

## Audubon Case Study

### Bonita Bay

Fully Certified 11/17/95

Bonita Bay consists of 538 acres of lakes and 550 acres designated for golf course that provide a diverse habitat for a variety of wildlife and birds.

Currently 108 nesting boxes have been strategically placed throughout the three courses resulting in the fledging of a variety of bird species. Downy woodpeckers, piliated woodpeckers, screech owls and flycatchers are but a few. The Bonita Bay wildlife inventory includes bald eagles, osprey, roseate spoonbills, tricolored herons, otters, bobcats, rabbits, bats, deer, squirrels and gopher tortoises.

Writes J. Mark Black, CGCS, assistant vice president of club operations:

"We are very fortunate to be a part of a large development whose objective from the beginning was a total commitment to environmental sensitivity. The Audubon Certification was a natural progression for us, and we are proud to support and be a part of its promotion in our industry."

### Resource Conservation

Habitat enhancement projects have reduced irrigation, fertilizer, and pesticide use. Biological controls, such as parasitic nematodes, incorporated to control mole crickets around lake banks have reduced the risk of runoff to water sources. In addition, pine straw is used to promote favorable plant growth around surrounding landscape trees and plants.

Further, Bonita Bay's water conservation and water quality management programs include regular water monitoring to check the spread of noxious exotic vegetation and xeriscaping to preserve native plants and conserve water. They participate in the Key Pine Tree Save Program to preserve fish, waterfowl, and human life.

"The community was the first xeriscape demonstration site, and continues to incorporate water conservation techniques and encourage residents to

### Bonita Bay Bonita Springs

Bonita Bay is a 2400-acre residential community consisting of three Arthur Hills-designed championship golf courses. The land was purchased in 1979 by David B. Shakarin to create a place where people, plants and animals would co-exist in a beautiful natural environment.

Bonita Bay is situated in Southwest Florida, bordered by the Estero Bay Aquatic Preserve, the Imperial River, and Spring Creek. Slough and mangrove preserves that are federally protected, salt flats and wetlands comprise the majority of Bonita Bay. The remainder of the community is comprised of three championship golf courses and resident neighborhoods. Bonita Bay management is committed and dedicated to preserving wildlife, enhancing habitat, and preserving the environment.

follow their lead," says Kurt Harclerode, senior public communications officer of the South Florida Water Management District.

Scouting, sampling, monitoring and recording pest activity are key components of Bonita Bay's integrated pest management program. Now in its third year of practice, these IPM measures have resulted in accurate mapping of insect, weed, and nematode areas to allow for spot treatments that significantly reduce pesticide use.

### Outreach & Education

The Bonita Bay Community Association schedules educational meetings to teach and inform residents and local special interest groups about the unique vegetation, xeriscaping, birds and plants common to Southwest Florida and protected by Bonita Bay. Their community newsletters report and incorporate photographs of wildlife and nature preservation at Bonita Bay.

Compiled by Dianne Rabkin  
Bonita Bay

## Threatened squirrels can call golf course home

BY CINDY SPENCE

IFAS Educational Media and Services

*Editor's note: Over a year ago we ran a story about a fox squirrel study being considered on golf courses in the Naples area. Since the theme for this Stewardship section is backyard habitat and a lot of backyards adjoin golf courses, we thought you might enjoy the most recent update on the project.*

A threatened species of wildlife has turned to a decidedly civilized habitat in its quest for survival, says a University of Florida researcher. Now wildlife ecologist Rebecca Ditgen is trying to determine how to make southwest Florida golf courses even more hospitable for Big Cypress fox squirrels.

"Our goal is to learn which courses have fox squirrel populations and what habitat features on those courses encourage the squirrels to live there," said Ditgen. With their own forested habitat vanishing as southwest Florida urbanizes, the fox squirrels, like many people, have turned to homes with a golf course view.

Very little is known about the Big Cypress fox squirrel, said Stephen Humphrey, acting dean of the College of Natural Resources and Environment.

"In the wild, they are very shy, difficult to see, difficult to find and almost impossible to study. In fact we've tried to study them in the wild and failed," Humphrey said. "But we found they're abundant on golf courses on the urban fringe of the coast of southwest Florida."

Ditgen said fox squirrels appear from field observations to be declining in the wild but it is unclear why. In the city, however, the reason is plain to see.

"Development is happening so rapidly here and the prime land for develop-



*Fox squirrels are native to pine forests with open understories and spend a lot of time on the ground so golf courses with open pine and cypress stands are good habitat for them. Photo by Rebecca Ditgen.*

ment, the upland pines, is also their prime habitat," Ditgen said. "They disappear shortly after intense development because they just don't do well with cars and cats and dogs."

Why the squirrels turned to golf courses for safe haven is a question Ditgen hopes to answer.

While her research requires her to spend enough time on the course to make avid golfers jealous, she says she is most likely to be found in the rough, scouring the trees and underbrush for squirrels fitted with radio collars. As she visits 60 courses in Lee and Collier counties, she records data on the squirrel numbers and landscape design. By tracking 30 squirrels with radio collars on two courses she can see how they are using their adopted habitat.

"Fox squirrels are native to pine forests with open understories and spend a lot of time on the ground so golf courses with open pine and cypress stands are good habitat for them. They seem to do well there and can move around easily," Ditgen said. "They do particularly well on courses with large stands of native palms and pines."

The Big Cypress fox squirrels have been on the threatened species list for 20 years. They differ from a common gray squirrel because they are larger and their fur can be black, blond or red.

"They're a very graceful squirrel. They leap and move around a lot and people

***In a four-year research project funded by the Non-game Bureau of the Florida Game and Fresh Water Fish Commission, Ditgen will come up with management recommendations golf course superintendents can use to improve habitat for fox squirrels.***

find them beautiful to watch," Ditgen said. "Certainly the native Floridians I talk to and the people who've been here a long time take real pride in having fox squirrels around. They like them a lot."

In a four-year research project funded by the Non-game Bureau of the Florida Game and Fresh Water Fish Commission, Ditgen will come up with management recommendations golf course superintendents can use to improve habitat for fox squirrels.

Ditgen has already learned that the squirrels have large home ranges, often more than 100 acres, and that young adults often travel more than a mile in search of an adult home range. She is also studying their feeding and nesting habits.

Part of her research also includes a comparison of highly developed courses to those in more natural environments with no adjacent homes. In one area of Naples, she has found 50 to 70 squirrels sharing three 18-hole courses lush with

cypress, pines, figs and maples—all prime habitat. With national golfing organizations and some wildlife groups encouraging golf courses to design in a fashion that is friendly to regional wildlife, many course superintendents are eager to hear Ditgen's recommendations.

Already, she said, she would recommend that courses plant more native vegetation to provide more year-round food sources for the squirrels. The exotic plants many courses use sometimes are more showy but frequently do not provide the best food for the animals.

Many golfers, curious to find out about the remarkably bad golfer whose cart seems to stay in the rough, are pleased when they find out Ditgen is a researcher and interested in learning more about sharing their green space with the squirrels.

"The idea of looking at how wildlife can use golf courses has arrived," Ditgen said.