

## Get Wild: Pikas go subnivean, a land full of snow tunnels and hay

Frances Hartogh



**A pika gathers Alpine grass to store near its den so it can survive through the long, harsh winter.**

*White River National Forest/Courtesy photo*

Cold, blustery and austere, the unique talus-strewn world above timberline holds a seductive allure. Yet even the most serious mountaineer will break into a grin when spotting a 4-ounce critter with a big squeak — the American pika. Often seen with a mouthful of flowers twice their size, these minuscule mammals survive year-round in some of the toughest environments Colorado has to offer.

How do these mini denizens of the Alpine survive seven to nine months of winter conditions? After all, like other members of the lagomorph family, which includes hares and rabbits, pikas don't hibernate. Instead, when the snow starts piling up on their high-top homes, pikas head for the subnivean zone, the area between the surface of the ground and the top of the snowpack.

As snow piles up, it captures the warmth of the ground underneath. This causes water vapor to rise through a process called sublimation. As that vapor cools and condenses, ice forms a layer on the snowpack, providing additional insulation and allowing below-snowpack temperatures to remain around 32 F degrees, even when outside it's far more frigid.

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But 32 degrees isn't exactly balmy. Pikas' normally thick coats become even longer in winter, and their high metabolism helps keep them warm.

What's a pika to eat to sustain that high metabolism during months surviving in the subnivean zone? Except for a few hardy lichens and plants, there's little available under the snow. And there are only a few snow-free months in the high-Alpine environment.

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During those few warmer months, pikas work furiously cutting grasses and flowers and caching them in "hay piles." A lot of technique goes into creating a sustainable hay pile. Pikas first gather fresh vegetation and lay it in stacks to dry, which avoids mold. Once the vegetation dries out, pikas store the material in stacks that can measure several feet thick and weigh 60 pounds.

To further help prevent rotting, pikas choose certain plants for their antibacterial properties. Interestingly, some of these are toxic to pikas but lose their toxicity as they dry, becoming edible later in winter.

Pikas make an average of 13 trips per hour to collect food — over 100 trips a day and 14,000 per season!

Within their territories, which pikas defend fiercely, they stash their piles under overhanging rocks, stack piles right on the talus surface, or wedge their piles between rocks so little is visible on the surface.

Then, as winter sets in, pikas dig tunnels in the snow from their den areas to their food stashes.

Pikas have received more attention in recent years as harbingers of climate change, having adapted to life in frigid climates, pikas can overheat and die when exposed to temperatures as mild as 78 degrees F. Unlike other mountain species that can move to higher altitudes, pikas already live so high on

the mountain that there is nowhere for them to go.

Conversely, in winter, lower snowpack — and snowpack that forms later and melts earlier — means less insulation in the subnivean zone, causing pikas to succumb to exposure. These conditions can also expose pikas to predators, like raptors, weasels, bobcats, coyotes — and your curious, off-leash dog!

Interested in helping pikas? Here are a few ways you can help:

- Volunteer with the [Colorado Pika Project](#)
- Contact your elected representatives and ask that pikas be protected under the [Endangered Species Act](#)

while also letting them know that reducing climate change is important to you

- Keep dogs leashed in our three local Wilderness Areas (it's the law) — and anywhere above tree line

- Lower your own carbon footprint by using the many tips that are available [online](#)

**“Get Wild” publishes on Fridays in the Summit Daily News. Frances Hartogh is a volunteer wilderness ranger**

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