
EFFECTIVENESS OF TRAIL CAMERAS AND SCAT GENETICS FOR DETECTING NORTHERN BOG LEMMINGS IN WESTERN MONTANA

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The northern bog lemming (*Synaptomys borealis*) is a boreal species that extends south into Washington, Idaho, and Montana in the west. Little is known about this rare species in Montana, in part due to the difficulty of catching it using standard small mammal trapping methods. Prior surveys with Sherman live traps resulted in low trapping success and high mortality rates for northern bog lemmings. This species is currently being evaluated for ESA listing, so better methods for detecting them are needed. We tested scat boards and Bushnell NatureView trail cameras with close-up lenses to determine their effectiveness for detecting northern bog lemmings. Cameras were pointed at scat boards baited with muskrat lure. In 2015 we surveyed seven wetland sites, five of which were known northern bog lemming sites, for 3- 8 nights each with 5-10 cameras per site. Camera-nights at each site ranged from 15 to 38, and totaled 188 camera-nights overall. We obtained definitive and probable detections of northern bog lemmings ($n=8$) at three sites for a detection rate of 4.25 detections per 100 camera-nights. Twenty scat samples collected from scat boards, runways, and latrine sites were submitted to the National Genomics Laboratory for Wildlife and Fish Conservation at the Rocky Mountain Research Station in Missoula. Genetic testing is in progress to determine species identification (results will be presented, if available). Trail cameras are easy to deploy and less labor-intensive than live trapping for detecting small mammal species that can be identified from photographs. Efficiency may be improved by finding better lures, but overall, species identification through genetic analysis of scat would be the most cost effective way to survey northern bog lemmings, if it is proven to work.