



# FACT SHEET

Freshwater Aquatic Invasive Species in Rhode Island

November 2017

## Variable Milfoil



Size of variable milfoil relative to a penny



Emergent spike with bracts and tiny flowers



The bulk of the plant grows under water



Bracts above the water surface make paddling difficult

### Species Description and General Information

Variable milfoil (*Myriophyllum heterophyllum*) is an under water, invasive plant with fine, densely packed, feather looking leaves whorled around a main stem. There are generally 4 to 6 leaves per whorl (5 is common) and each leaf has 5 to 14 pairs of leaflets. Stems range from green to bright red in color, and may be thin and flimsy or thicker like a twig. In summer, plants may exhibit a three- to six-inch emergent spike above the waterline. Specialized leaves (bracts) and flowers grow along this spike. Bracts are tiny, blade-shaped leaves, serrated and longer than the flower. Flowers are small, white and occur in the axils of the bracts. Variable milfoil grows in both still and flowing waters in a variety of substrates at depths from 1 to 5 meters. Plants reproduce by spreading rhizomes (lateral roots), turions, seeds and fragmentation.

### Why is Variable Milfoil Considered an Invasive Species?

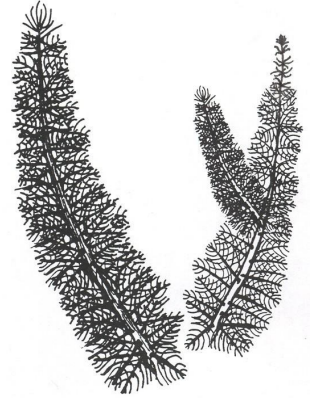
Originally, in its native environment, insects and fish fed on milfoil to control its growth. However, in Rhode Island, milfoil has no natural predators to keep its population in check. Milfoil grows rapidly, and under optimum temperature, light and nutrient conditions, it may grow up to an inch per day. Thick growth of milfoil may degrade water quality and displace beneficial native plants. Dense stands can impede recreation such as swimming, fishing and boating, it can devalue waterfront property, and slow water flow to provide breeding areas for mosquitoes. Milfoil spreads easily by fragmentation and is the most common, wide-spread, aquatic invasive in Rhode Island. Is very difficult to control once it becomes fully established, so it is imperative that it be contained in those lakes where it is a problem, and kept from spreading to other lakes and rivers.

### How Did Variable Milfoil Become Established in Rhode Island?

Variable milfoil is native to the Southeastern and Midwestern United States. It was first observed in New England in Bridgeport, CT in 1932 and now is established in every New England state. Initial introductions were most likely from aquarium releases or from "stowaway" fragments attached to a boat or trailer. Milfoil can live out of water for many hours if it remains wet, like when it's wound around a wet carpeted bunk on a boat trailer. Once introduced, milfoil can spread through fragmentation, whereby plant pieces break off from the parent plant through wind or boat action, grow roots and settle in a new location.

## What Methods Are Currently Being Used to Control Milfoil?

Hand pulling may be effective to completely remove small patches, however because milfoil reproduces by fragmentation, pulling activities may unintentionally promote the spread of the plant if care is not taken to be sure that all plant fragments are caught and removed. The manual removal of submerged aquatic vegetation is restricted to that area adjacent to, but no more than fifteen feet from existing or permitted docks, beaches or swimming areas under the RI Fresh Water Wetlands Regulations (Rule 6.02). Manual plant removal outside this area or control of larger patches via mechanical cutting or harvesting requires a DEM wetlands permit. However these physical removal methods, such as mechanical harvesting, are generally not recommended for milfoil species because the plant can reproduce by fragmentation. Experience from other states has indicated that infestations of fragmenting species can actually be made worse by mechanical harvesting activities that unintentionally promote the spread of the plant.



Chemical control may be effective for large populations. The DEM Division of Agriculture licenses the applicators that apply federally regulated herbicides to treat invasive plants. Each herbicide treatment requires a specific permit from the Division of Agriculture. The most appropriate means of selecting a specific treatment plan is to consult a lake manager or licensed herbicide applicator, who can provide treatment options and estimate associated costs. A more detailed survey of the entire water body will likely be needed to assess the severity of the infestation and develop the most effective and cost efficient long-term management plan.

## Please Help Prevent the Spread of Variable Milfoil in Rhode Island!

Learn to identify invasive plant species and be on the lookout for new plants in your lake.

It is much easier and cost effective to manage a small patch of invasive plants than an entire lake covered with plants, so early detection is key! Identification resources are available on the RIDEM website at <http://www.dem.ri.gov/programs/benviron/water/quality/surfwg/pdfs/identify.pdf>.

### Be a GREAT Boater! Check, Clean, Drain & Dry!

RIDEM encourages the use of clean boat hygiene practices. **CHECK** boats (trailers, gear and motors too) for plant fragments before launching in the water AND after boats have been hauled out of the water. **CLEAN** any plant fragments, and dispose of them away from the water, and **DRAIN** your motor and bilge. Allow boats to **DRY** overnight at least 24 hours before putting in at another lake. See posted reminders at state boat ramps.

### Where is Variable Milfoil found in Rhode Island?

As of November 2017, variable milfoil has been documented in 61 lakes or ponds, and 20 rivers and streams. It is the most widespread aquatic invasive plant in the state. The distribution map on the right shows locations where it has been found in red. A larger map can be found online @ <http://www.dem.ri.gov/programs/benviron/water/quality/surfwg/aismaps/myrhet.pdf>

