

Pika Monitoring in the Pacific West Region



American pika
on lava flow
Photo:
Doug Owen

Parks where protocol is being implemented

- Crater Lake National Park (CRLA)
- Craters of the Moon National Monument & Preserve (CRMO)
- Lassen Volcanic National Park (LAVO)
- Lava Beds National Monument (LBE)

Importance: Species vulnerable to climate change

Localized extirpations of the American pika (*Ochotona princeps*) have recently been documented in isolated mountain ranges of the Great Basin and in some areas pikas are being lost from lower elevations. The hypothesized mechanism for these losses is increased warming resulting from accelerated climate change. Recent habitat and extinction models predict that pikas may disappear from up to 80% of their current range by the turn of the century and consequently, the species was recently considered for listing under the Endangered Species Act. Long-term monitoring of pikas in these four parks will provide urgently needed information on population trends and will serve as an early-warning system for declining populations. Because each of these four parks provide large amounts of potential habitat, they may become increasingly important as long-term refugia, furthering the need for a well-established monitoring program.

Objectives

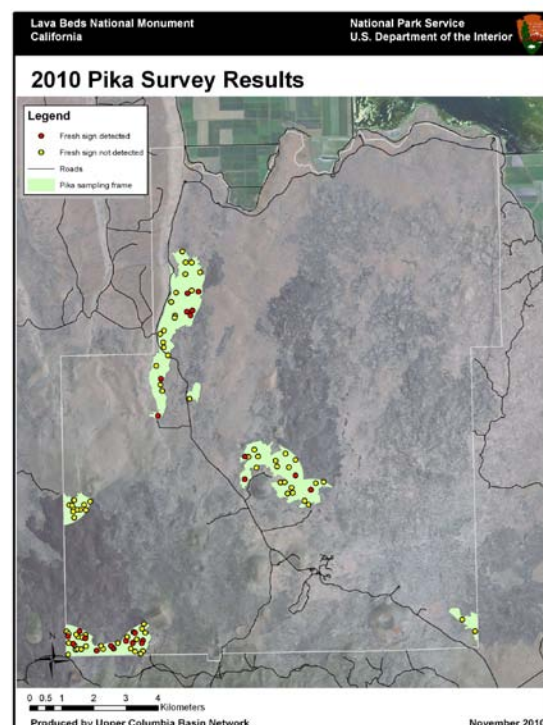
1. Determine current patterns of pika site occupancy in CRLA, CRMO, LBE, and LAVO along park elevational gradients.
2. Determine trends in pika site occupancy patterns in CRLA, CRMO, LBE, and LAVO along park elevational gradients.

Monitoring Methods

The UCBN has developed an occupancy modeling-based approach to pika monitoring in which trends in percent of area occupied and site turnover rates are assessed. This approach allows for inclusion of key environmental predictor variables, particularly elevation, providing an ideal framework for testing hypotheses about environmental drivers of pika population dynamics and for improving the precision of trend estimates. Occupancy of sites is being determined by surveying for pika activity via direct and indirect sign (i.e., visuals, calls, fresh haypiles, and fresh scat) following methods applied in published studies and LBE and CRMO inventories. Pika surveys occur at sample locations selected through a spatially-balanced sampling procedure known as the Generalized Random Tessellation Stratified (GRTS) approach and are stratified by elevation. Each survey site consists of a 12-m radius plot, and given high detectability when using both direct and indirect sign (~1), one survey per site per season is being conducted.

Future Plans

A draft pika monitoring protocol was submitted for peer review in December 2009. Pilot surveys were conducted in all four parks summer 2010. Results from pilot work and comments from reviewers were used to revise the protocol, which will be submitted for final approval in November 2010.



Sampling frame and results from 2010 pilot surveys
conducted at Lava Beds National Monument.

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