A Key to Common Native Maine Aquatic Plant Species

Adapted by

MCIAP
Maine Center for Invasive Aquatic Plants
### A Key to Common Native Maine Aquatic Plant Species

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How to Use this Key

In this key you are asked to make a series of choices between descriptions of different plants. Eventually, by observing the plant you are trying to identify and making these choices, you will arrive at an identification of the plant.

First, go to page 2.6.4, where you are asked to decide whether the plant has a submersed, floating-leaved, or emergent growth habit. By choosing one of these, the key then directs you to a page and number, where you will again make some choices. Each choice will be between two, three, or sometimes more options. In many cases you will need to look closely at the plant in order to be able to decide which description it fits.

There is a glossary on page 2.6.18 should you encounter an unknown term.

Thirty-seven of Maine’s common native aquatic plants are covered in this key. However, there are over 120 aquatic plant species in Maine, so it is possible you are trying to identify a plant not covered by this key. Should you have questions or want a confirmation on an identification you are encouraged to send a plant sample to the Volunteer Lake Monitoring Program’s Maine Center for Invasive Aquatic Plants. Detailed information on how to prepare your specimen for shipping is provided on page 2.10.2 of this handbook. This information can also be found online at www.mainevolunteerlakemonitors.org/mciap/reportinvasive

Please do not copy without proper credit. Additional copies of this key are available upon request from:

VLMP – Maine Center for Invasive Aquatic Plants
24 Maple Hill Road, Auburn, Maine 04210
207-783-7733.

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All illustrations and information, except those noted below, were adapted with permission from A Key to Common Vermont Aquatic Plant Species by Susan Warren, Lakes & Ponds Unit, Water Quality Division, Vermont Department of Environmental Conservation.

CHOOSE BETWEEN 1A, 1B, or 1C BELOW:

1A. **Submersed:**
Plants are growing completely or largely beneath the water's surface...

1B. **Floating-leaved:**
Plants having at least some leaves floating on the water's surface (surface of floating leaves shed water)...

1C. **Emergent:**
Plants are rooted on the pond bottom and extend upright above the water's surface...
2A. Basal Leaves –
All leaves emerge from a single point
near the pond bottom........page 2.6.6, #4

2B. Leaves on a Stem –
Leaves are arranged along the stem
..............................................see #3 below

3A. Leaves undivided, flattened, may be toothed...............................page 2.6.7, #5

3B. Leaves finely divided, or narrow round leaves (not flat)...............page 2.6.10, #8
4. Submersed Plants With Only Basal Leaves

4A. Pipewort (*Eriocaulon aquaticum*)
- Roots with light & dark striations
- In shallow water, Pipewort will grow an emergent “flower” resembling a button
- Plants are usually 1½ to 3 inches high

4B. Water Lobelia (*Lobelia dortmanna*)
- Flowers are white to lavender
- Base of plant resembles pipewort, but leaves are rounded at the tip

4C. Quillwort (*Isoetes spp.*)
- Flowers are below water’s surface and roots are white (not striated)
- Small spikey plant, may resemble the basal leaves of the pipewort plant

4D. Wild Celery, Eel Grass (*Vallisneria americana*)
- Seed Pod
- Leaves are ½ to 1 inch wide and up to 2 feet long
5. Submersed Plants With Blade-shaped, Entire Leaves

5A. Leaves in whorls of three or more around the stem........see #6 below

5B. Leaves arranged oppositely or alternately along the stem....see page 2.6.8, #7

6. Whorled Leaves

6A. Waterweeds:

Common Waterweed (Elodea canadensis) & Slender Waterweed (Elodea nuttallii)

Leaves 3 in a whorl usually ½ to 1 inch long, plants can vary in height from less than 1 foot to upwards of 6 feet

The leaves of common waterweed are generally shorter, wider and more blunt at the tip, than the leaves of slender waterweed

6B. Slender Naiad (Najas flexilis)

Carefully pull a leaf off, teeth are almost invisible, even with a hand lens.

Leaves may also occur in pairs or loose clusters

Leaves are about 1 inch long.

Plants are usually 1 or 2 feet high with branching stems
7. Submersed Plants with Opposite or Alternate Blade-shaped Leaves

7A. Water Starwort (*Callitriche spp.*)

- There are 2 species of Water Starwort in Maine
- Very fragile leaves about 1 inch long and 1/32 inch wide, in pairs.
- Generally a small plant growing in shallow water
- Sometimes has a group of small round floating leaves at the surface
- Tiny nutlets in leaf axils

7B. Pondweeds (*Potamogeton spp.*)

- There are 22 species of pondweeds in Maine, varying between very small thin leaved species to those with large wide leaves
- They are distinguished as a group by possessing a leaf mid-vein (look closely on the thin-leaves species). Also, pondweeds have small sheath-like structures (stipules) at the base of each leaf. In some species the stipule is fused to the leaf and is difficult to see.

Large-leaf Pondweed (*Potamogeton amplifolius*)

- Large arched leaves with wavy edges, often brown, 3 or 4 inches long, and up to 2 inches wide.
- This plant can be up to 6 or 7 feet high
- Sometimes has floating leaves
- Seed-head above water’s surface
7B. Pondweeds Continued – Some Common Pondweeds

**Floating-leaved Pondweed** (*Potamogeton natans*)

Narrow stem-like submersed leaves, up to 1/8 inch wide, usually brown, floating leaves are 2 to 3 inches long, usually growing in water 2 or 3 feet deep.

**Variable Pondweed** (*Potamogeton gramineus*)

Heavily branched, many leaves, leaves are ½ inch to 4 inches long and may have small floating leaves.

**Small Pondweed** (*Potamogeton pusillus*)

No floating leaves are produced. Submersed leaves are ½ to 3 inches long, linear and attached directly to the stem. Look for a pair of raised glands at the base of the leaf. (Magnification may be needed.)
7B. Pondweeds Continued – Some Common Pondweeds

**Spiral Fruited Pondweed**  
(*Potamogeton spirillus*)

Submersed stems compact and highly branched. Linear leaves may have curly appearance. Stipules fused to the leaf blade for more than half their length. Floating leaves may occur.

**Clasping Pondweed**  
(*Potamogeton perfoliatus*)

Leaves clasp the stem. No floating leaves are produced.

**Fern Pondweed**  
(*Potamogeton robbinsii*)

Leaves are two-ranked, creating a feather or fern-like appearance.

**Ribbon Pondweed**  
(*Potamogeton epihydrous*)

Leaves are alternate. Submersed leaves are striped and floating leaves are supported by a slender leaf stalk.
8.  Submersed Plants With Finely Divided Leaves Along A Stem.
These plants must be examined closely to determine which kind of divided leaves they have.

8A.  Watermilfoils (Myriophyllum spp.)

Leaves are arranged radially around the stem; not always in strict whorls.

There are 6 native species of watermilfoil in Maine.

All leafy milfoils have feather divided leaves. (One native milfoils species lacks true leaves.)

8B.  Common Bladderwort (Utricularia macrorhiza, aka, U. vulgaris)

The leaves of common bladderwort are branch divided and alternately arranged along the stem.

Maine has 8 species of bladderworts.

Both species shown here have numerous small “bladders” attached to the leaves.

8C.  Large Purple Bladderwort (Utricularia purpurea)

The leaves of large purple bladderwort are branch divided and arranged in whorls, spaced loosely along the stem.
8D. Water Crowfoot (*Ranunculus* spp.)

There are 2 species of water crowfoot in Maine.

This plant is usually a few feet long, sometimes trailing just below the water surface. Leaves are branch divided and alternately arranged along the stem. The base of the leaf stem is thickened and clasps around the main stem.

8E. Water Marigold (*Bidens beckii*, aka *Megalodont'a beckii*)

Occasionally has a yellow flower above the water’s surface.

This plant usually grows only a few feet high.

Two branch-divided leaves, oppositely arranged and loosely spaced along the stem. The broadly-branching leaves have no leaf stem. As a result, the pair may resemble a whorl of six smaller leaves on short leaf stems.
8E. Coontail (*Ceratophyllum demersum*)

Leaf whorls are clustered at the ends of the branches, giving the plant the appearance of a raccoon's tail.

Maine is home to one other *Ceratophyllum* species.

8F. Stoneworts (*Chara* spp. or *Nitella* spp.)

These are actually large upright forms of algae. Stoneworts usually grow in tangled masses along the bottom.

*Chara* is brittle and course, covered with a mineral scale.

*Nitella* is smooth and flexible.

When fresh, *Chara* gives off a distinctive skunk-like odor.

9A. Plants with both floating leaves, and submersed leaves on a stem.

9B. Very small floating plants, not rooted to the pond bottom. Each plant has a small root or roots hanging from underneath.

9C. Plants with only floating leaves on stems which are rooted in the pond bottom.

10A. Large elongated floating leaves with round lobes and large yellow ball-shaped flowers. **Spatterdock, Yellow Water-lily** (*Nuphar variegata*)

Leaves are 3 to 6 inches across

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10B. Large rounded floating leaves with pointed lobes and white flowers. **Fragrant Waterlily** (*Nymphaea odorata*)

Leaves are 3 to 6 inches across

---

10C. Elliptical-shaped leaves with stem attached at the center of the leaf. **Watershield** (*Brasenia schreberi*)

Leaves are usually 2 or 3 inches long. The stem and underside of the leaf is often covered with a clear, jelly-like material.

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10D. Little Floating Heart (*Nymphoides cordata*)

Leaves are the size of silver dollars. Stems are rooted in pond bottom.

Leaves reach the surface and float horizontally along it.

*Small white flowers*  
*bunch of banana-like “roots” on stem just below water’s surface.*

11. Long Narrow, Grass-like Floating Leaves Burreed (*Sparganium spp.*)

Maine has 7 species of aquatic burreeds, some with floating leaves and others with erect emergent leaves.

*Hard, burr-like seed heads*  
*Leaves reach the surface and float horizontally along it.*
EMERGENT PLANTS

12. Plants Which Are Rooted On The Pond Bottom And With Leaves and/or Stems That Extend Upright Above The Water’s Surface.

12A. Leaves long and narrow, may be round in cross-section.....page 2.6.17, #14

12B. Leaves broad....#13 below.

13A. Arrowhead (*Sagittaria spp.*)

- Leaves with pointed lobes.
- Leaf size is variable.
- Small white flowers with 3 petals.

There are 5 species of arrowhead in Maine some erect emergents, others with floating leaves.

13B. Pickerelweed (*Pontederia cordata*)

- Leaves with rounded lobes. Small purple flowers in cluster.
- Plants are usually 1 or 2 feet tall.

14A. **Cattail** (*Typha latifolia*)

- Leaves up to 5 feet tall.
- Dark brown “catkins”, 5-6 inches long.
- There is one other species of cattail in Maine.

14B. **Horsetail** (*Equisetum spp.*)

- Round, hollow stalks, often 1-2 feet high, rough in texture
- Stalk in segments
- Some species branch at each segment.

14C. The following three emergent species may produce dense patches of fine, hair-like submersed leaves.

**Bayonet Rush** (*Juncus militaris*)

- Tall, erect, segmented stems rise above water surface. Flowers and fruits emerge on a spray of branching stems below the tip.
- Thin, hair-like, submersed leaves rise from the base. Tip: squeeze the emergent stem between fingers and pull firmly, to feel the “pop” of the internal segments.

2.6.18
Robbins Spikerush (*Eleocharis robbinsii*)

Stems are stiff, slender and triangular. They are tipped with a small spikelet that is often difficult to see.

Fine, hair-like underwater stems are sterile.

Water Bulrush (*Schoenoplectus subterminalis*)

Leaves sheath one another at the base. Leaf tips may float at the water surface.

Only the tips of fertile stems poke out of the water. Solitary spikelets emerge from fertile stems, below the tip.
axil - the junction between a stem and a leaf or branch

divided leaf - a leaf that is cut into multiple smaller divisions

fruit - the seed bearing portion of a plant.

lobe - a partial division of a leaf

midvein - the main or central vein of a leaf; not all plants have leaves with midveins

nutlet - dry fruit having a hard shell which usually contains only one seed.

sheath - a portion of the leaf that wraps around the stem of the plant.

stipule - a small sheath-like structure borne in the axil of the leaves in some species

whorl - a circle of three or more leaves radiating from the same point on a stem.