

Mountain hares in Scotland are failing to adapt to climate change, making them more vulnerable to predators

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A team of researchers from the U.S. and the U.K. has found that

mountain hares in Scotland have not been changing their molt times in response to climate change. In their paper published in *Proceedings of the Royal Society B*, the group describes their study of mountain hares in Scotland.

Mountain hares in Scotland typically molt in late October each year. Their brown, warm-weather fur is replaced with snowy white fur that allows them to blend in with a snowy background, making it more difficult for predators to spot them. The reverse happens in late March.

Prior research has shown that many species have been adapting to a warming planet by molting later in the fall and earlier in the spring. In this new effort, the researchers wondered if the snow hares in Scotland were doing likewise. To find out, they conducted multiple field studies around Scotland, recording molt times at different elevations and times of the year. They then obtained weather data describing changes in snow patterns going back a half-century for the same area.

The researchers found that while snow patterns have changed dramatically, molt times for [mountain hares](#) have not changed in either the fall or the spring. And because molt times did not change, the number of days that the hares were mismatched with their environment increased by 35 each year. And such mismatches, they note, could place the hares at risk.

In trying to understand why the hares were not changing their molt times, which would be an evolutionary process, the researchers came up with three theories. The first was that the population of [mountain](#) hares is too small to allow for changes in the short term. The second was that they are simply a species that takes longer to react to climate changes. And the third possibility was that the hares were not more at risk from predators despite being more exposed because there are too few predators left in the area—humans have reduced their numbers to

encourage growth in grouse populations for hunters.

More information: Marketa Zimova et al. Lack of phenological shift leads to increased camouflage mismatch in mountain hares, *Proceedings of the Royal Society B: Biological Sciences* (2020). [DOI: 10.1098/rspb.2020.1786](https://doi.org/10.1098/rspb.2020.1786)

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