



2022 Fox Squirrel Sighting Survey Summary

Introduction

Due to concern about the population status of the fox squirrel (*Sciurus niger*) across the Southeast, a fox squirrel sighting survey was initiated in South Carolina in 1989 to document distribution, habitat preference and relative abundance for this species. Fox squirrels prefer habitat consisting of mixed stands of longleaf, loblolly and shortleaf pine, hardwoods and bottomlands. They use tree cavities and leaf nests both as escape and for rearing young. Fox squirrels also use cavities in a variety of tree species especially in the winter and spring. The widespread loss of preferred habitat is detrimental to fox squirrels throughout the Southeast. Practices such as large-scale monoculture replacement of longleaf pine by loblolly pine, shortened stand rotation, loss of natural hardwood stands and fire suppression have contributed to habitat loss. Changes in agribusiness and increased urban sprawl have also replaced suitable fox squirrel habitat.

The fox squirrel sighting survey has been conducted in even-numbered years since 1994. This report details information from the 2022 survey.

Methods and Materials

Data cards for recording information were distributed to Wildlife Section personnel of the South Carolina Department of Natural Resources (DNR) and cooperators from the U.S. Forest Service (USFS), U.S. Fish and Wildlife Service (USFWS), the South Carolina Forestry Commission (SCFC) and other potential cooperators. In addition, sightings could be recorded using a smart phone app. Cooperators who wish to use this method of reporting can sign up at <https://www.dnr.sc.gov/hunting/smallgamesurvey.html>.

From January 1 through December 31, 2022, participants were asked to record date, county, location, color phase and associated habitat type each time a fox squirrel was sighted. Participants were asked to report sightings during the course of their normal work activities and not to drive purposefully through areas of known fox squirrel concentrations.

Habitat types were delineated as follows: pine plantation <15 years old (PPy), pulpwood sized pine plantation (PPp), sawtimber sized pine plantation (PPs), mixed pine-hardwood <30 years old (PHy), mixed pine-hardwood 30-50 years old (PHm), mixed pine-hardwood >50 years old (PHo), bottomland hardwood 30-50 years old (BHy), bottomland hardwood >50 years old (BHo), upland hardwood 30-50 years old (UHy), upland hardwood >50 (UHo), and agricultural or other open field (FD).

Results and Discussion

A total of 383 (an increase from 113 in 2020) individual fox squirrel sightings were recorded in 21 counties (increased from 14 counties in 2020) across South Carolina during the 2022 calendar year. We believe the increase in reporting rate for the 2022 period is more accurate than the 2020 survey and a better representation of the current population. The 2020 period was directly related to the national pandemic (COVID 19) and more likely resulted in decreased travel and observations across the state.

Fox squirrel sightings were higher during the first six months with the most sightings occurring in May (82) followed by April (72), March (69) and February (36) respectively. Fox squirrel sightings showed a noticeable decline during the months of August, September, and October (Figure 1).

The 2022 survey had fox squirrel sightings most prevalent in mixed pine-hardwood habitats (greater than 50 years old and 30-50 years old). This is to be expected as maturing/old mixed pine-hardwoods are a preferred habitat for fox squirrels. However, fox squirrels were also observed in other habitat types including sawtimber sized pine plantation and agricultural or other open field (FD), or orchard (FDo) (Figure 2).

Fox squirrels are the largest species of squirrel in North America. This, combined with their multiple color phases, makes them very noticeable and intriguing to those who encounter them. In the 2022 survey, gray (257 sightings) was the dominant color phase observed followed by black (120 sightings) and brown (6 sightings), respectively (Figure 3). Chesterfield County had the highest number of sightings with 93, followed by Richland (81), Berkeley (59), Hampton (39), and Calhoun (28) respectively (Figure 4).

In the past, counties with the most sightings often contain large areas of multiple suitable habitat types for fox squirrels. Fort Jackson Army Base, Richland County, includes a large mature longleaf pine area. Hobcaw Barony, Georgetown County, consists of several hundred acres of longleaf and mixed pine-hardwood forests. Chesterfield County is home to Sand Hills State Forest and Carolina Sand Hills National Wildlife Refuge, two large expanses of mature longleaf pine habitat. Berkeley and Charleston Counties contain the Francis Marion National Forest and several large low country plantations, and Colleton County is home to Donnelley Wildlife Management Area and several large low country plantations. There was a single fox squirrel sighting in Oconee County for the first time since the Fox Squirrel Sighting Survey 33 years ago. Most of the sightings reported for 2022 come from the Santee and Edisto River drainages (Figure 5). Only 3 counties in South Carolina have not reported a fox squirrel sighting over the 33-year lifetime of this survey (Greenville, Cherokee, and York Counties).

Before estimates of relative abundance can be determined, survey methodology will have to be adjusted in order to quantify effort expended by cooperators during the survey. Other confounding variables including weather, suitable habitat available for fox squirrels and observer numbers and visibility will have to also be controlled. Combinations of these factors may be responsible for skewing results in any given area of the state.

Conclusions and Recommendations

In South Carolina, fox squirrels seem to be prevalent where suitable habitat occurs. They have a state rank of S3, vulnerable, and a global rank of G5, secure (NatureServe 2023, Item 1). South Carolina's NatureServe rank is likely due to low participation during the COVID19 pandemic. It is recommended that this survey be continued in order to document changes in distribution and relative abundance of fox squirrels in South Carolina.

The South Carolina Department of Natural Resources, Small Game Program would like to thank all participants in the 2022 Fox Squirrel Survey. It is through their commitment that SCDNR can conduct these surveys. Copies of these small game survey reports can be obtained online at <https://www.dnr.sc.gov/hunting/smallgamesurveys/reports.html>.

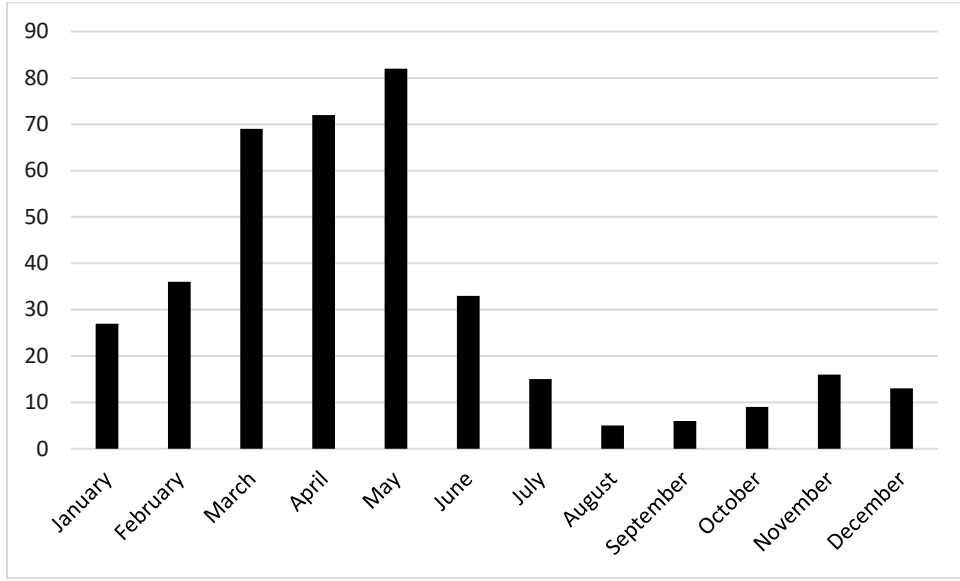


Figure 1. Fox Squirrel Sightings by Month, SCDNR Fox Squirrel Sighting Survey, 2022.

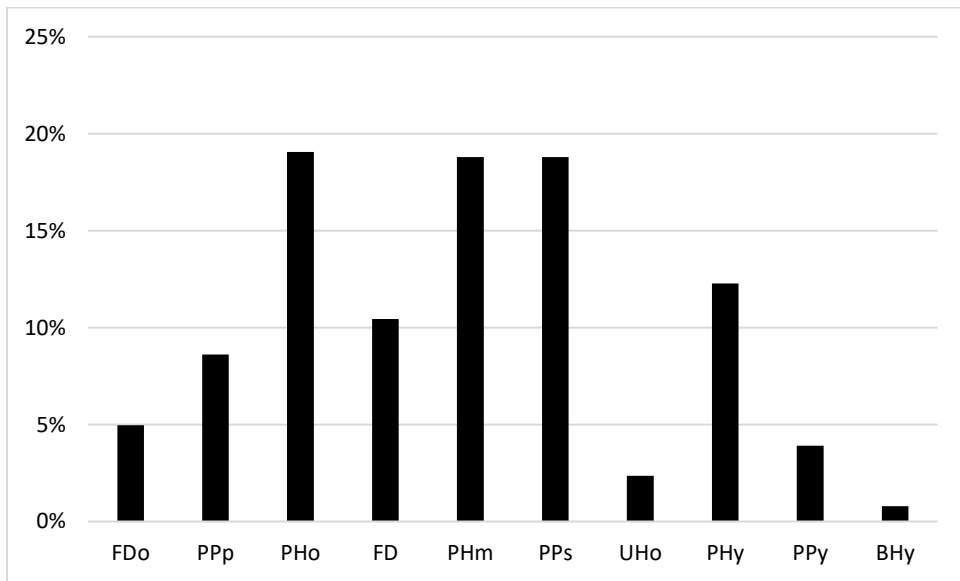


Figure 2. Fox Squirrel Sightings (%) by Habitat Type, SCDNR Fox Squirrel Sighting Survey, 2022.

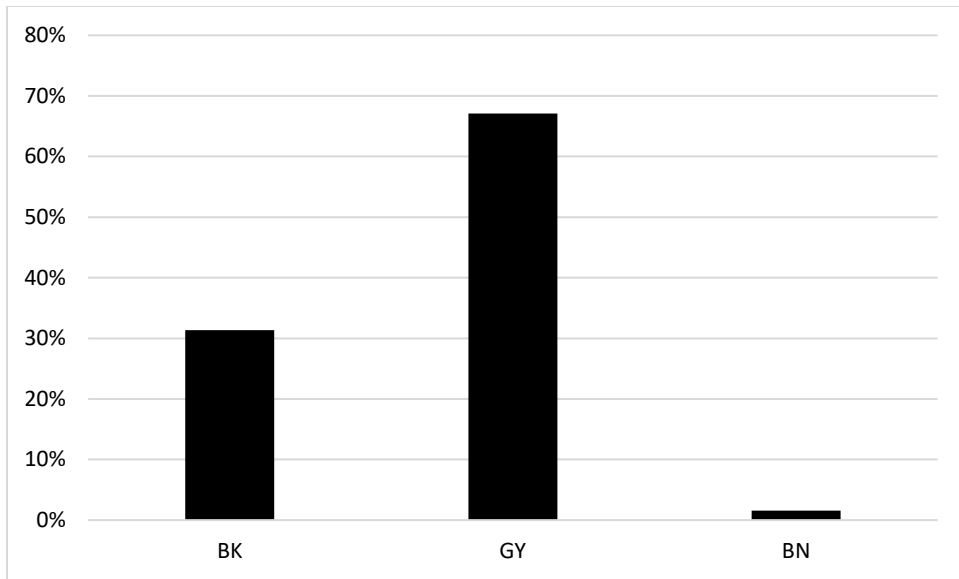


Figure 3. Color Phase (%), SCDNR Fox Squirrel Sighting Survey, 2022.

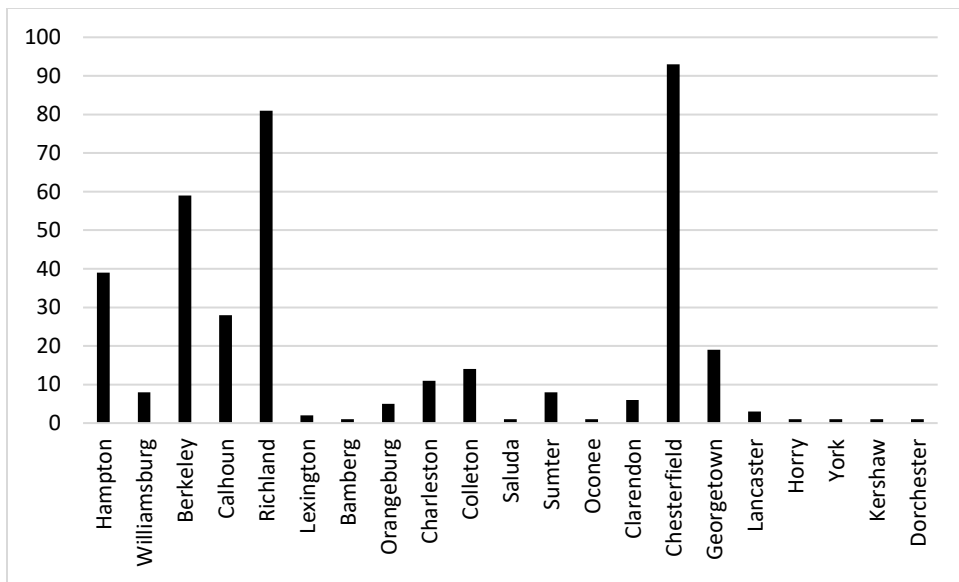


Figure 4. Number of Fox Squirrel Sightings by County, SCDNR Fox Squirrel Sighting Survey, 2022.

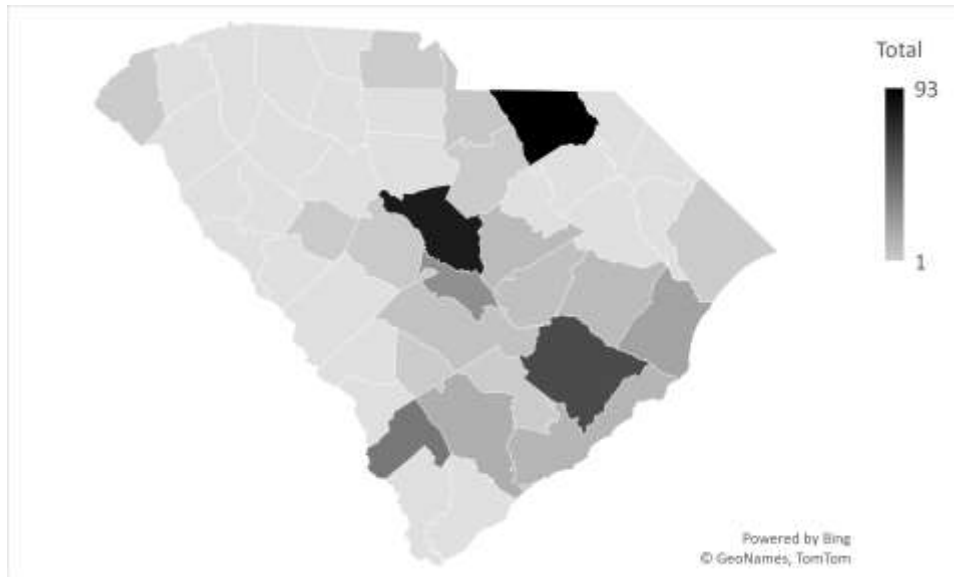
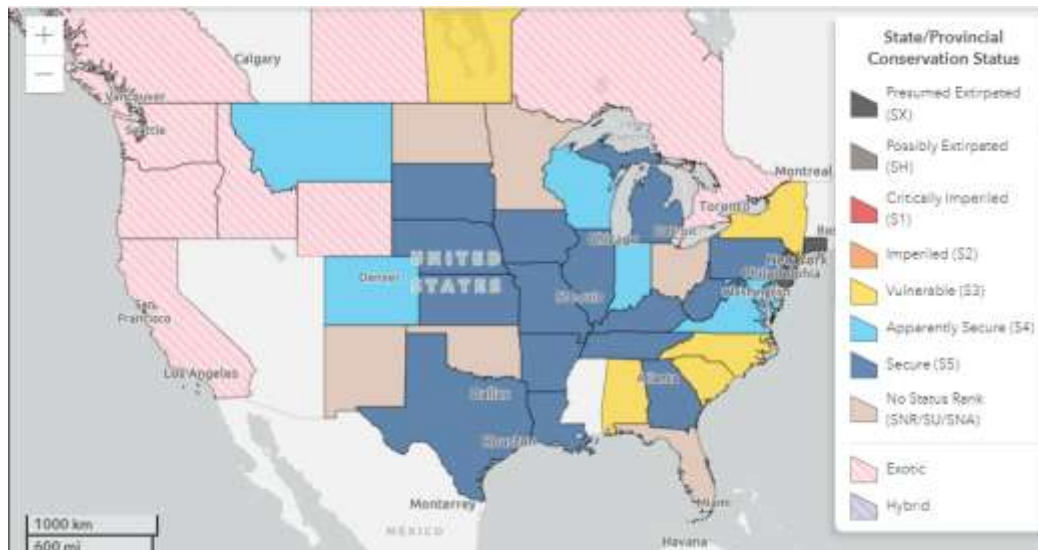


Figure 5. Counties reporting sightings by reported total for 2022.



Item 1. NatureServe Conservation Status February 2023.

https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.105485/Sciurus_niger