrangement of leaves where only one leaf is born at each level of the stem.
Complex	A leaf that is divided by either many leaflets or is extremely sinuous.
Bladder	In terms of aquatic plants, this is the carnivorous sack of bladderworts that captures micro invertebrates and other small organisms. Bladders range in size from 0.2 mm to 1.2 cm.
Dentate	Pertaining to a leaf with a triangular, tooth like edge.
Leaflet	A small leaf like part of a true leaf.
Margin	The edge of a leaf.
Opposite	Pertaining to leaves occurring two at a node on opposite sides of the stem.
Petiole	The stalk of a leaf.
Rossette	The arrangement of leaves in a dense, radiating cluster forming the base of the majority of plant mass.
Simple	Pertaining to a leaf that is not divided.
Whorled	Pertaining to leaves arranged in a circle at one level of the stem.

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