



## “Pikas in Peril” Research in Great Sand Dunes National Park and Preserve



### 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. 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.

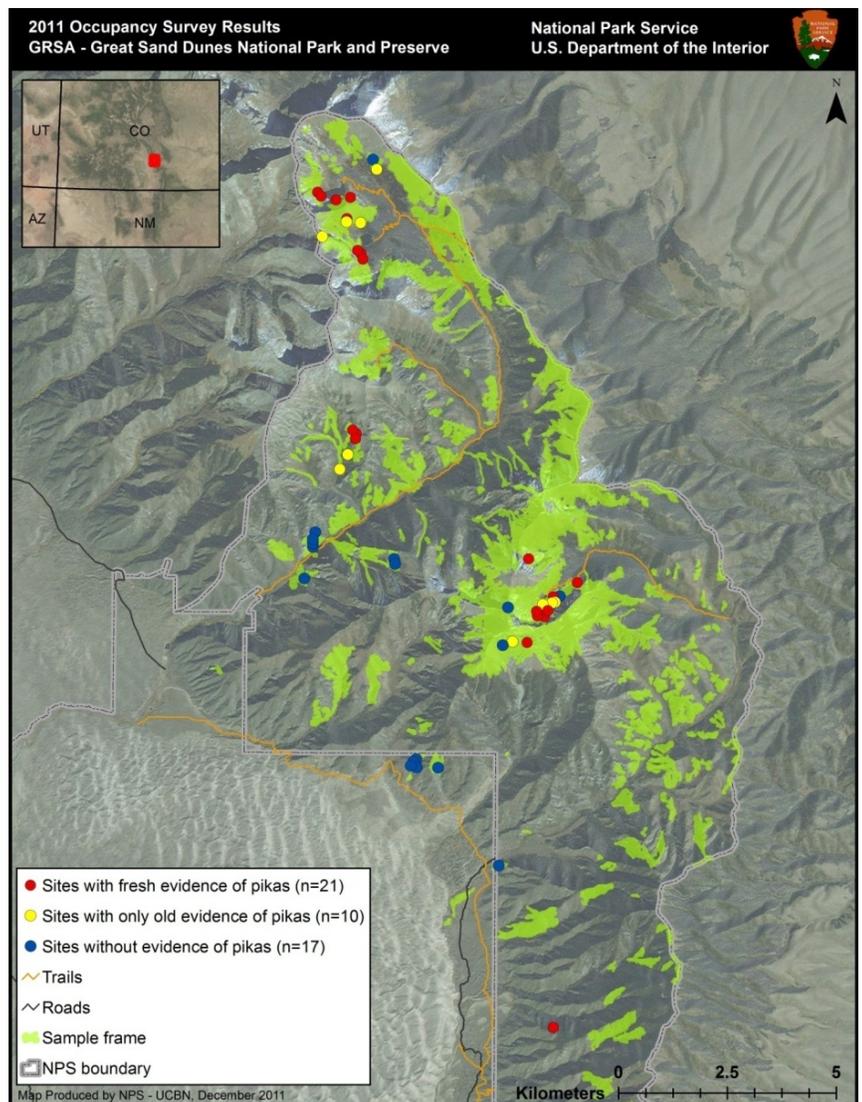
**Pika habitat in Great Sand Dunes NPP.**  
*Justine Smith photo.*

### Project objectives

1. Document patterns of pika occurrence and habitat preferences within eight parks, including Great Sand Dunes NPP. *Use data to model and map the full distribution of pikas within each park.*
2. Determine genetic relationships among pikas within five parks, using non-invasive sampling of pika fecal pellets found during habitat surveys. *Estimate rates of pika movement among locations within parks in relation to intervening habitat types.*
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 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 Great Sand Dunes NPP, 48 plots were searched in 2011 and 49 in 2010, including 17 plots surveyed in both years. Pikas or fresh pika sign were found within 21 plots (44%) in 2011, compared with 35 plots (71%) in 2010. Of the 17 plots surveyed in both years, seven (41%) changed occupancy status, one gaining pika sign and six losing pika sign in 2011. Data analysis has begun, and a final project report will be submitted in 2012. Further details and results are available from sources below.



**Map of 2011 pika habitat occupancy survey results for Great Sand Dunes NPP.**

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