

GOLF 'SCAPING

Controlling aquatic weeds

■ Aquatic plants are a component of the aquatic environment that are natural, therefore they are necessary, says Robert Hesser a retired member of the Pennsylvania Fish and Boat Commission.

"Control"—not "eradicate"—is the magic word," Hesser says.

Ponds, most typically those on golf course landscape, serve three functions, according to Hesser:

- 1) They beautify the course.
- 2) They act as water hazards.
- 3) They can be an irrigation source.

The weeds—Aquatic weeds take two forms, Hesser notes: algae and flowering plants.

According to a Penn State University bulletin which Hesser co-wrote, algae is the most common and widely distributed of all aquatic plants. Three different types of algae—plankton, filamentous algae and muskgrasses—are found in the aquatic environment.

Plankton algae (phytoplankton) are single-celled plants that

gather at the top of the pond and frequently look like spilled dark green paint. "They are a pain in the neck," Hesser says.

Filamentous plants are often erroneously described as moss or slime. They tend to look like long strands of hair which can form dense mats or fur-like coatings on rocks and other underwater objects. "They have a way of hiding," he notes, "particularly on hot days when they drop to the bottom of the pond."

Muskgrasses, which resemble some flowering plants, are often rough and gritty to the touch. "They have a skunk-like odor and are very difficult to control," Hesser says.

Flowering plants take the form of sub-emergents (underwater), emergents (above water) and floaters (on the water surface).

"Sub-emergents include milfoil, allodea, hydrilla in the South, bladderwort, coontail and water celery, which is a beneficial plant in most cases," Hesser says.

Emergent plants include arrowhead, cattails, various rushes

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Cleaning up Champion's lakes

■ The lakes at Champion Lakes Golf Club in Ligonier, Pa., needed cleaning. So veteran golf course superintendent Wade Coffman, stretched to the limits of his budget, tried a variety of solutions.

Mechanical raking, aeration and chemical weed control all seemed to work.

"(Aquatic weed control) is one of those things you let slip until someone says something," notes Coffman. "It got to the point, though, when the odor got just terrible in the warm, humid weather."

Champion Lakes—co-owned by former Pittsburgh Pirate baseball stars Dick Groat and Jerry Lynch—has seven bodies of water. Six smaller ponds drain into one bigger lake, which is used as the irrigation system's water supply.

"We put a fountain on No. 13," says Coffman. "There's always been a lot of algae in that pond, and it looked bad all the time. The fountain has definitely helped. We're going to put additional fountains on No. 11—and possibly No. 18, if this is a good year."

Part of the expense involved in



Wade Coffman has tried a variety of solutions for weeds on Champion Lakes Golf Course's seven ponds and lake. Aerating fountains most recently have proven effective.

installing pond aerators is getting electrical power to the ponds which, Coffman observes, "costs a good bit."

Drawdowns and mechanical raking have always been his first option.

"Usually, we draw the pond down a little and rake out what we can," he says. "There are also a lot of new chemicals out that seem to work well. But since we're using the water for irrigation, we have to kind of watch what we're putting in it."

Sonar (manufactured by SePro), Reward (manufactured by Zeneca), Komeen (manufactured by Griffin) and

Rodeo (manufactured by Monsanto) are some of the improved aquatic herbicides available. Coffman has been especially happy with the performance of Komeen.

"I'm still trying to learn the names of the weeds," Coffman notes. "You've got to tell the Pa. Department of Natural Resources exactly which weeds you want to treat before they'll give you a permit."

The 18-hole course sits in the midst of the Laurel

Highlands, just a stone's throw from Latrobe, Pa., where Arnie Palmer grew up. Palmer has played Champion Lakes, which is also a favorite of numerous professional baseball and football players, Coffman says.

Most of Champion Lakes' business comes from Pittsburgh-area golfers, who are drawn to the rolling hills, bentgrass fairways and sparkling lakes. "Dick and Jerry wanted a championship course that would be playable for anybody," notes Coffman, who's been the superintendent since the course opened in 1966. —J.R.

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GOLE-SKAPING



Milfoil
(*Myriophyllum
spicatum*)

Milfoils have
whorls of
feather-like
leaves.

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which grow along the edges of a water body. "These tend to be not too much of a problem except for cattails, which come from ponds that are too shallow (less than four feet deep) around the edges," says Hesser.

Floaters—most of which are rooted plants with much of their structure floating on the surface—include water lilies, spatterdock, watershield and duckweed.

Control—The best way to control aquatic plants is to prevent excess nutrients from entering the water, the Penn State leaflet says. Control, Hesser further notes, can be achieved either environmentally, mechanically and/or chemically.

Environmental control consists of deepening shorelines, holding water at certain levels, and drawdowns. Fertilization is also an environmental control—one which, Hesser says with some hesitation, will stimulate plant growth for predators.

"I'm not a proponent of fertilization," he continues. "This method of control was developed down south where the longer growing season is prevalent."

Mechanical control consists of cutting, mowing, raking and hand-weeding, all very labor-intensive and sometimes very difficult to achieve. Also included in this type of control are mechanical surface aerators or fountains and compressed air systems.

"The advantages of water aeration include higher dissolved oxygen levels, cooler temperatures through mixing of top and bottom water layers, less aquatic vegetation, and a more aesthetically pleasing water body condition," the Penn State leaflet says.

Biological control of aquatic plants is a controversial method, Penn State says. "And the only fish I'm aware of that will eat some vegetation is the grass carp," Hesser adds. (Triploid grass carp, a genetically altered version, are not legal in all states. They are also very expensive.)

Specialty herbicides, if used, need to be applied precisely according to the EPA label. In some states, such as Pennsylvania, you need permission from the governing state aquatic or agricultural commission before applying chemicals.

Finally, says the Penn State Cooperative Extension Service, "a good understanding of the water's chemical and physical characteristics (pH, hardness, temperature) is highly desirable."

Normal rates of some chemicals like copper sulfate are not as effective in water temperatures of less than 60°F or in water having hardness above 50 parts per million or three grains.

—Jerry Roche