

# 2018 Ankney Award Recipient

## Samantha Fino, PhD Student

### Evaluating predator communities and duck nest survival in eastern South Dakota

Depredation is a major cause of nest failure of ground-nesting birds. Understanding the predator community composition and predator movements, influenced by patch dynamics, is critical to explain predator-prey interactions, spatiotemporal habitat use, and foraging of nest predators. Similarly, it is important to understand how grassland patch dynamics and the vegetation community influence nest success of ground-nesting birds. Our study will be conducted in Faulk and Hand counties, South Dakota, with the primary difference of one township being subject to coyote removal management for several years, and the other has not. Our objectives include: (1) quantify the influence of grassland composition and patch dynamics on predator community dynamics, occupancy and use, as well as on nest site selection of ducks (2) quantify the relationships between predator community dynamics with nest success, and (3) estimate vital rates of predators and nests, and if landscape-level habitat characteristics influence these. We aim to capture and radio mark at least 35 predators each year. Predators will be monitored weekly for survival

and radio collars will be programmed to record various locations/day based on the season. We will also deploy camera trap stations to execute multi-species occupancy modeling, as well as conduct point count surveys of raptor species and capture-mark-recapture live trapping of the sciurid community to index abundance of nest predators. Lastly, we will use nest-drag sampling to mark and monitor nests to evaluate nest survival. The results of this study will provide a better understanding of how grassland patch dynamics and vegetation composition influence predator community dynamics, occupancy, habitat use and search patterns that will assist state and federal agencies in developing habitat-patch-size recommendations that encourage waterfowl nest success.

