University of Wisconsin-Stevens Point

Occupancy Modeling of Southern Flying Squirrels (*Glaucomys volans*) in Schmeeckle Reserve, Stevens Point, WI

Marinn Champeau, Alyssa Johnson, Sam Sodke, Dr. Shelli Dubay, and Dr. Ben Sedinger

Introduction/Hypothesis

- The Southern flying squirrel (SFS) is a nocturnal mammal commonly found in hardwood forests (1).
- Flying squirrels are less susceptible to traps placed on the ground (2).
- Traps we use are elevated, semi-permanent, and require lots of planning (Figure 1).
- Not all traps are equally likely to catch squirrels.
- Estimating occupancy helps to determine where to place traps.
- We hypothesize that there will be significant variability in occupancy among trap sites.

Figure 1. Modified Sherman trap.

Figure 2. Ear-tagging a squirrel.

Methods

- 20 Sherman traps were set for 21 nights from September 10 to October 14, 2020.
- Traps were modified and elevated in trees (Figure 1).
- Traps were baited and opened at 5pm and checked at 10pm roughly four times per week.
- Squirrels were anesthetized using isoflurane, then weighed, sexed, ear-tagged, and released on site (Figure 2,3,4).
- Data were formatted with a 0 if the trap was empty and 1 if a squirrel was trapped.
- Excel was used to fit occupancy models and estimate detection and occupancy probabilities.

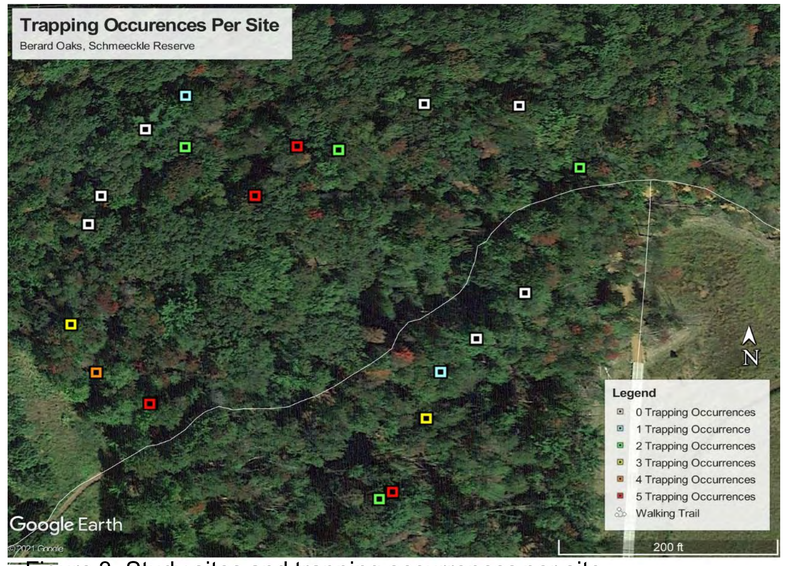

Figure 3. Study sites and trapping occurrences per site.

Results

- Number of trapping occurrences at each site varied from 0 to 5 (Figure 3).
- 8 squirrels were trapped a total of 40 times throughout the study.
- 15% chance of capturing a squirrel on any given night (p=0.15).
- 66% of sites were occupied at least once ($\psi = 0.66$).
- Occupancy varied from 0.0359 to 1 across trap sites.

Figure 4. Southern flying squirrel processing.

Discussion

- The variability in occupancy is likely caused by differences in environmental characteristics.
- SFS depend on tree cavities for nesting sites (1).
- SFS commonly feed on oak and hickory nuts (1,3).
  - High SFS densities are correlated with abundant acorn and hickory nut production (4).
- SFS prefer areas with a low density of large overstory trees, low deciduous canopy cover, and high herbaceous ground cover (5).

Future Research

Our future research will focus on which environmental characteristics influence likelihood of trapping southern flying squirrels at trap sites in Schmeeckle Reserve.

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