

## Submission to the Senate Inquiry on Australia's Faunal Extinction Crisis



14<sup>th</sup> August 2018

### A submission on behalf of the La Trobe University Research Centre for Applied Alpine Ecology

*The La Trobe University Research Centre for Applied Alpine Ecology (RCAAE) comprises a group of professional scientists and academics who study all aspects of the ecology of alpine and sub-alpine landscapes in Australia. Our scientific research includes ecological processes, effects of fire, exotic plants and animals, threatened species conservation, human activities, and the management of these ecosystems in response to climate change. Many of our members have decade-long associations with these regions and the threatened biota they support.*

#### SUMMARY

The RCAAE welcomes this Inquiry and sincerely hopes it is the beginning of meaningful action to reverse the trajectory of biodiversity decline in Australia. We believe this is a surmountable challenge – our world-leading ecological and environmental researchers have a strong track record in building the knowledge base required to address this crisis. Almost nowhere else is this better illustrated than in the Australian Alps where long-term monitoring and management of threatened species has been undertaken for decades. **Chronic under-funding threatens the capacity to continue this monitoring and undertake the required management actions.**

Our Major Recommendation relates to the need to **invest in long-term monitoring to track the status of threatened species populations.** Monitoring, performed over long time periods, is necessary to detect changes in population abundance, identify key threats and causes of decline, and to undertake effective adaptive management to reverse species decline. **A new Federal funding initiative** is urgently needed in Australia to ensure that current long-term monitoring for threatened species is maintained, and to enable such monitoring activities to be expanded.

It is worth noting that RCAAE members have significant experience and expertise in monitoring species and ecosystems. We would welcome the opportunity to work with government in designing and implementing robust monitoring activities for Australia's threatened alpine species.

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## Overview

We welcome the opportunity to make a submission to the Senate Inquiry on Australia's Faunal Extinction Crisis (noting that the points we raise here also relate to threatened plant species conservation). We address the following Terms of Reference, focusing on the Australian Alps Bioregion:

TOR i. The adequacy of existing monitoring practices in relation to threatened fauna assessment.

TOR h. The adequacy of existing funding streams for implementing threatened species recovery plans and preventing threatened fauna loss in general.

The Australian Alps is a National Heritage Bioregion that is environmentally significant. The region is also critically vulnerable to climate change. In alpine regions, warming - combined with changed patterns of rainfall and seasonality - is resulting in more frequent fires and pressure from migrating species, native and exotic. Significant warming has been recorded and is on track to meet or exceed predicted rises of 3.5 – 6 °C by 2100. Snow depth and duration have diminished and are predicted to decrease by more than 60% by the end of the century. The high concentration of biological and ecosystem service values in this zone creates **an imperative to monitor and manage alpine systems**.

**The Australian Alps is uniquely placed to monitor and manage threatened species.** Australia has a rich legacy of long-term alpine research (on both fauna and flora), with **some long-term monitoring dating back to the 1940s**. Many species have been re-surveyed only on an irregular basis because of a lack of funding and vision inherent in supporting long-term monitoring. The funding shortage threatens to derail our ability to better manage threatened species in alpine ecosystems. Threatened species conservation is far more likely to be successful with well-targeted monitoring. Species are far less likely to become threatened, and those that are threatened are more likely to be successfully recovered when there are targeted, fit-for-purpose, monitoring programs in place.

It is not possible to determine if a species is declining or recovering without monitoring. It is not possible to determine whether efforts to recover a species are effective (e.g. through cat and fox control, vegetation restoration or genetic rescue) without effective monitoring. It is not possible to determine if taxpayer funds are being well-spent to achieve adequate conservation return on investment without monitoring. **Funding of long-term monitoring has not always been a priority** at either the Federal or State-level. Hence, not all threatened species are monitored.

The Federal Government did fund threatened species monitoring in the alpine via LTERN (Long-term Ecological Research Network) from 2012 to 2017; this included **funding targeted, fit-for-purpose monitoring** of threatened plant and animal species, building on the rich legacy of long-term alpine research established in the Australian Alps since the 1940s. LTERN was central to the RCAA's renewed impetus to document the fate of Australia's only winter hibernating animal – the endangered Mountain Pygmy Possum – by funding population surveys and data collation spanning 1982-2017. This has led to the publication of the most up-to-date assessment of the long-term population trajectory of one of the key populations for the species (Grenville et al. 2018), as well as

impetus to develop and execute practical approaches to restoring habitat connectivity (Weeks et al. 2017). Such work has recently been recognized for its excellence by being nominated for the prestigious Museum Australia Eureka Award for Environmental Research. This shows that long-term monitoring, that informs conservation management, can play a critical role in reversing the decline of endangered species.

Funding for LTERN was cut at the end of 2017 and the important threatened species monitoring capability associated with it has been lost. **A new Federal funding initiative for biodiversity monitoring is urgently needed** to ensure that the exceptional value of the long-term plots established in the Australian Alps for threatened species monitoring, and allied threatened species conservation management, is not lost.

### Synopsis

We recommend that **a new funding initiative** is urgently needed in Australia to ensure that the exceptional value of long-term plots for threatened species monitoring is maintained. This will enable the decades-long monitoring to be continued in the Australian Alps, enabling adaptive management interventions to be quantified and refined. Understanding population trajectories is a pressing issue for threatened species conservation in the Australian Alps. It will become more urgent as the pressures that these species are subjected to increases in the coming decades. The estimated cost of supporting long-term biodiversity monitoring plots is minimal but **needs to be sustained over decades**. This is a small investment relative to the enormous benefits generated for threatened species conservation and management.

### Contact for further information



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## References

Greenville A.C., Burns E., Dickman C.R., Keith D.A., Lindenmeyer L.B., Keith D.A., Morgan J.W., Heinze D., Mansergh I., Gillispie G.R., Einoder L., Fisher A., Russel-Smith J., Metcalfe D.J., Green P.T., Hoffmann A.A. and Wardle G.M. (2018) Biodiversity responds to increasing climatic extremes in a biome-specific manner. *Science of Total Environment*. **634**: 382-393.

Weeks A.R., Heinze D., Perrin L., Stoklosa J., Hoffmann A.A., Rooyen A., Kelly T. and Mansergh I. (2017) Genetic rescue increases fitness and aids rapid recovery of an endangered marsupial population. *Nature Communications* **8**: 1071.