

Project Summary
Rocky Mountains Cooperative Ecosystem Studies Unit

Project Title: Developing a protocol for long-term population monitoring and habitat projections for a climate-sensitive Rocky Mountain sentinel species

Discipline: Natural
Type of Project: Technical Assistance/Research
Funding Agency: National Park Service
Other Partners/Cooperators: University of Colorado, Boulder
Student Participation: Yes
Effective Dates: 6/1/2016 - 12/31/2017
Funding Amount: \$11,313

Investigators and Agency Representative:

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Project Abstract: This proposed project is largely an extension of the Pikas in Peril (PiP) project funded in 2010. Using the survey points and data collected from PiP as a baseline, we will evaluate the efficiency and efficacy of previous PiP sampling in ROMO, in order to guide our design of a long-term pika habitat-occupancy monitoring protocol. The emphasis in this project is on spatial analyses of remotely sensed data to prioritize field sampling locations to best monitor ROMO pika occupancy and functional connectivity.

We propose to identify a reduced set of survey sites sufficient for monitoring pika occupancy and projecting any climate-related trends in the park. Because pikas likely require topographic heterogeneity at a fine scale (Rodhouse et al. 2010, Jeffress et al. 2013, Beers et al. in prep.), we will use remotely sensed imagery and elevation data at the highest resolution available to derive metrics of topographic position and heterogeneity across the entirety of the park, and use these metrics to detect the features that currently foster suitable pika habitat. We will conduct occupancy surveys in select areas in order to test model projections. The field surveys will follow the protocols developed for the PiP project (Shardlow et al. 2009, Jeffress et al. 2013, Schwalm et al. in press).

Keywords: Pika, population, climate, habitat, monitoring, Rocky Mountain National Park, University of Colorado-Boulder