



*Hole #13, John's Island West Course.*

# Golf Courses and the Environment: What's the Future?

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**F**OR THOSE OF US in the turfgrass and golf course industry, the good news is that the game of golf is experiencing a tremendous surge in popularity. The National Golf Foundation estimates that there are 21.7 million golfers in the United States, and by the year 2000, the number of players could easily exceed 30 million. To keep up with both present-day needs and the rapidly increasing number of golfers, it has been suggested that approximately 4,000 to 5,000 courses need to be built over the next 10 years. Thus, if current

trends continue, there will be tremendous opportunities for individuals in the turfgrass and golf course maintenance industry.

The bad news is that growing environmental concerns about golf course construction and maintenance practices could cause a restriction on the number of new courses that will be built, and could affect the quality and cost of course maintenance at existing facilities.

During the late 1950s and into the 1960s, golf courses were viewed in a very

positive light. Besides being a recreational facility and increasing a community's economic base, golf courses were considered to have a positive impact on the surrounding environment. The health and environmental benefits of a good stand of turf were published by The Lawn Institute, in Pleasant Hill, Tennessee. The list of benefits includes:

- Water purification and conservation
- Erosion control and soil building
- Oxygen generation

- Absorption of pollutants and entrapment of particles (dust)
- Fire retardation
- Temperature modifications
- Allergy control
- Noise and glare reduction

In effect, the establishment and maintenance of golf courses and other "Green Belt" areas within urban communities was promoted and accepted by the public. But today, due to the way environmental and pesticide issues are being reported by the news media, the general public could easily get the impression that golf courses and other highly maintained turf areas are not much safer than an active hazardous waste disposal site.

A classic example of negative reporting occurred in 1982 with the unfortunate death of a navy lieutenant after he had played the Army/Navy Golf Course. Because an application of the commonly used fungicide chlorothalonil (Daconil 2787) had recently been made to the golf course, the ensuing headlines gave the immediate impression that a pesticide was the cause of the lieutenant's death. One golf

magazine even hit the newsstands with a "Killer Course" cover. It was later reported that the lieutenant's death was due to a rare, rapidly progressive disease called toxic epidermal necrolysis, which was unrelated to his exposure to the chlorothalonil. Unfortunately, the public's perception of golf course pesticides was affected by the "emotional shock" type of journalism that was practiced.

In Vermont, the construction of a golf course has been blocked by the Vermont Environmental Board because of a perceived damage the course would have on the surrounding environment. Despite an extensive, comprehensive program to protect the surrounding environment, including overwhelming expert testimony that the potential for a negative impact on the surrounding environment is very minimal, construction of the course has not been permitted. Unfortunately, politics and emotional issues have overridden all other aspects of the project. Furthermore, as a result of this case, new state regulations have been proposed in Vermont that would require that an extensive data package be submitted

before a pesticide use permit would be granted to any course. It has been estimated that the cost of compliance could be as high as \$50,000 per facility, per year.

Today, not a day passes that doesn't include reports by the news media on the negative aspects of pesticide use and the declining quality of our environment. Thus, if the golf course maintenance industry is to thrive and meet future demands, those of us in the industry must take an active role in promoting the benefits of golf courses, researching environmental issues, continuing to practice sound environmental stewardship, and educating the general public on the real facts of these issues.

Dr. Thomas Watschke's recently published research (GREEN SECTION RECORD, May/June 1989) reported the benefits of a high-quality turfgrass stand in reducing surface runoff and keeping nutrient and pesticide concentrations in leachate water to an absolute minimum. This work is an excellent beginning, but much more work must be initiated and completed in order to cover the entire range of environmental issues before us.

*Sequence of John's Island West site. Before: Sand pine.*



*During: Selective clearing to enhance native vegetation.*



**A**T THE June, 1989, meeting of the AUSGA Turfgrass Research Committee, a proposal was made to conduct an exhaustive review of the current research literature on this project. After the review has been completed, the Committee will develop guidelines for future research needs, along the same line as the current 10-year research effort to significantly reduce water usage and maintenance costs of golf courses. Golf course owners, developers, and club managers, the PGA, golf course superintendents, golf course architects, and even individual golfers, must actively support turfgrass research for this worthwhile goal.

Across the country there are golf courses where environmental stewardship is an integral part of basic course management. Mr. Tim Hiers, Golf Course Manager, and his staff at the John's Island Club in Vero Beach, Florida, have successfully integrated sensitive environmental situations and routine course management into an effective, total management strategy. When Mr. Hiers first came to John's Island, a project was initiated to correct shade and poor air circulation problems

that had limited turfgrass growth in a number of areas through the 36-hole existing facility. A selective pruning and vegetation removal project is now in the final stages, and turfgrass growing conditions and the health and quality of the native vegetation have been greatly improved. One of the primary components of the native tree population on this course is the cabbage palm, where pileated woodpeckers commonly nest. To make sure that the woodpeckers' habitat was not compromised, great care was taken in selecting the cabbage palms to be removed.

Mr. Hiers has also had the responsibility of supervising construction and maintenance of the new John's Island West Course, located a few miles inland from the beach courses. The Tom Fazio designed course is located in a "sand pine scrub" habitat, which is one of Florida's rarest and oldest ecological communities. Throughout the design and construction phases, as well as with ongoing course maintenance, priority has been given to preserving the environmental balance of the entire site. After a review of the West Course, Mr. John Fitzpatrick, Executive Director of

the Archbold Biological Station, a privately funded research facility in Lake Placid, Florida, commented: "The course acts as a refuge for at least 10 of Florida's most endangered plants and animals (such as the Florida Scrubjaya). It can serve as a landmark course, protecting an endangered ecological community while maintaining the highest possible aesthetic and golfing standards."

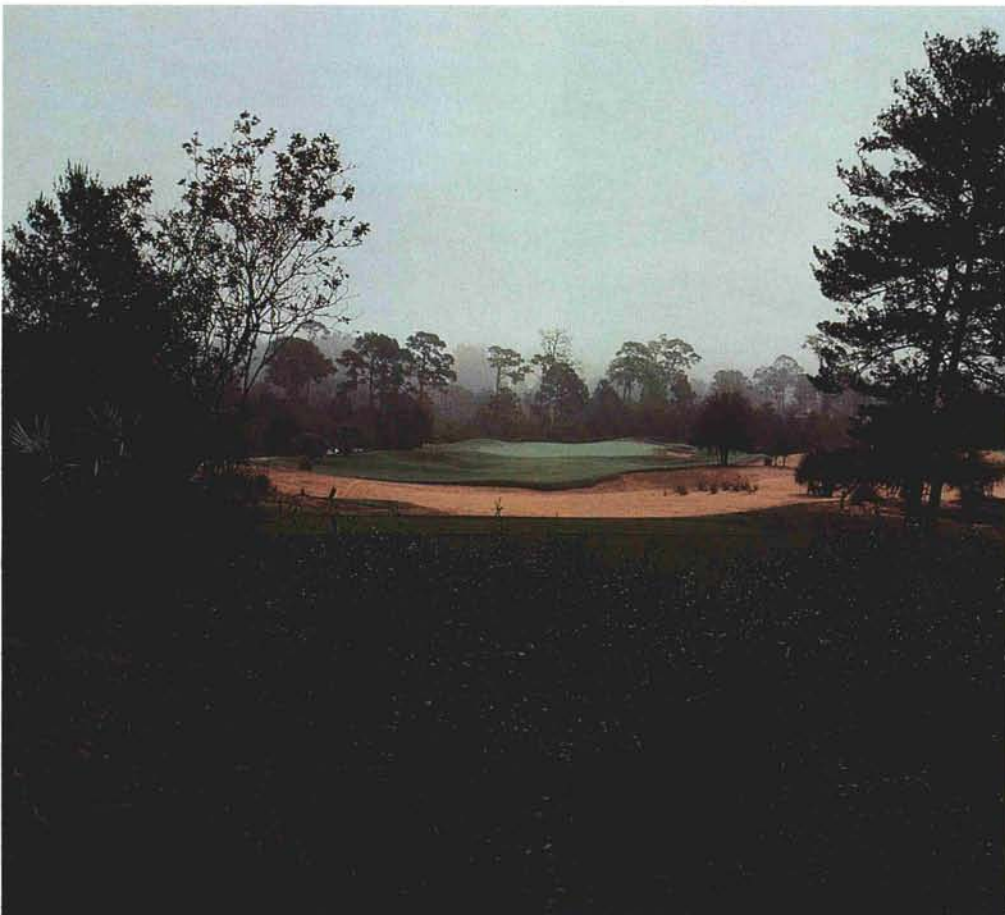
The John's Island Course is a shining example of how a new course can be built and maintained in a sensitive environmental situation so that positive environmental stewardship reigns. But what about the thousands of courses across the country where environmental stewardship was not really taken into consideration during the design and construction and the development of the original management programs? Can current standards and future demands be met? With the help of today's technology and the information from tomorrow's research, the answer to this question should be a definite yes. It is absolutely essential, however, that a conscientious effort be put forward to consistently utilize management programs and practices that favor a balanced environmental situation.

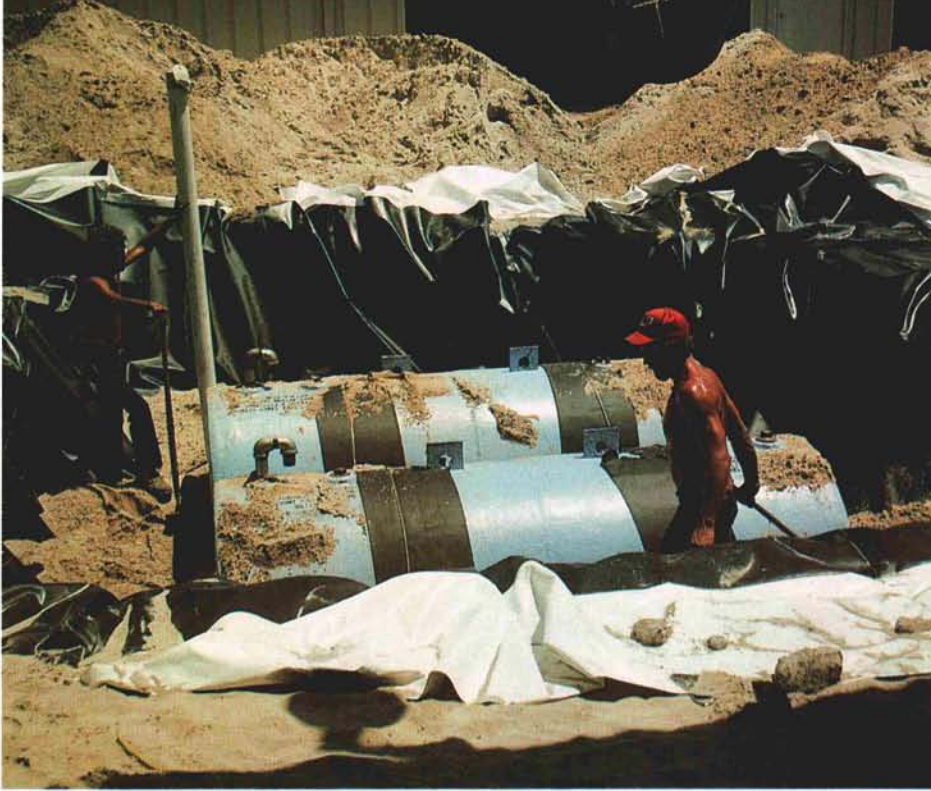
**W**ITH the 1990s rapidly approaching, it would be appropriate for every golf course to conduct an in-house review of its impact on the surrounding environment. Basic issues such as pesticide and fertilization use and irrigation practices should be considered, along with the composition and quality of the total plant and fauna community, area hydrological characteristics and the public's perception of the impact of the course on the community.

Presently, there are about 10,000 pages of federal regulations related to the various facets of golf course maintenance. Compliance with all of these regulations is a monumental undertaking for an individual club. The advent of regulatory compliance assistance programs, then, must be viewed as a positive and essential aspect of our golf course operations in the future. Taking advantage of one or more of these programs would seem to be a sound approach to minimizing the potential for repercussions due to a negative environmental situation.

Finally, it behooves all of us in the industry to actively pursue educating the general public on the facts of pesticide usage. There are "environmentalist" groups that have purposely misconstrued information on pesticide

*After: Picture of third hole at John's Island Club, the finished project.*





*(Top left) Protecting groundwater supplies by installing new fuel tanks with liners and monitoring wells.*

*(Bottom left) Wildlife enjoying the golf course.*



usage and its impacts in order to scare the public and create a totally negative attitude towards all pesticides. A recent example of this was the Public Citizens Congress Watch report, dated April 18, 1989, which reviewed the effects of the pesticides most commonly used by the lawn care industry. Several prominent members of the scientific community have reviewed this report and have stated that, in their opinion, the claims it makes are not supported by scientific data.

It has been said many times that the risk of exposure to hazardous materials is much greater inside the home than it is in conjunction with agricultural pesticide use. Nevertheless, considering the high visibility of pesticide usage on golf courses, it is essential to make sure that every precaution is taken to handle, apply, store, and dispose of all pesticide materials in the safest manner.

In some states, it is presently acceptable for an unlicensed individual to apply certain pesticides under the supervision of a certified pesticide applicator, but it is quickly becoming standard policy that only licensed spray technicians are allowed to handle, apply, and dispose of pesticide materials. Practicing and promoting a management philosophy of adhering to or exceeding all state and federal pesticide regulations is a must. Some extra costs might be incurred, but it can easily be justified if due consideration is given to the potential cost of a pesticide-related accident.

In summary, the future looks bright for the game of golf. With a fast-growing number of golf courses and golfers, there is also great promise for an expanding golf course maintenance industry. The pesticide issue, though, is one that could threaten the growth of the game by robbing golf course superintendents of some of the tools they need to maintain decent quality golf courses. Therefore, if the industry is to keep up with current demands, let alone meet future needs, then active support of turfgrass research, sound environmental stewardship, and a continuing educational effort will all be essential.