

DO YOU NEED A WATER MANAGEMENT PROGRAM?

By JIM WILLIAMS
The Lake Doctors

Let's answer the question in the first paragraph. If you have lakes, canals, ponds, or drainage ditches, you probably do need a water management program. Most waterways in Florida, particularly in golf course situations, will develop aquatic problems. The reasons are many, and include the year-long growing season in many parts of the state, the high nutrient level of the water partly as a result of heavy fertilization schedules, poor water depth and infestation by "exotic" species of exotic aquatic weeds imported from other countries, for instance hyacinth and hydrilla. These aquatic species can grow extremely fast, are hard to control, and will crowd out more beneficial native species. Another problem is that many of us have open systems, i.e. the waterways, at some point, connect to an outside waterway. These connections are, inevitably, a source of infestation into your system from the outside water. New systems, although they may be in good shape, are subject to a variety of problems if not periodically monitored and treated as necessary.

In aquatic weed control, the methods and technology have advanced to the point where a fish kill is no longer likely when chemically controlling the aquatic weeds. In fact, a good program can result in a more balanced and healthy fish population due to less crowding from severe aquatic weeds.

The other problem that golf course superintendents don't have to worry about as much as in the past is irrigation from treated waterways. The label on most aquatic chemicals requires anywhere from zero to 14 days restriction of treated water for irrigation. Typically, after the initial heavy treatments, subsequent marginal or spot treatments require much less water use restrictions.

One of the main questions to be decided by the golf course superintendent after deciding that he needs a water management program is whether to do it himself or to call in a professional company which provides all of the manpower, service, and materials to do the job on a periodic basis. Some of the considerations to consider are: Do I have the proper knowledge of aquatics in order to perform an effective job? Do I have a restricted pesticide license in aquatics from the Department of Agriculture as required by law? Is my equipment adequate to perform the job and do I want to risk using aquatic herbicides in the equipment? Do I need a boat and pump system in order to distribute the chemicals properly. Do I have qualified people who are capable of handling aquatic chemicals effectively and safely? Finally, do I have the time and am I willing to take the risks and headaches associated with maintaining a good aquatic program?

The advantages of a self-maintenance program for your waterways are sometimes a considerable savings in cost and being able to better time your aquatic applications to conform to your schedule. Also, of course, the satisfaction of trying a new venture and having it work out.

Should you desire to start a self-maintenance program, the first step is to inspect closely all of your waterways and to identify the problems. The problems may be quite varied, ranging from a fringe of algae to 100% infestation by an underwater or floating aquatic plant. There are several ways to get the plant problem identified. One of the best ways is to talk to technical sales representatives from the various chemical distributors. They may have the knowledge or have people within their organization who can help. Another possibility is contacting the Department of Natural Resources or The Florida Game and Fresh-Water Fish Commission. They may be willing to look at your problem or will tell you where to send samples of weeds for identification. Also, many of the professional water management companies will work with you on a consultant basis to help identify weeds, suggest aquatic herbicides and set up your own programs. After you have identified the weed, the next problem is calculating the extent of the various weed problems. You need to know the average depth (usually $\frac{1}{2}$ of the maximum depth), the perimeter footage of the shoreline, and the total acreage of the lake and acreage of the infestation. Thirdly, you need to decide which chemicals will do the job for you most economically as well as most efficiently. Again, the chemical company representatives or the professional companies can help with that.

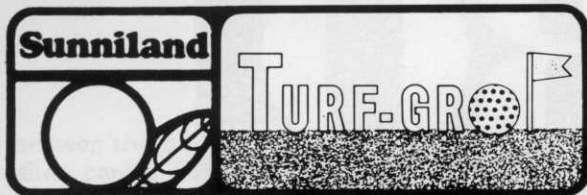
After gaining the necessary background knowledge and information, outline, for yourself, your intended twelve-month program. Some lakes will need attention as frequently as once per month or even more frequently. Others can be inspected and treated as little as four times or less per year. To arrive at the estimated total annual cost of your program list each weed which must be treated and the chemical to be used on it. Then multiply the chemical rate times the acres of infestation times the number of treatments per year times the unit cost of the material. This will give a rough estimate of the cost of the materials and amount needed.

Application should be made with all of the appropriate safety equipment, including goggles, masks, rubber gloves, and other protection where indicated. We must take into consideration a safety factor to avoid fish kill. The best way is to, as most labels recommend, treat only

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part of the body of water at once, and, of course, make sure we don't use the water for irrigation sooner than recommended on the label of the material. Ideal application conditions should dictate your timing. Low wind, no rain, normal water level, sunshine, and actively growing aquatic weeds are likely to give the best results. Basically, let common sense and prudent action help make some of your decisions.

Should you decide to consider a professional water management program, there are several well-qualified professional aquatic application companies who provide state-wide service and have excellent reputations. Most are willing to provide a free survey, detailed analysis of your waterways, suggest a program, and outline a monthly and annual maintenance cost. The following are a few questions which you should make it a point to find out from the company representative: frequency of treatment; will additional treatments be provided if required at no extra cost; the mode of application, i.e. truck or boat; what specific aquatic weeds are covered (in most cases, it should cover all noxious aquatic weeds); if a permit is required, will the company be responsible for obtaining it and submitting the periodic reports required; do you feel the company will be easy to communicate with and are they willing to notify you in advance of treatments as well as let you know what was treated and what chemicals were used; are their field applicators experienced and responsible; are their current customers satisfied (most are willing to submit a partial list of their current local customers); what is the cost of continuing a program for the second year; do they provide adequate insurance protection; and can the contract be terminated if you are not satisfied with the results.

At this point, mention should be made of "the fish," referring to the weed-eating chinese grass carp (white amur) or its new kin, the hybrid grass carp. The stocking of white amur has been halted by the State even though it was effective in combatting aquatic weed growth in some situations. It was determined that wide spread stocking of this fish could have some adverse environmental impacts. Permit applications for the hybrid grass carp are being accepted by the Florida Game and Freshwater Commission. If approved (based on a number of considerations), the stocking rate is usually 40 to 80 fish per acre. The cost of the fish varies and a list of suppliers is provided by the Commission. Preliminary results seem to indicate that the hybrid is not as good a weed-eater as the white amur. Results of stocking may take two to three years to become apparent. Some weeds, including torpedograss and algae, may not be adequately controlled. Before deciding on this alternative, it would be wise to do a thorough investigation of what results to expect.

In summary, no matter how it is accomplished, a good water management program will not only improve the appearance of the lakes but will also beautify the appearance of the entire golf course. Not only does good water management have benefits of improved beauty, aid in golf ball retrieval, and prevent more severe growth before it develops. Since the warm growing season is on the way, now is the time to consider a program. ■