

**A Survey for the Southern Bog Lemming
(*Synaptomys cooperi*) in Tripp County,
South Dakota**

**by
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**SOUTH DAKOTA SMALL GRANTS
PROGRAM
2001**

INTRODUCTION

The Southern Bog Lemming (*Synaptomys cooperi*) has only been documented in one area in South Dakota, near Fort Randall Dam (SD Heritage Database). It has never been documented in Tripp County, but range maps in mammal reference guides show it occurring across the border in Nebraska. In the spring of 1999 I collected Long-eared Owl pellets about 11 miles south of the SD border in Nebraska. These pellets contained 2 Bog Lemming skulls. The preceding evidence suggests that the Bog Lemming is present in southern Tripp County. If found this would be a range extension for the species in South Dakota and may represent relict populations

My objective for my SD GF&P Small Grants project is to document bog lemmings in southern Tripp County. I contracted to identify suitable lemming habitat and set traps for 6 days in order to obtain a voucher specimen if possible.

METHODS & MATERIALS

I searched road ditches and fence rows along wet meadows and thick grasslands for lemming sign. By lemming sign I mean above and below ground runways, green feces and piles of grass clippings in the runways. A lemming trapping survey in Kansas captured bog lemmings only in fence rows and road ditches in their study (Welker & Choate 1994). They assumed that fence rows and roadside ditches served as dispersal corridors for the lemmings. Many articles and references state that light green to bright green species feces are an indicator of the species presence (Welker and Choate 1994) (Higgins and etal. 2000) (Sheffield 1998) (Jones, Armstrong & Choate 1985). An associate species the Meadow Vole has brown or black feces (Welker & Choate 1994).

In April 2001 I located an area on the west side of Dog Ear Lake (R 76W, T97N, S31) with many above ground runways, grass clippings and light to bright green feces. This area was a 200 yard stretch of ditch along a section line trail. The ditch contained thick vegetation along the sides and water in the bottom. I also located a backwater area on the east side of Dog Ear Lake (R77W, T97N, S36) with green feces and above and below ground runways present.

I set standard mammal museum traps for 9 days in runways from April through mid June. The traps were baited with peanut butter. I also made pitfall traps from coffee cans and set them in runways and near the waters edge in June.

RESULTS & DISCUSSION

I never captured any small mammal in the areas with lemming sign. I set standard small mammal museum traps for a total of 190 trap days and pitfalls a total of 98 trap days. I did catch the following species on the edges of the areas containing lemming sign.

| <u>Common Name</u> | <u>Scientific Name</u> | <u>Number</u> |
|----------------------|---------------------------------|---------------|
| Prairie Vole | <i>Microtus ochrogaster</i> | 2 |
| Plains Harvest Mouse | <i>Reithrodontomys montanus</i> | 1 |
| Masked Shrew | <i>Sorex cinereus</i> | 5 |

In my opinion the Southern Bog Lemming is present in the area I was trapping for the following reasons. The presence of green feces is a strong argument that the bog lemming was present as referenced earlier in this report. Meadow voles or other captured species do not have green feces. I did not catch any other small mammal in the area with lemming sign. The lemming sign was present in appropriate habitat as referenced earlier. Bog lemmings are hard to trap or collect due to low population densities (Linzey 1984).

I fulfilled my contractual obligation but was unable to obtain voucher specimens of the bog lemming. After writing this report I am still going to try documenting the bog lemming in this area. I am going to collect owl pellets and coyote scat if possible from this area. In Kansas a successful bog lemming survey was conducted this way because of the difficulty in trapping the species (Brillhart and Kaufman 1992). If specimens are collected, an addendum to this report will be provided to SD GFP.

Small mammals I collected were identified using the keys in *Guide to Mammals of the Plains States and Mammals of the Northern Great Plains*.

LITERATURE CITED

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