

RESEARCH PROJECT SUMMARY

Project Title: Evaluation of the Deadwood bighorn sheep herd translocation.

Need: Bighorn sheep (*Ovis canadensis*) historically inhabited the entire Black Hills region but were extirpated from the area in the early 1900's. Within the Black Hills ecoregion, the species has been successfully restored to Custer State Park, Spring Creek, Rapid Creek, Sheridan Lake, and Elk Mountain areas. There are areas within the Black Hills that have been deemed potentially suitable as restoration sites for bighorn sheep that are currently vacant. To expand bighorn sheep restoration in the Black Hills, the South Dakota Department of Game, Fish and Parks (SDGFP) will translocate bighorn sheep from Alberta to the Deadwood Region of the Black Hills. This area has high habitat capability for bighorn sheep based on habitat suitability models and a qualitative assessment of topography, forage, and water. Evaluating large mammal translocations is critical to project success due to expected initial mortality post-release, relatively low number of animals initially translocated, habitat capability, potential for predation, and time necessary for acclimation. As such, evaluation is necessary to determine population parameters (survival, cause-specific mortality), which can be used to assess potential for long-term viability and future need for population augmentation as a consequence of mortality as well as potential for genetic founder effects.

- Objectives:**
1. Document survival and cause-specific mortality of translocated bighorn sheep in the Deadwood Region of the Black Hills.
 2. Assess genetic diversity and disease prevalence of translocated bighorn sheep.
 3. Assess movement patterns post-release of translocated bighorn sheep in the Deadwood Region of the Black Hills.
 4. Evaluate 3rd-order habitat use and selection post-release of bighorn sheep in the Deadwood Region of the Black Hills.
 5. Estimate herbaceous biomass at foraging and available sites for bighorn sheep in the Deadwood Region of the Black Hills.
 6. Evaluate methods for estimating population size of bighorn sheep in the Deadwood Region of the Black Hills.

Study Location: Northern Black Hills, South Dakota

Expected Completion: June 2017

Principal Investigator: Dr. Jonathan A. Jenks, Distinguished Professor, Department of Natural Resource Management, South Dakota State University

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