



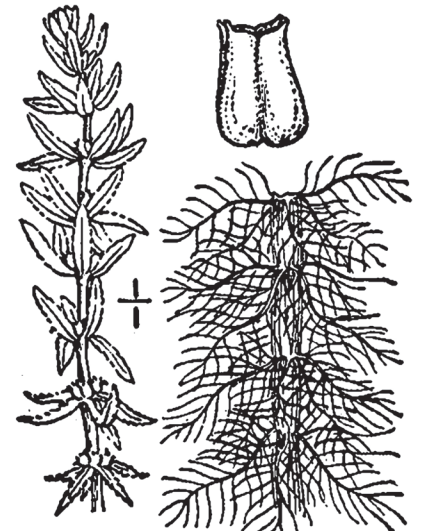
# Variable-Leaf Watermilfoil

*Myriophyllum heterophyllum* Michaux, 1803 (Aka broadleaf watermilfoil, two-leaf watermilfoil, variable milfoil)

**Provincial Designation:**  
Fisheries Act



Leslie J. Mehrhoff, University of Connecticut, Bugwood.org



USDA PLANTS Database, USDA NRCS PLANTS Database, Bugwood.org

## Overview:

Variable-leaf watermilfoil is an aquatic plant native to the southeast U.S. (not considered native to other parts of USA). It is invasive through New England and the northwest U.S., as well as Europe.<sup>1</sup> It reproduces both by seed and vegetatively via stem fragments. It grows rapidly through the spring and summer and dies back in the winter. Variable-leaf watermilfoil is easily confused with other *Myriophyllum* species, especially when not in flower.<sup>1</sup>

Variable-leaf watermilfoil's rapid growth produces dense mats of submerged plant material through the water column and along the surface. These mats prevent water flow, reduce sunlight for other plant species, reduce oxygen availability when decomposing in winter, and impede swimming/boating/fishing.<sup>1</sup> Infestations can also reduce property values.<sup>3</sup>

Variable-leaf watermilfoil is a popular aquarium and water gardening plant and is sold under a variety of common names (myrio, fox-tail, or parrotfeather) and scientific names

(*M. pinnatum*, *M. tuberculum*, *M. aquaticans*, and *M. simulans*).<sup>1</sup> Escapes from aquarium dumping and water gardens are further spread by water and animal pathways.

## Habitat:

Variable-leaf watermilfoil grows in freshwater lakes/ponds, rivers, watercourses and wetlands but can also survive on wet mudflats. In the northeastern U.S. it has been associated with lakes having relatively higher alkalinity and pH.<sup>1</sup>

## Identification:

**Stems:** Are about 3 mm in diameter and grow to 100 cm. Stems can be dark red to brownish-red in colour.<sup>3</sup>

**Leaves:** Submerged leaves are feather-like, green, 2-5 cm long and 2-4 cm wide. Leaves are arranged in whorls of 4-5 and dissected into 7-11 leaflets. Emergent leaves develop late summer reaching 5-15 cm above water and are highly variable; 0.4-3 cm long and 1.5-5 mm wide.<sup>3</sup>

**Flowers:** Are borne in a spike 5-35 cm long and the florets occur in whorls of 4. Florets have 4 stamens and petals are 1.5-3 mm long. Fruits are round, 1-1.5 mm long and have 4 chambers.<sup>3</sup>

## Prevention:

Do not purchase or grow variable-leaf watermilfoil in your aquarium or pond. Never release plant species into natural water bodies. Remove any existing variable-leaf watermilfoil plants and dispose of in landfill-bound garbage. When visiting infested water bodies clean all equipment (watercraft, trailers, etc), people and pets thoroughly to remove any fragments of plant material. Small fragments of variable-leaf watermilfoil can create new infestations in clean water bodies. Voluntary lake monitoring can facilitate early detection and rapid control response making eradication a possibility.

## Control:

**Grazing:** Not applicable. Invasive plants should never be considered as forage.

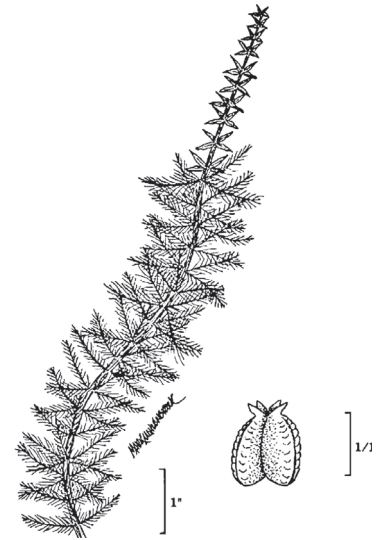
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# Variable-Leaf Watermilfoil (Continued)

**Mechanical:** Mechanical and hand harvesting can be effective but care must be taken to prevent fragments dispersing. 'Drawdown' by drawing water into a reservoir area will expose the watermilfoil beds to drying, heat, cold, etc.<sup>1</sup> All plant material should be bagged and disposed of in landfill-bound garbage. Tarping can be used to block sunlight to dense mats.<sup>1</sup>

**Chemical:** Diquat is approved for use on Myriophyllum species. The use of herbicides in water bodies requires special permits and applicator certification. Always check product labels to ensure the herbicide is registered for use on the target plant in Canada by the Pest Management Regulatory Agency. Consult your local Agricultural Fieldman or Certified Pesticide Dispenser for more information.

**Biological:** The use of parasitic nematodes was explored in the U.S.<sup>2</sup>



USDA PLANTS Database, USDA NRCS PLANTS Database, Bugwood.org

## REFERENCES

- <sup>1</sup> Datasheet report for Myriophyllum heterophyllum. Invasive Species Compendium. [www.cabi.org/isc](http://www.cabi.org/isc). Accessed: December 9, 2015.
- <sup>2</sup> An Exploration of the Use of Parasitic Nematodes for the Biological Control of Variable Leafed Milfoil (Myriophyllum heterophyllum). Final Report. 2008. University of New Hampshire Center for Freshwater Biology and University of New Hampshire Cooperative Education. [http://des.nh.gov/organization/divisions/water/wmb/exoticspecies/documents/nematode\\_report.pdf](http://des.nh.gov/organization/divisions/water/wmb/exoticspecies/documents/nematode_report.pdf). Accessed: December 30, 2015.
- <sup>3</sup> Myriophyllum heterophyllum (aquatic plant). Global Invasive Species Database. [www.issg.org](http://www.issg.org). Accessed; December 30, 2015.