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Integrated Pest Management in Idaho: Discovering the Diet of Idaho Barn Owls

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INTRODUCTION

- Gophers (*Thomomys townsendii*) cause damage to agricultural fields and crops in Idaho's Canyon county.
- Canyon County Weed and Gopher Control installed barn owl boxes to mitigate this problem.
- Studies done on barn owl diets in other regions have found that barn owl diets consist mainly of voles and mice (Marti, 2010).
- Our project aimed to examine the extent to which barn owls included gophers (*Thomomys* spp.) in their diet in the study area.

METHODS

1. Collected 1,552 regurgitated owl pellets from nest boxes in Canyon County, Idaho. Prey remains (skulls and other bones) were analyzed from pellets collected at 47 different sites.
2. Soaked owl pellets in sodium hydroxide to dissolve fur and enumerated prey contents – quantified 3,379 individual prey items.
3. Identified prey species from skulls – at least 24 species were present.



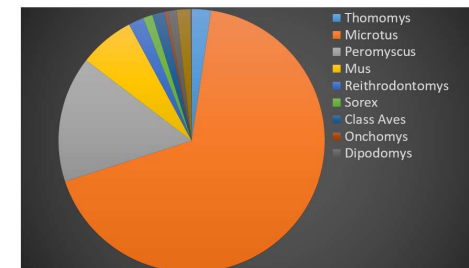
RESULTS

- Average of 2.17 prey items per pellet.
- Of the prey items identified, 67.6% were montane voles (*Microtus montanus*).
- Only 2.3% of prey items were gophers (genus *Thomomys*).
- Mice made up a large percentage of the diet as well - 15.5% of prey items were *Peromyscus* (deer mice) and 6.8% were *Mus* (house mice).

Integrated Pest Management with Barn Owls is a Viable Alternative to Chemical Rodenticides



Species of Prey Items Found in Barn Owl Pellets



• IMPLICATIONS

- Although gophers made up a small percentage of a barn owl's diet, they were still being captured by owls.
- Barn owls eat around 2 rodents per night each (Marti, 1998). So, a brood with 10 nestlings would consume 1200 rodents in just a 60-day period. This would be a substantial reduction of rodent pests!
- Montane voles, which make up the largest percentage of barn owl diets, are also destructive to agricultural practices (Sullivan et al., 2018).
- Thus, integrated pest management with barn owls is a viable approach to reducing rodent pests. Use of this strategy could help reduce the need for chemical rodenticides.
- Chemical rodenticides travel up the food chain, causing secondary poisoning to non-target species such as predators as well (Rattner et al., 2020).

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