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Arthur Gorrie
Vice President
National Dingo Preservation and
Recovery Program (Inc. A0051763G)
c/o 643 Pascoe Vale Rd.
Oak Park, 3046
Melbourne

Kate McArthur
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Re: Remaking of Dingo threatened species listing Order in Council.

Dear Ms McArthur,

The NDPRP would like to thank you for the opportunity to comment regarding the remaking of the Order in Council (OIC) associated with the Victorian *Flora and Fauna Guarantee Act* dingo threatened species listing.

The NDPRP would like to outline a number of serious shortcomings regarding the OIC consultation draft and recommend alterations to it. Our comments relate to the serious conservation shortcomings of the current and proposed OIC because the consultation draft essentially foreshadows a remaking of the current conditions for a further five years.

The NDPRP recognises that the listing of the dingo as a threatened species was a major advance. As you know, prior to the listing the dingo was governed as an established pest animal under the Catchment and Land Protection Act (CaLP Act) along with introduced pest animals including feral pigs, goats and rabbits. As a result of the listing, the dingo was not only governed as wildlife under the Wildlife Act, but as a threatened species under the FFG Act.

Notwithstanding this past progress, the NDPRP considers that, in the light of new environmental research and knowledge relating to apex predator function in Australian ecosystems, and relating to dingo genetic lineage, the draft OIC would constitute environmental malpractice. Such environmental malpractice would incur significant social, reputational and, ultimately, potential economic damage to society.

It is now increasingly accepted by governments that there is a critical inter-relationship between the natural environment, society and the economy and that healthy ecosystems are a precondition for the sustainable provision of good public services, jobs and community safety. The sustainable provision of ecosystem services, upon which all societies depend, rests upon responsible environmental stewardship and leadership by governmental authorities.

The NDPRP, therefore, rejects claims by extreme elements from the farming lobby, as asserted in the *National Wild Dog Management Program* (unfortunately endorsed by the Victorian government), that the only primary or legitimate stakeholders in relation to lethal wild dog control issues are rural landholders. *All Victorians are equal stakeholders in relation to actual or potential environmental damage associated with the lethal control of apex predators.* A failure to adequately recognise and act on this basic democratic principle stands to damage social and political trust, and therefore social cohesion in Victoria.

On this basis, the NDPRP recommends the following revisions to the consultation OIC draft:

1. *There should be no un-protection of the dingo in Victoria, certainly not on Crown land.*

Lethal control and environmental harm

Despite the dingo threatened species listing, broad scale lethal control has continued within the 3 kilometer buffer zone at the interface of private and public land. The intensity of this control has been increased over time, and now includes a ‘wild dog’ bounty to encourage recreational hunters to kill dingoes/‘wild dogs’, and aerial baiting in some areas. The NDPRP believes that government initiatives are currently under way to apply aerial baiting on an even broader scale.

Yet, advice to the Victorian government by some leading ecologists is that the disruptive ecological ramifications of such lethal control reach far beyond the 3 kilometer zone into dingo habitat, potentially destabilising ecosystems on a broader scale, disrupting pack structure and accelerating the hybridisation of dingoes.

Lethal control has continued on a significant scale under current OIC arrangements even though the Victorian Scientific Advisory Committee in June 2007, in recommending the listing of the dingo as a threatened taxon, advised the Victorian government that lethal control programs constituted an ongoing threat to dingo populations in Victoria:

“Criterion 1.2 The taxon is significantly prone to future threats which are likely to result in extinction.

Evidence:

Remnant populations of dingoes are subject to loss of genetic integrity through hybridisation with wild dogs *Canis familiaris familiaris* (Newsome and Corbett 1982, 1985; Wilton 2001; Elledge et al. 2006). The increased frequency and intensity of bushfire in remaining habitat areas, **and wild dog control programs (including baiting and other control measures)** have the potential to result in a decline in remnant dingo populations and recruitment to those populations.” (VSAC, 2007)(Our emphasis)

At that time, it was understood that the greater part of lethal control occurred within 3 kilometers of the private – public land interface. The VSAC’s caution concerning the potential harm from lethal control programs to the survival prospects of the dingo in Victoria was therefore effectively ignored in the framing of the current OIC, which would be perpetuated if remade unaltered.

Farm stock predation exaggerated

The NDPRP considers that the scale and economic significance of harm to farm live stock from dingo/'wild dog' predation in Victoria has been consistently and irresponsibly exaggerated. Such claims do not stand up to serious empirical scrutiny. In 2016-17, officially recorded stock loss from predation was 995. At this time, Australian Bureau of Statistics agricultural data show the Victorian sheep/lamb population to have been over 13 million. This translates to a predation rate of 76 sheep/lambs per one million sheep in Victoria.

When the geographically uneven nature of predation is taken into account, the stock loss rates are still relatively low. The table below shows that, for the Victorian regions of Gippsland and Hume in eastern Victoria, where predation rates are higher than the Victorian average, 1 sheep in every 1,000 is lost to predation. These farming areas are situated close to important dingo habitat and biodiversity regions.

It should also be emphasised that these regions only account for approximately 7 per cent of Victoria's total sheep/lamb stock. Therefore, these higher predation rates only apply to a relatively small proportion of Victoria's farms and sheep farm stock.

Recent stock predation rates, Gippsland and Hume regions, Victoria

Region	No. sheep/lambs reported lost to		
	predation###	No. sheep lambs #	Loss rate
Gippsland*	590	558,737	0.11
Hume**	364	323,001	0.11

Sources: # Stock numbers taken from Australian Bureau of Statistics, 71210DO003_201415 Agricultural Commodities, Australia-2015-16

Reported stock lost taken from DEWLP August 2017 (for period 2016-17)(See references)

* Victorian government region of Gippsland approximated through combining National Resource management Regions - West Gippsland and East Gippsland

** Victorian government region of Hume is approximated by use of National Resource management Region - North East

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Although official stock predation numbers were very low in 2016-17, having been higher in previous years (approximately 2,700 in 2013-14), it should be remembered that the Victorian sheep population was also significantly greater in previous years. This means that, despite the higher recorded stock losses, the loss rate remained very low in previous years. A plausible hypothesis is that previously higher predation

¹ 364/323,001*1000=1.1 (1.1 in 1000 sheep); 590/558,737*1000=1.05 (1.05 in 1000 sheep)

numbers, not rates, have largely reflected the higher sheep population in previous years and higher farm stocking rates in some areas.

Moreover, evidence suggests that the reduction in Victoria's sheep population over recent years has had nothing to do with excessive predation harm to livestock, as has been often claimed, but rather a changing emphasis within the industry from wool to meat and alternative farm management practices. A 2014 sheep industry report stated:

There has been significant adjustment in the industry over the last two decades, with the flock size falling by a third, from 23.4 million head in 1993-94 to 16.1 million head in 2012-13. (DEDJTR, 2014)

Not only have claims about the scale of farm stock predation been exaggerated, but convincing empirical evidence to show the effectiveness of lethal control in protecting farm stock has been lacking. Indeed, additional high impact lethal control methods have been introduced without empirical justification, including aerial baiting and a wild dog bounty for recreational hunters.

It is generally accepted that recreational shooting is not an effective means of pest animal control, a view shared by many pest management agencies. The New South Wales Invasive Species Council has concluded that, unless recreational hunters can kill more feral animals than are naturally replaced each year, pest animal populations are not reduced. Large numbers of feral animals can be killed for no environmental or agricultural benefit. In addition, the effectiveness of recreational hunting may be compromised by the highly variable skills of shooters and the motivation of many recreational hunters to preserve and disperse feral animal populations for future hunting (NSW Invasive Species Council, 2012).

A major failing of the current Victorian 'wild dog' bounty is that recreational hunters are permitted to hunt over wide areas of public estate and claim the bounty with no guarantee that the wild dogs taken are from locations where farm stock predation is claimed to occur. Any claimed benefit for stock protection is thereby not credible. No accurate data about kill location is required from recreational hunters when claiming the bounty.

Concerning aerial baiting, the NDPRP considers that solid empirical evidence to support the claim that it is effective in protecting farm stock from predation is largely lacking, and to the extent that it is presented, it is largely contrived. The continuation of aerial baiting without sufficient evidence as to its efficacy, without due consideration for potential wider environmental damage, and without adequate consideration to the very low actual stock predation rates (where the scale of lethal control is not proportionate to the scale of the actual threat) in Victoria would be widely viewed by Victorians as environmentally irresponsible.

The Victorian government stands to suffer significant reputational damage for allowing the recreational destruction of dingoes across wide areas of the public estate, contrary to limiting 'wild dog' control by the state to the 3 kilometer buffer zone. Notwithstanding that the NDPRP's primary recommendation is for complete cessation of dingo un-protection, recreational hunting constitutes a serious, officially sanctioned breach of the logic and intent of the current and proposed OIC. This

inconsistency, particularly when government online literature emphasises that it is not generally possible to visually distinguish between ‘pure’ dingoes and dingo hybrids, risks bringing public confidence in Victorian government environmental policy integrity into question.

‘Opportunity cost’

An argument increasingly relied upon by advocates of wild dog control is that the direct cost of stock loss from predation is only a small part of the overall costs. It is maintained that, because of the predation threat to farm stock near to the public estate, farmers choose not to utilise such land to its full potential, this incurring an ‘opportunity cost’, which in Victoria is currently claimed to amount to 16 million dollars annually. The favoured source for this argument is a consultancy by Lightfoot prepared in 2010.

This argument is flawed on practical and ethical grounds and amounts to yet another form of hyper exaggeration as to the damage incurred by ‘wild dogs’.

First, the evidence base as to what farmers *actually do* as compared to what they would *otherwise do* in different circumstances is fraught with guesswork and inherent uncertainty. Perhaps more important is this line of argument’s ethically naive, simplistic and even anti-social nature. In all modern societies, where different and competing vested interests are moderated through legislative and customary restraints, everyone is subject to ‘opportunity costs’ in differing degrees. No one is free to operate their business or behave individually completely as they wish. While everyone could potentially try to calculate their personal opportunity cost from having to live in an ordered, regulated society, few would consider doing so. The benefits of living in a regulated, predictable and safe society, where harmful excesses are banned or at least curtailed are mostly intuitively appreciated. Yet, extreme elements within the farming lobby, unfortunately often supported by governments, calculate their collective opportunity cost at the expense of responsible environmental management, as if their special interest is paramount to all others.

The actual opportunity cost figures frequently cited only amount to an infinitesimal share of the financial scale and profitability of the livestock farming industry.

Genetics and hybridisation

An issue closely associated with the ecological deficiencies of the current and proposed dingo OIC un-protection arrangements is the scientifically unsound distinction between ‘pure’ dingoes and dingo hybrids. This distinction ignored the advice given to the Victorian government in 2009 by a stakeholder advisory committee established to advise on how the dingo should be defined for the purposes of the FFG Act listing. It recommended that *genetics alone should not be used* as the determining criteria for protection. The currently proposed un-protection order, combined with an ecologically deficient definition of the dingo, will be environmentally harmful in the view of the NDPRP. In effect, it endorses and encourages environmental ignorance in relation to the role of apex predators within

Victorian ecosystems. Further, it encourages the most virulent anti-environmental vested self interests to oppose the dingo threatened species listing.

This distinction is unsound for two basic reasons. One is that the commonly relied upon genetic testing technique can no longer be considered reliable for conservation purposes. The other reason relates to the ecological function of animals deemed to be hybrids, and therefore relegated to pest animal status and unprotected, under the current lethal control arrangements. These aspects are briefly dealt with in turn.

The geneticist who developed the currently used technique, Dr Alan Wilton (deceased), acknowledged the test's limitations in 2010:

... the testing is complex and it would be a mistake to use too constrictive a definition of what is a pure dingo... I think it would be scientifically invalid... we cannot easily distinguish between hybridisation and regional genetic variation... The test relies on comparison to a reference group of dingoes. If this group is not representative of all dingoes then any genetic differences will be interpreted as coming from dogs and animals from different geographic regions will be classed as hybrids... If my scoring alone was to be used I would suggest a cut-off of 3Q=0 [75%]. (Wilton, private communication, 4 July 2011)

Geneticist, Dr Kylie Cairns, a former colleague of Dr Wilton's, corroborates this view:

As pointed out by Associate Professor Wilton previously, the testing methodology is complex... applying too restrictive a definition of what a "pure" dingo is would be a mistake. This would be both impractical and scientifically invalid. (Cairns, Letter May 2016)

Here, these experts argue that dingoes testing between 75% and 100% pure by the current testing technique should be treated as 'pure' for conservation purposes in the wild.

The validity of the current policy distinction between dingoes and 'wild dogs' (dingo hybrids) is also challenged by recent genetic research which finds that, contrary to established opinion, the Australian dingo population has descended from more than one ancestral lineage. Due to the limitations of the current genetic testing technique, this finding implies that dingoes in Southeastern Australia may not be as hybridised as previously thought. Rather, the genetic differences in dingoes from Southeastern Australia, which had been interpreted as hybridisation, may in part be due to the distinct lineage found in that part of the continent:

...there are at least three populations of dingo in Australia: Southeastern, Northwestern and Fraser Island. These three populations are distinguishable based upon a variety of genetic markers... Until recently, it was thought that dingoes were the result of a single immigration into Australia and that they

formed a single homogeneous population. This view is now evolving... strong evidence of regional geographic variation, suggests the need to be cautious in interpretation of DNA testing methodologies, particularly as the reference population is likely not representative of all dingo populations. (Cairns, May 20126)

The sub-lineages identified occur in two distinct continental subregions, with the line of demarcation occurring diagonally between the Northeast and Southwest of the continent. Not only is it observed that the Southeast lineage is more geographically restricted, but it is suggested that the Northwest lineage may be experiencing geographic expansion at the expense of the south eastern lineage (Cairns and Wilton, 2016).

There are significant conservation implications of these findings in relation to the impact of lethal control upon dingo populations, particularly in south eastern Australia. The authors consider that these new insights into the origins, multiple migrations to Australia and differential geographic distribution need to be taken into account in the formulation of management and conservation plans for the dingo:

This [the different bio-geographic distribution of the two major lineages] is an important finding given the current strong persecution of the dingo in SE Australia and suggests that management and conservation plans need to incorporate information concerning the current population structure of the dingo. (Cairns and Wilton, 2016)

In addition, there is no evidence of any notable morphological, behavioural or ecological differences between dingo populations with high and low levels of hybridisation. Since existing hybrids appear to share the same ecological role as pure dingoes (Claridge & Hunt, 2008; Glen, 2010; Purcell, 2010; Daniels & Corbett, 2003; Jones, 2009; Parr *et al.*, 2016), the NDPRP considers that hybrids are equally as important to conserve as top predators in Victorian ecosystems. Hybrids are also equally as threatened as pure dingoes are by the expansion and intensification of lethal 'wild dog' control, which in some areas may comprise most of the individuals in the dingo population; in these areas, targeting hybrids for control would result in removal of the only top predator, with resultant negative flow-on ecological effects (Claridge *et al.*, 2014).

The limitations of current genetic testing, as well as new genetic insights into the geographic distribution of distinct dingo lineages, suggests that the extent and degree of hybridisation in Southeast Australia may have been overstated. Moreover, recent research indicates that south eastern Australian dingoes appear particularly vulnerable to lethal control regimes, with flow on effects for their apex predator function in south eastern Australia.

2. Cessation of lethal control in North Western Victoria

If environmentally responsible apex predator management cannot be achieved for the whole of Victoria for political reasons, then it is important to explore where within Victoria the cessation of lethal control would be least contentious and where the ecological gain would nevertheless be significant.

Therefore, the NDPRP would urge that the OIC be modified to remove the shaded area in northwest Victoria from the un-protection order.

The case for un-protection in the northwest for stock protection is very weak. The greater part of farming activity is grain production and sheep farming is increasingly marginal. In 2016-17, the officially reported stock lost to 'wild dog' predation was 15.

Current Victorian government policy settings are favourable to such a revision to the OIC. The Victorian government *Biodiversity 2037* policy document highlights the prospect of using native apex predators to help maintain ecological balance within habitats effected by climate change (pp. 16-17).

'Ecological regimes will be improved and biodiversity supported by preventing the spread and reducing the impact of weeds and pest animals and by ensuring that water flows, fire regimes and nutrient cycles are appropriate and adequate, that resource use is sustainable, and *that the roles of important classes of species (e.g. pollinators and native apex predators such as owls, quolls and dingoes) are acknowledged and considered in management planning.*' (*Biodiversity 2037*, 14) (Our emphasis)

In addition, the *Biodiversity 2037* 'Flagship' statement on '*Mobilising our Ecosystem Engineers*' strongly points in this policy direction, highlighting the goal of investigating the potential for reintroduction of apex predators *in north western Victoria*.

These policy emphases, together with a clear government policy reorientation away from dingo genetic purity to apex predator ecological function should result in a political environment conducive to all cessation of lethal control in the northwest, as well as the removal of the Victorian northwest from the jurisdiction of the wild dog control program. In its 2014 Policy Platform, the current Victorian government publicly committed to:

Review the Flora and Fauna Guarantee Act and put in place a state wide biodiversity strategy which includes recognition of the role of native apex predators in maintaining biodiversity (Victorian Labor Platform 2014)

The NDPRP is informed that the Victorian government will shortly release its 2018 policy platform, which includes the following commitments:

Recognise *and protect* the ecological function of *existing* dingo *populations within* Victorian ecosystems as part of biodiversity programs and management initiatives (Victorian Labor Platform 2018)

Given these explicit government policy settings, the NDPRP considers that there is no good reason for Victorian environmental authorities to be conservative or resist advocating improvement in the remaking of the FFG Act Dingo Order in Council. There is currently an historical opportunity before us that, if not utilised, will likely cause significant social division and environmental harm in the longer term.

Thank you for consideration of these pressing issues.

Yours Sincerely,

Arthur Gorrie,

Vice President,

National Dingo Preservation and Recovery Program Inc.

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