AQUATIC

Lakes, ponds, and streams are central features to many landscapes. The best maintained landscape around a weed-infested lake is a failure. Both land and water must work together for a complete landscape.

A water feature without plants is not the objective either. Plants produce oxygen needed for a healthy, balanced water environment. The lake should be designed as you would any landscape and maintained to preserve the design.

Whereas some water plants are usually a nuisance, such as hydrilla, watermilfoil, algae, and spinyleaf naiad, others can be managed to provide an attention-getting display. These include water lily, lotus, arrowhead, cattail and others.

Control measures are limited by the desirable plants in the lake and the use of the lake water for irrigation, fish farming, air conditioning, etc. If the lake is part of a watershed area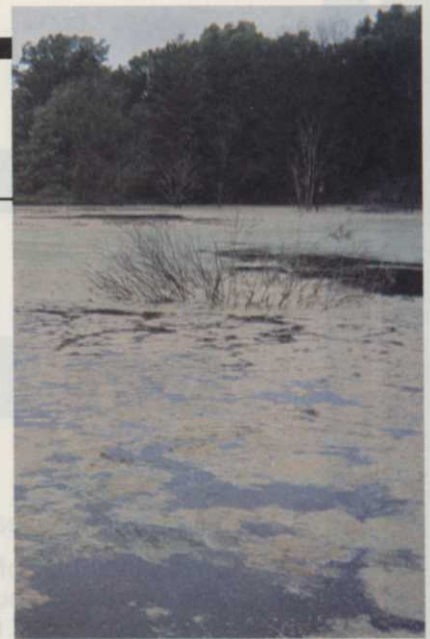, there may be restrictions on the use of certain chemicals or weed-eating fish. Check with the extension service in your area before instituting an aquatic weed control program.

Preventative control

Aquatic weeds have the same needs as other plants; light, nutrition, and certain growing conditions. As on land, you want to encourage the desirable plants and discourage the weeds.

Typical conditions causing an aquatic weed problem are shallowness (less than eight feet deep), water in the lake does not circulate by currents or flow, and heavily-fertilized watershed drains into the lake. Concentrate first on these faults.

Weeds won't get established if sunlight can't reach the lake bottom in amounts satisfactory for growth. Banks should drop quickly so that very little of the lake is less than eight to ten feet deep. Areas where plants are desired can be kept shallow. An option to this is to plant aquatic displays in pots raised from the lake bottom.

If this is impractical, dyes or *Chlorela sp.* algae can be used to shade out the sunlight at the surface. Another method gaining acceptance is Aquascreen, a fiberglass cloth which is placed over the lake bottom where weeds are not wanted. Bottom-rooted aquatic plants will not grow through the material. It can even be placed over growing vegetation if necessary.

Algae likes stagnant, warm
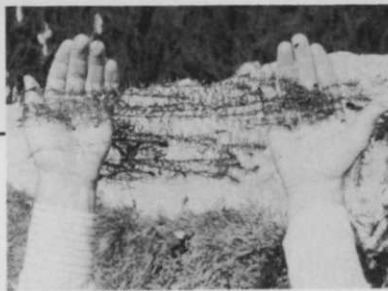
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Mechanical aquatic *weed harvester.*

water. A pond aerator or recirculator can be used to mix the layers of water together, keeping temperatures down and adding oxygen to the water.

Plants produce oxygen needed for a healthy lake. Decaying plants or effluent rob water of valuable oxygen. Do not throw grass clippings into lakes. If possible, remove dead plants after chemical treatments.

In certain states, various weed-eating fish are legal. These and other fish feed on lake vegetation. They are restricted from certain states for fear they might reach major rivers and lakes.

Drawdown, or lowering the water level to expose aquatic weeds to full sun or freezing temperatures is used where fish or irrigation uses are not important. Dredging can also be tried to remove plants and deepen lakes. Mechanical weed harvesters are available for purchase or rent. They cut the bottom-rooted weeds below the surface for removal.

Remember, once you decide to use chemical controls, you must protect the desired aquatic plants. Also trees with roots extending into lakes may be effected by aquatic herbicides. Preventative measures should be tried before resorting to a chemical program.

Curative control

In certain areas it is impossible to defeat all the conditions favoring aquatic weeds. In warm climates, landscape managers fight a constant battle with aquatic weeds.

In cooler climates, summer provides better conditions for aquatic weeds and seasonal control may be needed.

Algae If preventative measures aren't enough to stop algae, then copper compounds(Cutrine) are effective. Used at correct rates, these compounds do not restrict water use for swimming, irrigation, watering stock or fish farming.

If the lake has a history of algae problems, start using copper compounds as soon as water temperatures reach 60 degrees F. Periodic retreatment may be necessary for season-long control.

Copper compounds are often mixed with other aquatic herbicides for control of a variety of weeds.

Floating weeds Floating weeds are either free-floating or bottom-rooted plants which have leaves that float on the water's surface. They include hyacinths, duckweed, water lettuce, floating fern, water pennywort, and salvinia.

The primary herbicides for floating weeds are 2,4-D and Diquat.

Submersed weeds Weeds which are bottom-rooted and totally under water are called submergent. They include hydrilla, pondweed, watermilfoil, and coontail.

The primary herbicides for submersed weeds are 2,4-D, endothall(Aquathol K), Diquat and combinations of Diquat and endothall with copper.

Emersed weeds These are weeds growing in shallow areas with stems and leaves above the water surface. They include cattails, duckweed, hyacinths, alligatorweed, torpedograss and arrowhead.

Primary herbicides for these are Banvel, 2,4-D, dalapon(Dowpon), diuron(Karmex) and amitrole.

Ditchbank weeds Emergent weeds and grasses are often problems on ditchbanks. Use herbicides listed for emergent weed. If the ditches are dry, glyphosate(Roundup) may be used. Caution should be taken to keep the glyphosate away from nearby bodies of water.

Herbicide precautions

Use of water following applications of aquatic herbicides may be restricted. Generally, copper compounds cause no delay in use. Wait 24 hours before swimming and seven days before irrigation when using endothall. Diquat requires certain delays up to ten days and should not be used in muddy water. Always check product labels for delays and precautions.

Proper calculation of the amount of herbicide is important. Rates are based on acre square feet. To calculate this figure you need to know both the area of the lake surface and the depth. Measurements should be taken rather than estimating. Multiply the area of the surface in acres by the average depth in feet. Your chemical supplier or extension agent can help you if you are uncertain of your calculations. **WT&T**