

Aquatic Plant Identification and Control

Introduction

Aquatic plants are an important part of the natural ecology of a pond. However, when they interfere with the intended use of the pond, they become “weeds” that must be controlled and managed. This fact sheet introduces the types of aquatic plants commonly found in Maryland ponds and some methods used to control them.

Aquatic Plant Identification

Since control methods for aquatic plants can be type specific, it is critical that plants be identified accurately. Aquatic plants can be grouped into one of five categories based on their structure and where they grow in the water column. The following table gives a general description of each category with an example of the commonly identified plants that cause problems in Maryland ponds.

Type of Aquatic Plant	Description	Example
Algae	<p>Non-Vascular Plants: Have no true root or stem system and do not produce flowers or seeds</p> <p>3 Basic Forms: Planktonic, Filamentous, and Macrophytic</p> <p>Planktonic: Microscopic, single or multi-celled plants that are responsible for giving a pond its color</p> <p>Filamentous: String, hair-like, or thread-like in form; typically found as floating mats on the water’s surface; often mistaken as a submerged plant</p> <p>Macrophytic: Found attached to the bottom; often mistaken as a submerged plant</p>	<i>Pithophora</i> <i>Hydrodictyon</i>
Floating	<p>Vascular Plants: Have a true root & stem system and produce flowers & seeds</p> <p>Roots are not anchored in the sediment</p> <p>Found floating in or on the water’s surface</p>	Duckweed Watermeal
Submerged	<p>Vascular Plants: Have a true root & stem system and produce flowers & seeds</p> <p>Rooted in the sediment</p> <p>Found completely submerged underwater</p> <p>Lack a rigid structure (appear limp out of water)</p> <p>Flowers often extend above the water’s surface</p>	Pondweeds Hydrilla Elodea
Emergent	<p>Vascular Plants: Have a true root & stem system and produce flowers & seeds</p> <p>Rooted in the sediment</p> <p>Found floating at and extending above the surface of the water</p> <p>Rigid structure</p>	Waterlillies Water Chestnut
Marginal	<p>Vascular Plants: Have a true root & stem system and produce flowers & seeds</p> <p>Rooted to the bottom</p> <p>Found along the fringes of a pond, typically in less than 2 feet of water</p> <p>Rigid structure</p>	Cattails Phragmites

Aquatic Plant Control

It is important to recognize that all aquatic plant control methods can affect not only the pond but the surrounding environment. Aquatic plants can be controlled mechanically, biologically, or chemically. The control method of choice must consider more than just the type of plant but include the *cause of the problem*, the *primary use of the pond*, and *cost of control*. The following table describes some of the commonly used control methods for aquatic weeds in Maryland ponds.

Control Method	Description	Notes of Interest
Mechanical	<i>Use of physical mechanisms (man or machine) to control aquatic plants.</i>	<i>Usually quite expensive and/or labor intensive</i>
Physical Removal	Raking, Seining, Pulling, Cutting, Mowing	Labor intensive; Fragments of plants not removed can re-root and re-establish in the pond
Liners	Solid plastic or screening material laid on the bottom of a pond to discourage rooted plant growth	Expensive; Does not discourage algae production
Draw down	Lowering the water level in a pond to expose the plants to freezing and/or drying	May allow terrestrial plants to grow; May be harmful to fish populations
Dying	Shades sunlight from penetrating to bottom sediments discouraging rooted plant growth	Should not be used in ponds with high water flows; Can be expensive; Requires repeated applications
Dredging	Deepening shallow areas to discourage rooted plant growth	Usually expensive
Biological	<i>Use of animals or other living organisms to control aquatic plants</i>	<i>Less effort than mechanical methods Less expensive or hazardous than chemical methods</i>
Fertilization	The addition of fertilizer (nutrients) to encourage planktonic algae blooms which shade sunlight from penetrating to bottom sediments discouraging rooted plant growth	Recommended for newly dug ponds; DO NOT USE in ponds that have an established plant problem, have large areas of shallow water (< 2 ft deep), or have a high water flow
Fish	Grass Carp or Sterile Triploid Grass Carp Common Carp (Israeli Carp) - bottom feeding fish that disrupt formation of rooted plants by rummaging through the sediments and increasing the turbidity of the pond	ILLEGAL to possess in Maryland Do not intentionally eat aquatic plants; Increased turbidity can cause gill irritation in other pond fish that could lead to fish kills; Feeding carp can interfere with bluegill and largemouth spawning; Can be expensive; Pond may become unacceptably muddy; Stocking permits are required
Barley Straw	The addition of whole bales to a pond in the spring may help control filamentous algae	Works only on filamentous algae; Control mechanism is not currently understood; May not be effective in all ponds
Chemical	<i>Use of chemical agents to control aquatic plants</i>	<i>Permits required; Some chemicals may require professional application; May be expensive</i>
Herbicides	Aquatic herbicides can be used to control all types of aquatic plants	Can be expensive and provide only temporary control; Requires a State issued permit; Incorrect herbicide is often used as a result of incorrect plant identification; If not applied correctly can have disastrous environmental and economic affects

The easiest and cheapest means of controlling aquatic weeds is to prevent a problem before it starts. An integrated management program using a combination of control methods coupled with proper pond and watershed management can save a pond owner from a lot of headaches in the future. To receive more specific information on *aquatic plant types*, *species*, *control methods*, or *pond and watershed management techniques*, contact the Home & Garden Information Center at 1-800-342-2507.



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