17 February 2020

The Honourable Sussan Ley MP
Minister for Environment, Australia
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cc: The Honourable David Littleproud MP, Minister for Agriculture, Australia (minister.littleproud@agriculture.gov.au)

cc: The Honourable Lily D'Ambrosio MP, Minister for Energy, Environment and Climate Change, Victoria (lily.dambrosio@parliament.vic.gov.au)

cc: The Honourable Jaclyn Symes, Minister for Agriculture, Victoria (jaclyn.symes@parliament.vic.gov.au)

cc: The Honourable Matthew Kean MP, Minister for Energy and Environment, New South Wales (office@kean.minister.nsw.gov.au)

cc: The Honourable Adam Marshall MP, Minister for Agriculture, New South Wales (adam.marshall@parliament.nsw.gov.au)

cc: Dr Sally Box, Threatened Species Commissioner (ThreatenedSpeciesCommissioner@environment.gov.au)

RE: DINGO (WILD DOG) BAITING IN SOUTHEASTERN AUSTRALIA AND BUSHFIRE RECOVERY

Dear Minister/s,

The undersigned wish to express our expert opinion on the status of dingoes across Australia in light of the current bushfire emergency. At the time of writing, more than 10 million hectares has been burnt across Australia, including 1.2 million hectares in Victoria and 4.9 million hectares in New South Wales. Across southeastern Australia this represents burning of major dingo habitat zones in National Parks and State Forests. We commend the Federal, NSW and VIC State Governments for their focus on assisting fauna and flora recovery after the catastrophic 2019/2020 bushfire season, however, the proposed 'feral predator' aerial baiting plans are counterproductive to that aim. In particular, we wish to express concern about plans to undertake widespread 1080 "wild dog" aerial baiting across burnt habitat in NSW and VIC.

The prevailing wisdom is that introduced predators such as foxes and feral cats pose the most significant risk to native fauna (marsupials, birds, reptiles etc). These risks need to be proactively and swiftly managed to protect (already struggling) threatened species that have been endangered by recent bushfires. We agree that proactive measures to limit introduced predators may need to be taken but these should be targeted and not endanger native predators such as quolls, dingoes and varanids. Currently proposed aerial baiting programs will not target cats, leaving threatened

species under increased pressure from these predators. It is also important to iterate that “wild dog” baiting will kill dingoes, leading to widespread mesopredator release, removing suppressive pressure on cat and fox populations exerted by dingoes.

Aerial baiting in bushfire affected southeastern Australia is an unacceptable risk to native carnivores

Aerial baiting with 1080 poison poses an unacceptable risk to native predators such as quolls, dingoes and varanids because it is unknown if food scarcity in burnt landscape may increase bait consumption leading to poisoning of quolls or varanids. Furthermore, dingoes are highly susceptible to 1080 baiting and are included as a direct target of “wild dog” baiting efforts. Importantly, best-practice guidelines to limit 1080 baiting impacts on quolls suggests that all baits should be buried to a depth of more than 10 cm and “*aerial or broadcast surface baiting should only be used in areas where it can be demonstrated that there is a low risk to spot-tailed quoll populations*” (*EPBC Act Policy Statement 3.4 - Significant impact guidelines for the endangered spot-tailed quoll Dasyurus maculatus maculatus (southeastern mainland population) and the use of 1080*). Currently it is unknown how quolls and other non-target species will be impacted by aerial baiting in burnt habitat. Arguably, the recently proposed NSW “wildlife and conservation bushfire recovery” plan should be referred to the Federal Environment Minister under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* for assessment.

We strongly emphasise the ecological importance of terrestrial apex predators in biodiversity resilience and ecosystem functioning. Dingoes are the sole non-human land-based top predator on the Australian mainland. Their importance to the ecological health and resilience of Australian ecosystems cannot be overstated, from regulating wild herbivore abundance (e.g. various kangaroo species), to reducing the impacts of feral mesopredators (cats, foxes) on native marsupials (Johnson & VanDerWal 2009; Wallach et al. 2010; Letnic et al. 2012; Letnic et al. 2013; Newsome et al. 2015; Morris & Letnic 2017). It would be hypothesised that continued dramatic reduction of dingo populations, by aerial baiting, will enable introduced mesopredators such as foxes and cats to exploit burnt areas unchecked, posing a high risk to threatened native species. The impacts of feral cats and red foxes are likely to be amplified in disturbed ecosystems, such as those burnt by bushfires. Indiscriminate and non-target specific lethal management should not be implemented if there is a risk to the persistence of threatened native fauna or ecosystem resilience.

We would urge the Federal, NSW and VIC State Governments to focus bushfire recovery efforts on proactive evidence-based measures including:

- Installation of exclusion fences to protect recovering vegetation and wildlife communities (short-term)
- Targeting lethal control measures to key refuge areas and important sites for remaining populations of threatened species
- Limiting lethal control to targeted methods such as shooting, trapping or ground-baiting where steps are taken to limit non-target bait consumption
- Providing supplemental shelter, food and water to identified remaining populations of threatened species
- Increasing post-fire weed control to protect regeneration efforts

Dingoes have a fundamental ecological role and their protection needs to be enhanced rather than diminished

"Wild dog" aerial baiting programs, as proposed as part of bushfire recovery programs, seriously threaten the persistence of dingoes in southeastern Australia. Cairns et al (2019) and Stephens et al (2015) effectively demonstrate through DNA testing that "wild dogs" are predominately dingoes and dingoes with dog ancestry rather than feral dogs (see Appendix 1 - *Wild dog terminology is inaccurate and misleading*). Dingoes are a native species, and despite their impact on livestock producers, play a fundamental ecological role. Aerial baiting is not target specific and kills dingoes, dingo hybrids and feral dogs, as well as other non-target species. Diminishing predator populations tend to be associated with ecosystem instability and native species decline. The dingo is a keystone species that benefits small animals and plant communities by suppressing and changing the behaviours of mammalian herbivores and smaller predators (including introduced foxes and feral cats) (Johnson & VanDerWal 2009; Wallach et al. 2010; Letnic et al. 2012; Letnic et al. 2013; Newsome et al. 2015; Morris & Letnic 2017). Their presence adds a stabilising influence and provides ecosystem resilience for species only found in Australia. We strongly underline the importance of adequate protection of dingoes within Australian ecosystems.

Conservation of dingoes in the face of the bushfire emergency (2019-2020)

Currently southeastern dingoes are under threat because of widespread lethal control programs, genetic dilution by hybridisation and have faced serious habitat destruction following the recent 2019-2020 bushfires in Victoria and New South Wales. We call upon Federal and State Governments to undertake proactive steps to preserve and protect distinct southeastern dingoes, by putting in place a moratorium on widespread aerial and ground baiting programs.

Widespread aerial and ground baiting in southeastern Australia is incompatible with the ongoing persistence of dingoes because:

- Aerial baiting dramatically decreases the population of dingoes (killing up to 90% of individuals)
- Widespread lethal control is a key risk-factor in increasing the risk of hybridisation by destroying social (pack) structures
- Indiscriminate lethal control increases the spread of dog genes through the dingo population via genetic bottlenecking

We strongly urge the NSW and VIC State Governments to put in place active conservation protection for identified "high genetic integrity" populations (please see Appendix 1 for further comment on NSW and VIC Government policies on dingo conservation). In NSW, "high genetic integrity" populations have been identified at Myall Lakes, North of Port Macquarie and Washpool National Park. In Victoria, urgent genetic and population surveys of dingo populations are needed across the state to identify populations of high conservation significance. Additional genetic surveys are needed across NSW and VIC to identify additional high conservation value populations for protection. High conservation value dingo populations should be immediately protected from lethal control. State Governments are urged to consider transitioning to a legislative model that sees dingoes protected on public lands including within

National Parks and State Forests. We also wish to clarify that concern about hybridisation is based on an ecologically unproven distinction between 'pure' dingoes and ecologically functional 'dingoes with dog ancestry', (see Appendix 1 - *Wild dog terminology is inaccurate and misleading* for further detail).

Ecosystem recovery after catastrophic bushfires

It is important that wildlife and conservation bushfire recovery programs focus on environmental regeneration and protection. Dingoes (and other wildlife) are likely to migrate into agricultural and unburnt lands as they escape fires and seek food/water following the extensive burning of habitat. Farmers should be assisted to explore non-lethal forms of management such as electric fencing, animal husbandry changes and livestock guardian animals; promoting co-existence with wildlife whilst local habitat regenerates. In circumstances where dingoes cause significant impact to livestock producers then targeted lethal control of problem animals would be an acceptable mitigation strategy, after having trialled non-lethal strategies. It is important to consider that there is strong evidence that haphazard, broad-scale baiting can increase conflict with livestock producers (Allen & Gonzalez 1998; Allen 2015).

Summary

As prominent international and Australian researchers in predator ecology, biology, archaeology, cultural heritage, social science, humanities, animal behaviour and genetics, we wish to emphasise the importance of dingoes in Australian ecosystems. On the balance of scientific evidence, ethical reasoning and society-wide expectations, protection of dingoes should be enhanced rather than diminished. We urge Federal and State Governments to develop a cohesive management strategy that preserves and protects existing dingoes (including high-content hybrids) irrespective of taxonomy in southeastern Australia.

Aerial baiting programs are not compatible with the continued persistence of dingoes and pose an unacceptable risk to other native predators in southeastern Australia after the bushfire crisis. We reiterate that the NSW and VIC Governments should reconsider planned aerial baiting programs in burnt landscape.

Signed:

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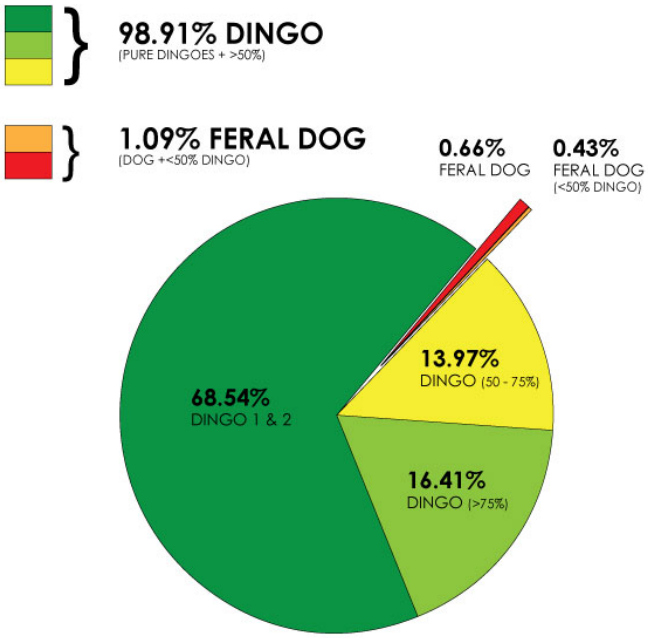
APPENDIX 1 – ***Wild dog terminology is inaccurate and misleading***

We wish to clarify that the terminology 'wild dog' is not appropriate when discussing wild canids in Australia. Government bodies need to use clear language to communicate planned lethal control activities on dingoes, avoiding the terminology "wild dog" which is misleading and poorly understood by the public. Continued use of the terminology 'wild dog' is not justified because wild canids in Australia are dingoes (some with dog ancestry), not feral domestic dogs.

One of the main discussion points at the recent Royal Zoological Society of NSW symposium 'Dingo Dilemma: Cull, Contain or Conserve' was that the continued use of the terminology 'wild dog' is not justified because wild canids in Australia are predominantly dingoes and dingo hybrids, and not, in fact, feral domestic dogs. Across Australia, Stephens et al. (2015) observed that only 24 out of 3,637 free-ranging canids (0.7%) sampled were feral domestic dogs with no evidence of dingo ancestry. This same study determined that 78.4% of wild canids across Australia were pure or likely-pure dingoes and 12.5% were hybrids with greater than 75% dingo ancestry. A total of 8.2% of the wild canids sampled carried 50-75% dingo ancestry. Surprisingly, only 12 animals were dingo-dog hybrids with less than 50% dingo ancestry, suggesting that to persist in the wild animals needed predominately dingo genes. This is consistent with the recent findings of Cairns et al. (2019) in northeastern NSW who identified that a majority of wild canids were predominately dingo ancestry and feral dogs were virtually absent from the free-ranging canid population. Comparative studies by Jones (1990), Jones (2009) and Parr et al. (2016) observe that dingoes maintain a strong phenotypic identity, and perceptively 'wild dog' like animals were more dingo than domestic dog.



1. Raw data Stephens et al. (2015) plus Cairns et al. (2019) combined

Score	Description	No.	%
1	Dingo 1 & 2 (Dingo with no (or likely no) dog ancestry)	3033	68.54
2	Dingo with dog ancestry 1 (>75% dingo)	726	16.41
3	Dingo with dog ancestry 2 (50%-75% dingo)	618	13.97
4	Feral Dog with dingo ancestry (<50% dingo)	19	0.43
5	Feral Dog	29	0.66
		4425	

Figure 1. Ancestry of wild canids across Australia based on Stephens et al (2015) and Cairns et al (2019). Classification of wild canids according to the framework of Cairns et al (2019) and based on STRUCTURE q-value.

In southeastern Australia, particularly within Victoria and New South Wales, dingoes have been subjected to landscape wide persecution in the form of aerial and ground baiting strategies across public and private lands. These activities are depicted as 'invasive animal' management of wild dogs, who are deemed to pose a risk to livestock. The National Wild Dog Action Plan, of which the Victorian and New South Wales Governments are signatories, defines "wild dogs" as "*all wild-living dogs, which include dingoes, feral dogs and their hybrids*". Lethal control activities occur within National Parks, where dingoes as a native species should be (and are often portrayed as being) protected. Widespread use of poison baiting, which is not target specific, is at odds with Federal and State Government objectives of conserving dingoes, particularly on public lands.

Aerial and ground baiting pose a serious risk to the persistence of dingoes (and their genetic identity) across southeastern Australia by increasing the risk of hybridisation between wild dingoes and feral/roaming domestic dogs. Furthermore, it assists the spread of dog genes throughout the dingo population through bottlenecking. If we are to maintain the identity of the dingo, then we must take steps to protect those high dingo ancestry populations we have now and limit future hybridisation. Beyond this, conservation management of dingoes (and ecosystems as a whole) must consider the 'total identity' of animals including their ecological function, behaviour, morphology, alongside their genetic ancestry.

APPENDIX 2 – ***Comments on State Government legislation as relating to dingoes***

In Victoria specifically: Dingoes are listed as Threatened under the *Flora and Fauna Guarantee Act 1988* (Victoria) and are protected wildlife under the *Wildlife Act 1975* (Victoria). However, under an Order by Council made on 18 September 2018, dingoes are unprotected on all private land in Victoria, and public land within 3 km of any private land boundary, within certain areas of the state. Furthermore, under the *Catchment and Land Protection Act (1994)* (Victoria), wild dogs are listed as an established pest animal and "a landowner must take all reasonable steps to prevent the spread of, and as far as possible eradicate, established pest animals". Victoria also reinstated a "wild dog" bounty in 2016. These management strategies pose a conundrum, for how can a listed threatened species be realistically conserved if they are unprotected and in fact identified for eradication across much of the landscape. The 2008 'Flora and Fauna Guarantee Scientific Advisory Committee recommendation' resulting in the threatened species listing of dingoes in Victoria specifically identifies bushfire and lethal control as activities which threaten dingo populations. **We ask that the Victorian Government cease both aerial baiting and the 'wild dog bounty' program which, pose an unacceptable risk to the persistence of dingoes and that a proactive conservation plan for dingo populations be put in place.** It is concerning that the dingo does not feature in the 23 January "Victoria's bushfire emergency: Biodiversity response and recovery" Report, despite it being a Victorian listed threatened species. Additionally, there is some concern that "Intensive predator (fox and cat) control within the burnt area and adjacent refuges", an action identified by the Victorian bushfire response plan, may impact on remnant dingo populations as dingoes likely consume fox or cat baits, particularly in bushfire affected areas.

In New South Wales specifically: The NSW Wild Dog Management plan states that the conservation of dingoes is a key goal and in the past Schedule 2 lands (generally National Parks tenure) were identified as areas where dingoes were to be conserved. Now, under the current Local Land Services (Wild Dogs) Pest Control Order 2015 (New South Wales) and Biosecurity Act 2015 (New South Wales) there is a general obligation for landholders to control 'wild dogs' as a biosecurity responsibility, including on public lands. As stated in the NSW Wild Dog Management Plan, "*NPWS undertakes extensive wild dog control as part of coordinated cross-tenure programs to minimise the impacts of wild dogs on neighbouring livestock producers*". Interestingly, the Local Land Services Act 2013 (New South Wales) defines wild dogs as "*any dog, including a dingo, that is, or has become wild, but excludes any dog kept in accordance with the Companion Animals Act 1998…*". This lumping of dingoes with feral domestic dogs as "wild dogs" effectively disrupts any proactive conservation actions including in National Parks, because "wild dogs" are a declared pest and as such National Parks must seek to control them. **We ask that the New South Wales Environment Minister enact measures to protect and conserve dingo populations across public lands, balancing the need to mitigate risks to livestock with conserving dingoes across the landscape.** Hotspots of high dingo ancestry in New South Wales identified by Cairns et al. (2019) need to be immediately protected and additional genetic surveying of dingo populations needs to be carried out across the state.