



## ENVIRONMENTAL STEWARDSHIP AT THE LANDINGS: A PRIORITY THAT DEFINES US

A review of a 16-year partnership with Audubon International, Landings Club and Landings Association professionals and resident volunteers to sustain and enhance the environment of The Landings.

By Dick Miller, Chairman of Audubon Committee 1999-2001

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### ***Introduction***

*In 1998, The Landings Club Board took a significant action to improve the current conditions and better manage the maintenance of its golf courses, by deciding to seek certification of its six courses as Audubon Cooperative Environmental Sanctuaries. The Board was also motivated by the desire to not only improve course conditions but to do so by improving the environment.*

*Audubon International, based in Troy, NY, is dedicated to sustainable natural resource management. This not-for-profit developed its rigorous course certification program based on research that indicated that, in varying degrees, the 16,000 golf courses in the United States, with some 24 million acres of green space, a huge amount of land, were not effectively protecting their environment or providing sufficient wildlife habitat.*

*Today 885 golf courses have agreed with this assessment and become certified, including 36% of the top 100 courses, Baltusrol, Pebble Beach, Pine Valley, Bethpage Black, Pinehurst, Merion, all the TPC's, to name a few. Currently 1130 more are seeking certification.*

*The U.S Golf Association has endorsed the program, supporting it with an annual grant of \$100,000.*

*Certification involves performance in the areas of judicious use of chemicals, improved quality and conservation of water, expanded wildlife habitat in non play areas and outreach to the community to sustain and improve the environment.*

*To achieve certification The Landings Club had to demonstrate actions in all these areas to meet rigorous performance standards determined by the Audubon program. Detailed documentation of performance was required.*

*Oakridge was our first course to be evaluated and certified. The other five followed in the next two years. And then each course has faced a certification renewal every two years which requires continuing progress in the five critical areas mentioned above and serves as a constant motivator to seek continued better performance.*

## CERTIFICATION ACTIONS

Following are examples of actions that enabled certification to be achieved in the distinct areas of performance.

### Use of Chemicals

Thorough analysis of the chemicals used (fertilizer, for example) led to changing to more effective products and reduced use of them, producing better results with reduced environmental contamination.

### Water Quality

Water Quality relates to the water in our 151 lagoons, about half of which are on our golf courses and half of these are fresh water where chemical runoff is the most harmful. This harmful runoff was decreased by less chemical use, fewer harmful chemicals and the planting of cord grasses on lagoon banks that serve as a filter.

Currently there is interest from the Club and The Landings Association for a more comprehensive shore planting program for eliminating or reducing shore erosion, filtering chemical runoff from fairways into the water and beautifying our lagoons in the process.

In the past similar pilot programs have provided significant knowledge and experience on lagoon shore planting which will be valuable for this new initiative.

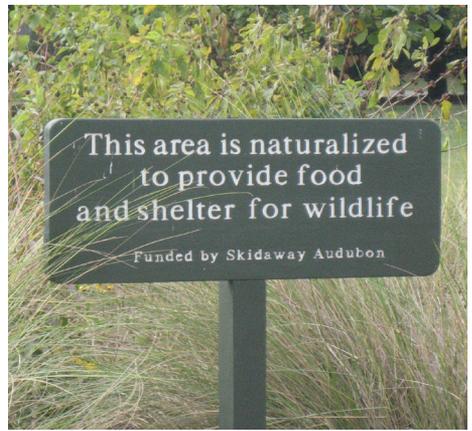
Improved water quality in our fresh water lagoons has had a favorable impact on the health of the fish population, especially largemouth bass and bluegills, other aquatic creatures including insects whose habitat is water, as well as various birds that depend on fish, such as herons, egrets, ospreys and ducks to name a few.

Health of the fish population is of great interest to Landings fishermen. Research indicates that fishing activity involves 45% of Landings households equaling golf memberships in 43% of households.

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### Water Conservation

This is a very serious issue for The Landings, especially for our golf courses. The Floridan Aquifer which provides all our drinking water is incurring saltwater intrusion. As an alternative to using potable water for course irrigation, we now rely on shallow wells that capture ground water runoff and lagoons retaining storm water and only expect to use two deep water wells drawing on the aquifer in emergencies.

Additionally The Club has been successful in significantly reducing water consumption. The installation of state of the art irrigation system on all courses using Evapo-Transpiration (ET) data daily identifies large and small areas needing irrigation and the precise amount needed on all six courses and then instructs only those sprinkler heads among the over 5,000 on the six courses to provide the needed water for a specific area.

This system plus the change to the application of dry fertilizer instead of that mixed with and applied with water has reduced water consumption of 361,382,000 gallons of water in 2011 to 275,785,000 in 2012, a reduction of 85,597,000 or 23.7%, in spite of drought conditions. The expectation is further reduction in the future.

## Wildlife Habitat

To provide natural wildlife habitat two approaches were pursued.

**One** was to keep as much of the natural landscape that exists, leaving dead trees, called snags, and fallen limbs both of which provide homes for woodpeckers, nuthatches, chickadees, hawks and ospreys among many others, plus flying squirrels and other animals. Also leaving brush, bushes and natural plants and grasses provides additional habitat for many birds, as well as butterflies, wasps, bees, beetles, and other pollinators that transfer seeds to maintain and expand the natural landscape.

Natural landscape is also the home for all our animal wildlife.

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*“... converting an acre of natural landscaping to grass has an initial cost of \$28,000 with an annual maintenance expense of close to \$1,000.”*

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It is interesting to note that converting nature to grass not only eliminates wildlife habitat but also is quite costly. It is estimated that converting an acre of natural landscape to grass has an initial cost of \$28,000 with an annual maintenance expense of close to \$1,000. Natural landscaping requires little need for water.

As a further protection of wildlife habitat, The Landings Club, as well as The Association, has comprehensive written tree policies that state the conditions under which trees can be removed and a strict decision process for removal.

The **second** approach is to create natural landscape mainly in barren areas by planting native grasses, shrubs, and trees, providing additional habitat where none existed while also adding beauty to the landscape.

Here are some examples of the many, many landscaping projects, large and small, developed by the Audubon Committee over the years;

- Back of Marshwood’s first green.
- The area where Plantation’s 5<sup>th</sup> and 15<sup>th</sup> greens and the 6<sup>th</sup> tee come together.
- Some 3.3 acres between the Marshwood/

Magnolia driving range and the fairway lagoon along Magnolia number 9.

- The area around the lagoon on Oakridge number 7 adjacent to the green.
- The lagoon at the side of the cart path going from Palmetto’s 8<sup>th</sup> green across the road to the 9<sup>th</sup> tee which originally had a bare shoreline.
- The cord grass plantings on the Deer Creek lagoon between the driving range and the 1<sup>st</sup> green.

Some of the above can be seen from the street giving the passerby a glimpse of natural beauty.

As mentioned earlier, the banks of some of our fresh water lagoons have received cord grass plantings to serve as a filter for chemical run off, a home for various

water related creatures and as a means to reduce bank erosion. Lagoon shore plantings will continue as a major ongoing project.

## Outreach and Education

Another element of the Audubon Certification Program is the requirement that The Landings Club publicize its efforts to sustain and improve the environment in order to engage and educate the community. Over the years education and outreach have taken many forms, including articles in island and off-island publications, e-mail communication from staff, panel discussions, lectures, the annual presentation of the Environmental Stewardship Awards, participation in community forums, the website (skidawayaudubon.org) and word of mouth. Special activities such as home renovation expos, the annual golf tournament, a 10<sup>th</sup> anniversary progress brochure, a 15<sup>th</sup> anniversary timeline feature in the Club’s magazine, the Skidaway Wildlife and Birding Guides and even turtle hatching parties contribute to communicating and sharing accomplishments which, in turn, continue to generate enthusiasm for more projects and programs.



## OTHER STEWARDSHIP INITIATIVES

### **The Bluebird Trail**

Each of our golf courses is dotted with pole mounted bluebird nest boxes, over 200 in all, built, repaired, tended and monitored by 39 Landings volunteers. In 2012, 988 bluebird fledglings were counted, a new record. The trail is the largest one of its kind in the Southeast.

The trail has prompted many backyard nest boxes as well.

### **The Sparrow Field**

This 31/4-acre wildlife sanctuary, once a turf farm for the club, is supported by 30 volunteers. Located the other side of a berm that runs left of Magnolia's 15<sup>th</sup> green, and accessible from Bartram Road, this field environment is purposely natural, comprised of a large area of native grasses, bushes and trees. It is an attractive haven for a great variety of birdlife, some unique to this habitat, including ground nesting birds. A pollinator berm garden attracts butterflies, bees and other pollinators as well as citizen scientists and photographers of distinction, bringing widespread recognition. It also serves as a University of Georgia study site for monarch butterflies.

### **Diamondback Turtle Rescue**

When identifying attractive areas for burying eggs, female diamondback terrapins have chosen sand bunkers, especially on the Plantation course, to lay their eggs. To avoid destruction of the eggs from predators, especially crows and raccoons, golfers or trap maintenance, a local resident was trained by a UGA Marine Extension naturalist and operates under his DNR permit to rescue the eggs. What was once a back porch operation has grown to 8 volunteers (and myriad golfers who call in when they spot the turtles) who rescue the buried eggs and place them in nesting boxes built by Club Maintenance. When born, each turtle is escorted by a human companion to the marsh. In 2012, more than 1,033 eggs were rescued and 882 newly hatched terrapins, a species of concern in Georgia, were helped to the water.

### **Lagoon Reefs**

The Landings fish also have an improved habitat environment with the addition of artificial reefs to our lagoons. Through the efforts of the Skidaway Chapter of the Coastal Conservation Association, reefs constructed of used tires, weighted to sink and identified on the surface by duck decoys have been placed in our fresh water lagoons. They provide a safe haven for small fish against larger fish and diving bird predators. CCA calls on 100 volunteers for this and other projects.

### **Golf Ball Retrieval and Lagoon and Fish Health**

Every few years The Landings Club engages a firm to retrieve golf balls from the lagoons. Usually somewhere between 60,000 to 75,000 balls are found. The Club receives an amount for each ball collected which are then reconditioned and sold by dealers. In 2001, the Club stopped mechanical retrieval of golf balls since the method damaged lagoon bottoms, vegetation and the shoreline and only allowed manual retrieval by a diver. Also retrieval is not allowed from February to May, the spawning months for

bass and bluegills. The result is unharmed lagoon banks and bottoms and more and healthier fish.

### **Landings Bird Life – A Wonderful Treasure**

Our golf courses and the rest of the Landings are a mecca for birdlife. It is such a valuable resource for The Landings and we are fortunate to have such a great variety of birds on our island. A one-day count identified 120 species and it is estimated that nearly twice that number visit us in a year.

The Palmetto course is currently host to one of three bald eagle nests on Skidaway Island and Magnolia has a recent osprey family. Herons, egrets, anhingas and ducks adorn our many lagoons.

In response to the plight of birds in distress, there is a wonderful resource on our island, Orphaned Bird Care, comprised of one licensed, professional woman and another in training, who rehabilitate injured and trapped birds plus abandoned chicks so they can be released back into the wild. This work is partially financed by donations from Landings residents and organizations.

To respond to the widespread interest in birdlife on our island Skidaway Audubon, with the help of the island's birdwatchers and partial funding from Landlover's, produced a four-color trifold brochure, The Landings Bird Trail, which has directions for following a birding trail, as well as pictures and descriptions of 110 birds most commonly seen on the island. Copies were distributed free. An earlier brochure, The Skidaway Wildlife Guide, was a four-color trifold with pictures and descriptions of 102 birds, plus 50 mammals, fish, reptiles and amphibians common to the island. At \$2 a copy, the run of 10,000 sold out.

### **Recycling Receptacles**

In response to member enthusiasm for recycling, the most recent program for environmental improvement has been the installation on each of our six golf courses of very attractive recycling bins for metal and plastic. Their contents are collected and deposited at the Community Recycling Center by Club staff. Part of the funds generated by the most recent Audubon Tournament financed this project. The Club, in turn, installed additional bins at the tennis center and pools.



## BROADENING INTO THE COMMUNITY

As the Club progressed with the Audubon certification program, it became evident that although the Club had some unique needs and the Club's specific initiatives and efforts would remain a focus, there was an opportunity to reach out to the wider community on environmental issues.

As a result, in 2007 the program expanded to include both Club and community. Shortly thereafter, the committee secured not-for-profit status and became Skidaway Audubon.

The combined effort has been very successful with Skidaway Audubon providing continued leadership and support for the Club's programs while developing new initiatives for the community with strong cooperation from The Landings Association. Among them are:

### **The Bottle Brigade**

The Landings Community has been divided into 35 geographic areas. Sixty five volunteers canvass weekly to pick up any loose trash. A forerunner to this effort is a program initiated by The Landings Garden Club which for many years has involved volunteers who on the first Monday of the month, October to May, collect and bag trash at the side of road of Diamond Causeway, a two-mile strip of road that runs through the marsh connecting Skidaway Island to the mainland.

### **Skidaway Farm**

With the help of 50 volunteers, a former three-acre sod farm for The Club has been converted into a community garden. Two hundred plots can be rented for flower and mostly vegetable gardens. A sturdy fence enclosure keeps out browsing animals while an irrigation system supplies water. The Farm has been a great success

and is currently serving 180 farmers. The Skidaway Audubon pavilion in its center provides a covered space for education and social gatherings.

### **Tallow Tree Removal**

The issue of invasives was brought to the fore by the increasing presence of the Chinese Tallow Tree which threatens the diversity of our maritime forest and has been labeled a Priority One Invasive Species in Georgia. Groups of residents were organized to physically halt the spread of the tree with an educational blitz focused on identification and removal on residential property. The scope of the program grew to include systematic purging of Tallows from the six golf courses and the common property of The Landings Association – upwards of 35,000 trees as of July 2013 – by two groups of volunteers: one with chain saws, one with hatchets and both with herbicide to prevent regrowth. The Club, the Association and Utilities Inc have provided financial support and their staffs serve as ongoing watchdogs for any new





*All residents of the island are eligible to rent plots at the community garden, Skidaway Farm, which opened in 2011*

trees. Additional support has come from the Skidaway Island State Park, Green Thumb Garden Club, as well as Skidaway Audubon which was honored for this project with the 2013 Georgia Urban Council's Grand Award for a civic organization.

### **Water Conservation**

Similar to The Landings Club golf courses, home owner property is threatened by a potential serious reduction in our water supply. The conservation of water has become a signature issue for Skidaway Audubon, initially addressed by a water conservation panel which highlighted the severity of the problem and actions that must be taken to preserve our water supply for the future.

Watering restrictions are already in effect. Education and advice to the community will be an ongoing program for Audubon, and The Club's leadership in this effort continues to offer insights for residents

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### **FINANCING AND SUPPORT**

Funds for the many projects described above came from a variety of sources. The annual Audubon Golf Tournament has raised \$212,000 over the past 15 years. A Skidaway Wildlife Guide produced by The Audubon Committee contributed another \$12,000. Donations and/or volunteer help have come from The Landings Garden Club, Birdwatchers, The Green Thumb Garden Club, Landlovers, The Landings Club, The Landings Association and numerous private donors and business supporters. CCA is a major contributor to lagoon water quality efforts.

In addition, the time and effort of many hundreds of resident volunteers have been essential to the success of every project. And, of course, the Club's Golf Course

Maintenance staff and the Association's Public Works Department have been invaluable in the planning and execution of projects.

Anyone looking to be involved in our projects or wishing to suggest additional initiatives can call the Association or Club offices where you will be directed to the appropriate person. Or visit the website: [skidawayaudubon.org](http://skidawayaudubon.org).

## **Conclusion**

*After 16 years we can look back and take pride in the many initiatives and resultant actions the Club has taken to sustain and improve our environment, and the growth of the program within the larger community with the support of the Association.*

*The wise decision to take our courses into the Audubon Cooperative Sanctuary Program has increased our awareness of the need, provided the incentive to take action and given us the framework to carry out efforts to sustain that action, beyond the Club and into the broader community.*

*Certification acknowledges the success of our efforts and recertification encourages continual progress in sustaining and improving our environment.*

*The foregoing review of the many initiatives and actions taken over the years is ample proof of our success.*

*Could all of this have been done without the Audubon program? Not likely for the scope of activity and certainly not likely within the timeframe. However, there is still more to be done, especially in water conservation and continual improvement of our natural habitat.*

*The good news is that we now have momentum to continue our success, a mindset on the need among our governing bodies and the community at large, including many community groups, hundreds and hundreds of volunteers, programs in the works, and an experienced and very competent professional staff to identify and effectively respond to needs.*

*Plus there is a realization that linking The Landings with successful environmental stewardship has a positive effect on those evaluating the community as a very desirable place to live.*



Dick Miller



**SKIDAWAY AUDUBON**

[www.skidawayaudubon.org](http://www.skidawayaudubon.org)