BLADDERWORTS
Utricularia macrorhiza, U. radiata, U. purpurea and U. intermedia

NATIVE TO MAINE

Habitat: Nine species of bladderwort are found in Maine. Four of these are possible invasive plant look alikes:
· Common bladderwort (*Utricularia macrorhiza*)
· Floating bladderwort (*Utricularia radiata*)
· Large purple bladderwort (*Utricularia purpurea*)
· Northern bladderwort, or flat-leaf bladderwort (*Utricularia intermedia*)

All four species are aquatic and occur in both the floating-leaved and submersed plant communities. They may be found free floating at or below the water surface, or trailing along the bottom of lakes, ponds, slow-moving streams, and wetland pools. Most aquatic bladderworts are adapted to survival on dry land when stranded by low water levels. Unlike rooted aquatic plants, that draw their nutrients primarily from the sediments, bladderworts, lacking roots, draw nutrients directly from the water. Bladderworts are carnivorous, and supplement their nutrient intake by capturing small prey, such as zooplankton or small insects.

Description: Tiny, lopsided sack-like bladders used for capturing invertebrate prey are either attached directly to the leaves or to specialized leafless stems. In addition to this key shared feature, all four bladderworts discussed here have finely-divided, branched, submersed leaves and produce irregular snapdragon-like flowers. Beyond these common characteristics, however, the four look alike bladderwort species are easily distinguishable. The chart on page 68 provides a summary of key distinguishing features.

US Range: All four species are native to Maine and found throughout much of New England and other parts of the United States.

Annual Cycle: All four species are aquatic perennials that propagate primarily from stem fragments. Flowers followed by fruits are borne at or above the surface in mid-summer, and winter buds are produced on the submersed stems toward the end of the growing season. At the end of the growing season, plants sink to the sediments and decay. The winter buds and some of the stem fragments overwinter intact. When the water warms in the spring, winter buds inflate with air and float to the surface where new growth begins.

Value in the Aquatic Community: Bladderworts offer shade, invertebrate habitat and foraging opportunities for fish. Common bladderwort and large purple bladderwort often occur in extensive, dense colonies.

Look Alikes: May be confused with other plants with finely divided leaves including fanwort, hornworts, mermaid weed, water crowfoots, water marigold, and leafy water-milfoils.
Common bladderwort with flowers and magnified bladders (insets)

Common bladderwort has coarse, alternately arranged branch-divided leaves

Flowers are supported by an inflated raft of specialized leaves

Floating bladderwort has fine, alternately arranged branch-divided leaves

Floating bladderwort in flower

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<table>
<thead>
<tr>
<th>Bladderwort Species</th>
<th>Relative Stem Length</th>
<th>Leaf Arrangement</th>
<th>Leaf Description</th>
<th>Flowers</th>
<th>Bladders</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Common bladderwort</strong> <em>(Utricularia macrorhiza)</em></td>
<td>Long (up to 3 meters)</td>
<td>Alternate</td>
<td>The leaf arrangement is alternate, but leaves may be divided in such a way that they appear to occur in pairs, or lopsided whorls. The leaves are typically paler and greener toward the growing tip.</td>
<td>Yellow snapdragon-like flowers emerge on flower stalks at the surface. There may be 4-20 flowers per stalk.</td>
<td>Bladders are attached along the edges of the divided leaves. Young bladders near the growing tip are transparent and tinted pale green. Bladders become darker and less transparent as they age.</td>
</tr>
<tr>
<td><strong>Floating bladderwort</strong> <em>(Utricularia radiata)</em></td>
<td>Medium (up to 1 meter)</td>
<td>Alternate</td>
<td>The leaf arrangement is alternate, but leaves may be divided in such a way that they appear to occur in pairs, or lopsided whorls. The leaves are moderately to tightly arranged, giving the plant a coarse appearance.</td>
<td>Yellow snapdragon-like flowers emerge from a slender, ascending stalk, act like a float.</td>
<td>Bladders are attached along the edges of the divided leaves. Bladders are generally transparent, with a pale green tint.</td>
</tr>
<tr>
<td><strong>Large purple bladderwort</strong> <em>(Utricularia purpurea)</em></td>
<td>Medium (up to 1 meter)</td>
<td>Strict whorls</td>
<td>The leaves are arranged in strict whorls. The leaves are arranged in strict whorls, giving the plant a delicate appearance.</td>
<td>Pale purple snapdragon-like flowers emerge on slender flower stalks at the surface. Often several flowers per stalk.</td>
<td>Bladders are attached to the tips of the divided leaves. Tiny transparent bladders are attached to the tips of the divided leaves.</td>
</tr>
<tr>
<td><strong>Northern bladderwort</strong> <em>(Utricularia intermedia)</em></td>
<td>Short (less than 0.5 meters)</td>
<td>Alternate</td>
<td>The leaf arrangement is alternate, but leaves are arranged in such a way that they appear to occur in pairs, or lopsided whorls. The leaves are finely divided.</td>
<td>Yellow snapdragon-like flowers emerge on slender flower stalks at the surface.</td>
<td>Bladders occur on separate, leafless stems.</td>
</tr>
</tbody>
</table>
Northern bladderwort (>U. intermedia<): submersed stems (left)

Leaves and bladders occur on separate stems (right)

Large purple bladderwort leaves are arranged in whorls

Divided leaves are flat in cross-section

Winter bud

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