

Hydrilla is a fully aquatic plant (does not grow beyond the water's surface) that is quickly becoming an issue. Originally from Asia, this plant was most likely introduced to the US through the aquarium plant trade.

- Large population present throughout the Connecticut River.
- Can grow up to 7 meters (23 ft) long!
- Requires very little light and nutrients to grow (can grow in very deep waters).
- Grows in thick, dense mats that shade out native plant species and clog boat props.
- Primarily reproduces via fragmentation. When boat props cut through this plant, those free-floating fragments can grow to form a new plant - in an entirely new area!



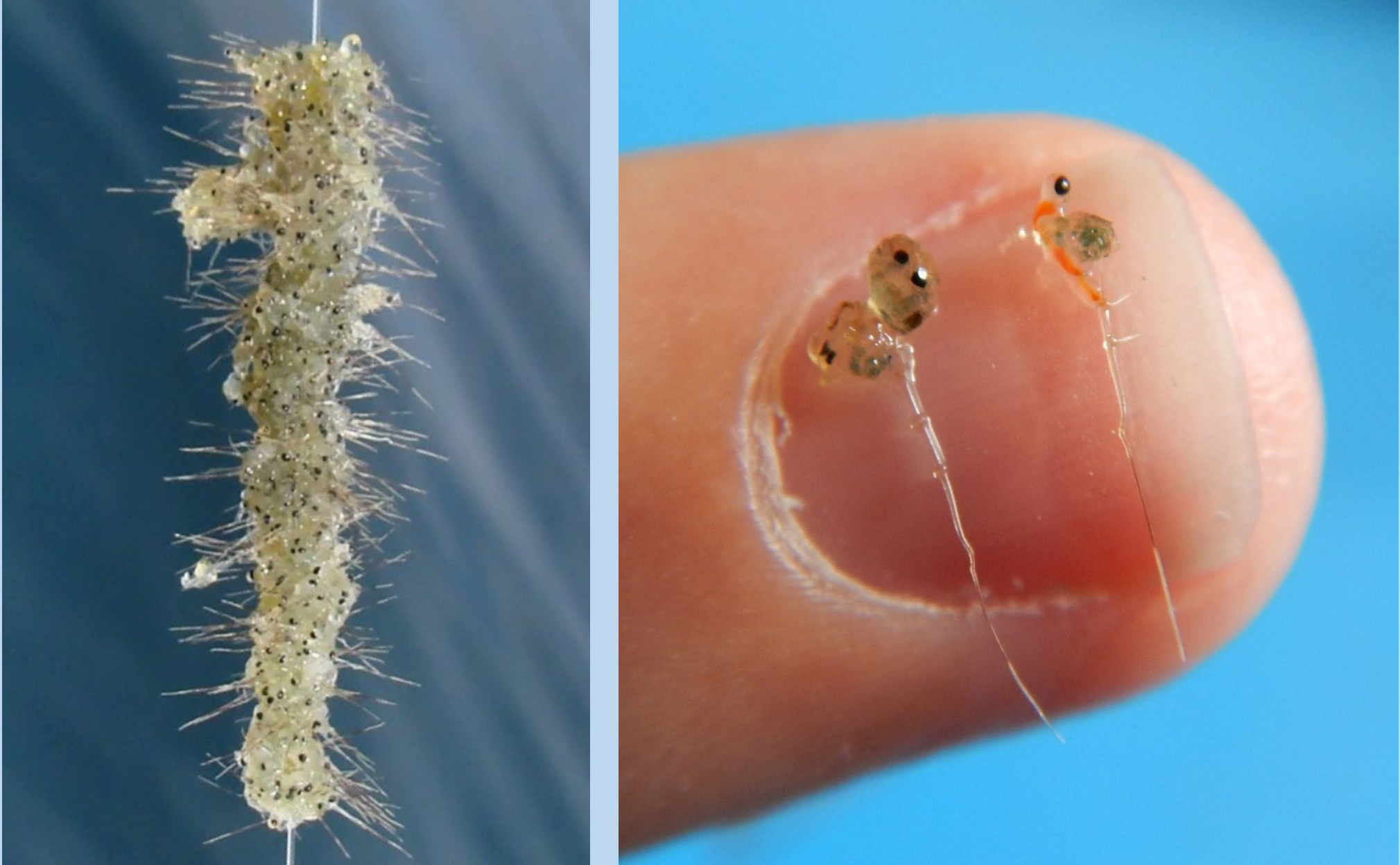
Left: Close-up of Hydrilla stems. Leaves in whorls of 3-5 and toothed. May be misidentified as native Elodea species.

Right: A mat of Hydrilla.

Photos courtesy of fingerlakesinvasives.org and Angela Dow

Spiny Water Flea and **Fishhook Water Flea** are crustaceans native to Eurasia and were introduced to the Great Lakes via ballast water in ships in the 1980s.

- Compete with juvenile sport fish for food.
- Because of their long spines, fish cannot eat them allowing their populations to grow easily due to low predation.
- Produces “resting eggs” that can remain dormant for long periods of time and are resistant to environmental extremes.
- Both species can accumulate as a jelly-like clump that fouls gear and interferes with fishing.
- No way to eradicate it once it is introduced to a body of water.



Left: Spiny water flea clump on fishing line.

Right: Size comparison of Fishhook water flea (right) and Spiny water flea (left).

Photos courtesy of bemidjipioneer.com and lhprism.org

Aquatic Invasive Species

What is an aquatic invasive species?

To be considered an aquatic invasive species, the following must be true:

- 1) Is either fully or partially aquatic.
- 2) Has moved outside of its native or historic range, usually accidentally transported by humans.
- 3) Is able to reproduce and outcompete native species in the area. Usually due to a lack of predators, diseases, and parasites.
- 4) Has a negative impact on native species, the environment, or may cause human harm.

If a species meets criteria #2 and part of #3, but not #4, then it is considered a non-native species, not an invasive one.

Listed here are **only four** of the many aquatic invasive species that concern DCR Quabbin aquatic biologists.

Why are aquatic invasive species a concern?

- Outcompetes and displaces native species.
- Degrades habitats and impairs water quality.
- Poor food source for other organisms.
- Damages infrastructure and clogs pipes
- Nuisance to recreational activities (boating, swimming, fishing, etc.)

What is DCR doing to minimize the risks from aquatic invasive species?

- Education and outreach.
- Self-certification at high priority water bodies.
- Ongoing monitoring.

At Quabbin Reservoir:

- Boat decontamination and boat seal program for private boaters: cold weather quarantine; washing with hot water, vinegar; motor flushing; thorough inspections.
- Inspections at fishing areas.

What can the public do to stop the spread of aquatic invasive species?

- Thoroughly clean and dry your boat, trailer, and equipment when moving between bodies of water. Best practice - minimum 5 days to dry.
- Spread the word about aquatic invasive species.
- Learn as much as you can about aquatic invasive species through websites such as:

www.mass.gov/lakesandponds or
www.stopaquatichitchhikers.org



- If you think you have found the location of an aquatic invasive species, report it immediately to DCR aquatic biologists:

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Areas outside of the Quabbin & Ware River Watersheds:
DCR Lakes & Ponds – dcr.lakesandponds@mass.gov



Photos courtesy of bcarboretum.org and Roberta Hill



Source: Roberta Hill, VLMP © 2007

Left: Eurasian Milfoil; feathery leaves usually arranged in whorls of 4 around the stem. On average, the whorls are 3/8” apart along the stem.

Right: Variable Leaf Milfoil; feathery leaved usually arranged in whorls of 4-6 with little space between whorls. Stem may be red.

Variable Leaf Milfoil and **Eurasian Milfoil** are two submerged invasive aquatic plants that can form dense mats at the water’s surface. Although there are native varieties of milfoil, these two species are non-native to the northeastern US. Eurasian milfoil originates from Asia, while Variable leaf milfoil is found in the southeastern US. Both were most likely introduced to the area through the aquarium plant trade.

- Variable leaf milfoil is present at Quabbin Reservoir. It is one of the most widespread aquatic invasives in the northeast.
- Eurasian milfoil is currently not present within the Quabbin or Ware River Watersheds, but has been documented in Massachusetts.
- Both species can spread from fragmentation, where a piece as small as 1/2 inch can establish itself in a new area and grow into a full plant.
- As it decays, the available oxygen in the water is significantly depleted, leading to fish kills.



Photos courtesy of tramper.nz and cbc.ca



Left: Didymo appears slimy, but has a rough, damp wool texture. Unlike other algae, Didymo does not come apart when rubbed between your fingers.

Right: Didymo coating rocks in a stream.

Didymo is a highly invasive alga that attaches to plants and rocks in rivers and streams.

- Also known as “rock snot.”
- Native to the northern hemisphere and historically only occurred in low-nutrient waters at high latitudes.
- In the past twenty years it has expanded its range and taken on the characteristics of an invasive species.
- Produces thick mats that cover a stream bed, making fishing, swimming, or paddling undesirable, or even impossible.



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