**PLANT TYPE CATEGORIES FOR RULING OUT INVADERS**

All eleven invaders have characteristics that place them in one of the following five categories. If the plant in question does not fit into at least one of these, you may rule out all eleven invaders!

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Floating leaf plants</td>
<td>Submersed plants with whorls of small lance-shaped leaves (leaves approx 1” or less)</td>
<td>Submersed plants with pairs or clusters of small narrow leaves</td>
<td>Submersed plants with long flat alternately-arranged leaves</td>
<td>Submersed plants with finely divided leaves</td>
</tr>
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### 1. FLOATING LEAF PLANTS

a) Is the plant attached to the sediment by a stem?
- If yes, rule out *European Frogbit*; go to (b)
- If no, are the leaves heart shaped, and growing in a clump, often connected to nearby plants with stem-like runners (stolons)?
  - **IF YES, SUSPECT EUROPEAN FROGBT**
  - If no, rule out *European Frogbit*; go to (b)

b) Does the floating part of the plant consist of a rosette of conspicuously toothed triangular shaped leaves?
- **IF YES, SUSPECT WATER CHESTNUT**
- If no, rule out *Water Chestnut*; go to (c)

c) Is the leaf heart shaped, and notched almost to the center?
- If no, rule out *Yellow Floating Heart*
- If yes, is the leaf margin wavy or rippled, with multiple leaves per stem?
  - If no, rule out *Yellow Floating Heart*
  - **IF YES, SUSPECT YELLOW FLOATING HEART**

### 2. SUBMERSED PLANTS WITH WHORLS OF SMALL LANCE-SHAPED LEAVES (APPROX 1” OR LESS)

a) Snip the stems several times at intervals along the stem. Count the number of leaves per whorl. Are there consistently three leaves per whorl?
- If yes, rule out *Brazilian Elodea and Hydrilla*
- If no, are there generally four leaves or more per whorl, and are the leaves finely but conspicuously toothed? (Can you see the serrations without magnification?)
  - **IF NO, SUSPECT BRAZILIAN ELODEA**
  - **IF YES, SUSPECT HYDRILLA**

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**Quick Key**

To Ruling Out

**Maine's Eleven Most Unwanted Invasive Aquatic Plants**

Because sometimes knowing what it isn't is more important than knowing what it is!

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If you find a "suspected invasive" plant please mark the location with a weighted buoy and carefully collect a sample for species confirmation. Place the specimen in a zip-lock bag 1/3 full of water and store in a cool place. Do not attempt to remove the entire plant!

Alert the Maine Center for Invasive Aquatic Plants immediately, at 207-783-7733 or vlmp@mainevlmp.org. You will be provided with important shipping instructions.

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3. SUBMERSED PLANTS WITH PAIRS OR CLUSTERS OF SMALL NARROW LEAVES

a) Are the leaves finely but conspicuously serrated or “toothed”?
   (Can you see the serrations easily with, and sometimes without, a hand lens?)
   - If no, rule out **European Naiad**
   - If yes, pull a leaf away from the stem. Are the leaf bases serrated and bulging out in a blocky way (as opposed to gently flaring out)?
     - IF YES, SUSPECT **EUROPEAN NAIAD**

4. SUBMERSED PLANTS WITH LONG FLAT ALTERNATELY-ARRANGED LEAVES

a) Is there more than one leaf type associated with this plant?
   - If yes, rule out **CURLY LEAF PONDWEED**
   - If no, are the leaves finely but conspicuously serrated and distinctly wavy (like a lasagna noodle) in appearance?
     - If no, rule out **Curly Leaf Pondweed**
     - IF YES, SUSPECT **CURLY LEAF PONDWEED**

5. SUBMERSED PLANTS WITH FINELY DIVIDED LEAVES

<table>
<thead>
<tr>
<th>Forked</th>
<th>Branched</th>
<th>Feathered</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Forked Leaf" /></td>
<td><img src="image2" alt="Branched Leaf" /></td>
<td><img src="image3" alt="Feathered Leaf" /></td>
</tr>
</tbody>
</table>

a) Are the leaves fork or branch divided (as opposed to feather divided?)
   - If yes, rule out all three invasive milfoils on Maine’s watch list: **Eurasian Watermilfoil**, **Variable Watermilfoil** and **Parrot Feather**; go to (b)

b) Are the branched leaves oppositely arranged and held to the stem by long slender leaf stems?
   - If no, rule out **Fanwort**
   - IF YES, SUSPECT **FANWORT**

But remember, there are five native milfoil species as well as some feather divided non-milfoils.

<table>
<thead>
<tr>
<th>Eurasian Watermilfoil</th>
<th>Variable Watermilfoil</th>
<th>Parrot Feather</th>
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<tbody>
<tr>
<td><img src="image4" alt="Eurasian Watermilfoil" /></td>
<td><img src="image5" alt="Variable Watermilfoil" /></td>
<td><img src="image6" alt="Parrot Feather" /></td>
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Illustrations courtesy of University of Florida-Center for Aquatic and Invasive Plants, G.E. Crow and C. Barre Hellquist.