

After millions of years...

The Gopher Tortoise Needs Your Help

By Kyle Sweet, CGCS, SANCTUARY G.C.

Oh, how times have changed for the gopher tortoise.

As a young child growing up in Zephyrhills (yes, where that great bottled water comes from), I had the opportunity to grow to know gopher tortoises very well. Believe it or not, we raced them. Although slow, the racing was entertaining and held annually at a local fair. Our stealthy reptile, Lord Baltimore as affectionately named by my dad, was directionally challenged and after his rookie appearance



Josh Sweet with one of The Sanctuary's largest tortoises that inhabits a protected tortoise habitat area alongside the 13th hole. Photo by Kyle Sweet, CGCS.

was released back to the pasture lands where he was found. At that time, Gopher tortoises seemed nearly as common as the ever-present mourning doves in open pasture lands throughout central Florida.

Upon arrival to Sanibel Island, many years later, I was quickly educated in the importance of the gopher tortoise while working around several biologists and consultants during the development of The Sanctuary Golf Club. I thought I was educated in the industry after years of experience and a degree, but this was a learning experience that has continued for the past 15 years while I have been actively involved in gopher tortoise habitat understanding and

management. As a golf course manager, course staff member or just interested citizen, you can make a difference with this gentle, important animal.

THE GOPHER TORTOISE

The gopher tortoise, *gopherus*

polyphemus, belongs to a group of land tortoises that originated in North America 60 million years ago, thus making it one of our oldest living species. They are found throughout Florida, Georgia, South Carolina, Mississippi, Alabama and eastern Louisiana. It is a plain-looking turtle, being either dark tan or gray. Their front legs are broad and flat and are excellent for digging while its rear legs closely resemble the shape of an elephant's.

Identification of this tortoise is very important. All tortoises are turtles, but not all turtles are tortoises. With this in mind, a little education with your staff and members can go a long

way and can save a small tortoise from mistakenly being put in a lake or pond when happened-upon on the course.

THE IMPORTANCE OF HOME

The Gopher tortoise digs and lives in burrows. The burrow provides protection from predators, freezing weather and fire. The burrow, ranging in depth from 3-20 ft. deep and averaging 30 feet long, provides not only a safe and temperature-moderated home for the tortoise, but plays a role in the entire wildlife community where it resides. Just to name a few, snakes, frogs, mice, fox, skunks, opossums, rabbits, quail, armadillos, burrowing owls and lizards will share the burrow with tortoises or utilize old abandoned burrows.

As habitats are adversely affected, tortoises will dig multiple burrows. Loss of food sources, changes in water table levels and burrow disruption are also a few causes for tortoises moving out.

LATE BLOOMERS AND A STRUGGLE FOR SURVIVAL

The Gopher tortoise doesn't reach sexual maturity until 10-15 years of age. At this age, the shells are typically about 9 inches long. As it matures, the gender of the tortoise can be easily determined by viewing its plastron (underbelly). The male's will be concave while the female's is flat. The tortoise's courtship begins in the spring and the females nest between April and

July. Typically, the female will lay an average of 5–6 eggs very close to the their burrow openings in the loose soil generated from creating their home, which is defined as the “apron.”

After nearly three months, the young will hatch and their gender will be determined by the temperature of the soil where the nest incubated. Hatchlings are 1-2 inches long and grow about 3/4-inch per year. The hatchlings are much brighter in color than adults and, unfortunately, very few young tortoises survive to reproductive maturity. At 6 -7 years old, tortoises are able to thwart most predators but, at this age, domestic dogs, raccoons and man are its biggest adversaries.

FOOD AND WATER

Gopher tortoises are vegetarians but not at all picky about what plants they eat. You are most likely to see tortoises foraging in dry, open areas in the early morning or late afternoon during the

Another SW Florida Tortoise Habitat

South of Kyle Sweet’s Tortoise habitat on Sanibel Island lies the Old Collier Club in Naples. Highlights of the Fazio-designed layout include ample native areas and connecting wildlife corridors. Seldom does a guided wildlife tour go by without participants seeing a gopher tortoise den or several of the critters crawling about. During a recent visit this 3-1/2-inch juvenile tortoise was spied venturing about. Superintendent Tim Hiers said during this vulnerable soft-shelled stage in their lives, crows are their chief predators. The good news is that Hiers reports a 70-percent increase in the gopher tortoise population since the course opened seven years ago.



summer months. They feed mainly on low-growing plants that require abundant sunlight. Landscaping with native plants on your course or home

will help ensure that proper food is available for the tortoise.

Tortoises are seldom seen drinking water. Rather, they get the water they



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need from their diet and also have the ability to gather rain water to drink when water travels down their burrow. During extreme drought conditions however, tortoises have been seen drinking puddle water following rain showers.

HOW YOU AND YOUR COMMUNITY CAN HELP

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Gopher tortise habitat in the Sanctuary Golf Club is clearly marked. Photo by Kyle Sweet, CGCS.



with less and less available dry upland, have caused the gopher tortoise to be detrimentally impacted and classified as a species of concern. It's important to know what that means. By definition, a species of special concern is one where a population reduction of at least 20 percent has been projected or suspected to be met within the next 10 years or three generations, whichever is longer.

You can help by first identifying that tortoises are on your course and in your community. You may know this already from laws that are in place to protect the habitats of tortoises throughout Florida or just from your own observations. Once you know they are there, their habitats will need to be maintained. The typical forest fire cycle, that helps to maintain the open habitat needed by the tortoise, is seldom a reality in a residential community or on the course. However, with proper trimming and mowing, the same effect can be achieved in areas that tortoises

need to thrive.

Education of golfers and residents is very important. Keep people and dogs away from the sites where burrows exist. Foot traffic can crush shallow burrows, destroy egg clutches when layed near the burrow opening, and break or disturb important vegetation that the tortoise relies on for its diet.

<SUBHED>Implementation, what can you and your club do?

Education must be reinforced by identifying the tortoise areas and keeping people out. We have installed 4x4 posts and roped around all of The Sanctuary's protected gopher tortoise habitat areas and have also identified these for our membership with vinyl signs. These areas are marked as environmentally sensitive lateral hazards where golf balls cannot be retrieved if they are hit into these areas. A one-stroke penalty is incurred and the player must take a drop.

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and displaying signage, we have recently begun to map all of our protected tortoise habitat areas with GIS so we can monitor populations of the tortoise and also monitor the travel of tortoises throughout their habitat. We hope to complete annual surveying and will be sharing our survey results with the J.N. Ding Darling National Wildlife Refuge (our neighbor), The Sanibel Captiva Conservation Foundation and the City of Sanibel, all of which are very dedicated to the protection of the Gopher Tortoise.

You can accomplish this at your own club. Your county has Georeference photographic mapping of your property that you can purchase in digital form. Once you have this photography, GPS points can be layered on top of the map by using appropriate software. Each burrow location or whatever you're mapping can be referenced with a GPS point. Our mapping was done by wildlife research

REMEMBER THESE FACTS...

- This "keystone" species helps support several other animals in its community.
- High and dry habitats are where you will find them.
- Burrows can be crushed by foot traffic alone so be careful where you step.
- The primary reason for the gopher tortoise being endangered is a loss of habitat.

- Tortoises need to roam freely, so limiting obstructions is important to their welfare
- Tortoises cannot be moved from one community to another due to URTD, which can affect an entire tortoise population. You can make a difference in the survival of the Gopher tortoise on your course and in your community.

volunteer through the local Sanibel Captiva Conservation Foundation. Other wildlife research organizations in your area may be able to help in your efforts.

Upper Respiratory Tract Disease of Tortoises

An upper respiratory tract disease of tortoises has been observed in Florida as well as in the Western US, Georgia

and Mississippi. This disease is highly contagious and is passed from one tortoise to another by close contact. In many situations, the threat of spread of this disease has limited the availability of tortoise relocation. Established colonies can be drastically affected if a diseased tortoise is introduced into the population. Never introduce or remove/relocate a tortoise from its known habitat.

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34 Marriott Courses to Become Sanctuaries by Year's End

Marriott Golf is requiring 34 of the company's managed golf courses throughout North America and the Caribbean to become Certified Audubon Cooperative Sanctuaries, by the end of 2008.

Certified Audubon Cooperative Sanctuaries are part of a systemwide commitment by Marriott International, Inc. to promote environmental stewardship.

Marriott's Audubon Certification mandate program includes famed golf destinations such as Doral Golf Resort & Spa, in Miami; Royal St. Kitts Golf Club in the British West Indies; and Shadow Ridge Golf Club in Palm Desert, California, among others.

Doral, host of the 2008 WGC-CA Championship, March 20-23, became the first-ever Certified Audubon Cooperative Sanctuary in North America to host a World Golf Championships event.

"Marriott Golf is proud to be part of the company's broader green initiatives by supporting Audubon Certification, golf's environmental gold standard," said Robert Waller, senior director of grounds, Marriott Golf. "Our goal is to engage our guests and associates from around the world in this unique process and to further our commitment to promoting the game of golf in an eco-friendly way."

Marriott International has been actively involved in energy conservation since the 1980s. Recently, Marriott's headquarters in Bethesda, along with its timeshare division based in Orlando, replaced more than 2.5 million pieces

of Styrofoam and plastic utensils with those made of potato ("SpudWare™"), sugar cane and cornstarch, all fully biodegradable within an average of 100 days. These industry-leading efforts have been recognized by the EPA, which awarded Marriott its 2008 Sustained Excellence award and placed the Energy Star label on more than 200 of its hotels (the most of any hotel company).

To date, and in advance of the 2008 mandate initiative, Marriott Golf maintains six properties that operate as Certified Audubon Cooperative Sanctuaries, five in Florida:

- Stone Mountain Golf Club in Stone Mountain, Georgia
- Doral Golf Resort & Spa in Miami
- The Ritz-Carlton Members Club in Sarasota
- The Ritz-Carlton Golf Club in Jupiter
- Grande Pines Golf Club in Orlando
- The Ritz-Carlton Golf Club, Orlando,
- Grande Lakes in Orlando

Each of these properties has achieved certification through a variety of methods, including the development of water conservation plans; converting formerly managed turf into wildlife habitat; constructing nesting boxes for native birds; the creation of butterfly gardens, and much more.

"We are elated with the level of commitment Marriott is showing by mandating Audubon Certification across their portfolio of golf courses," said Kevin Fletcher, executive director of Audubon International. "This program directly enables golf courses to



Part circle heads and aquatic plantings help protect the golf course waterways providing an environment where wildlife can thrive

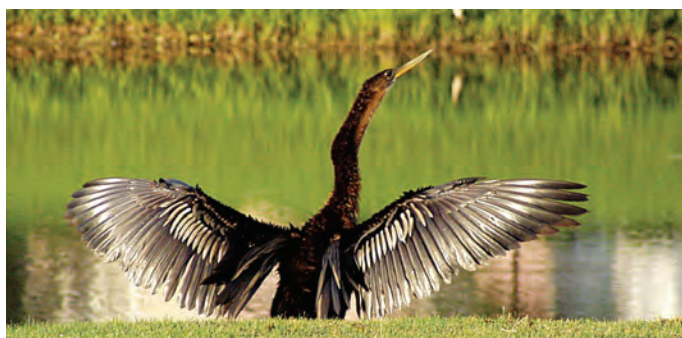
protect the environment by improving the quality of land, water, and air, along with conserving natural resources and protecting wildlife habitats. These proven environmental management practices will help preserve the natural heritage of the game of golf for many generations to come."

GRANDE VISTA NEXT

The next property to become Audubon certified will be Grande Vista Golf Club, a nine-hole golf course and 32-acre practice facility and part of The Faldo Golf Institute in Orlando.

Throughout the past year, Grande Vista has implemented a variety of programs to demonstrate its commitment to environmental stewardship. Highlighting the property's efforts is the creation of a nature trail that runs throughout the property and hosts a number of native Florida plants. Each plant is identified with a post that describes the plant in details and serves to educate guests.

Moreover, Grande Vista has worked to provide habitats along streams and lakes that provide food and shelter for wildlife and 35 acres of habitat area has been protected throughout the property.



Often called the "Snake bird" or water turkey, an anhinga sunbathes on the 11th hole at Grande Pines.