

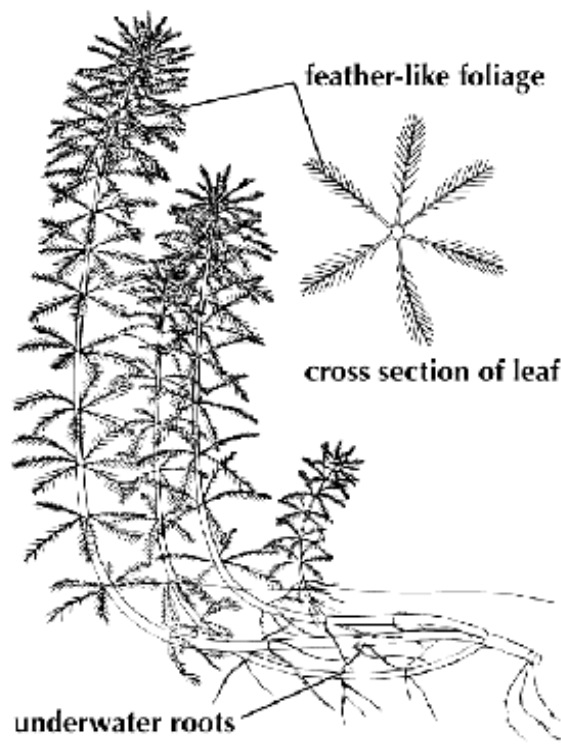
Potential Invader
Parrot Feather: An Exotic Aquatic Plant
Myriophyllum aquaticum



Description

- *M. aquaticum* is a member of the Watermilfoil (Haloragaceae) family, and although native to South America, is now found on every continent except Antarctica.
- Emergent leaves are bright blue-green, 1-2" long, rigid, deeply serrated and profuse. Leaves are arranged in whorls of 4-6 around the stem and each leaf has 10-18 segments. Emergent leaves may protrude a foot above the water's surface, looking like miniature fir trees.
- Reddish, submerged, feathered leaves have 20-30 segments per leaf. They frequently appear to be decaying and are often confused with Eurasian Milfoil leaves.
- The woody stems can grow over five feet long, often extending outward onto the bank or shore.
- Each spring pink-white flowers develop.

Parrot Feather



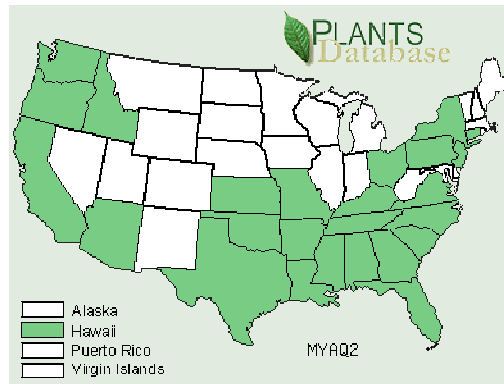
Habitat

M. aquaticum is very hardy species that is established in a wide range of aquatic habitats.

- *M. aquaticum* prefers nutrient rich, quiet or slow moving shallow waters but can tolerate the salinity of coastal waters and emergent sections withstand routine water level fluctuation.
- Although this species is not yet in MA, it has been documented in neighboring states (CT, NY).

Distribution Map

Myriophyllum aquaticum



Reproduction

The main method of reproduction for *M. aquaticum* is vegetative.

- *M. aquaticum* spreads primarily by fragmentation. Fragments may drift downstream or attach to boats and wildlife and create new infestations elsewhere.
- *M. aquaticum* is dioecious (male and female parts are on separate plants) and since all the *M. aquaticum* plants documented in North America are female, there is no known reproduction from seeds.
- *M. aquaticum* does not produce any turions, tubers or winter buds but can re-grow from rhizomes (underground stems). *M. aquaticum* does not store carbon or phosphorus in the rhizomes.

Impacts and Threats Posed by Parrot Feather

M. aquaticum is a competitive plant that is capable of rapid growth and spread. *M. aquaticum* can displace native species, reduce biodiversity, limit recreation, diminish aesthetic value, provide breeding grounds for mosquitoes and decrease water quality and flow.

- Once established, *M. aquaticum* can form dense mats on the water's surface that may restrict light to the complete exclusion of other native plants.
- The mats formed can hamper fishing, boating, swimming and other activities and the loss of recreational and aesthetic value can cause a decline in surrounding lake property value.
- *M. aquaticum* may form dense single species stands that often do not provide ideal habitat or food for native wildlife. These native wildlife populations may be forced to relocate or perish, ultimately resulting in a loss of biodiversity and a disruption in the balance of the ecosystem.
- Algae, a major component of the base of the food chain, can be shaded out by dense mats of Parrot Feather. The resulting decline in algae can disrupt the entire food web in a lake.
- When large stands of *M. aquaticum* die, their decomposition can create anoxic (low oxygen) conditions in the water which may result in fish kills.
- Dense stands of *M. aquaticum* trap sediments, slow water flow in irrigation channels and waterways. Dense surface mats can provide a breeding ground for mosquitoes.
- Sediment levels may increase with dense Parrot Feather abundance.

Management Methods

Management methods currently include mechanical methods, drawdowns and herbicides.

- Although harvesting can greatly reduce the *M. aquaticum* biomass in a water body, harvesting causes fragments which may expedite the spread.
- Some limited success has been reported with drawdowns; however, Parrot Feather can re-grow from surviving rhizomes and drawdowns may impact other aquatic organisms and downstream conditions.
- *M. aquaticum* is more difficult to control with herbicides than other aquatic species. The leaves are protected by a thick waxy coating, and in order for herbicides to penetrate the leaves, surfactants must be added. Control may be achieved with Diquat, Endothall, and 2,4-D. Herbicides require permits, must be applied by a licensed applicator. Herbicides may impact non-target native plants or animals.

Other Information

- Parrot Feather is on the Massachusetts Prohibited Plant List (as of January 1, 2006)
- Informational websites:
<http://aquat1.ifas.ufl.edu/> (Center for Aquatic and Invasive Plants)
<http://nas.er.usgs.gov/queries/plants/PlantState.html> (USGS- search for exotic species by state)
www.ProtectYourWaters.net (Aquatic Nuisance Species national web site)
- *M. aquaticum* is a popular ornamental plant, often sold in stores as *Myriophyllum brasiliensis*, an “oxygenating pond plant”.
- Due to the woody stems and high tannin concentration, most fish find Parrot Feather unpalatable.

Parrot Feather compared to Eurasian Milfoil

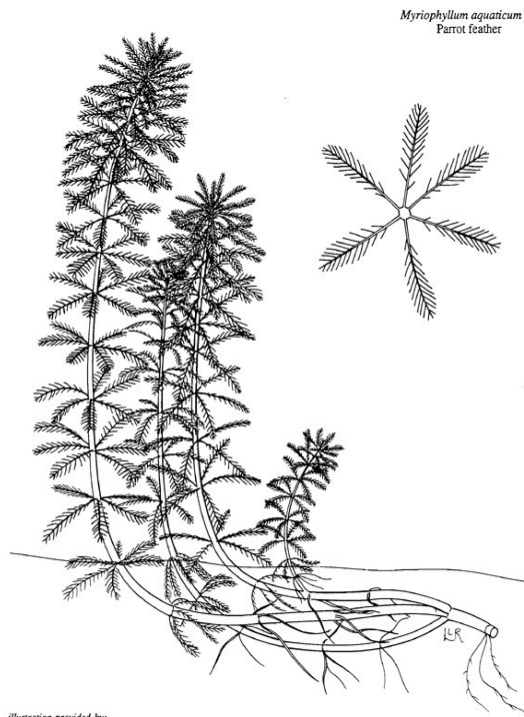


illustration provided by:
IFAS, Center for Aquatic Plants
University of Florida, Gainesville, 1990



Blue-green feathery leaves (top) and an infestation of Parrot Feather (bottom).

Parrot Feather has rigid stems that can protrude a foot above the water's surface. Leaves are arranged in whorls of 4 to 6. Rigid emergent leaves are bright blue-green.

Eurasian Milfoil is mainly submerged with only a reproductive bract emerging. All leaves are reddish in color.

References:

1) Literature References:

- Generic Environmental Impact Report <http://www.mass.gov/dcr/waterSupply/lakepond/geir.htm>
- Vermont DEC <http://www.anr.state.vt.us/dec/waterq/ans/objects%5Cpffs.pdf>
- Virginia DEC <http://www.dcr.state.va.us/dnh/fsmyaq.pdf>
- Western Aquatic Plant Management Society <http://www.wapms.org/plants/parrotfeather.html>

2) Photographs were obtained from:

Center for Aquatic Invasive and Non-native Plants <http://aquat1.ifas.ufl.edu/myaqpic.html>

3) The distribution map was taken from:

USDA Plant Atlas http://plants.usda.gov/cgi_bin/topics.cgi

For more information please contact:

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 Or visit the Lakes and Ponds web site at: <http://www.mass.gov/lakesandponds>