



**MA Department of Conservation and Recreation
Office of Regional Planning
Best Management Practices**

Managing Aquatic Invasive Plants

Contacts:

DCR Lakes and Ponds Program

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Goal:

Control aquatic invasive plants to preserve native plant communities, protect fish populations and maintain recreational use of a water body.



Eurasian water-milfoil (*Myriophyllum spicatum*)

Guidelines:

Impacts of Aquatic Invasive Plants

- Many non-native aquatic plant species have been brought here from other parts of the country and the world. Some of these species are considered “invasive” because they have few or no natural predators and can fill a shallow water body within a few years.
- Once established, invasive aquatic plants are almost impossible to eradicate and can be carried to other water bodies on boats and waterfowl.
- Aquatic invasive plants may out compete native plants and interfere with human use of the water for boating, fishing and swimming.
- Water becomes stagnant under dense plant canopies and suppresses oxygen circulation.
- Invasive aquatic plants often create single species stands, thus reducing biodiversity and affecting habitat values.

Prevention

- It is illegal to transport, sell or introduce invasive aquatic plants in Massachusetts.
- The Massachusetts Weed Watchers Program identifies and reports new aquatic infestations.
- Educate lake users and residents about the threat of invasive species and potential solutions.
- Post signs at boat launch sites warning boaters to remove all plants from the boat, trailer, anchors, fishing gear and dispose of them on dry land, well away from the water. Signs are available from the Lakes and Ponds Program contacts listed above.
- Utilize boat ramp monitoring programs to inspect boats and trailers for invasive species.
- Never release any plant or animal into a body of water unless it came out of that body of water.

Aquatic Plant Management Program

- Accurately identify the size and location of the aquatic invasive plant infestation.

- Work with the DCR Lakes and Ponds Program to select the least harmful control method based on size of the infestation, biology of the invasive species, presence of state-listed rare species and the potential for long-term control.
- Obtain local Conservation Commission approval for all aquatic control plans (see WPA BMP).
- If the water body is located in Priority Habitat for state-listed species, obtain NHESP approval (see MESA BMP). Compliance monitoring and reporting may be a permit condition.
- Implement the approved control plan. Conduct annual surveys to identify new infestations.

Physical Control Methods

- Hand pulling is one of simplest and most widely used methods to control small infestations. This can be a highly selective technique if the target species can be easily identified. Hand pulling is often used to target new or small infestations or to follow-up after a herbicide treatment. Roots should be carefully dislodged and the entire plant removed to prevent vegetative re-growth.
- Drawdown – In coordination with the Lakes and Pond and Dam Maintenance Programs, lower the water level each winter to dry and freeze target plants. Used to control submersed species that reproduce primarily through vegetative means (e.g., Eurasian water-milfoil, variable water-milfoil and fanwort). Care must be taken to avoid stranding organisms with limited mobility (e.g., amphibians, mollusks), and to leave enough water to support fish populations.
- Benthic Barriers – Working with the Lakes and Ponds Program, place materials on the bottom of a water body to smother the invasives. Used to control dense infestations of invasive species by eliminating their light source. Barriers are usually made from PVC, fiberglass and nylon. Barriers must be securely anchored to the bottom.

Other Control Methods

- Mechanical harvesters used to cut plants off at depths of 2-10 feet with a hydraulically operated cutter head that conveys the cut plants into a storage bay on the harvester. Application once or twice a year is usually needed.
- Liquid or pelletized herbicides applied to the target area to directly kill vascular plants and/or algae. Typically requires application every 1-5 years. May be able to selectively eliminate a plant species.
- Herbivorous insects (e.g., milfoil weevil and loosestrife beetles) introduced to feed on a specific host invasive plant (the target plant).
- Hydroraking - Plants, root systems, sediments and debris are pulled with a mechanical rake and removed from the water body. Also allows removal of stumps or other obstructions.

Resources

- Aquatic Invasive Species Fact Sheets <http://www.mass.gov/eea/agencies/dcr/water-res-protection/lakes-and-ponds/aquatic-invasive-species.html>
- Legislative Report: Managing Aquatic Invasive Species in the Waters of the Commonwealth. <http://www.mass.gov/eea/docs/dcr/watersupply/lakepond/downloads/ais-report-2-22-06.pdf>
- The Practical Guide to Lake Management in Massachusetts. <http://www.mass.gov/eea/docs/dcr/watersupply/lakepond/downloads/practical-guide.pdf>
- Invasive Plant Atlas of New England (IPANE) tracks invasive plants throughout New England and contains useful information on the identification of invasive plants. www.ipane.org
- Biology and Control of Aquatic Plants: Best Management Practices Handbook. http://plants.ifas.ufl.edu/misc/pdfs/AERF_handbook.pdf