Project Title: Model Update and Application for Rocky Mountain National Park Elk Population: A Bayesian Framework for Management of Population Reductions

Discipline: Natural
Type of Project: Research
Funding Agency: National Park Service
Other Partners/Cooperators: Colorado State University
Effective Dates: 6/15/2007–6/30/2012
Funding Amount: $16,987

Investigators and Agency Representative:
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Project Abstract: CSU researchers will work with NPS, Rocky Mountain NP biologists to verify the results of management actions by ROMO under the Elk and Vegetation Management Plan. CSU principal investigator will: (1) Review of proposed work on elk population surveys and recommendations on population monitoring designed to support decisions needed to implement population reductions outlined in the park's Elk and Vegetation Management Plan, (2) Consult on design of implementation actions and associated vegetation monitoring, (3) use a model of park and town elk populations that explicitly estimates process variance and observer error and uses these estimates in developing confidence intervals on estimates of model parameters and forecasts and (4) annually update parameter estimates and forecast the effect of potential elk reduction scenarios using all existing data, including elk population survey data, culling or other population reduction data inside the park, and results of hunter harvest outside the park.

Outcomes with Completion Dates: The model will be run annually, with interim reports due at the end of each model exercise.

Keywords: ecological modeling, elk-vegetation plan, Rocky Mountain NP, Colorado State University