Controlling Nuisance, Native Aquatic Plants and Algae

VERMONT
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Watershed Management Division
Montpelier, Vermont

Aquatic plants and algae occur naturally in all water bodies. This growth is desirable and beneficial. Algae are a food source for zooplankton, insects and fish. Aquatic plants are crucial to Vermont's fisheries as they provide spawning and nursery areas for young fish. Aquatic plants also tend to increase the variety of wildlife in a lake or pond and retard the movement of sediments entering a lake from inlet streams or other sources.

These same beneficial aquatic plants and algae can become a problem, however, when they reach nuisance proportions in areas used for swimming, fishing and boating. In cases of excessive plant and algae growth, nutrients (including farm run-off, failing septic systems, and eroding soil) are often the root of the problem. Controlling the sources of nutrients provides an effective long-term solution to nuisance plant growth; short-term solutions are addressed in this publication. It is not possible or desirable to permanently or completely eliminate aquatic plants or algae. Lakes, ponds and their inhabitants need aquatic vegetation to remain healthy.

The Vermont Department of Environmental Conservation is responsible for administering the Aquatic Nuisance Control Permit Program as authorized under 10 V.S.A. Chapter 50 § 1453 and the Shoreline Encroachment Program Title 29, Chapter 11, Management of Lakes and Ponds. A permit is required to use pesticides, chemicals other than pesticides, biological controls, bottom barriers, structural controls or powered mechanical devices for the control of nuisance aquatic plants, insects or other aquatic life including lamprey in waters of the state, and for dredging activities.

The information in this document will help you manage nuisance aquatic plants and algae, and determine which control methods require a State permit. Although native aquatic plants may reach nuisance proportions, it is important to remember that some amount of plant growth is beneficial and desirable for a healthy lake.

For additional information, visit our website at
www.watershedmanagement.vt.gov

Nonchemical Control

Handpulling and Raking
In small areas, rooted plants can be kept under control by pulling them up by hand or with a rake and removing them from the water. No permit is required for this activity.

Battery-operated hand-held weed cutters are also available for controlling nuisance rooted plant growth in small areas. Any use of a battery operated hand-held cutter, from shore or towed from a boat, would require a permit.

Upright, plant-resembling forms of algae (muskgrass) may be effectively controlled by regular hand pulling and raking. Filamentous and planktonic types of algae (often called "*pond scums*") can best be controlled by reducing the flow of nutrients entering a lake. Information on identifying and reducing nutrient sources is presented at the end of this document.

Powered Mechanical Harvesters
Large areas of nuisance aquatic plants can be controlled by dragging a chain, barbed wire, a scythe-type cutter bar or battery-operated hand-held weed cutter behind a motorboat, or by using a powered mechanical harvester. A permit is necessary to control nuisance plants with any power-operated device (e.g. a motorboat). Care should be taken when targeting invasive aquatic plants with this method as mechanical harvesting may unintentionally contribute to increased spread.

Benthic Barriers
Another non-chemical control method involves placing special bottom-covering materials on the lake bottom to block out sunlight necessary for plant growth. The use of benthic barrier materials requires a permit.

Dredging of Lake Sediments
Dredging of the lake bottom is sometimes suggested as a nuisance aquatic plant control method. However, unless the lake is dredged to a depth where light can no longer reach the plants, dredging will be ineffective. Plants will soon grow back in the dredged area. Dredging is normally quite expensive, negatively impacts non-target organisms and does not provide for long-term control. Dredging requires a permit under the provisions of Title 29, Chapter 11, Management of Lakes and Ponds and is also administered by the Department of Environmental Conservation. Additional permits may be required to dispose of dredged material.

Plant-eating Fish
Some states allow the use of plant-eating fish, such as grass carp, to control nuisance aquatic plants. The introduction of these fish or other non-native fish into Vermont waters is currently illegal. With this type of control, there are many unanswered questions regarding negative impacts to fisheries or water quality.

Chemical Control

The introduction of any pesticides or chemicals other than pesticides into waters of the State requires a permit from the Department of Environmental Conservation. The only exception is the use of copper compounds to control algae in waters with a surface area of **one acre or less**, located **entirely** on an individual's property and with an outlet where the flow can be controlled for at least **three days**.

It is important to remember that using chemicals for control of nuisance aquatic vegetation only provides seasonal relief. Often chemical controls are considered a "quick fix;" however, they are **not** a cure. Aquatic herbicides or algicides only kill existing visible weeds and algae. Treatments must often be repeated to achieve the desired amount of control. In many situations, chemicals may not be effective at all.

Chemicals should only be considered when other non-chemical control methods won't do the job and when label restrictions regarding that pesticide's use can be met.

CONTROL ACTIVITIES REQUIRING A PERMIT

The Department of Environmental Conservation is responsible for issuing permits for those activities in State waters that have a potential impact on water quality, fish and wildlife habitat, aquatic and shoreline vegetation, etc. A permit is needed to do any of the following in a lake, pond, river or stream:

- Introduce pesticides for the control of nuisance aquatic conditions.
- Use chemicals other than pesticides to control aquatic nuisances.
- Install benthic barrier materials to control aquatic nuisance plants.
- Use biological or structural controls to control aquatic nuisances.
- Use powered mechanical devices to control aquatic nuisances.
- Remove or dredge material from the bottom of the lake.
- Place sand.

To determine whether or not your proposed activity needs a permit:

CONTACT: Department of Environmental Conservation
Watershed Management Division
1 National Life Drive, Main 2
Montpelier, VT 05620-3522
(802) 828-1535

On-line permit information is located at
http://www.anr.state.vt.us/dec/waterq/permits/htm/pm_anc.htm

CONTROLLING THE SOURCE OF THE PROBLEM

Plant and algae growth is regulated by nutrients found in lake water and sediments. Eliminating sources of excessive nutrients and sediments should be a primary concern when plant and algae control is desired. By investing time to identify and control nutrient sources, you can more effectively manage growth of aquatic vegetation in the future.

Evaluate the land surrounding the lake or pond and identify possible nutrient and sediment sources. Examples of potential sources are:

- animal manure
- failing septic systems
- bare, exposed soil
- areas of lawn and garden or farm fertilizer use
- unstable or eroding stream banks and roadside ditches

Any of the above conditions can result in nutrients and/or sediment reaching a pond or lake. Locate animal holding areas well back from waterways, and don't allow runoff from these areas to flow directly into streams or ponds. Septic systems are ideally located at least 100 feet from surface water and need to be properly maintained. Fertilizer use should be reduced or, preferably, eliminated within 100 feet of streams or ponds.

Well-vegetated stream and lake shorelines are the best protection against pollution. If possible, leave a buffer strip of at least 100 feet between land uses and water. A mixture of trees, shrubs, and groundcover is preferable. Trees, shrubs and large perennials have long-lived extensive root systems that capture nutrients and sediments before they reach the lake. Lawns bordering water provide little water quality protection.

Further information on the identification and elimination of nutrient sources is available from:

Lake Protection Program
Watershed Management Division
1 National Life Drive, Main 2
Montpelier, VT 05620-3522
(802) 828-1535

You can also visit our website (www.watershedmanagement.vt.gov) for information on shoreline vegetation and buffer strips and other lake protection suggestions.

ANSWERS TO FREQUENTLY ASKED QUESTIONS

We are experiencing nuisance plant and/or algae problems in our pond. What can we do?
The Department does not provide technical assistance to private pond owners or make site visits. Links to information available on our website are located throughout this document or can be requested by mail from the Department at the address noted above. A list of aquatic plant management contractors is available on our webpage www.anr.state.vt.us/dec/waterq/lakes/docs/ans/lp_contractorlist.pdf. You can also refer to your local yellow pages under 'lake management/environmental-ecological consulting services'.

We are concerned about the threat Eurasian watermilfoil poses to our lake. What can we do to protect our lake from an introduction of this nuisance aquatic plant?
Contact the Department of Environmental Conservation for information on prevention activities that can be undertaken to protect lakes from an infestation of an aquatic invasive plant like Eurasian watermilfoil or an aquatic invasive animal. You can also become a Vermont Invasive Patroller (VIP) and learn to check your lake for aquatic invasive species annually. See our website for additional information (www.watershedmanagement.vt.gov)

I am aware of a pollution source on our lake. How do I report this violation?
Violations may be reported to the Environmental Enforcement Office located in Montpelier.

Agency of Natural Resources
Environmental Enforcement Division
1 National Life Drive, Main 2
Montpelier, VT 05620-3522
(802)828-1254 www.anr.state.vt.us/site/html/enf/enf-complaint.htm

How can I have my camp's septic system checked to be sure sewage isn't getting into the lake?
Septic systems may fail and cause a health problem. The Town Health Officer or your area Environmental Enforcement Officer can check for failure by dye testing your system or by doing bacterial tests of the water in the area. Septic systems may also cause excessive nutrients to reach the water and contribute to weed and algae growth. This condition is very difficult to detect. The best way to prevent nutrients from reaching the lake from your system is to be sure your system is properly installed and carefully maintained. Moving it back at least 100 feet from the lake (if possible) is also desirable. Information on septic system maintenance is available from the Department of Environmental Conservation's Lakes and Ponds Management and Protection Section. (www.anr.state.vt.us/dec/waterq/lakes/docs/lpseries/lp_lpseries4.pdf)

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This document is available upon request in large print, braille or audiocassette.

VT Relay Service for the Hearing Impaired
1-800-253-0191 TDD>Voice - 1-800-253-0195 Voice>TDD

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