

Information on Controlling Nuisance Aquatic Plants and Algae

August 2004

Some amount of plant life and algae growth is desirable and beneficial to lakes and ponds. Rooted aquatic plants and algae occur naturally in all water bodies. They play an important role in the environment by providing food and cover for aquatic organisms. Algae form the base of the aquatic food chain. Rooted plants are crucial to Vermont's fisheries since they provide spawning and nursery areas for young fish. Plants also tend to increase the variety of wildlife in a lake or pond and act to retard the movement of sediments entering a lake from an inlet stream.

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 nuisance plant and algae growth, the sources of nutrients (including farm run-off, failing septic systems, and eroding soil) feeding the nuisance growth should be investigated. Controlling the sources of nutrients will provide a more effective long-term solution to the nuisance plant growth. It should be realized that there is no way to permanently or completely eliminate aquatic plants and algae from lakes and ponds, nor is this desirable. All aquatic plants have some value.

The Vermont Department of Environmental Conservation is responsible for administering the Aquatic Nuisance Control Permit Program as authorized under Title 10, Chapter 47, § 1263a. 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.

The information in this brochure will help you to make decisions on how to manage nuisance aquatic plants and algae, and determine which control methods require a State permit. Although aquatic plants may reach nuisance proportions, it is important to remember that some amount of plant growth is a beneficial and desirable part of healthy lakes.

For additional information, visit our website at vtwaterquality.org

Nonchemical Control

Plants

Aquatic plants are usually found to be a nuisance only when they grow in areas where they interfere with swimming, fishing or boating.

Hand Pulling 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, or by using a battery-operated hand-held weed cutter. No permit is required for this activity; however, the use of a battery-operated hand-held weed cutter would require a permit if it is used behind a motorboat.

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.

Bottom Barriers

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

Dredging of Lake Sediments

Dredging of the lake bottom is sometimes suggested as a nuisance 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 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, which 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 illegal. With this type of control, there are still unanswered questions regarding negative impacts to fisheries or water quality.

Algae

Upright, plant-resembling forms of algae (muskgrass) may be effectively controlled by regular hand pulling and raking. Filamentous and planktonic types of algae (the so called "*pond scums*") can best be controlled by preventative actions to reduce the flow of nutrients entering a lake. Information on identifying and reducing nutrient sources can be obtained from the Department of Environmental Conservation's Lakes and Ponds Management and Protection section, and by requesting our handout "What is Algae?".

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 realize that chemicals for control of nuisance aquatic plants and algae only provide seasonal relief. Often chemical controls are considered a "quick fix", however, they are **not** a cure. Aquatic herbicides only kill existing stands of weeds and aquatic algicides only existing algae. Treatments must often be repeated to achieve the desired amount of control. And, in many situations, chemicals may not be effective at all.

The Department does not normally endorse chemical treatment for control of nuisance aquatic plants if a nonchemical control alternative is available and feasible to use. Chemicals or pesticides should only be considered as a last resort, when other control methods won't do the job and when label restrictions regarding a certain 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 bottom barrier materials to control aquatic nuisances.
- Use biological or structural controls to control aquatic nuisances.
- Use powered mechanical devices to control aquatic nuisances.
- Remove or dredge lake bottom material.
- Place sand.

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

CONTACT: Department of Environmental Conservation
Water Quality Division
103 South Main Street, Building 10 North
Waterbury VT 05671-0408
(802) 241-3777

CONTROLLING THE SOURCE OF THE PROBLEM

Plant and algae growth is stimulated by nutrients found in the lake or pond water and sediments. Searching for and eliminating sources of nutrients and sediments should be a primary concern when plant and algae control is desired. By investing time in controlling the source of the problem, you can more effectively address weed and algae problems and reduce such problems in the future.

Evaluate the land surrounding the water 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 streambanks and roadside ditches

Any of the above conditions, and others, can result in nutrient and sediment pollution of a pond or lake. Locate animal holding areas well back from waterways, and don't allow runoff from these areas to run 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, as this provides for optimum treatment of polluted runoff by the vegetation. Lawns bordering water provide little water quality protection and it is suggested that they, in part, be reverted to buffer strips, which are a mixture of native trees and shrubs planted along the water shoreline.

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

CONTACT: Lake Protection Program
Water Quality Division
103 South Main Street, Building 10 North
Waterbury VT 05671-0408
(802) 241-3777

ANSWERS TO FREQUENTLY ASKED QUESTIONS

We are experiencing nuisance plant and/or algae problems in our pond. What can we do?

Upon request, the Department of Environmental Conservation will provide a packet of general information on ponds. The Department, however, does not provide technical assistance to private pond owners. A list of pond consultants, compiled for informational purposes from Department file records, can be found in our booklet "Vermont Pond Construction Guidelines".

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 Eurasian watermilfoil. You can also become a "Milfoil Watcher" and learn to check your lake for Eurasian watermilfoil annually.

I am aware of a pollution source on our lake. How do I report this violation?

Violations may be reported to the District Environmental Officer for your area at one of the numbers listed below, or the Chief Environmental Enforcement Officer in Waterbury.

CONTACT:	Morrisville	888-2250
	Derby	766-8860
	Randolph	728-6631
	Springfield	885-1139
	Mt Holly	259-3115
	Bristol	453-5943

Or

Chief Environmental Enforcement Officer
Department of Environmental Conservation
103 South Main Street
Waterbury VT 05671-0406
(802)241-3820

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.

Why do we have a lot of dead fish on the lake in the early summer?

Seasonal fish kills are a common, natural occurrence in productive warm water lakes. A number of stresses combine in the late spring and early summer to weaken the fish and make them more susceptible to disease and bacterial infection. However, occurrences of large numbers of dead fish should be reported to the District Fisheries Biologist at the Agency of Natural Resources District Environmental Office listed on page 8.

Do I need a permit to build a dock or put in sand along the shore in front of my camp?

Small temporary docks do not require permits as long as navigation is not hindered. Other than these, any construction or alteration beyond the shoreline at mean water level of a lake or pond does require a permit under the provisions of Title 29, Chapter 11. Examples of these are retaining walls along the lakeshore, permanent structures on the lakebed, or the placement of sand. Before beginning any construction:

CONTACT: Department of Environmental Conservation
 Water Quality Division
 103 South Main Street, Building 10 North
 Waterbury VT 05671-0408
 (802) 241-3777

What are lake associations and what do they do?

Lake associations are voluntary organizations of people interested in protecting a lake. Some lake association activities include representing the members' interests before local and state government, helping identify and correct problems on the lake, and taking advantage of government programs. The Department of Environmental Conservation can provide information and contacts for assistance in organizing lake associations.

Our lake association doesn't have the money to fund an aquatic plant control program. How do we go about getting funds?

Through the Vermont Aquatic Nuisance Control Program, financial assistance has been provided in the past to qualified lake associations through their local municipality to develop long-range programs for the control of nuisance aquatic plants. The VTDEC is interested in helping lake residents diagnose water quality problems and can suggest projects that associations can undertake to improve water quality conditions.

What can our lake association do to obtain water quality information about our lake?

Water quality data is available on many Vermont lakes and may be obtained by contacting the Vermont Department of Environmental Conservation at 103 South Main Street, Building 10 North, Waterbury, Vermont 05671-0408. In addition, lake residents are encouraged to join the Department's Lay Monitoring Program, a citizen volunteer program in which interested lake residents sample their lake during the summer season in order to determine current water quality conditions. If interested in further information about this program, contact the Coordinator, Lay

Monitoring Program, Vermont Department of Environmental Conservation at (802) 241-3777.

How can we protect our lake from water quality problems in the future?

The Department of Environmental Conservation offers the Lake Protection Program to provide assistance to towns and lake associations in selecting and implementing lake protection measures. A variety of regulatory and non-regulatory mechanisms can be implemented at the local level, from shoreland zoning to property owner education. Contact the Department for further information.

How do I get my drinking water tested to make sure it is safe?

The Vermont Department of Health tests drinking water. Contact your local health officer or:

Vermont Department of Health Laboratory
195 Colchester Avenue, Box 1125
Burlington VT 05402-1125
1-800-660-9997 (Vermont only) or (802) 863-7335

**VERMONT AGENCY OF NATURAL RESOURCES
REGIONAL ENVIRONMENTAL CONSERVATION OFFICES**

BARRE

5 Perry Street
Barre VT 05641
(802) 476-0190

ESSEX

111 West Street
Essex Junction VT 05452-4695
(802) 879-5192

PITTSFORD

317 Sanitorium Road, West Wing
Pittsford VT 05763-9713
(802) 483-2314

RUTLAND

450 Asa Bloomer State Office Building
Rutland VT 05701-5903
(802) 786-5900

ST. JOHNSBURY

1229 Portland Street, Suite 201
St. Johnsbury VT 05819
(802) 751-0130

SPRINGFIELD

100 Mineral Street
Springfield VT 05156-3168
(802) 885-8855

The Vermont Department of Environmental Conservation is an equal opportunity agency and offers all persons the benefits of participating in each of its programs and competing in all areas of employment regardless of race, color, religion, sex, national origin, age, disability, sexual preference, or other non-merit factors.

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