Public Abstract

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Graduation Term:SP 2009

Department:Fisheries & Wildlife

Degree:MS

Title:Evaluation and Development of Black-footed Ferret Resource Selection Models

Evaluation and selection of reintroduction sites are essential components of the recovery program for the endangered black-footed ferret (*Mustela nigripes*), a specialized predator of prairie dogs (*Cynomys* spp.). Resource selection function (RSF) and utilization function (RUF) models might facilitate consideration of the patchiness of prairie dogs and burrows within colonies when evaluating reintroduction sites, thereby increasing the resolution of habitat evaluations. We monitored post-breeding resource selection of adult black-footed ferrets inhabiting the South Exclosure, a 452-ha black-tailed prairie dog (*C. ludovicianus*) colony in the Conata Basin, South Dakota, USA, during 2007-2008. We (1) evaluated the predictive capabilities of a recently developed RUF generated from observations of ferrets on an adjacent colony; and (2) developed new RSFs, while evaluating influences on resource selection not yet investigated for this endangered carnivore (e.g., predators and resource connectivity). The ferret RUF was useful in predicting ferret occurrence, suggesting that the model could be used to evaluate fine-scale habitat suitability. Our new RSFs demonstrated importance of active burrows, characterized by prairie dog cues, in ferret resource selection. Conservation and restoration of colonies with high active burrow and prairie dog density are needed for continued recovery of ferrets. The ferret RUF, and our RSFs, if validated via independent data, could complement current habitat evaluation procedures, and thus facilitate (1) reintroduction of ferrets to black-tailed prairie dog colonies and (2) the ferret recovery program.