

Variable Milfoil: An Invasive Aquatic Plant

Myriophyllum heterophyllum

Common Name: Variable watermilfoil, Two-leaf milfoil

Biology

Variable milfoil is a submersed, rooted plant, which grows in depths up to 15 feet. Its robust, red stem serves as a central axis to green, feather-like leaves. Arranged in densely packed whorls of three to six leaves around the stem, each mature leaf has six to twelve segments. In the mid to late summer small, red flowers develop on an emergent bract (4-6in.). Also, found on the emergent spike are small, bright green, oval-shaped leaves.

Reproduction

Variable milfoil can reproduce asexually by vegetative reproduction and asexually by seed formation. Of the two, vegetative reproduction is the main method of dispersal. The vegetative reproduction mechanisms this species utilizes to re-sprout are fragmentation, rhizome division, and asexual budding. Although less common, seed formation produces viable seeds, which remain dormant in the sediment for long periods of time.

Habitat

Historically, this plant species is native to the southern part of the US, from Florida to central and north Texas. Human introductions have allowed this species to expand its range to include northern parts of the US. In New England, this species has invaded all states. Variable milfoil is a generalist species; therefore, it has a wide range of environmental tolerances. It is commonly found in lakes, ponds, swamps, streams, and mudflats. It tolerates a wide range of water chemistry conditions, but prefers acidic waters, such as those found in eastern Massachusetts. Nearly unaffected by temperature gradients, this aquatic species is “cold-hardy” and can overwinter in frozen lakes and ponds.

Impacts and Threats Posed by Variable Milfoil

Variable milfoil forms extremely dense mats on the subsurface, which shades out native vegetation. Species that depend on the native vegetation must relocate or perish; thereby, leading to a reduction in the local biodiversity. In the fall, the dense mats fall back. This decaying event causes a reduction in the oxygen levels. Substantial depletion of oxygen can result in anoxic conditions, which kill fish and other organisms in the waterbody. Furthermore, invasions impose limitations on water use for recreational purposes, such as boating and fishing, which leads to negative impacts on real estate values and tourism.

Management Methods

General management methods include:

- Mechanical removal
- Drawdowns
- Herbicides
- Mechanical harvesting
- Benthic barrier

Literature Cited

1. <http://des.nh.gov/organization/commissioner/pip/factsheets/bb/documents/bb-23.pdf>
2. <http://www.mass.gov/dcr/waterSupply/lakepond/factsheet/Eurasian%20Milfoil.pdf>
3. <http://nbii-nin.ciesin.columbia.edu/ipane/icat/browse.do?specieId=78#repro>