

Controlling Aquatic Vegetation

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Quick Facts...

- In moderate amounts, aquatic vegetation is beneficial to the natural ecosystem of most lakes and ponds.
- Reduce aquatic vegetation if it interferes with fishing, boating or swimming.
- Proper plant identification is necessary when considering aquatic vegetation control.
- Aquatic plant classification is based on growth form and location in the pond.
- Three methods of vegetation control are: mechanical, biological and chemical.

Aquatic vegetation is found in most lakes and ponds and is beneficial to the natural ecosystem in moderate amounts. Vegetation is needed for food production and cover for fish. Aquatic plants produce oxygen, stabilize bottom sediment, protect the shoreline from wave erosion, and serve as feeding and nesting habitat for waterfowl.

Aquatic vegetation can become so abundant it interferes with recreational use. When fishing, boating or swimming is seriously impeded, aquatic vegetation should be reduced. Periodic die-offs of dense vegetation also occur after periods of cloudy weather, long winter ice and snow cover, or the end of their growing season. Oxygen is consumed by bacteria that decompose dead plants. Microscopic bacteria can be so abundant that they can lower oxygen levels, inhibit fish from feeding and growing, and possibly cause death.

Identification

Probably the most essential thing to know in aquatic vegetation control is the type of plant causing the problem. Aquatic plants are classified into general categories based on their growth form and location.

Algae

Algae are primitive plants with no true leaves or flowers. They have three classifications: **planktonic**, **filamentous**, and **attached-erect** forms.

Planktonic algae (often called phytoplankton) gives the water a green to greenish-brown tint, but individual plants cannot be seen without a microscope. Filamentous algae, often referred to as "moss," float freely and form greenish mats on the surface. The attached, erect forms often are mistaken for higher plants. The best way to identify these advanced algae is by the musky odor and gritty feel. Common examples of algae are spirogyra, cladophora and chara.

Floating Plants

This group includes plants that have leaves floating on the surface and roots hanging down into the water not connected to the bottom. Their leaves usually are smaller than the end of a wooden match stick, and they have hairlike roots. Duckweed is the most common floating plant, seldom creating problems.

Submerged Plants

These plants are rooted to the pond bottom and grow to the surface. Submerged weeds usually consist of long flexible stems with clumps of narrow leaves around the stem. Flowers, if present, may extend above the surface. Common examples of submerged plants are potamogeton, coontail and elodea.

Emergent Plants

This type of plant is rooted in the pond bottom with extensions above the water's surface. Shoreline plants are included in this group. Many are not truly aquatic, but can live in saturated soils or submerged in water for considerable time. Common examples of emergent plants are cattails, bulrush, smartweed and arrowhead.

Control

Three methods of reducing or eliminating nuisance aquatic vegetation are mechanical, biological and chemical.

Mechanical

Mechanical control involves physically removing plants from the pond. Hand-pulling is effective to control cattails, willow trees and cottonwood trees while they are small. Rake to remove algae and submerged vegetation from the pond, especially around a swimming area. Submerged vegetation also can be removed by pulling a chain or cable through the pond between two tractors.

Mechanical control is temporary and normally affects a portion of the pond's vegetation. It is the least effective method and may aggravate the problem because some aquatic plants spread through broken fragments and become new plants.

Biological

Biological control includes the most effective control for Colorado warmwater ponds: the grass carp, an herbivorous fish. The grass carp requires large rivers for spawning and does not reproduce in ponds. The Colorado Division of Wildlife requires notification of stocking. Only triploid grass carp are permitted on the West Slope. Grass carp stocked on the West Slope must also meet the stocking criteria of the Upper Colorado River fish recovery program.

Grass carp are expensive but can provide many summers of vegetation control with one stocking. Little evidence of control will be seen the first summer but change will appear the second. Stock fingerling grass carp (3 to 4 inches) at the rate of 10 to 25 fish per acre of vegetation. If adult bass are present, stock grass carp of at least 8 inches to avoid predation. After several years, additional grass carp will have to be stocked when consumption of vegetation by large grass carp declines.

Ducks, geese and crayfish are used to control aquatic plants. They produce inconsistent results, and some pond owners object to the mess waterfowl can make.

Fertilization can be used to discourage other types of aquatic vegetation and promote phytoplankton. This method has produced inconsistent results, can cause oxygen depletion, and is not recommended for Colorado ponds.

Chemical

No single, all-purpose chemical exists to control all aquatic weeds. Proper plant identification is important for selecting the best chemical for a specific vegetation problem.

Generally, chemical applications are most effective when weeds grow rapidly and have not yet gone to seed. One to two treatments usually are sufficient to control submerged vegetation, whereas one to four treatments may be needed to control algae for a season. Do not apply chemicals in strong winds where drift might occur. Apply chemicals early in the day under sunny conditions and water temperature above 60 degrees F. Regrowth or belated appearance of dormant weed species requires re-treatment.

After the nuisance plant is identified, choose the proper chemical and read the label carefully. Next determine the area to be treated. Application of the chemical can be done by hand, pressure tank sprayer, or by ladling the chemical from a bucket. Dilute the chemical tenfold with water to ensure uniform coverage over the area to be treated. Mix only as much chemical as is needed for the job.

Usually plants begin to show signs of weakness, discoloration or drooping within two weeks; plants may even die. Filamentous algae often turn a pale green or yellow. When large masses of plant materials decay, nutrients are released and can lead to plankton or filamentous algae growth. Bacteria that multiply to take advantage of the rotting vegetation consume oxygen. At the same time demand for oxygen increases, production of oxygen by green plants disappears or is greatly reduced. Oxygen levels may be so reduced that fish die. Reduction of plants in the spring or early summer before large growth occurs usually prevents oxygen depletion. If treatment is not done until heavy growth occurs, treat the pond in sections with at least two weeks between treatments.

Failures may be due to one or more of the following reasons:

- not reading and following directions on the label;
- misidentification of the weed; or
- miscalculation of treatment volume.

Other things to consider prior to treatment are adverse weather conditions or high water exchange in the pond.

Chemicals are registered for specific uses and few are cleared for aquatic use. Cutrine is effective on algae. Control submerged plants with Aquathol; the potassium formulation is more effective in Colorado than the sodium formulation. Rodeo works well on cattails, which is the most common emergent aquatic plant in Colorado. Many chemicals have restrictions on the use of water for a period of time after application. Follow the directions on the label and read restrictions on fishing, swimming, and use of water for livestock, and irrigation.

To obtain names and addresses of most major herbicide manufacturers and distributors in Colorado, contact your Colorado State University Cooperative Extension county office.