

Submission
No 539

**INQUIRY INTO PROPOSED AERIAL SHOOTING OF
BRUMBIES IN KOSCIUSZKO NATIONAL PARK**

Name: Name suppressed

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Partially
Confidential

How many Brumbies are in Australia?

Background

Contention exists regarding the number of feral horses (Brumbies) in the alpine regions of Australia. Given the Brumby's ongoing impact on fragile alpine habitats, it is essential to uncover this information so that appropriate management decisions are made. Here we propose to verify the population size of feral horses (Brumbies) in Australia using high-resolution, time and cost-effective genetic methods. The only method that has been used to estimate horse numbers is aerial surveys (i.e., Helicopter Line Transect Distance Sampling (HLTDS)), which uses observers in a helicopter moving along parallel transects. The number of horses observed and their distance from the observer are recorded, and the distance measure is used to calculate a number for those that are not counted because they are obscured by vegetation or not seen.

Therefore, these methods may be affected by observer bias and do not rigorously account for terrain or habitat variability in producing density estimates. This has resulted in increasing estimates ranging between just 1357 to 19,242 Brumbies in Kosciuszko National Park over eight surveys conducted between 2001-2022 (Walter & Hone 2003; Cairns 2019). Management interventions are primarily informed by HLTDS (e.g. trapping and aerial shooting), which may misdirect the scale of management efforts where estimates are lacking confidence.

Conservation and population genetic methods have been critical to estimating population size, barriers to population connectivity, genetic uniqueness, and historical population dynamics across myriad Australian fauna (Frankham et al 2002). Genetic data are therefore frequently used to improve and justify conservation and invasive species management actions (Bertola et al. 2024). Previous work has examined the historical genetic lineages of the Brumby, revealing diverse geographic origins of this long-standing population of horses (Nicholas et al. 2003).

However, there has been no investigation into the population genetic diversity of Brumbies, and therefore the contemporary processes that are unfolding in these populations. Genetics is frequently used to support or confirm population sizes of cryptic or difficult to assess species. Australia's feral horses are therefore a prime candidate for this analysis given contention surrounding their numbers, and the environmental pressures that necessitate efficient management. Results from genetic data can therefore be used to predict the consequences of different management actions and ongoing threats to endemic vulnerable ecosystems. Having a confident measure of how many Brumbies require management is vital for implementing a cost-effective and efficient control strategy in Australia.

References

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