

# Capture Probability of Female and Male Southern Flying Squirrels in Schmeckle Reserve

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## Introduction

The southern flying squirrel (*Glaucomys volans*) is one of two species of flying squirrel found in North America. It is found in all of Eastern North America, ranging from Florida to Southeastern Canada. Previous research from various areas in the Eastern United States has shown that female flying squirrels are much more territorial than males. This appears to be a trend in Schmeckle Reserve, Stevens Point, Wisconsin, as well. We are attempting to discover why, out of seven individuals we trapped this season, only one of them was a female. We also only recaptured this female one time, for a total of two captures. Some of the male squirrels were captured as many as fifteen times. Flying squirrels have two mating seasons each year, the first from January to April and the second from June to August. Our trapping season began on September 10th, 2020. We believe that the ending of the mating season overlapping with our trapping season is an explanation for the low capture probability of females. During our trapping season, female flying squirrels are still nursing their young, as their offspring are not independent until they reach four months of age. When female flying squirrels are raising their young, they build a secondary nest. They do not allow any other squirrels, even males, within immediate vicinity of the nest. Male southern flying squirrels play no role in raising young, so their activity level is not changed by the conclusion of the mating season. Females also have a smaller home range than males. Female home ranges are approximately 4,050 square meters while the home ranges of males are around 6,000 square meters, which likely explains why our female was captured in traps that were near each other, while some males were caught in traps that were completely across our trapping grid.

## Methods

We utilized a pulley system to hoist Sherman traps, baited with a peanut butter and oats mixture, into twenty different trees. Our trapping grid was in the Berard Oaks of Schmeckle Reserve. We set traps at 5:30 pm and checked them at 10:00 pm. Later in the trapping season after temperatures dropped below 40 degrees, the traps were checked about three hours after they were set. Trapping occurred on weekdays from September until mid-October. Our trapping grid consisted of 20 traps, in a loop, with traps 1 and 20 being closest to each other. Once a squirrel was captured it was maneuvered into a pillowcase, weighed, then transferred into a clear bin for anesthesia. We anesthetized the squirrels with Isoflurane via inhalation, then placed an ear tag in one of their ears so that we were able to take data on recaptures. After the squirrel was monitored and successfully recovered from the anesthesia it was released.



## Results

Trap Number	24	23	Tag Number 22	21	20	19	18	17
1	x			xx				
2			x	xx				
3				xxx				
4								
5								
6								
7				x				
8			x	x				
9			xx		xxx			
10			xx	x				x
11			x			x		
12								
13								
14		x					x	
15								
16								
17			x					
18			xx	x				
19	x		xx	xx				
20				xx				

Table 1. Occupancy results of each trap site that was occupied. Each “x” represents how many times the individual was found in the trap. Individual 024 is female and the rest of the individuals are males.

Parameter	Beta	Standard Error	Lower	Upper
1:	0.1823201	0.6055353	-1.0045292	1.3691694
2:	19.917657	12725.187	-24921.449	24961.284
3:	1.8082961	1.5270265	-1.1846758	4.8012681
4:	-1.8078800	1.0499594	-3.8658004	0.2500403
Mass:	-0.0490809	0.0259616	-0.0999657	0.0018039

Table 2. Beta estimates, the beta value for mass indicates that mass did not affect capture probability because the 95% Confidence Interval is overlapping zero.

## Discussion

Over the course of the fall trapping season, we caught a total of seven southern flying squirrels. One of these squirrels was a female while the other seven of them were males. We tagged the female with an ear tag; her number was 024. Our female was first caught on September 10th and then she was recaptured a singular time on September 22nd. The temperature for the first night that we caught her was 41 degrees Fahrenheit while it was 61 degrees the night of the recapture. 024 was captured in trap number one on the 10th and trap number 19 on the 22nd. These two traps are close to each other in our trapping grid. The males that we captured were observed in traps all over the grid, not just in two that were near to each other. We also had many more recaptures with the males compared to our one female. We had two trap happy males (021 and 022) that were caught a total of 15 and 12 times. 021 was caught in all but four traps on our grid.

## References

Atwood, Alex. “Glaucomys Volans (Southern Flying Squirrel).” *Animal Diversity Web*, animaldiversity.org/accounts/Glaucomys\_volans. Accessed 24 Feb. 2021.

“Southern Flying Squirrels Fact Sheet.” *Uga.Edu*, Savannah River Ecology Laboratory, archive-srel.uga.edu/outreach/factsheet/flyingsquirrel.html. Accessed 24 Feb. 2021.

## Acknowledgements

We would like to thank the students of UWSP’s Wildlife Society who helped us with data collection and our project advisor Dr. Shelli Dubay and Dr. Ben Sedinger for assistance with data interpretation. We would also like to thank the staff at Schmeckle Reserve for allowing us to use their property to collect our data.



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