



“Pikas in Peril” Research in Great Sand Dunes NPP



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 implicate climate as a driver of local pika extinctions. 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. Great Sand Dunes National Park and Preserve encompasses a variety of pika habitats at a range of elevations 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.

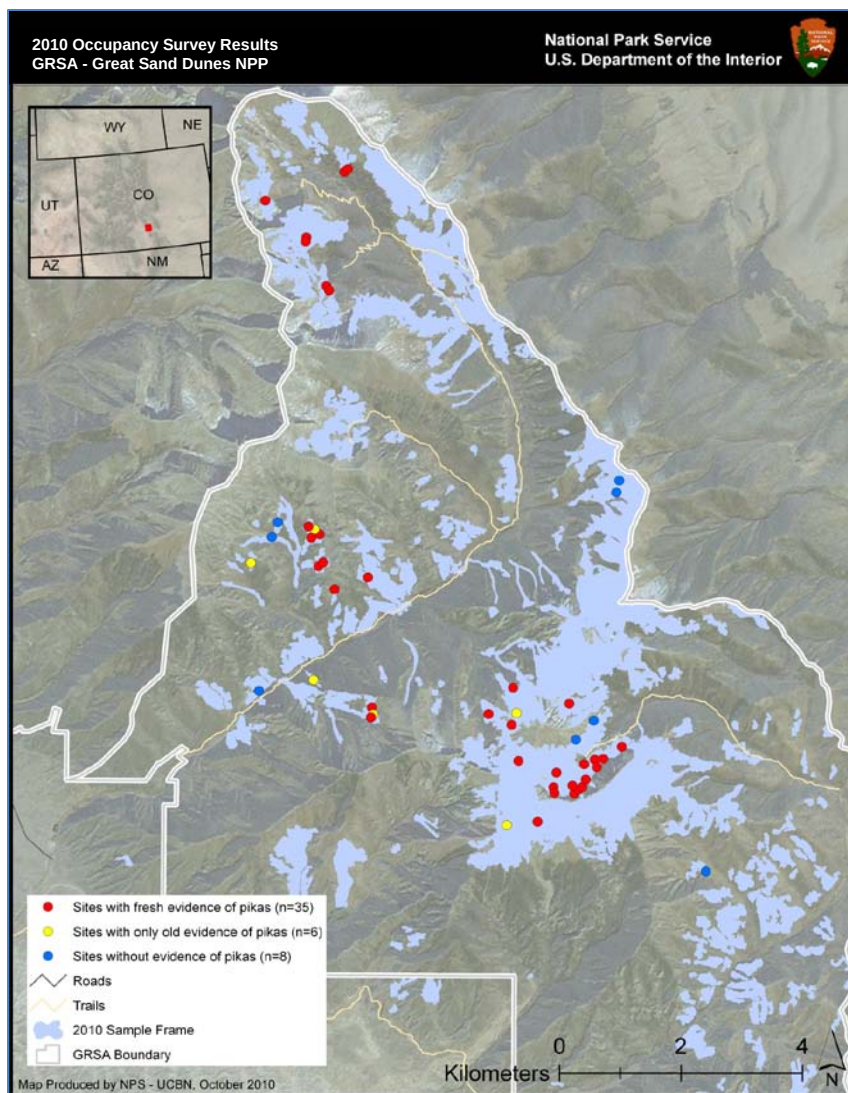
A patch of pika habitat in Great Sand Dunes NPP. Photo by Justine Smith

Project objectives

1. Document patterns of pika occurrence and habitat preferences within eight NPS units, including Great Sand Dunes NPP. *Extrapolate from samples of pika site use to model and map the full distribution of pikas within the eight parks.*
2. Determine genetic relationships among pikas within Rocky Mountain NP, Grand Teton NP, Crater Lake NP, Lassen Volcanic NP, and Craters of the Moon NMP. Sample genetic material non-invasively using pika fecal pellets found during habitat surveys. *Model the ‘connectivity’ among pika populations based on genetic relationships, and relate connectivity to the types of habitat between populations.*
3. Use climate projections to identify expected changes in park habitats that are used or traversed by pikas. *Estimate the vulnerability of pika populations based on projected changes in the distribution and connectivity of their preferred habitats under future climate scenarios.*

Preliminary results and future plans

In 2010, researchers surveyed potential pika habitats across all eight parks, using a consistent protocol. In Great Sand Dunes NPP, 49 sites were selected at random from all areas that might host the creviced rock habitats that pikas require. Each site (a circular area, 24 m across) was surveyed once or twice during August–October. Pikas or fresh pika sign (fecal pellets or food caches) were found within 35 (71%) of surveyed sites. More surveys are scheduled for 2011, and a final project report will be submitted in 2012. Further details and results will be available from sources listed below.



Map of 2010 pika habitat occupancy survey results for Great Sand Dunes NPP.

Contact Information

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