

HOW AN OUTBREAK OF MANGE REMODELLED A WILDERNESS



Vicuñas in an Andean reserve have been badly affected by mange.

When mange began to kill llama-like animals called vicuñas in the high Andes, their loss reverberated through the food web to affect grasslands and, eventually, condors.

Julia Monk at Yale University in New Haven, Connecticut, and her colleagues wanted to examine the part that pathogens play in the intricate relationships that connect plants, prey and predators. They studied the ripple effects of a deadly 2015 outbreak of mange – an itchy skin condition caused by mites (*Sarcoptes scabiei*) – in vicuñas (*Vicugna vicugna*) in the 166,000-hectare San Guillermo National Park in Argentina. The mites' source is unknown,

but llamas (*Lama glama*) in an adjacent reserve are a candidate.

The decline in the vicuña population left fewer of the animals for local pumas (*Puma concolor*) to kill. That meant that there weren't enough carcasses to support Andean condors (*Vultur gryphus*), leading to the scavengers' departure. The researchers also noted an increase in vegetation in areas where vicuñas normally grazed.

Understanding how diseases shape ecosystems is crucial as human encroachment brings wildlife into contact with new pathogens.

Ecol. Lett. <https://doi.org/hjnm> (2022)

RAPID COVID TESTS ACCURATELY DETECT SILENT CASES

A large-scale testing campaign in Canadian workplaces shows that the regular use of rapid antigen tests is highly effective at ferreting out asymptomatic SARS-CoV-2 infections.

Rapid antigen tests identify proteins on the virus's surface and are faster and cheaper than more-sensitive polymerase chain reaction (PCR) tests, which can pinpoint tiny amounts of the virus by detecting its RNA. To determine the usefulness of rapid antigen tests, Laura Rosella at the University of Toronto in Canada and her colleagues studied a programme that implemented twice-a-week COVID-19 screening at Canadian companies that ranged from fewer than 100 employees to more than 10,000.

From January 2021 to June 2021, nearly 322,000 rapid tests were conducted at 73 workplaces. Testing yielded 604 positives; 473 of those were confirmed by PCR to be true positives. Only about one in 4,300 rapid-test results was confirmed by PCR as a false positive, which the authors note was not enough to disrupt workplace operations.

Of the 116 workplace-testing organizers who responded to a survey, 99% said they were either satisfied or very satisfied with the programme.

Sci. Adv. **8**, eabm3608 (2022)



TRAVELLING WHEN TIRED? NO NEED TO LOSE SLEEP OVER IT

Data from thousands of wearable monitors suggest that travelling can help people to catch up on sleep, contrary to popular belief.

Sune Lehmann at the Technical University of Denmark in Kongens Lyngby and his colleagues collected activity data from devices worn by around 20,000 people, who collectively spent 218,000 nights travelling and accumulated a total of 3.17 million nights of sleep. The authors found that people who normally sleep, on average, less than 7.5 hours per night – the amount an adult normally needs for good health – tended to get more sleep while travelling. Those who usually sleep more than 7.5 hours slept less. But people in both groups were more likely to lose sleep if they changed time zones during their trips than if they didn't.

People who got less than the median amount of sleep at home were more likely when travelling to add sleep to weeknights than to weekends. The authors say that travel seems to balance out sleep patterns – it helps tired people to get rest and erodes the sleep of only those who already get enough.

Nature Hum. Behav. <https://doi.org/hjnn> (2022)