



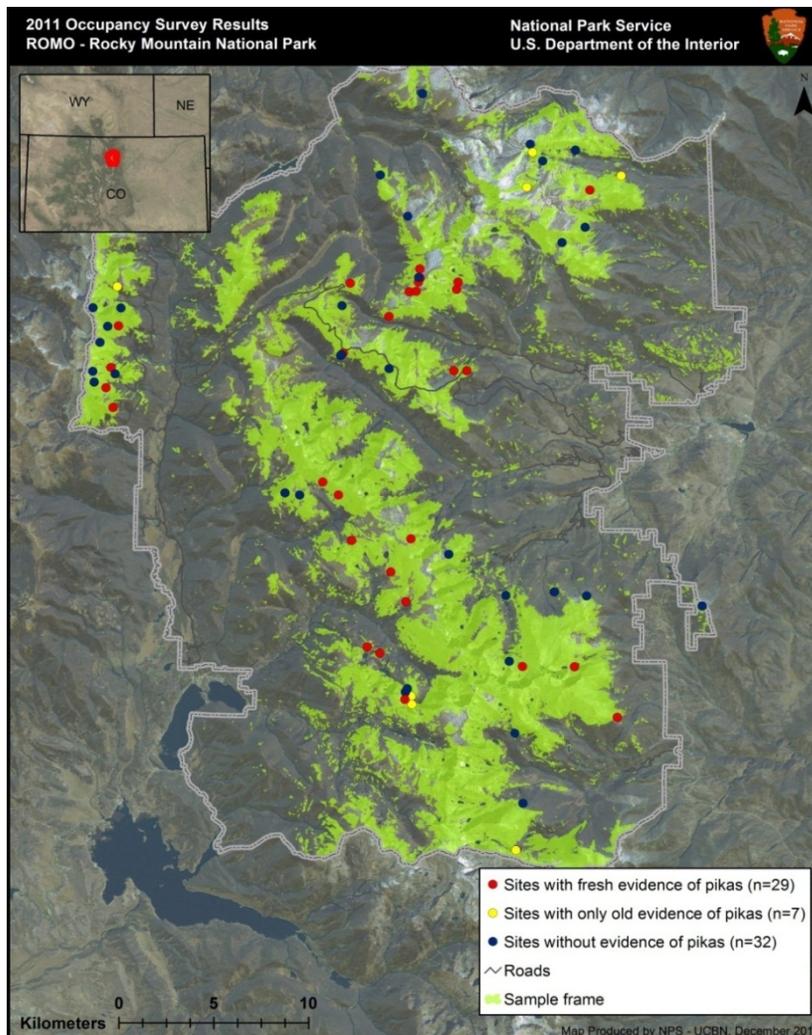
“Pikas in Peril” Research in Rocky Mountain National Park

Importance: Species vulnerable to climate change

The American pika (*Ochotona princeps*) is considered an indicator species for detecting ecological effects of climate change. Recent studies suggest climate as a driver of population losses across this species' range. The National Park Service has a unique opportunity to assess the pika's vulnerability to climate change, and to predict effects of climate on pikas over time. Rocky Mountain National Park encompasses a variety of pika habitats and is one of eight NPS units included in a three-year research project titled “Pikas in Peril: Multi-Regional Vulnerability Assessment of a Climate-Sensitive Sentinel Species.” Vulnerability will be assessed by determining which habitats pikas prefer, how frequently they move through different habitats, and how the distribution and connectivity of preferred habitats is expected to change in a changing climate.



Pika habitat in Rocky Mountain NP. Chris Ray photo.



Map of 2011 pika habitat occupancy survey results for Rocky Mountain NP.

have begun, and a final report will be submitted in 2012. Further details and results are available from sources listed below.

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Rocky Mountain Network website: <http://science.nature.nps.gov/im/units/romn>

“Pikas in Peril” research website: http://science.nature.nps.gov/im/units/ucbn/monitor/pika/pika_peril/index.cfm

Project objectives

1. Document patterns of pika occurrence and habitat preferences within eight parks, including Rocky Mountain NP. *Use data to model and map the full distribution of pikas within the eight parks.*
2. Determine genetic relationships among pikas within Rocky Mountain NP (and within four other parks), using non-invasive sampling of pika fecal pellets found during habitat surveys. *Estimate rates of movement within each park in relation to the types of habitat between sampled locations.*
3. Use climate projections to identify expected changes in habitats used or traversed by pikas. *Estimate the vulnerability of populations based on projected changes in distribution and connectivity of preferred habitats under future climate scenarios.*

Preliminary results and future plans

In 2010 and 2011, researchers surveyed potential pika habitats in all eight parks using a consistent protocol. Randomly selected plots, each 24 m in diameter, were surveyed for pikas or fresh pika sign (fecal pellets or food caches). In Rocky Mountain NP, 68 plots were searched in 2011, 58 in 2010, 20 in both years. Pikas or fresh pika sign were found within 29 (43%) plots in 2011, compared with 39 (67%) in 2010. Of the 20 plots surveyed in both years, seven (35%) changed occupancy status, all losing pika sign in 2011. A total of 73 fecal samples were collected for genetic analyses. Analyses