A Case Study of the Atlantic Golf Club

by REES JONES, Golf Course Architect

THE ATLANTIC Golf Course is a classic example of a project that was designed and built as a cooperative venture between local officials, the community, and the developer. Specifically, the project was the result of combined efforts of a sensitive golf course developer, Lowell Schulman, his project manager, Tom Julius of the Legacy Group, golf course superintendent Bob Ranum, and our firm working with the Town of Southampton, New York, and two local environmental groups, the Group for the South Fork and The Nature Conservancy. Rees Jones, Inc., Tom Julius, and Lowell Schulman used cooperation and creativity to ensure the site was designed to be attractive to wildlife while incorporating the requirements of a superb golf course.

To ensure that our environmental homework was done properly, Tom Julius asked local officials and environmental groups for suggestions of issues to be studied and recommendations of consultants to retain. Accordingly, impact reports were prepared on vegetation, ornithology, wildlife, soils, hydrogeology, traffic, archeology, turf management, and herpetology. Studies made regarding birds, wildlife, reptiles, water quality, and wetlands indicated the potential impacts of the golf course and pointed out the steps needed to protect and enhance wildlife habitat, preserve the wetlands, and guarantee good water quality. The studies regarding traffic, drainage, noise, and archeology showed these were areas of little impact and consequently of minimal concern to local officials in the development of the Atlantic Golf Club.

One of the primary goals at the outset was to find methods to convert 204 acres of farm fields to a golf course, while improving the ecology of the site. One clear advantage was our ability to show that maintenance of golf turf requires less fertilization and other chemical applications than required by the farm crops previously grown on the property.

We also knew from previous projects that golf courses can be designed, built,

Rees Jones

and planted to provide better habitats for birds, wildlife, and reptiles. Through the controlled use of fertilizer and other chemicals, we were able to demonstrate that we would enhance groundwater quality as well. Crops previously had been grown right to the edge of the wetlands, but in the golf course design, 100- and 200-foot buffers were established to protect existing wetlands.

Studies indicated there were two New York State endangered species inhabiting the site. One species was the northern harrier hawk, the only hawk which hunts by sound instead of sight. It was also determined that a kettle hole on the property was possibly a hibernation area for the eastern tiger salamander. Steps were taken to protect and ultimately enhance the environment for these two endangered species. For instance, in order to protect the migration movement patterns of the eastern tiger salamander, we avoided working areas of the site during the migrating period of March to May.

To enhance the future needs of the eastern tiger salamander, we worked with a herpetologist to prepare a specific habitat plan for the major kettle hole. A 200-foot buffer was maintained in this area, tree trunks and rocks were installed in the deep grasses, and, as mentioned earlier, a path was kept open and no golf course construction in March, April, or May occurred in the area where the eastern tiger salamander migrates.

SHINNECOCK Hills Golf Club and other maritime grassland areas were investigated to find grasses that would be conducive to golf play and acceptable as native plants to our botanist, Eric Lamont. Seven or eight native, local types of grasses were found that golf shots could be played from. These native grasses have been diminishing in quantity over a period of years because of residential development and farming. Several types of grasses were selected and incorporated into our grassing plan. We located the seeds for the principal grass in Denmark, after checking more than 25 domestic seed sources. Ultimately we collected some of the seed ourselves when we were unable to locate suppliers.

The primary wetland to be protected was the one where the eastern tiger salamander was found. This kettle hole, as well as Shorts Pond, are two of nine kettle holes found on the South Fork of Long Island resulting from the action of a receding glacier. They are geologically significant and prove to be wonderful natural features to incorporate in the golf course design.

In order to protect the wetlands, snow fences were installed adjacent to the wetland itself and also at the 100- and 200-foot buffer areas. Filtration fabric, approved as the standard fabric for erosion control, was installed to supplement the snow fence. For two reasons, we also volunteered to install hay bales next to the filter cloth; it would protect the expensive filter cloth, and it would serve as another method of erosion control for the wetlands. In the kettle hole area the erosion control devices were staggered so that the salamander could continue to move in and out of the wetland during migration. We also left a few openings in the snow fence to allow wildlife to enter for drinking water.

Since this site had been farmed for more than 100 years, native grasses previously existing in many areas had been lost and replaced by non-native

species such as ryegrass. To prepare these areas for the native grasses, sand was incorporated into the topsoil. These grasses were basically "poverty" grasses that grow best in sandy soil and drought conditions. Because maritime grasses survive better with poor soil and little water, they also require less water from the aquifer — another example of incorporating an environmental concern into a golf course design benefit.

In many areas, non-native tree species were removed to encourage the native species to better survive. Choke cherry and maple trees were often removed, leaving the spruces and hemlocks.

Between the 18th tee and 18th fairway a unique black willow grove was found. Black willows usually grow independently, and it was very unusual to find a grove this large. We were encouraged by local officials to clean out the non-indigenous trees to help the more valued native species to survive. In order to control erosion in this area, we agreed to plant three types of sheep fescue (*Festuca ovina*) and other native grasses, such as switch grass and sweet vernal.

EROSION CONTROL was of paramount importance from the outset of this project. A variety of control methods were used, including a cellular paper mesh imbedded with fescue grass. This "netting" product was purchased, with seed already imbedded, from a company in the Midwest. We ultimately were not happy with the seed quality and the resulting turf quality, but the method worked well on severe slopes to stabilize topsoil and prevent erosion. If we were to do it again, we would order seed from our designated supplier, send the seed to the "mesh" company and have them embed the mesh with the selected grass seed varieties. This would give us much better results with this method of erosion control. On Long Island, where there are several sod farms, the cost of sod installed was $.40 to $.45 per square foot. Using the cellular paper mesh method of seeding cost approximately $.20 per square foot. In other slope areas a hydro mulch consisting of wood pulp fiber mixed with seed was used. This method cost approximately $.06 per square foot; however, the method was not as efficient with regard to even seed application.

The most appropriate native maritime grasses for golf were broom-sedge (*Andropogon virginicus*) and common tufted hairgrass (*Deschampsia flexu-*

Photographs by RAMESHWAR DAS

The Atlantic Golf Club site prior to construction in February 1990.

Construction was completed on the Atlantic Golf Club in November 1990.

osa). Other grasses used in the rough areas were: little bluestem (*Schizachyrium scoparium*), big bluestem (*Andropogon gerardi*), Indian grass (*Sorgastrum nutans*), and tall fescue (*Festuca arundinacea*). There were only five other locations on Long Island where these native grasses were still evident. The Group for the South Fork and local officials were pleased that we were willing to try to establish a sixth location. Common hairgrass (*Deschampsia flexuosa*) seed was hand collected from the Nature Conservancy lands in Montauk. We located an area in West Hampton that had another desired native species, *Karex pennsylvanicus*. The landowner was paid approximately $5,000 to allow us to remove an acre of this grass, and it cost between $10,000 and $11,000 to divide the sod and transplant the plugs to the site. These plugs were used for the maritime grassland slope areas. The nearest alternate source of these materials was on Martha's Vineyard, and it would have cost the Atlantic Golf Club approximately $140,000 to buy, transport, and install a comparable number of plugs.

A distinct and positive aspect of planting and using native grasses, as well as the fescues, was that these grasses provide a suitable habitat for field mice, snakes, and other small animals which are the natural food supply for the northern harrier hawk. By using native grasses as part of the design, we were able to enhance the existing environment for this endangered species. These grasses also require significantly less water, causing less of an impact on the aquifer.

NATIVE SHRUBS were planted around the kettle hole area and Shorts Pond. We were helped in the selection process by The Nature Conservancy and the Group for the South Fork. These shrubs will provide a wonderful habitat for bird life since most of the shrubs in these out-of-play areas have berries, a food supply for birds. The planting around Shorts Pond was an example of Atlantic Golf Club's effort to work with the Town of Southampton to enhance the wetland habitat for wildlife. It should be mentioned that no heavy machinery was brought into the area, and the shrubs and trees were hand planted.

A golf course can be designed with the environment in mind, to create a better habitat for wildlife. As the golf course designer for the project, we incorporated all the findings of our environmental homework into our design and did several routings to accommodate the findings of these reports. We were fortunate enough to have had a 204-acre parcel to begin with, giving us plenty of room to develop the final 148-acre golf course.

By preserving the wetlands and utilizing a 100-foot buffer around four of them and a 200-foot buffer around the main kettle hole, we were able to utilize natural areas to re-vegetate the site as it may have been in the past. We also used native grasses and shrubs within some areas of the 148-acre golf course when they were compatible with the play of the game.

By utilizing the high ground for golf and enhancing the slopes to the wetlands, we have created a golf course which is truly visually exciting. The course will play differently each day due to the varying conditions of the wind. It is the type of golf course that one can continually enjoy, and it is a true example of a course designed in harmony with nature. It is my sincere hope that this course will become a model for other projects planned for environmentally sensitive sites.

Erosion control methods employed around the wetlands.