

Proposal Abstract

Evaluating Habitat Suitability, Population Size, and Prey Use of Bobcats in South Dakota

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Little information exists on distribution and population size of bobcats (*Lynx rufus*) in South Dakota. Although bobcats occupy habitats within the three major ecoregions (western prairies, Black Hills, eastern prairies) that characterize the state, it is unknown how they utilize these landscapes or their effects on other wildlife populations (i.e., prey species). Thus, there is a need to determine distribution of habitats, their use, and to evaluate indices to population abundance of bobcats in South Dakota. The objectives of this project are to: 1) determine habitat selection of bobcats at landscape, meso, and plot scales; 2) determine current distribution and movement patterns; 3) estimate population size of bobcats; and 4) determine food habitats in prairie and forested regions. In 3 study areas representing the major ecoregions of the state, 10 bobcats will be captured and fitted with GPS collars programmed to collect 8 locations per day for up to 1 year. Detailed spatial use data, in conjunction with varied modeling approaches, will be used to address multiple scales of habitat selection, current distribution, and movement patterns (Burnham and Anderson 2002). Home range data, habitat suitability mapping, survivorship of study animals, and harvest data will be used to estimate population size of bobcats. Food habits will be identified by utilizing stomachs collected from harvested bobcats from 15 counties representing the West River and Black Hills ecoregions of the state. This information will not only provide a better understanding of bobcat ecology in the northern Great Plains, but also provide needed information for management of this important furbearer species.

Literature Cited:

Burnham, K.P., and D.R. Anderson. 2002. Model Selection and Multimodel Inference-A Practical Information Theoretic Approach. Springer Science and Business Media Incorporated. New York, NY, USA.