

# Assessing the Conservation Value of Golf Courses for Fox Squirrels in Coastal South Carolina

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## Objectives:

1. Survey a representative sample of golf courses from the South Carolina coast for fox squirrel presence and abundance.
2. Collect data on landscape metrics and habitat features from these same courses.
3. Develop statistical models that relate fox squirrel abundance to landscape and habitat variables.
4. Develop management recommendations for fox squirrel habitat on existing and developing courses.

**Start Date:** 2004

**Project Duration:** two years

**Total Funding:** \$60,000

The fox squirrel is a charismatic species that appears to be declining in numbers and is experiencing loss of native habitat throughout the southeastern US. Fox squirrels are known to inhabit golf courses throughout the southeastern US and in some situations attain very high population densities. This research investigates the relationships between the abundance of fox squirrels on golf courses in coastal South Carolina and various landscape and habitat variables.

The research is occurring along the South Carolina coast because the rapid pace of landscape change there is frequently associated with golf course developments. As such, the presence of fox squirrels provides a unique opportunity to define golf course management and development plans that offer high conservation value, as well as an opportunity to create a flagship conservation program for golf courses. This region is the fastest growing area of the state, has a national reputation as a golf destination, and, given the number of courses in this region, has the potential to serve as a model for maintaining adequate habitat for a highly visible species that may benefit from urban habitats if they are properly managed.

The specific objectives are to: (1) survey a representative sample of golf courses from the South Carolina coast for fox squirrel presence and abundance; (2) collect data on landscape metrics and habitat features from these same courses; (3) develop statistical models that relate fox squirrel abundance to landscape and habitat variables, and (4) develop management recommendations for fox squirrel habitat on existing and developing courses.



Clemson University researchers are determining landscape features that favor fox squirrel populations in hopes of developing management recommendations for fox squirrel habitat on existing and developing courses in coastal South Carolina.

The project was initiated in mid-June, 2004 with the hiring of a graduate student at Clemson University. The student is focusing on class work and study design through December, 2004. During summer and fall 2004, we also collected various spatial data layers that will be used for the landscape analysis. Although additional data layers will be needed, we have been able to assemble base layers that are critical and, in the process, have developed important relationships with other research personnel.

We are currently developing the mail-survey for golf course superintendents. We are working with the Clemson Golf Management Program to distribute this to courses along the SC coast. This survey inquires about the willingness of courses to participate in the research and also will collect basic information regarding course layout and squirrel presence. Once these surveys are returned course selection will occur.

We also have assembled a suite of research cooperators with expertise in areas such as landscape ecology, fox squirrel biology, and remote sensing and data

processing and have established a working relationship with biologists at South Carolina DNR who are responsible for survey and management of fox squirrels in the state. These are important steps in ensuring that our research efforts are efficient and achieve the desired impact.

Our next objective is to begin developing the survey methodology for fox squirrels. This will be initiated in late October, 2004. Data collection (i.e., surveys of squirrels on golf courses) will begin in earnest in early spring 2005 and will also occur in fall 2005.

## Summary Points

● This research investigates the relationships between the abundance of fox squirrels on golf courses in coastal South Carolina and various landscape and habitat variables.

● Researchers are developing the survey methodology for fox squirrels. This will be initiated in late October, 2004. Data collection (i.e., surveys of squirrels on golf courses) will begin in earnest in early spring 2005 and will also occur in fall 2005.