

Recovery of Mountain Pygmy-possums in the Victorian Alps

Climate resilience and adaptation



The connection between the possums and moths is well understood by many First Nations people who identify the Bogong moth as a culturally significant species historically travelling to the alpine regions annually for ceremony and feasting.

Climate change casts a blanket of uncertainty over the Mountain pygmy-possum. Irregular snow seasons and food shortages are increasing threats to a species that is already confined to isolated habitats located on tops of some of Australia's tallest peaks. Climate change may also be impacting availability of the possum's main food source, the Bogong moth.

Mountain Pygmy-possums rely heavily on winter hibernation, where they create mossy dens beneath 'boulderfields', fields of rock piles that are blanketed in snow. This snow blanket shelters the possums from wind, moisture and predation.

In a warming climate with more extreme weather and less predictable snowfall, early season melts may wake the possums from their slumber exposing them to cold and starvation. There is little food available to consume in the winter months with the Bogong moths' influx to the Australian alps generally occurring in late Spring.

An experienced, diverse and talented team of project partners has come together on a long-term project aimed at building resilience and arresting the decline of wild possum populations.

How does it work?

The decline of possum numbers has multiple drivers, of which climate change is but one. By addressing other key threats and other drivers, possums have a greater chance of survival.

Mapping the Bogong Moth Migration to Safeguard the Possum's Future

A large portion of the Mountain pygmy-possum's diet comes from Bogong moths that hatch as larvae and develop into adult moths within the lowland pastures in rural regions across Australia. The moths fly thousands of kilometres to the alpine regions each year where they spend summer months in the cool rocky boulderfields where possums live.

This influx of moths is a major event, providing nutrition to many

alpine species, including the Mountain pygmy-possum. Food in the alpine regions is otherwise scarce, with no other food locally available to supplement the fatty, energy-rich nutrition Bogong moths provide.

The connection between the possums and moths is well understood by many First Nations people who identify Bogong moths as culturally significant species historically travelling to the alpine regions annually for ceremony and feasting.

In recent years the number of moths arriving in the alpine regions has plummeted. This has led to a reduction in the survival of young possums as the mothers cannot support them due to lack of nutrition over the summer season.

Climate change may be partly to blame for this decline in Bogong



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moth populations. A correlation is emerging between moth numbers and soil moisture in the moth breeding grounds. The largest declines in Bogong moths were observed during the Millennium drought and black summer bushfires.

More recently, there has been an increase in Bogong moth numbers after the extensive flooding of NSW and Qld in 2021. This provides anecdotal evidence that soil moisture may improve moth hatching

The First Nations groups aspire to expand this network and collaboration across Australia, with other First Nations groups tracking the moth migration across Country.

This will connect groups and mob from across Australia with a shared interest in protecting these iconic moths and the possums that rely on them.

success.

Scientists and First Nations groups are working hard to understand these drivers of change in the hope that moth populations can be maintained in the future, safeguarding food resources for the possums and a slew of other alpine species.

This project is supporting three First Nations groups to collaborate and deploy a series of Bogong moth monitoring stations across the Victorian alpine resorts to identify the numbers and timing of moths arriving and residing in the Australian alps.

Scientists can also analyse data against a range of environmental variables to better understand the moth's needs which are intrinsically linked to the possum's survival.

Consolidating this information will provide First Nations groups, scientists and land managers with critical information to help protect the Mountain Pygmy-possum populations living in the wild across the Australian Alps.

Acknowledgement

This project is funded by the Australian Government Natural Heritage Trust and delivered by North East Catchment Management Authority, a member of the Commonwealth Regional Delivery Partners panel.

Project team: Parks Victoria, Alpine Resorts Victoria, Zoos Victoria, Cesar Australia, Ecology Links, Gunaikurnai Land and Waters Aboriginal Corporation, Konermar Buller Jaithmathang, Jaithmathang Traditional Ancestral Bloodline Original Owners and Taungurung Land and Waters Council.

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