RESEARCH PROJECT SUMMARY

Project Title: Assessing movements, survival, and recruitment of elk in the Southwestern Black Hills, South Dakota.

Need: Recent declines in numbers and juvenile recruitment in elk (*Cervus elaphus*) herds in the Black Hills requires information on cow elk movements, nutritional condition, reproduction, and calf survival. Information on elk occupying Unit 2 indicate high calf recruitment in 2009-2010 (≥0.50 calves:cow; unpublished data, South Dakota Game, Fish and Parks). However, independent confirmation is necessary to validate survey data. Sportsmen have suggested that poor calf survival could be due to predation by cougars (*Puma concolor*). If cougars are targeting elk, particularly calves, there are implications for future management of the species. Furthermore, if documented recruitment is lower than expected, poor nutritional condition of adults could be affecting calf survival. Stress and/or disease also could impact recruitment of elk calves. A companion project (Study No. 7544) is being conducted in Custer State Park and portions of Units 4 and 9. However, herd and habitat characteristics, and management objectives for this region of the Black Hills differ from other regions. Information on factors affecting elk populations in the Black Hills will allow for validation of surveys and models and thus, improve management of this important species in South Dakota.

Objectives:

1. Determine nutritional condition during winter and pregnancy rates of reproductive aged cow elk in the southwestern Black Hills.

2. Determine neonate elk survival and cause-specific mortality rates in the southwestern Black Hills.

3. Quantify stress hormone metabolites in reproductive aged cow elk in the southwestern Black Hills.

4. Compare elk movements between elk of excellent condition and elk in poor condition.

Study Location: Black Hills, South Dakota

Expected Completion: December 2014

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