

Submission
No 402

**INQUIRY INTO HEALTH AND WELLBEING OF
KANGAROOS AND OTHER MACROPODS IN NEW SOUTH
WALES**

Organisation: Nature Conservation Council of NSW

Date Received: 30 April 2021



Nature Conservation Council

The voice for nature in NSW

30th April 2021

Nature Conservation Council submission - Inquiry into the health and wellbeing of kangaroos and other macropods in New South Wales

The Nature Conservation Council of NSW (NCC) is the state's peak environment organisation, representing over 160 environment groups across the state. Together we are dedicated to protecting and conserving the wildlife, landscapes and natural resources of NSW.

Thank you for the opportunity to contribute to the *Inquiry into the health and wellbeing of kangaroos and other macropods in New South Wales*.

Biodiversity in NSW is under pressure from a range of threats including habitat loss, bushfires, climate change, feral animals. This has been well established in successive reviews, inquiries and reports – most recently these include the Samuel's Independent Review of the EPBC Actⁱ and the NSW Biodiversity Outlook Report.ⁱⁱ Macropod species form part of this picture of ecosystem degradation and biodiversity decline.

Two centuries ago there were 21 species of macropod in NSW, now there are only 15.ⁱⁱⁱ Several species of kangaroo and wallaby are listed as threatened in NSW. We focus on these listed threatened macropod species in our submission. However, we emphasise the importance of monitoring the condition of all native species, especially in the context of extreme environmental events, such as bushfire and drought.

The NSW Government response to protect biodiversity is not proportional to the scale of threats facing biodiversity. We continue to call on the NSW Government to:

- Fix land clearing laws to protect biodiversity
- Strictly limit use of biodiversity offsetting
- End public native forestry and strengthen private native forestry codes
- Require ecologically sensitive bushfire management
- Adequately fund programs to protect biodiversity on public and private land
- Adequately fund increased scientific research into surveying current populations, understanding current and future threats.

These reforms would benefit all threatened species, including macropods.

We address a), c) and h) from the terms of reference in the attached submission.

Yours sincerely,



Nature Conservation Council

The voice for nature in NSW

Chris Gambian
Chief Executive
Nature Conservation Council



Nature Conservation Council submission to the Inquiry into the health and wellbeing of kangaroos and other macropods in New South Wales

(a) historical and long-term health and wellbeing indicators of kangaroos, and other macropods, at the local, bioregional and state levels, including the risk of localised extinction in New South Wales

European invasion in NSW has had a significant impact on native animals, including macropods. Habitat loss for agriculture, introduced species such as foxes, cats and dogs, changed bushfire management and climate change have interrupted the ecosystems and traditional land management practices in which they thrived.

Climate change driven hotter, drier summers and increased lightning strike was the primary cause of the majority of the fires that burned during Australia's Black Summer 2019 - 2020 fire season. These fires impacted 5.4 million hectares and known habitat for 293 threatened animal species, including the brush-tailed rock wallaby and long-nosed potoroo.^{iv&v}

Two centuries ago, there were 21 species of macropod in NSW - now there are only 15. The smallest species, and those with special habitat requirements and restricted ranges, have suffered the most, both from predators and from the destruction of their habitats. A number of species of kangaroo and wallaby species are listed as threatened in NSW, and are described in the table below.

Long-nosed potoroo (<i>Potorous trida ctylus</i>)	The long-nosed potoroo is a threatened macropod listed as Vulnerable at both the state and commonwealth level. It is found on the south-eastern coast of Australia, from Queensland to eastern Victoria and Tasmania, including some of the Bass Strait islands. There are geographically isolated populations in western Victoria. In NSW it is generally restricted to coastal heaths and forests east of the Great Dividing Range, with an annual rainfall exceeding 760 mm.
Long-footed potoroo (<i>Potorous longipes</i>)	The long-footed potoroo is listed as Endangered in NSW as well as Endangered nationally. It inhabits forest with a dense understorey in East Gippsland, south-eastern New South Wales and north-eastern Victoria. Long-footed Potoroos appear to occur in small, low-density colonies, which are vulnerable to stochastic processes, such as wildfire. Wild dogs and red foxes are known predators of the species, placing pressure on recruitment and successful dispersal.
Brush-tailed rock wallaby (<i>Petrogale penicillata</i>)	Brush-tailed rock wallabies are listed as Endangered in NSW and Vulnerable nationally. Their range extends from south-east Queensland to the Grampians in western Victoria, roughly following the line of the Great Dividing Range. However, the distribution of the species across its original range has declined significantly in the west and south and has become more fragmented. In NSW they occur from the Queensland border in the north to the Shoalhaven in the south,



Nature Conservation Council

The voice for nature in NSW

	with the population in the Warrumbungle Ranges being the western limit.
Rufous Bettong (<i>Aepyprymnus rufescens</i>)	Rufous Bettongs are listed as Vulnerable in NSW. The original range from Coen in north Queensland to central Victoria has been reduced to a patchy distribution from Cooktown, Queensland, to north-eastern NSW as far south as Mt Royal National Park. In NSW they have largely vanished from inland areas but there are sporadic, unconfirmed records from the Pilliga and Torrington districts.
Yellow-footed Rock Wallaby (<i>Petrogale xanthopus</i>)	Yellow-footed rock wallabies are listed as Endangered in NSW and Vulnerable at the state level. Formerly more widespread through the ranges of South Australia, western NSW and into south-western Queensland. Thought to have occurred over the entire north-western NSW fold belt from Broken Hill to Tibooburra, including on the Barrier, Scopes, Bynguano and southern Grey Ranges. Now only known to occur in the Mutawintji National Park and Mutawintji Nature Reserve, where less than 100 animals were recently counted (July 2003) during annual surveys.

- (c) threats to kangaroo, and other macropod, habitat, including the impact of:
- (i) climate change, drought and diversion and depletion of surface water sources
 - (ii) bushfires
 - (iii) land clearing for agriculture, mining and urban development
 - (iv) the growing prevalence of exclusion fencing which restricts and disrupts the movement of kangaroos

There are multiple key threatening processes impacting macropods in NSW that are common to the species listed above and many other native animals. The most common threats are predation by foxes, cats and wild dogs, loss, degradation and fragmentation of habitat, competition for resources with feral goats and rabbits, changed fire regimes, infestation of invasive weeds causing loss and degradation of habitat, road strike and a lack of useful knowledge of the distribution, abundance, reproduction and life history of more cryptic species at some locations.

The **Long-nosed Potoroo's** greatest threats are habitat loss and fragmentation and predation by foxes and feral and domestic cats. Further threats include inappropriate fire regimes, forestry activities, and habitat degradation due to livestock and feral herbivores.

According to the conservation advice from the Threatened Species Scientific Committee, the highest severity of risk is from clearing for agricultural, urban and industry developments. Development removes essential vegetation and understory. Populations become more isolated due to the resulting fragmented landscape, increasing the risk of predation. Clearing for roads also destroys habitat, creates barriers to movement, fragments populations preventing gene flow, and increases roadkill risk. Livestock grazing and timber harvesting follow in order of severity of risk.



Nature Conservation Council

The voice for nature in NSW

Future projections of climate relate to decreased rainfall along with increased average temperatures across much of south-eastern Australia^{vi}. These changes will lead to varying vegetation and elevated risks of frequent and severe bushfires. What habitat remains may no longer be suitable for the Long-nosed Potoroo.

Threats to the **long-footed potoroo** include very restricted distribution, small, fragmented sub-populations and colonies, low population densities throughout its range, continuing threats posed by predators and timber harvesting, susceptibility to stochastic processes such as extensive severe wildfire. Again, these are likely to be exacerbated by climate change.

Threats to the **rufous bettong** include changes to the grassy understorey by inappropriate burning and grazing, competition (rabbits), predation (cats and foxes), loss of habitat (clearing, logging, and collection of fallen timber) and poor knowledge of the species' abundance and distribution. Weather can determine these animals' distribution and affect range boundaries. So too will the outcome of competition between rufous bettongs and its rival the endangered bettong in Qld and northern Australia.

High specialisation of species increases their susceptibility to suffer in changing conditions. The **brush-tailed rock wallaby (BTRW)** for example, risks decline and possible extinction as the environment changes. Extreme events like droughts are known to directly influence the demography of rock wallabies. Climate change is likely to compound the threatening processes for BTRW including native vegetation clearing, feral species (foxes and cats), competition (rabbits and goats), drought and changes in fire regime.

Southeast Australia is predicted to undergo drought with climate change. It is suggested that a temperature rise of up to 3°C and anything less than a 10 per cent rise in rainfall will result in increased dryness. This may have serious implications for the brush-tailed rock wallaby, as their predicted range will contract with increasing global temperature. The recent contraction in the species is thought to be due to lower rainfall and a decline in rainforest vegetation. Further research into this little-known species is required to assess the extent of its current populations.

The **yellow-footed rock wallaby** has an estimated population size in NSW of 250. Current threats include competition for food and shelter (goats), predation by introduced predators (foxes and cats), habitat fragmentation, genetic risk due to small, isolated colonies and catastrophic events such as wildfire and drought. These threats are likely to be exacerbated and compounded by climate change.

Bushfires

Fire is a direct threat to the viability of macropod populations through radiant heat, smoke, removal of trees for food and shelter and connectivity. A fire ravaged landscape will also exacerbate all the other impacts on macropods until the impacted ecosystems recover sufficiently to function as macropod habitat. This will take months, years and decades in some vegetation types. In many areas, local populations will go extinct and may take many decades to re-establish in the absence of fire impacts.



Nature Conservation Council

The voice for nature in NSW

The bushfires have been so extensive that the status of many threatened species, threatened ecological communities and even some common species have been severely affected, to the point where some species may have become extinct. Many of these threatened fauna, flora and ecological communities are known to occur in State Forests.

Climate change is causing fire seasons to commence earlier and last longer. The opportunity to undertake safe and effective hazard reduction burning is reducing and fires are becoming increasingly unpredictable and difficult to contain. Weather is increasingly becoming a major driver in fire behaviour and our fire mitigation and suppression capabilities, less effective.^{vii}

(h) current and alternative measures to provide an incentive for and accelerate public and private conservation of kangaroos and other macropods.

Fix land clearing laws to protect biodiversity.

- Investigations by the Audit Office of NSW and the Natural Resources Commission have found that land clearing has tripled since 2014-2015 and there is a major risk of unexplained clearing.^{viii}
- The Audit Office of NSW found that "the clearing of native vegetation on rural land is not effectively regulated and managed. The processes supporting the regulatory framework are weak and there is no evidence-based assurance that clearing of native vegetation is carried out in accordance with approvals."^{ix}
- The Environmental Defenders Office has outlined steps that should be taken to fix the legal framework for vegetation management in NSW.^x

Strictly limit use of biodiversity offsetting.

- We encourage the committee to investigate examples and outcomes of biodiversity offsetting arrangements for threatened macropods.

End public native forestry and strengthen private native forestry codes.

Require ecologically sensitive bushfire management.

- Bush Fire Risk Management Plans need to be amended to include listing of environmental assets including threatened macropod populations and fire mitigation strategies assigned as a matter of urgency. While this is not a panacea it will improve the likelihood of fire managers including the protection of these highly vulnerable populations in their planning and hopefully lead to better conservation outcomes for these iconic animals.

Fund programs to protect biodiversity on public and private land.

- For example, Saving Our Species and Hotspots Fire Project.

Fund increased scientific research into surveying current populations, understanding current and future threats

- Extensive surveys are needed in burnt and unburnt areas of threatened species, endangered ecological communities and of common species to assess the current and ongoing status of populations, with the gathered data used to re-evaluate plans of action, identify priority locations for immediate conservation, and list new



Nature Conservation Council

The voice for nature in NSW

species and communities as threatened where necessary. Ongoing monitoring should also be undertaken to ensure that the decisions and actions taken are incorporated into existing programs as well as newly established programs.

Hotspots Fire Project – example of program to support for private land holders to support biodiversity on their properties

The Hotspots Fire Project (Hotspots) is jointly managed and delivered by the NCC and the NSW RFS. Nine project partners support the strategic direction of the program forming the Advisory Committee and agency representatives present at workshops on their fire management planning and implementation.

The project supports landholders to plan and implement actions on their property for fire mitigation and to maintaining biodiversity. Biodiversity conservation across tenure is critical to ensure populations survive.

The Hotspots Fire Project has supported landholders to include management actions in their property management plans specifically for threatened macropods including long-nosed potoroos particularly in southern NSW (e.g. Tanja, Wapengo, Bunga workshops, Murrah, Cuttagee, Bermagui workshops, Little Forest workshops, Black Range workshops) and brush-tailed rock wallabies (Budgong workshops, Murrah, Cuttagee, Bermagui workshops, and Kangaroo Valley).

ⁱ Samuels, G. (2020). Independent Review of the Environmental Protection and Biodiversity Conservation Act 1999. Available at: <https://epbcactreview.environment.gov.au/resources/final-report/executive-summary>

ⁱⁱ Department of Planning Industry and Environment. (2020). *NSW Biodiversity Outlook Report*. Available at: <https://www.environment.nsw.gov.au/research-and-publications/publications-search/biodiversity-outlook-report>

ⁱⁱⁱ Department of Planning Industry and Environment. (2021). *Kangaroos, wallabies, pademelons, bettongs, and potoroos*. Available at: <https://www.environment.nsw.gov.au/topics/animals-and-plants/native-animals/native-animal-facts/kangaroos-and-wallabies>

^{iv} Smith, J. and Smith, P., 2020, June. Outstanding Terrestrial Vertebrate Faunal Diversity in the Greater Blue Mountains World Heritage Area, New South Wales. In *Proceedings of the Linnean Society of New South Wales* (Vol. 142, No. 1).

^v Mo, M., Roache, M., Reid, T., Oliver, D.L., Broome, L., Fawcett, A., Howard, K., Thomas, P., Tracey, S., Andersen, G. and Lowry, R., 2021. Corporate support for threatened species recovery efforts: three case studies from the 2019–20 Australian bushfire season. *Australian Zoologist*, 41(2), pp.186-193.



Nature Conservation Council

The voice for nature in NSW

^{vi} Department of Environment and Primary Industries (2013) Action Statement No. 254. Longnosed Potoroo *Potorous tridactylus*. https://www.environment.vic.gov.au/__data/assets/pdf_file/0017/32444/Long_nosed_PotorooPotorous_tridactylus.pdf

^{vii} Swann, T. and Ogge, M., 2020. Out of Season. Expanding summers and shrinking winters in subtropical and temperate Australia. Discussion Paper. Australia Institute

^{viii} NSW Natural Resources Commission. (2019). *Final Advice on Land Management and Biodiversity Conservation Reforms*. Available at: <https://www.nrc.nsw.gov.au/land-mngt>

^{ix} NSW Audit Office. (2019). *Managing Native Vegetation*. Available at: <https://www.audit.nsw.gov.au/our-work/reports/managing-native-vegetation>

^x Environmental Defenders Office. (2020). *Restoring the balance in NSW native vegetation law*. Available at: <https://www.edo.org.au/publication/report-nsw-native-vegetation-law/>