

Managing Aquatic Plants in Ponds

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Frequently, people become concerned with plants in their ponds. High numbers of plants, especially algae, can be unpleasant to look at, cause odor problems, interfere with boating and swimming and may eventually result in fish kills. However, aquatic plants also provide cover for wildlife. Plants that flourish along the banks can prevent soil erosion. Fishing habitat can be improved with the appropriate plants. The goal for your pond should be to maintain plant populations at levels that will not interfere with the pond's intended uses. So, don't panic when plants start to grow in your pond. Consider your goals, and then make your decisions to control the plants.

What Common Species of Aquatic Plants Can You Expect to Find in Your Pond?

Algae are the most common plants found in ponds. They are small, single-celled or multiple-celled plants that float in the water or cling to rocks, trees and pilings under the water surface. Algae do not have roots, and absorb nutrients directly from the water.

The more recognizable "higher plants" found in ponds are generally classified into three categories: submergent plants, emergent plants and floating plants. Submergent plants root in the bottom of the pond and are entirely covered by water. Only the flowers, when they develop, will extend above the water surface. Common elodea, coontails and water milfoils are common submergent plants. Emergent plants are rooted below water, but much of the plant will extend above water. Most emergent plants grow in shallow water near shore. These plants include cattails, arrowheads, rushes, reeds and sedges. Floating plants can either root into the soil or float on the water, unattached to the bottom. Waterlillies, watershield and duckweed are common floating plants.

When Do Aquatic Plants Become a Problem?

Plants become a problem when they alter the pond ecology or disrupt the desired purpose for having a pond. In most situations, this means that either the pond has become covered with algae, or that submergent and emergent vegetation gets in the way of swimming or boating. Excessive plant growth can be caused by a number of problems. First, just like land plants, aquatic plants will grow when supplied with three things: light, nutrients and the right temperature. Light controls where in a pond plants will grow. Most rooted plants

(submergent, emergent or floating) will be found in shallow water, because it is there that plants will be able to gather enough light to survive. As the water gets deeper, less light will make its way to the bottom of the pond. When the water is about 10 feet deep, light levels at the bottom of the pond are so low that few plants can grow. If your pond has a shallow bottom, or if the bottom slopes downward at less than a 3:1 slope, you may have problems with aquatic plants.

Excessive nutrients in your pond can trigger plant problems. Lawn and garden fertilizers running off into your pond, failing septic systems or over-feeding fish can add nutrients to your pond. These nutrients act like fertilizer and promote plant growth. Algae will respond very quickly to excessive nutrients, and can form a thick mat that covers the pond's surface. When algae or other plant populations flourish and then die at the end of the summer, dissolved oxygen levels in the water may fall. If the dissolved oxygen level falls too low, fish in the pond will not have enough oxygen and may die. As a general rule, if aquatic plants, including algae, occupy more than 10 percent of the pond surface area, you should consider some control measure (Gablehouse et al. 1982).

How Should I Control Aquatic Plants?

The three best methods to control aquatic plants are

- prevention,
- mechanical or physical control, or
- chemical control.

Prevention

Prevention is clearly the best solution. With proper pond construction, many aquatic plant problems can be prevented. Plants like warm, clear, shallow waters. When planning your pond, make sure that it is at least three feet deep, or six to seven feet deep if fish will overwinter in the pond. Construct the banks with a 3:1 slope. However, you may want to have less steep banks near a swimming area. Good water flow through ponds is also helpful. Ponds that do not exchange or circulate water well tend to get stagnant. A pond without an inlet and an outlet will have more problems than a pond with good water flow.

Mechanical Control

Plants can be controlled by hand when they are small. Mowing, pulling, raking and digging will help control aquatic plants. Many aquatic plants have extensive root systems. They will likely regenerate from the root stock buried in the soil, and it may take several tries before you will get rid of the plants. Sometimes, you can raise or lower the water level in a pond to control certain plants, particularly cattails. However, a pond may have to be reconstructed to do this. Most mechanical measures are short term and only affect a portion of the pond.

Chemical Control

Before considering any chemical control method, consider the following:

- It is illegal to apply any pond vegetation control material (algaecide or herbicide) into any water of the state without a permit.
- One can only use materials registered for use in the state and only with the required permit. Only people with a pesticide license will be able to obtain the permit to apply the chemical.
- What is the plant species you want to control? Proper identification is critical. No one control method is used for all plants.
- Is the pond privately owned? What you can legally do on your own land is quite different from what you can do on someone else's. If the water does not leave the property of the homeowner, it is not considered a water of the state. The Maine Department of Environmental Protection (MEDEP) can help you determine what you are allowed to.
- Does the pond have an outlet? If the water flows out of your pond onto someone else's property, your options are extremely limited. Again, check with MEDEP before using a chemical weed control method.
- Have you checked with your town about the need for a permit?
- Have you tried other control methods first? Many herbicides are toxic to fish and other wildlife, and you may accidentally kill other desirable plant or animal species.
- If you use chemicals, read the and follow the label completely! Chemicals are registered for specific uses. Follow label directions. You will need to have a good estimate of the amount of water in the pond. The most effective time to apply a chemical is when the plants or algae are beginning to grow (May or June). To find out which chemicals are currently registered for use in ponds, contact your county office of University of Maine Cooperative Extension, or the Maine Board of Pesticides Control at (207) 287-2731. Remember, the label is the law.
- When are dyes effective? Sometimes dyes are used to block light that stimulates plant growth. They color the water. They are used on golf courses, generally before tournaments, to enhance the attractiveness of courses. They are not widely recommended for use in ponds.

Remember that a certain amount of aquatic plants are normal and expected in ponds. The vegetation will support growth and development of fish species and other aquatic wildlife. So, don't panic when you see some vegetation in your pond.

References:

- Bennett, G.W. 1978. *Management of Lakes and Ponds*. Van Nostrand Reinhold Co., New York, NY.
- Dillard, J.G. *Missouri Pond Handbook*. Missouri Department of Conservation. Jefferson City, MO.
- Gabelhouse, D.W.. Jr., R.L. Hagar and H.E. Klan. 1982. *Producing Fish and Wildlife from Kansas Ponds*. Kansas Fish and Game Commission, Pratt, KS.
- Wingard, R.O., T.D. Rader, W.K. Hock and R.B. Hesser. "Aquatic Plants - Management and Control." Special Circular 222. Pennsylvania State University.

For more information, contact your [county Extension office](#)

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