Test Your Knowledge of Look-Alike Native and Potential Invasive Aquatic Plants in Conway Lake

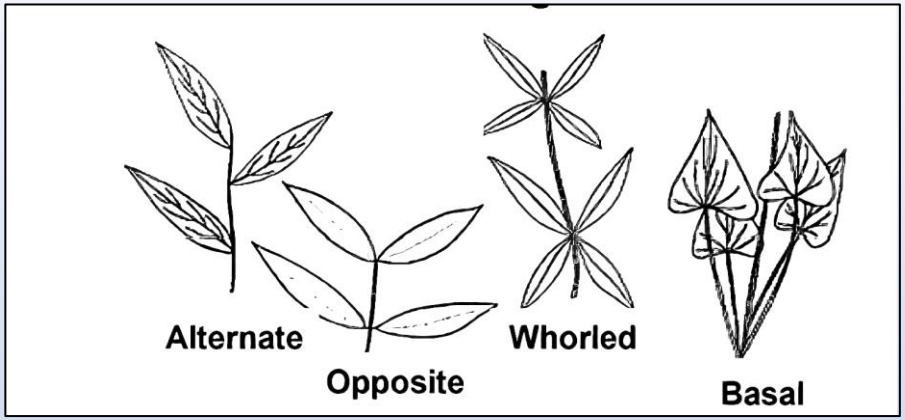
- ✓ The plants shown in this presentation are the **Invasives** we watch for in Conway Lake and the **Natives** that they can easily be confused with. See how well you can tell them apart and name them.

- ✓ Some of the key details you need to note when you encounter these plants are **Leaf Arrangement** and **Leaf Shape**. That often means you need to collect a sample so you can take a closer look in your canoe or kayak or on your paddle board.

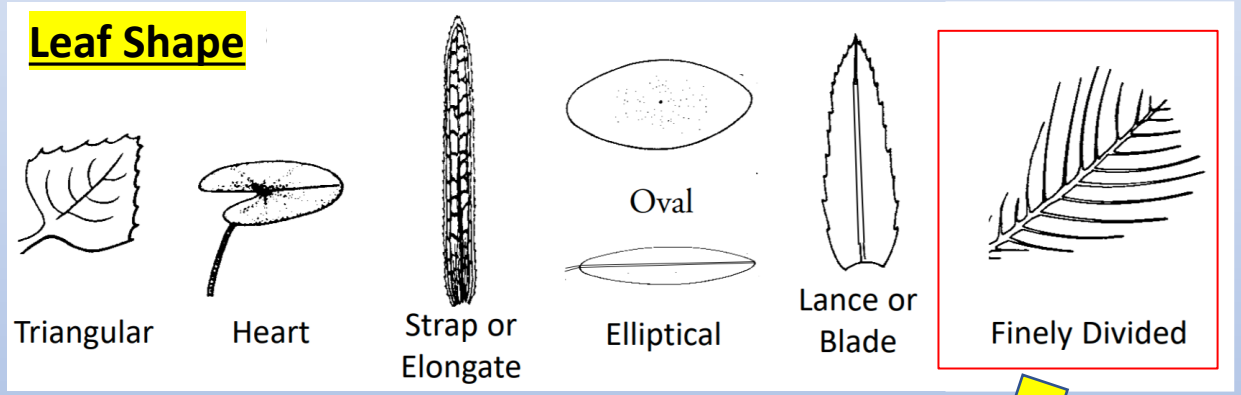
- ✓ For plants with **finely-divided leaves** it is important to know the different variations, e.g., fork-divided, branch-divided, and feather-divided.

Things to Note When Identifying Aquatic Plants

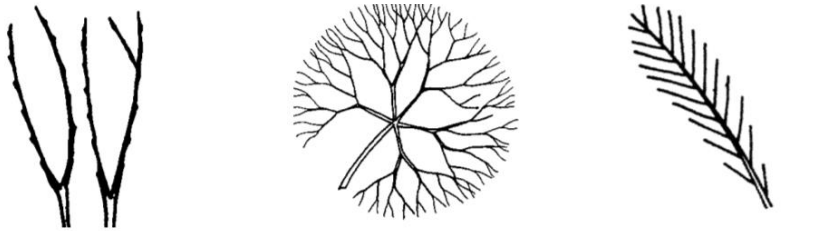
Leaf Arrangement – how the leaves are arranged on the stem



Leaf Shape



Finely-Divided Leaf Variations



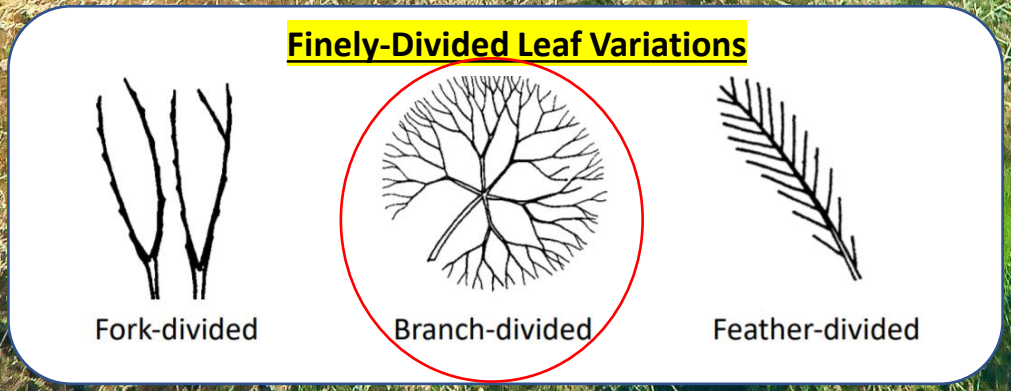
Let’s Start

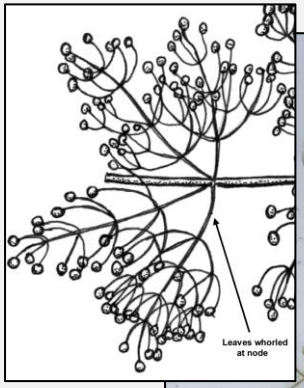
The first slide for each plant shows its typical appearance and lists its key identifying traits.

The second slide identifies each plant and highlights the key identifying traits.

The plants shown here grow below the lake surface and are divided into groups based on their leaf structure and shape.

Look-Alike Plants with Branch-Divided Leaves

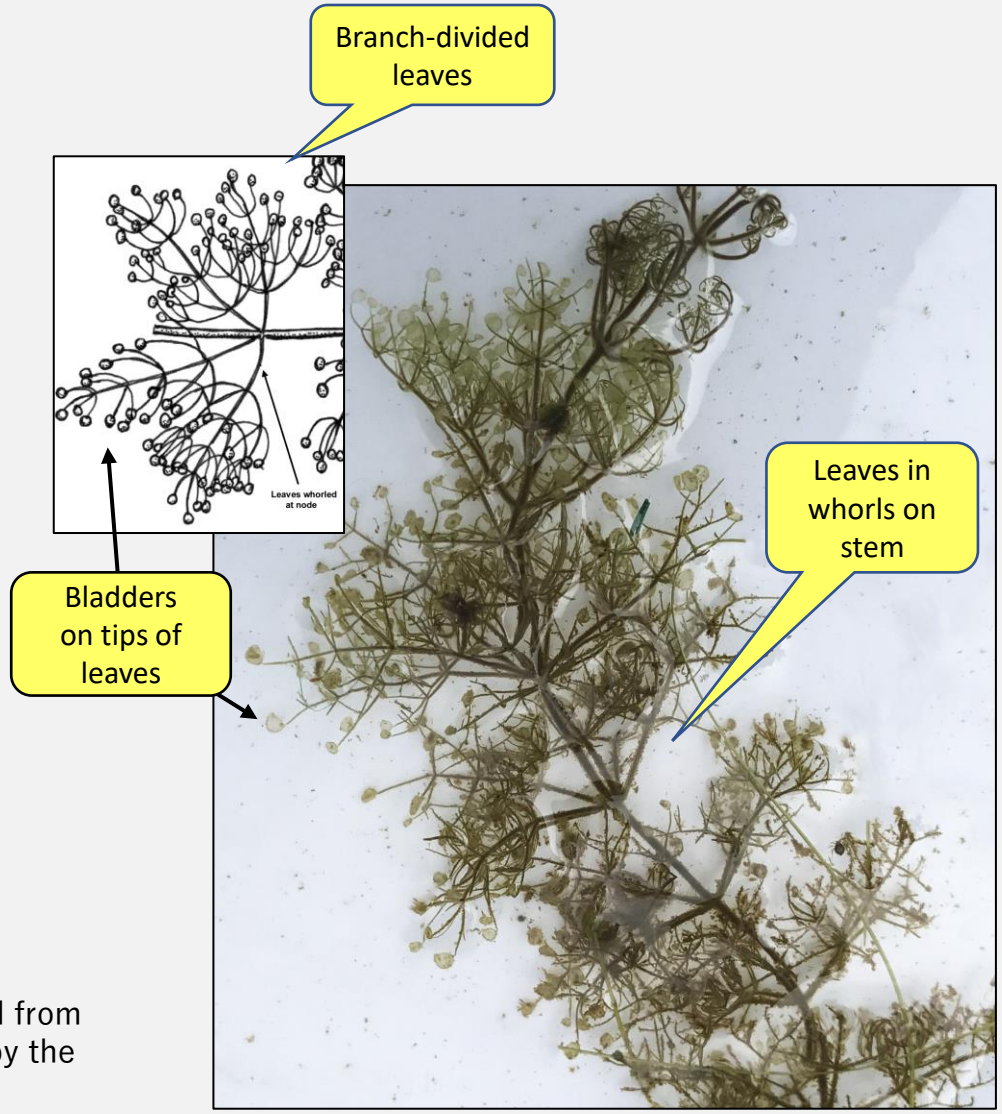




Can You Identify This Plant?

- Leaves are arranged in whorls and the leaves are openly spaced along the stem. The whorls at the growing tip curl upward.
- Bladders are present on the tips of leaves.
- Stems are unrooted, commonly tangled on other vegetation.
- Small purple flowers appear for several weeks in the middle of the summer.

Purple Bladderwort
(Aka Whorled Bladderwort)

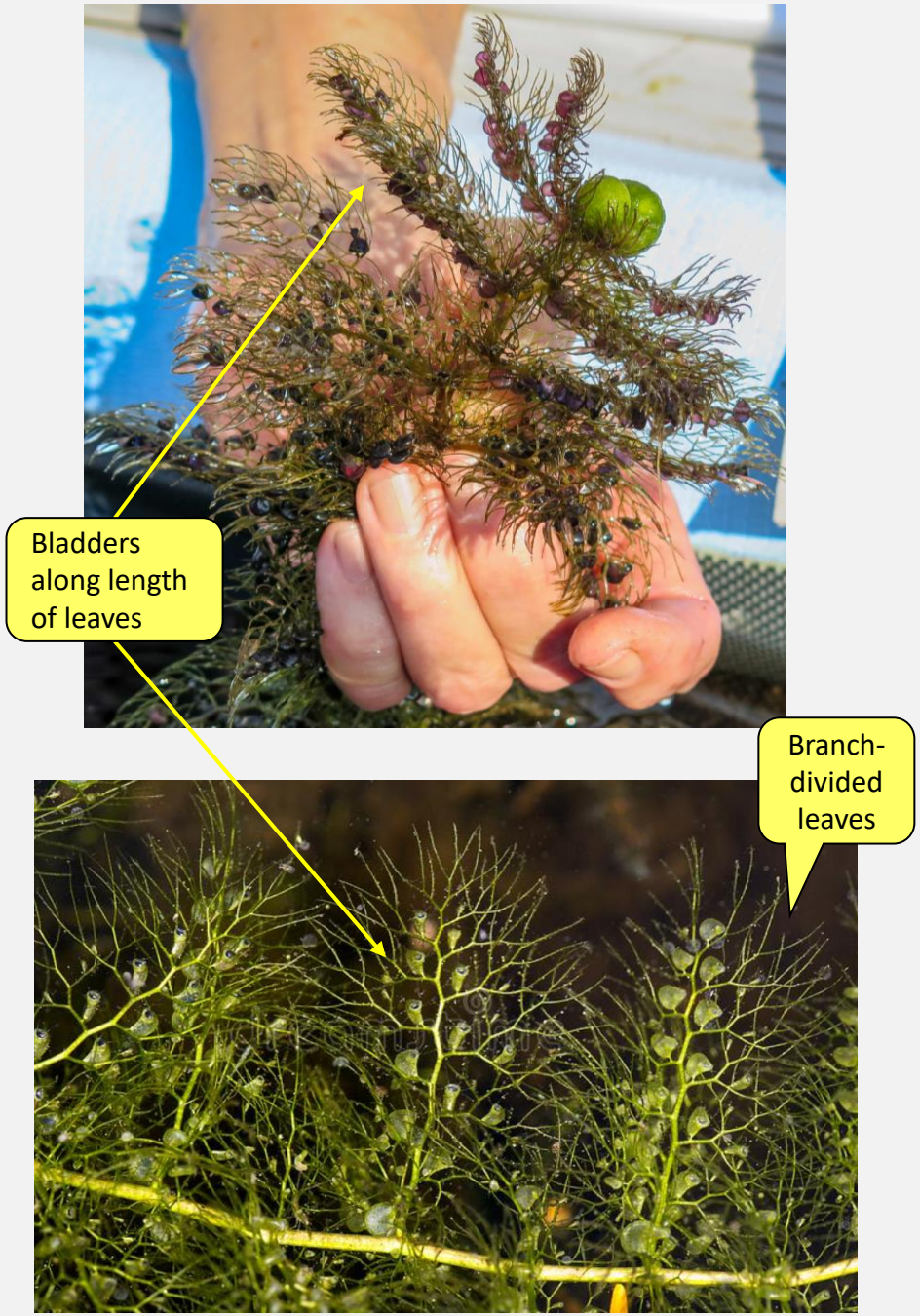


Bladderworts are easily identified and distinguished from other submerged plants with finely-divided leaves by the **presence of bladders**. Purple bladderworts are distinguished from other bladderworts by the presence of bladders on the tips of leaves.

This is a very common plant in Conway Lake

Can You Identify This Plant?

- Bladders are attached along the length of branching leaves. The bladders in young plants are transparent and green but become dark brown to purple to black as they age.
- There are branch-divided leaves along the stem with alternating leaflets that fork 3-7 times.
- Yellow flowers are produced on the stalks that protrude above the water surface.
- Stems are unrooted, commonly tangled on other vegetation.

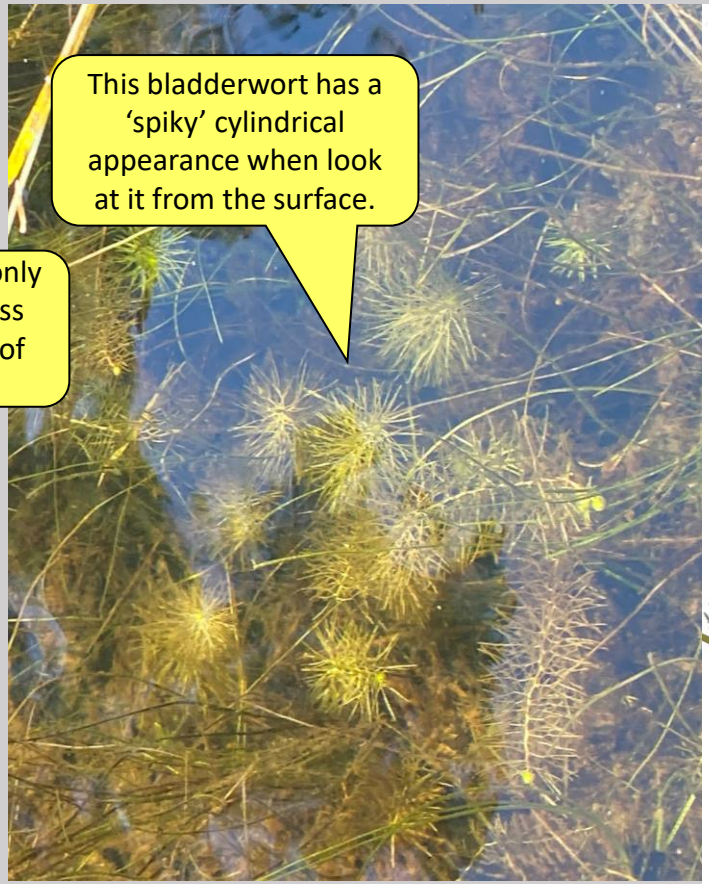


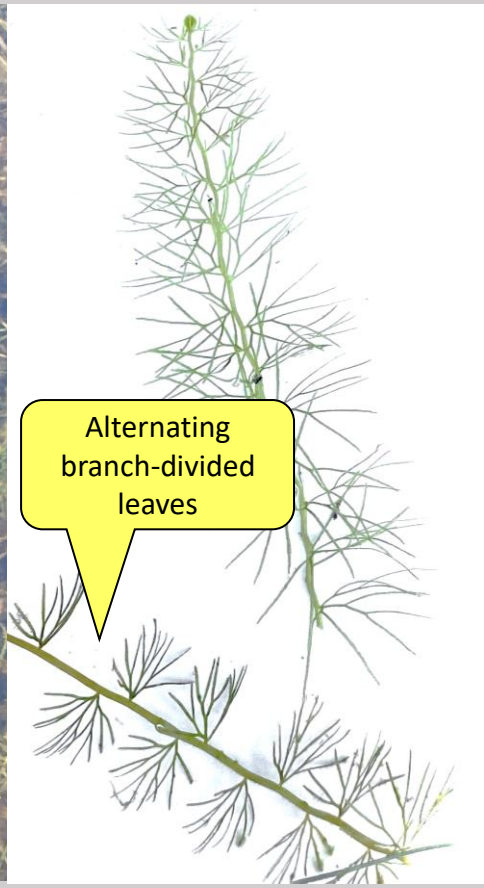
Common Bladderwort

- This is another common aquatic plant in Conway Lake.
- It is distinguished from other bladderworts by the presence of **robust bladders along the length of its leaves.**
- Also, while purple bladderworts have purple flowers in mid-summer, these have yellow flowers.

Can You Identify This Plant?

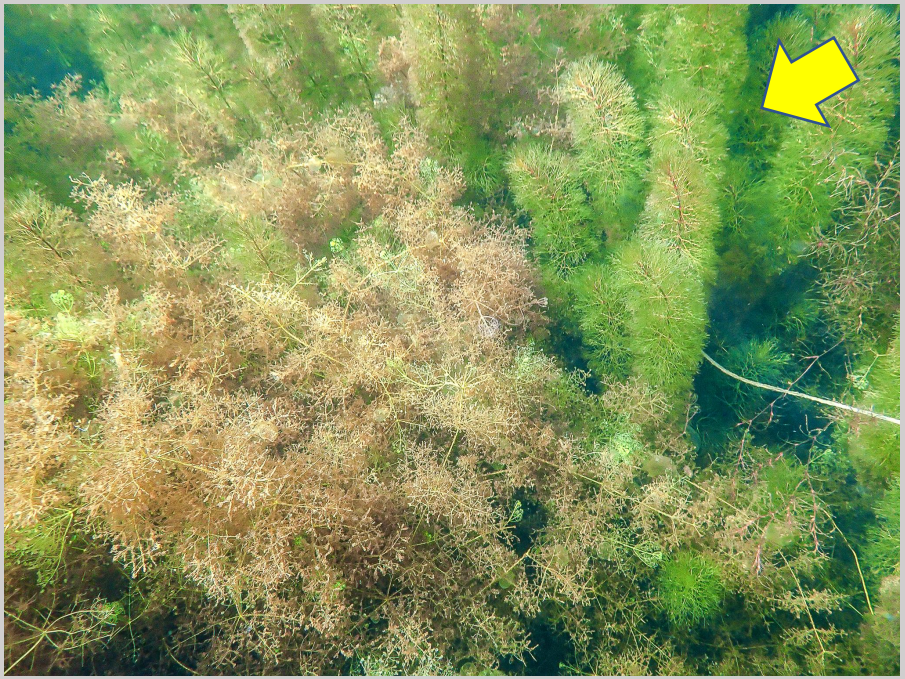
- This plant has a ‘spiky’ cylindrical shape when viewed from the surface.
- Leaves alternate on the stem and are branch-divided.
- Bladders are present on the leafless bottom part of its stem.
- Stems are short – less than 1 ½ ft long.

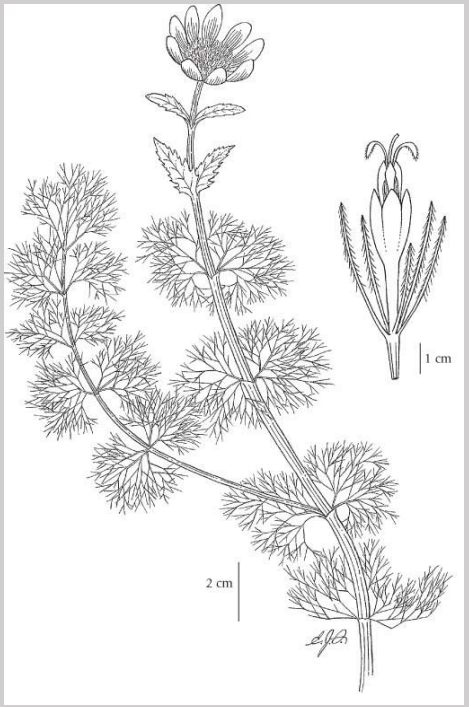




Flat-leaf Bladderwort

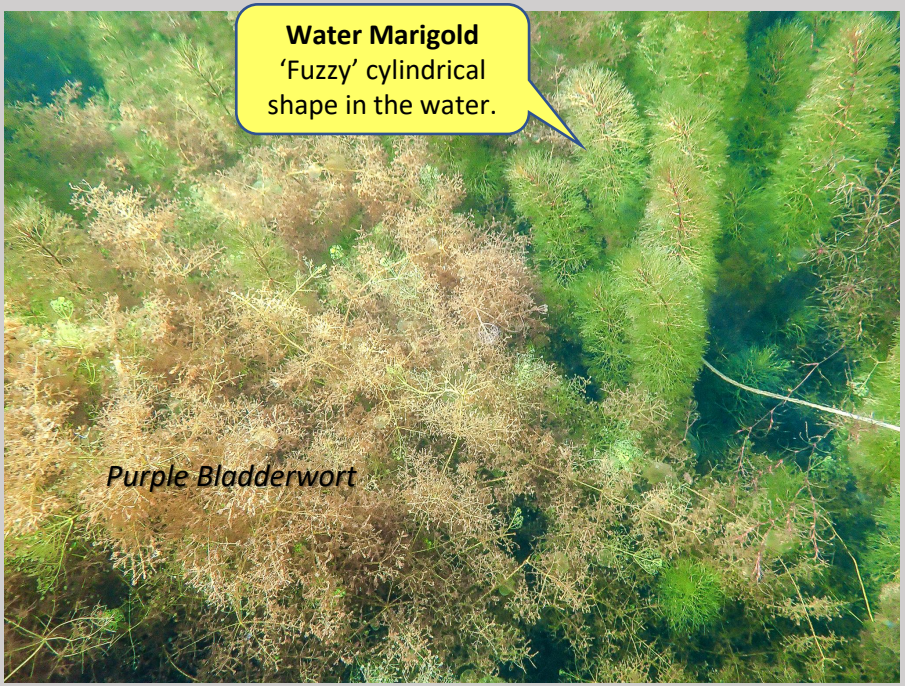
- This bladderwort is a little more difficult to identify in the lake as the bladders are only present on the leafless bottom part of the stem and may be more difficult to spot from the surface.
- From the lake surface it may be easily confused with other cyclindrical shaped plants – both Native and Invasive. It is easily differentiated from milfoils by its alternating branch-divided leaves.
- This bladderwort is common in parts of South Cove and is likely present elsewhere in the lake.

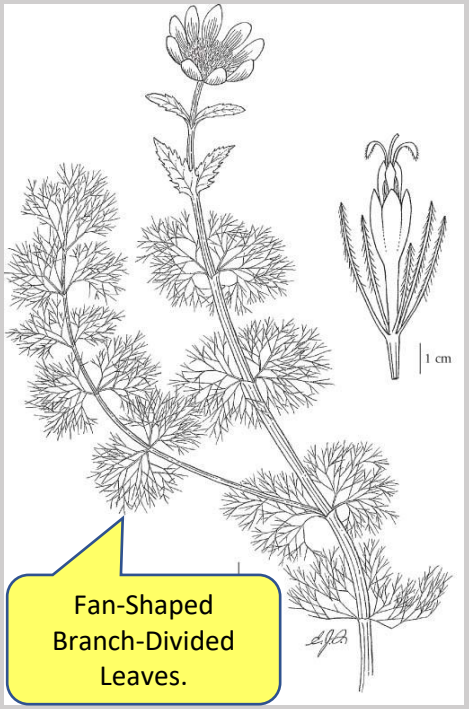




Can You Identify This Plant?

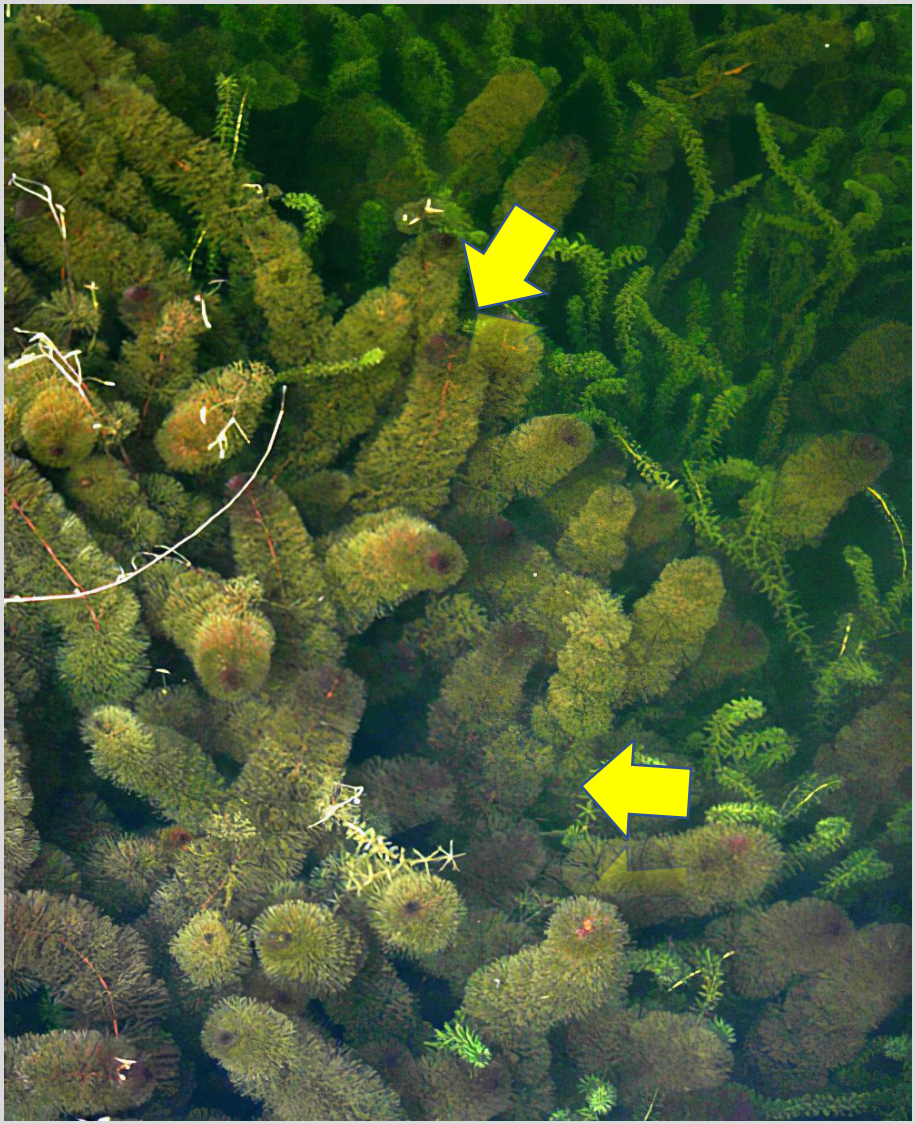
- This plant has a ‘fuzzy’ cylindrical shape in the water.
- Leaves occur in pairs on opposite sides of the stem and are attached directly to the stem (leaves occasionally occur in whorls of 3).
- Leaves are branch-divided and are round to fan-shaped in outline.
- Yellow daisy-like flowers appear in mid-summer.





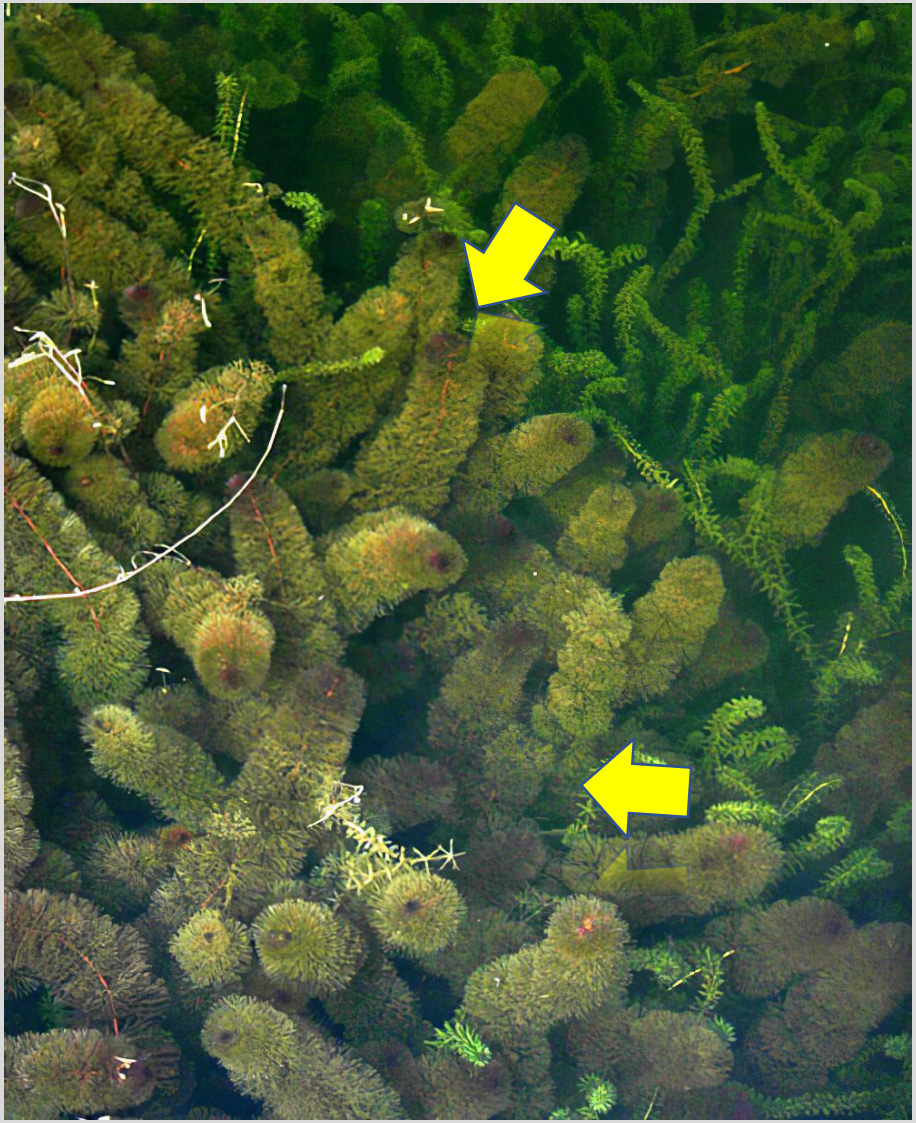
Water Marigold

- This plant is distinguished from bladderworts by the **lack of bladders**.
- It is distinguished from milfoils by the presence of fan-shaped **branch-divided leaves**, and from invasive fanwort by the method of leaf attachment.
- This plant is not abundant in the lake but is found in multiple areas.



Can You Identify This Plant?

- This plant has ‘fuzzy’ cylindrical shape in the water.
- Pairs of opposing leaves attach to the stem via a short **petiole.**
- Leaves are branch-divided and are round to fan-shaped in outline.
- Floating, lily-like leaves occur on the water's surface during flower production in August or September. Flowers are small, white and emergent. This plant stands 2-12 feet tall in the water column.
- Looks a lot like the last one – how can you tell them apart??



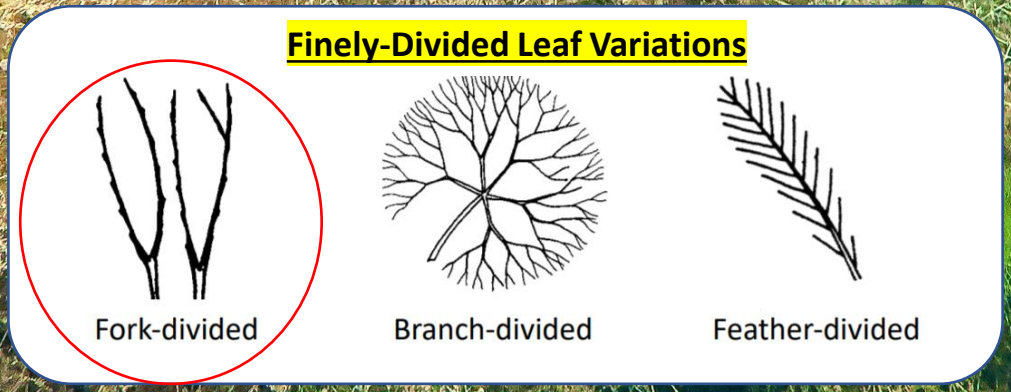
Fanwort - Invasive

This plant looks a lot like water marigold – both have opposing pairs of fan-shaped branch-divided leaves and have a cylindrical shape in the water.

However, the leaves on fanworts attached to the stem **via a short petiole** whereas on water marigolds they attach **directly to** the stem.

It is best to clip a piece of these plants to better examine leaf shape and arrangement.

Look-Alike Plants with Fork-Divided Leaves



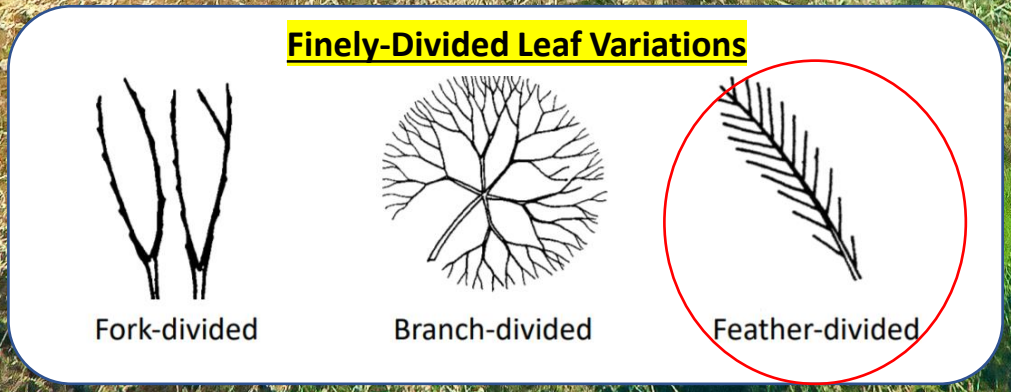
Can You Identify This Plant?

- This plant has <u>whorls of 5 to 12 fork-divided leaves around the stem.</u>
- Whorls are more closely spaced towards the end of branches giving the plant a raccoon tail appearance.
- The <u>leaves are relatively stiff to the touch</u> and typically hold their shape and position when pulled from the water.

Coontail

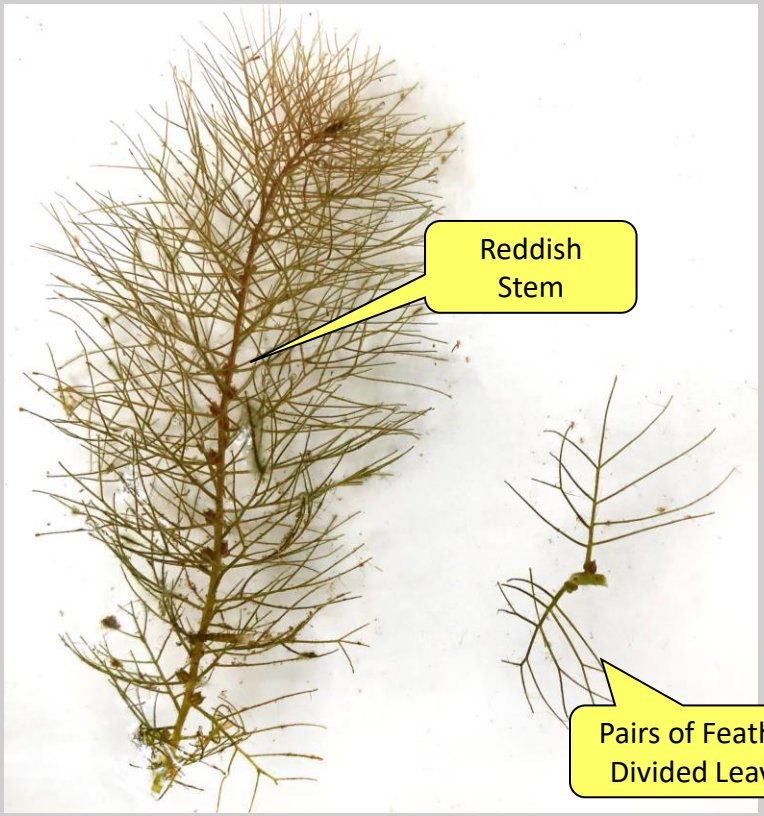
- This is the only plant in the group of plants with finely-divided leaves that have whorls of **fork-divided leaves.**
- The **leaves are also relatively stiff to the touch** and typically hold their shape and position when pulled from the water.
- This plant is not common in Conway Lake but is present in Wiley Brook Inlet

Look-Alike Plants with Feather-Divided Leaves



Can You Identify This Plant?

- This plant has a ‘fuzzy’ cylindrical appearance when viewed from the lake surface.
- Leaves occur as pairs of opposing feather-divided leaves packed closely on stem.
- Stems are reddish, brown or dark green.



Native Water Milfoil

- This plant is identified by its pairs of **opposing feather-divided leaves** and its reddish, brown or dark green stem.

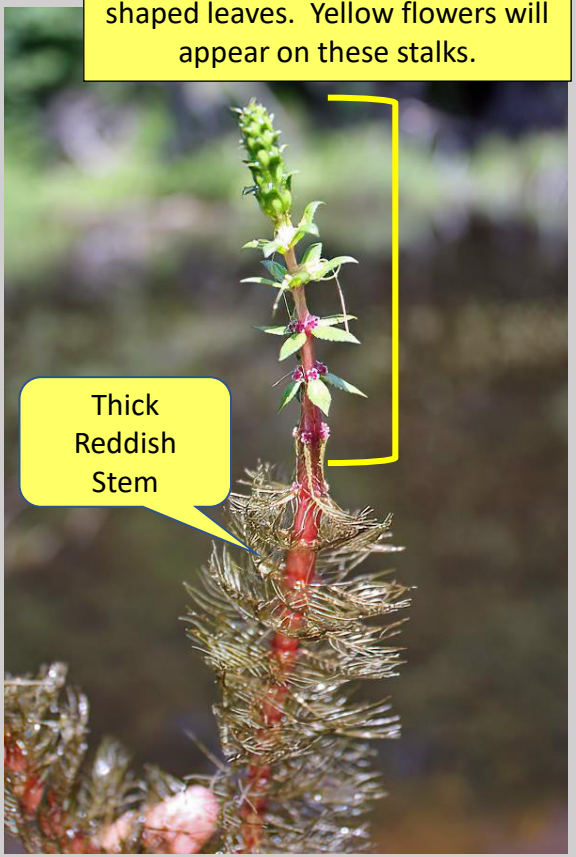
- This is not a common plant in Conway Lake but has been widely found in different parts of the lake.

Can You Identify This Plant?

- This plant has a ‘fuzzy’ cylindrical shape in the water and has a very stiff, thick, reddish stem.
- Leaves are feather-divided and occur in whorls of 4 to 6.
- In July, small yellow flowers emerge from the water on spikes that are up to 6 inches tall with distinctive blade-shaped leaves.
- Typically grows in water depths up to 6’ but it can grow in water depths up to 15’.
- Forms very dense growths and can dominate other plants.

Whorls of 4-6 Feather-Divided Leaves

Top emergent spike with blade-shaped leaves. Yellow flowers will appear on these stalks.



Variable Leaf Milfoil
Invasive

- This is the **most common Invasive plant in the lakes surrounding Conway Lake**!
- It is identified by its **thick, reddish stem** and its **feather-divided leaves that occur in whorls of 4 to 6.**
- The yellow flowers that emerge on spikes in the summer should also be a good visual indicator if it ever appears in the lake.

Can You Identify This Plant?

- This plant has a green to reddish stem.
- Feather-divided leaves occur in whorls of 4.
- The stems stretch toward the surface and then branch profusely to form thick floating canopies In July, flowers emerge from the water and are in a spike up to 6 inches tall with distinctive oval-shaped, toothed bracts.
- Prefers water depths 3’ to 14’.

Eurasian Milfoil
Invasive

This invasive milfoil is not as common in NH as variable leaf milfoil.

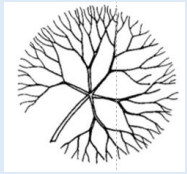
Both this and variable leaf milfoil have whorls of 4 or more feather-divided leaves so they are easy to distinguish from native milfoil, but it may be hard to distinguish between the two invasive species. If you think you see one of these in the lake let us know – both are **invasive! Also be aware that there are many hybrids of invasive milfoil.**

Quick Guide to Look-Alike Plants with Finely-Divided Leaves

Fork-Divided Leaves

Coontail

Branch-Divided Leaves



Water Marigold – leaves occur in whorls that are fan-shaped and attach directly to stem.

Fanwort – leaves occur in whorls that are fan-shaped and attach to stem via a short petiole – **Invasive.**

Bladders Present

Common Bladderwort – alternating leaves with bladders along edges of leaves.

Purple Bladderwort – whorls of leaves with bladders along tips of leaves.

Flat-Leaf Bladderwort – alternating leaves with bladders only on leafless basal stem.

Feather-Divided Leaves

Native Milfoil – pairs of opposing leaves.

Invasive Milfoils

Variable Milfoil – whorls of 4-6 leaves.

Eurasian Milfoil - whorls of 4 leaves.

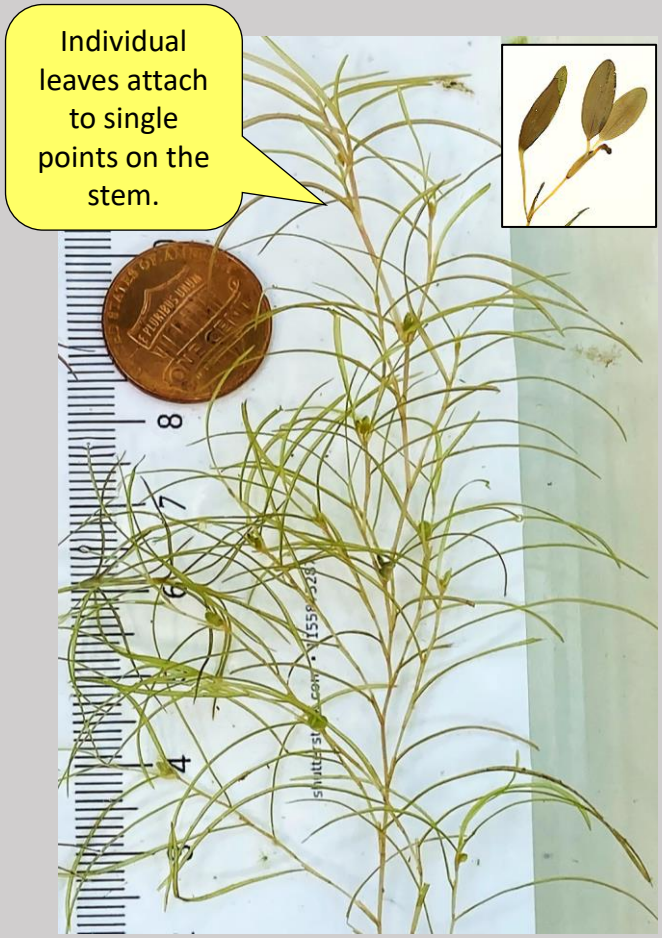

Look-Alike Plants with
Fine Thread-Like Leaves

Can You Identify These Plants?

- This plant has alternating thread-like leaves with <u>one leaf per node</u> that are more or less spirally arranged around the stem.
- <u>You may see a few small floating leaves</u> that are green, oval-elliptic, less than 1½ inches long, up to ½ inch wide.

- This plant has <u>whorls</u> of narrow thread-like leaves and leave margins are <u>smooth.</u>
- No floating leaves.

- This plant has <u>whorls</u> of narrow thread-like leaves and the leaves have <u>finely-serrated margins</u>.
- Leaves also have a <u>stiff plasticky</u> feeling.
- No floating leaves.



Spiral Pondweed

Water Naiad

Spiny Naiad - Invasive

- These plants can look very similar when looking into the lake, so reach in and snag a piece to check it in your boat.
- **Spiral pondweed** can be differentiated from **water naiad** and spiny naiad by its leaf arrangement and presence of small floating leaves. Individual leaves on spiral pondweed attach at single nodes – they are not arranged in whorls.
- Spiny naiad can be differentiated from **water naiad** by the finely serrated edges on its leaves and its stiff feel.

Look-Alike Plants with Whorls of Short, Blade-Like Leaves

Can You Identify These Plants?

- <u>Whorls of 4 or more blade-shaped leaves.</u>
- <u>Leaves have visibly toothed edge.</u>
- Leaf vein often has small visible spines.

- <u>Whorls of 4 or more blade-shaped leaves.</u>
- Leaves do not have visibly toothed edge.
- Leaf vein is smooth underneath.

- <u>Whorls of exactly 3 blade-shaped leaves (rarely 4).</u>
- Leaves do not have visibly toothed edge.
- Leaf vein is smooth underneath.

Whorls of 4 or more blade-shaped leaves with toothed edge.

Hydrilla - Invasive

Whorls of 4 or more blade-shaped leaves

Brazilian Elodea - Invasive

Whorls of 3 blade-shaped leaves

American Elodea aka Waterweed

- These plants can look very similar when looking into the lake, so reach in and snag a piece to check it in your boat.
- **American Elodea** can be differentiated from hydrilla and Brazilian elodea by the number of leaves in a whorl – it typically has whorls of 3 leaves while hydrilla and Brazilian elodea have whorls of 4 or more leaves.
- Hydrilla can further be differentiated from Brazilian elodea by the finely-toothed margins of the leaves.


Look-Alike Plants with
Alternating Leaves
2017 © Peter M. Dziuk

- Leaves alternate on the stem and are slightly wavy.
- Leaf edges are smooth, and leaves feel stiff.
- Grows to 1-1.5 feet in height.
- Leaf base does not wrap around the stem.

- Leaves alternate on the stem and are very wavy.
- Leaf edges are smooth, no teeth.
- Leaf tips are pointed.
- Leaf base wraps around the stem.

- Leaves alternate on the stem and are very wavy.
- Finely toothed leaf edges.
- Leaf tips are blunt.
- Leaf base does not wrap around the stem.

Can You Identify These Plants?

Very slightly wavy leaves. Leaf base does not wrap around the stem

Robbins Pondweed

Very wavy leaves. Leaf base wraps around the stem

Clasping-Leaf Pondweed

Very wavy leaves. Leaf base does not wrap around the stem

Curly-Leaf Pondweed - Invasive

- These plants are characterized by alternating leaves and can be distinguished from one another by the waviness of the leaves and whether the base of the leaf does or does not wrap around the stem.
- **Robbins pondweed** is present in Conway Lake and while clasping-leaf pondweed has not yet be spotted, it is present in nearby ponds and lakes. Be on the lookout for plants with very wavy leaves – it could be clasping-leaf pondweed or the invasive **curly-leaf pondweed**.

Quick Guide to Look-Alike Plants

Look-Alikes with Thread-Like Leaves

Spiral Pondweed
Alternating leaves – not in whorls. Has small oval floating leaves.

Water Naiad
Whorls of leaves with smooth margins.

Spiny Naiad
Whorls of leaves with serrated margins – leaves feel stiff. **Invasive**

Look-Alikes with Whorls of Short Blade-like Leaves

Waterweed – whorls of 3 leaves.

Hydrilla – whorls of 4 or more leaves – edges are serrated. **Invasive.**

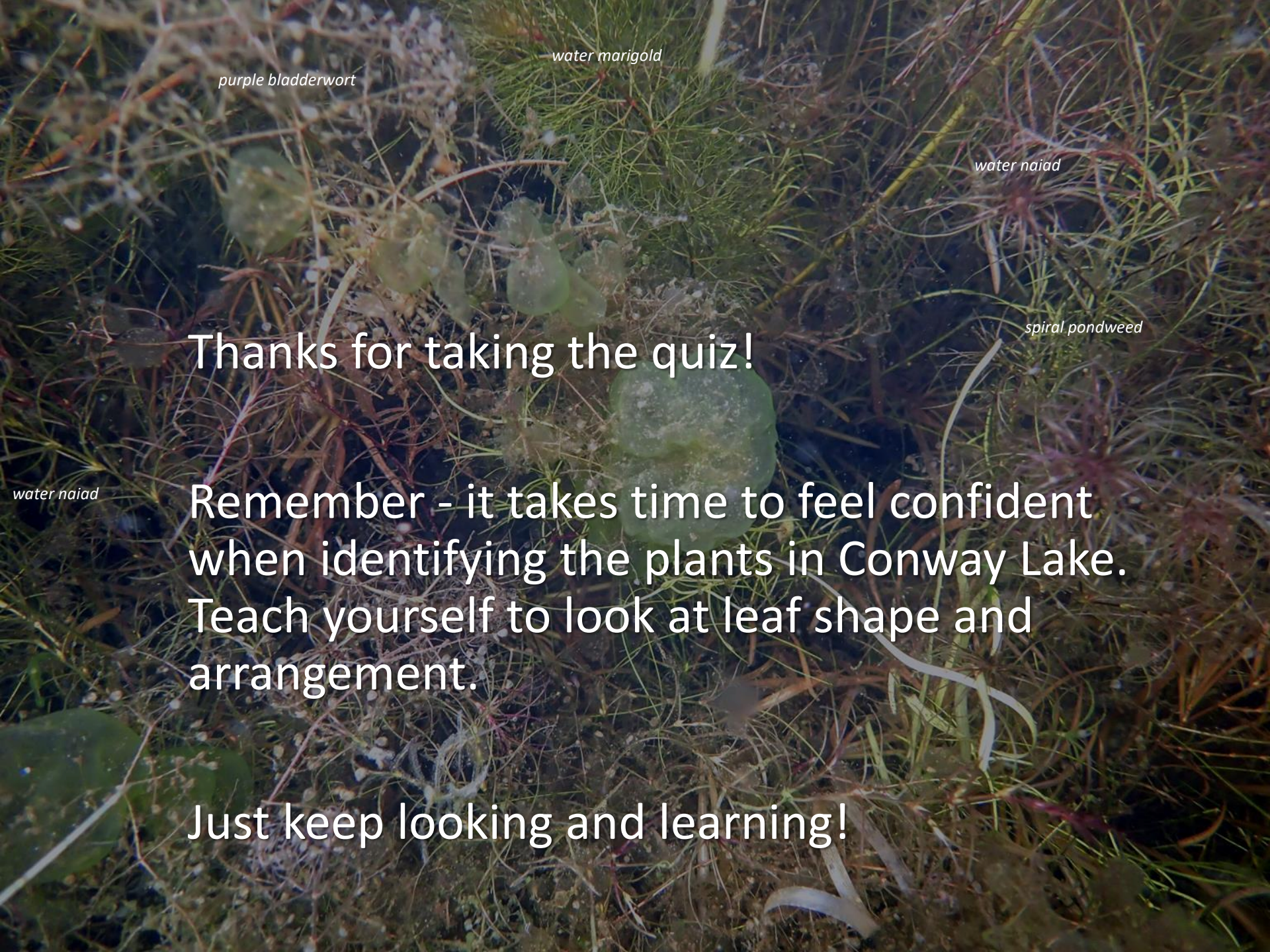
Brazilian Elodea – whorls of 4 or more leaves – edges are smooth. **Invasive**

Look-Alikes with Alternating Wavy Leaves

Robins Pondweed – very slightly wavy leaves.

Clasping-Leaf Pondweed – wavy leaves. Base of leaves clasp stem. Smooth edges on leaves

Curly-Leaf Pondweed – wavy leaves. Base of leaves do not clasp stem. Finely toothed edges. **Invasive**



Thanks for taking the quiz!

Remember - it takes time to feel confident when identifying the plants in Conway Lake. Teach yourself to look at leaf shape and arrangement.

Just keep looking and learning!