



American pika: status and vulnerability to Rabbit Hemorrhagic Disease



An American pika in Great Sand Dunes National Park and Preserve. Photo: Sara McLaughlin

The American pika (*Ochotona princeps*), also known as the rock rabbit or mouse hare, is closely related to rabbits and hares, but lives in an unusual habitat. In Great Sand Dunes National Park and Preserve (NPP), pikas live mainly at high elevations in piles of broken rock called taluses. Within taluses, temperatures can be warmer in winter and cooler in summer than the surrounding air, allowing pikas to adapt to a relatively narrow temperature range. Climate change is predicted to threaten pikas, and some populations have already been lost. Exotic disease might also threaten pikas. A deadly new form of Rabbit Hemorrhagic Disease (RHDV2) is spreading worldwide and has been found in dead rabbits and hares near Great Sand Dunes NPP. In 2022, the [Inventory and Monitoring Division](#) funded a survey of pikas, rabbits and hares in the park to better understand where pikas occur and where they might be exposed to RHDV2 through contact with rabbits and hares.

Results

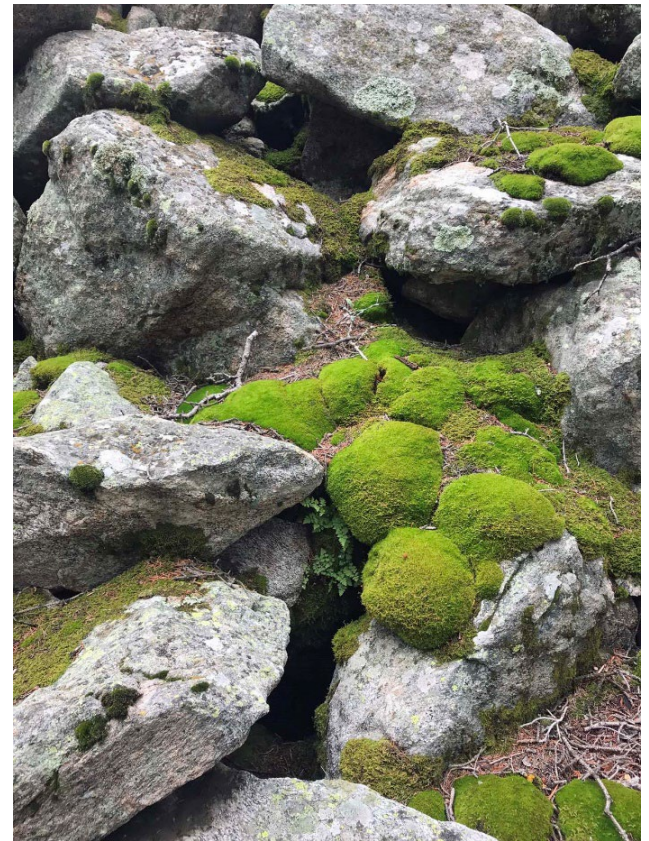
- We detected fresh pika sign in most of the 115 plots surveyed. Pika sign was more likely in plots at higher elevations and where solar radiation was higher at a regional scale (1.1 km around the plot). We estimated pika occupancy at 95%.
- We detected fresh rabbit or hare sign in 30% of plots. Overall rabbit/hare occupancy was estimated at 66% (after accounting for imperfect detection) and varied inversely with elevation.
- Areas of potential contact between rabbits, hares and pikas occurred mostly within the subalpine forest (10,000-12,000 ft), where probabilities of finding pikas as well as rabbits or hares ranged 0.50 to 0.94.

Conclusions

- Although a 2010-2012 study^{2,3} predicted pika losses in Great Sand Dunes NPP by mid-century due to climate change, pika occupancy had increased by 2022. We found no evidence of recent pika losses due to climate or RHDV2.
- Because pikas tend to overlap with rabbits and hares within the subalpine forest, they could be exposed to the RHDV2 virus. Park managers will keep an eye on pikas, rabbits and hares in the park to help ensure their health.

Survey methods and analyses

- We surveyed randomly selected plots in August 2022 for fresh fecal pellets and other signs of pikas, rabbits and hares. A subset of plots were surveyed twice, to quantify how often we might have missed fresh sign that was present.
- We recorded variables like observer, wind speed and temperature to model their effects on detection. We also collected information on variables that might influence the use of each plot by pikas or rabbits and hares. These variables included elevation, slope angle, slope aspect, climate and biome (below or above tree line).
- We used all these data to develop models for estimating the probability of pika presence in talus habitats and the probability of rabbit/hare presence across the park.



A relatively low-elevation talus where pikas might come into contact with rabbits and hares in Great Sand Dunes NPP. Photo: Chris Ray

¹Peralta A and Ray C. (2024) <https://doi.org/10.36967/2303667>

²Jeffress et al. (2013) <http://dx.doi.org/10.1890/12-0979.1>

³Schwalm et al. (2016) <http://dx.doi.org/10.1111/gcb.13189>