Photo courtesy of Michael Durham

American Pika (*Ochotona princeps*)

How is Climate Change affecting Pikas?

The American pika (*Ochotona princeps*) is a charismatic and conspicuous inhabitant of many western mountain landscapes. Pikas are related to rabbits, are slightly larger than a hamster, have short rounded ears and lack a visible tail. They are herbivores; grazing during summer and gathering grass and flowers for their haypiles to eat during the winter. They live in high elevation talus, boulder fields and lower elevation lava flows. Pikas are very active and have a high average body temperature of 104.2 °F, making them temperature-sensitive. Consequently, they adjust their behavior and activities to maintain this temperature, using the abundant crevices and cavities found in these areas that provide cover during the summer and insulation during the winter.

Climate change may pose a major threat to pika populations. Warmer summer temperatures may prevent them from foraging and finding enough food, and reduced snowpacks could mean they are more exposed to cold rain and wind. Results from recent research have shown that certain pika populations have been lost in lower elevations. In fact, 9 of 25 populations in the Great Basin have been lost over the past few decades, and there has been no evidence of recolonization.

Pika populations can be found in low and high elevations depending on their geographic location. Boulder fields are one of the typical pika habitats.

The Pikas in Peril Project

The National Park Service Climate Change Response Program has funded this project to address questions regarding the vulnerability of the American pika to future climate change scenarios projected for the western United States. A large team of academic researchers and National Park Service staff are involved in this project, and will be working in these 8 National Park Service Units: Crater Lake, Great Sand Dunes, Grand Teton, Lassen Volcanic, Rocky Mountain and Yellowstone National Parks, and in Craters of the Moon and Lava Beds National Monuments.

The research team will:

- Conduct pika occupancy surveys across a range of latitudes, longitudes, elevations, and substrate types (talus slopes vs. lava beds). An occupancy survey involves a search for evidence of pika presence at a site, such as observing pikas, hearing calls and finding fresh food caches or fresh fecal pellets . With these data, scientists will develop park-specific and regional maps of predicted pika distribution.
- Quantify recent gene flow patterns and develop habitat-based models of population connectivity within parks. In other words, they will determine how pika populations are related to each other. To achieve this, scientists will use information on genetic variation from analyses of fecal DNA collected during occupancy surveys.
- Combine these results to assess the vulnerability of pikas to climate change.

Above: Scientists searching for signs of pika in lava rocks and crevices. *Right:* Fresh pika scat on lava rock.

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