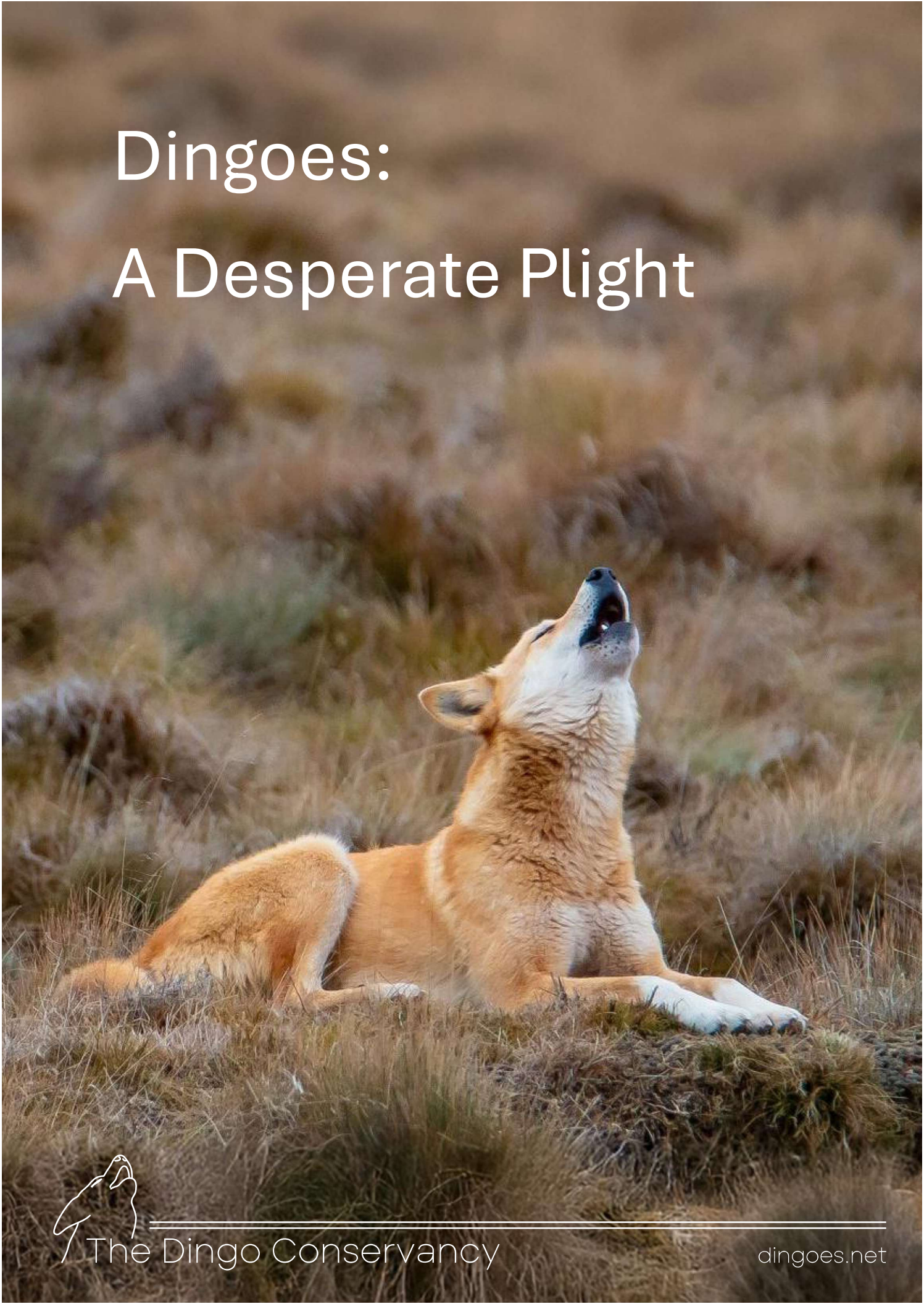
Dingoes:
A Desperate Plight



The Dingo Conservancy

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Dingoes: A Desperate Plight

Executive Summary

With the exception of humans, dingoes are Australia's largest land-based predator. They are arguably our most maligned, misunderstood, and mismanaged native species. (Ritchie et al., 2013).

Evidence however suggests that the iconic Australian canine plays a pivotal role in maintaining healthy ecosystems (B. Smith, 2015), they hold deep spiritual values for First Nations peoples (Crowe, 2023), and are loved by tourists (Woolaston, 2019) and Australians alike (Lily M Van Eeden, Crowther, Dickman, & Newsome, 2021).


Dingo in leg hold trap

Until recently it was thought that pure dingoes were largely non-existent on the Australian Mainland (Stephens, Wilton, Fleming, & Berry, 2015; Wilton, Steward, & Zafiris, 1999) however recent high quality research has debunked this long held perception and has demonstrated that not only are most dingoes pure, there are 4 distinct subspecies; Mallee, Desert, Alpine and Eastern dingoes (K. Cairns, Crowther, & Letnic, 2023). More recent research (Weeks et al., 2024) confirms this and also demonstrates that dingo x dog hybrids are virtually non-existent in the wild and that dingoes are genetically as distant from dogs as wolves are (Weeks et al., 2024).

Despite this, an industry has flourished that focuses on killing dingoes, with support and funding from successive state and federal governments. Not only are dingoes killed by cruel, indiscriminate and inhumane methods (RSPCA, 2021), it is expensive and more importantly likely to do more harm than good to the farming community it is supposed to assist and also does broader ecological damage (Glen et al. 2007) .

Sadly, this industry is likely chasing dingoes into extinction. Two of the four subspecies are located in Victoria and while dingoes once roamed the whole state they are now only found in the Big Desert (Mallee Dingo) and alpine areas (Alpine Dingo). Recent surveys (DEECA, 2024) indicate perilously low populations of 100 and 4,900 individuals respectively, which Dr Weeks (2024) advises will likely be lost in an "extinction vortex" without significant changes in the government policy with the Victorian Government yet to respond to the Parliamentary Report into Ecosystems Decline (Parliament of Victoria, 2021) and its dingo related recommendations.

The history of dingoes in Australia


Dingo puppies

For centuries, the scientific consensus has been that the dingo arrived in Australia with Asian seafarers around 3,500 years ago (Laurie Corbett, 1995) and this hypothesis was consistent with the oldest dingo fossil datings. However, a 2011 study based on DNA evidence published in the journal Proceedings of the Royal Society concluded that the dingo ancestors arrived across a land bridge much earlier, up to 18,000 years ago (Oskarsson et al., 2012).

The dingo as a native species

The taxonomy of the dingo has been inconsistent for more than two centuries. The animal was first called Canis dingo in 1793. The name changed several times as researchers tried to fit it into the evolutionary tree of canids[1]. The current taxonomic name is Canis lupus dingo, according to the Integrated Taxonomic Information System (ITIS), meaning it is considered a subspecies of the wolf (just as the domestic dog is Canis lupus familiaris).

However more recently, many experts have proposed that isolation, genetic drift and natural selection have resulted in the dingo being a unique species in its own right. A study in the Journal of Zoology (Crowther, Fillios, Colman, & Letnic, 2014) noted many physical differences between wolves, domestic dogs and dingoes, with the name Canis dingo being considered more appropriate.

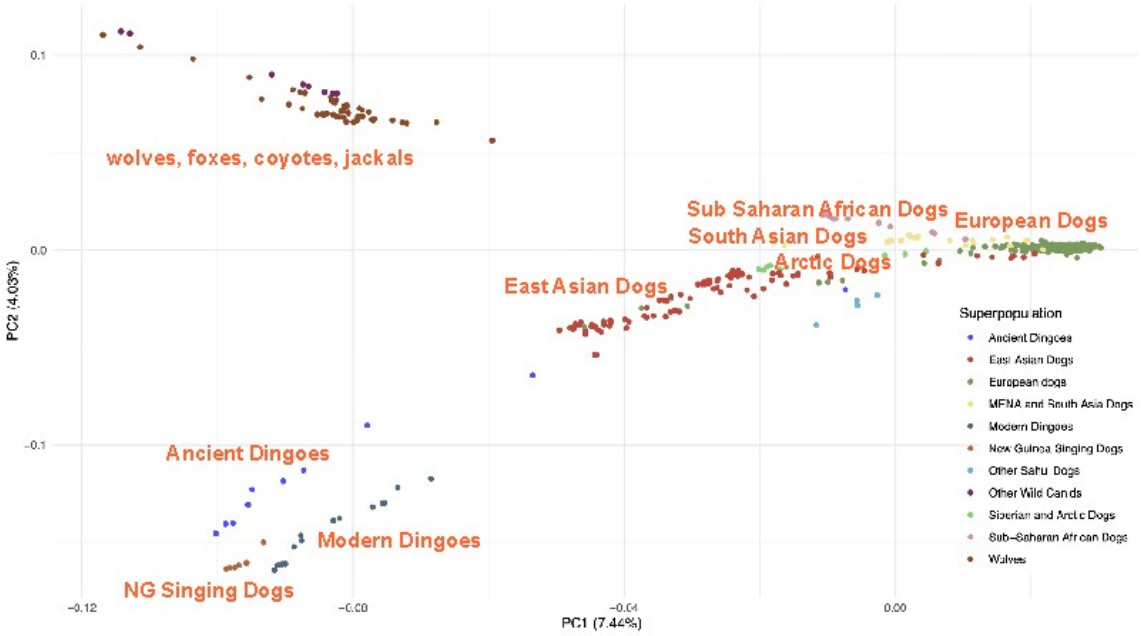
As relatively 'recent' arrivals, some people argue that dingoes are not truly native [in comparison to marsupials, who arrived in Australia 70 million years ago (Mitchell et al., 2014)]. However to put this in perspective, as recently as 55,000 years ago the first humans arrived in Australia(O'Connell et al., 2018), and 45,000 years ago neanderthals were likely still the dominant species in Europe (Mylopotamitaki et al., 2024).

Many, if not most, now consider the Australian dingo as a unique species that has evolved in this country along with other species. Moreover, that it is a geographically isolated (allopatric) species, separate from all other Canis, and is genetically, phenotypically, ecologically, and behaviourally distinct.(B. Smith et al., 2019)

[1] Canidae is a family of mammals in the order Carnivora, which includes domestic dogs, wolves, coyotes, foxes, jackals, dingoes, and many other extant and extinct dog-like mammals

Recent DNA research

Recent DNA research analysing the worldwide canid gnome shows that dingoes are as distinct from domestic dogs as wolves with the closest relation the New Guinea Singing Dog (Souilmi et al., 2024; Weeks et al., 2024).



Worldwide canid gnome showing the genomic separation of Wild dogs (wolves, foxes, coyotes, jackals), Dingoes and NG Singing Dogs and all other dogs. (Souilmi et al., 2024)

Over the millennia, the dingo has evolved to become Australia's apex predator with a unique and important role in Australia's ecosystems, filling the role of the now extinct thylacine (Levy, 2009).

Significance of the dingo to Indigenous Australians

Dingoes are a sacred animal to many First Nations people across Australia. To some, they are considered family. Dingoes hold significant spiritual significance, and form an important part of Indigenous totems, Dreaming, lore/law and customs. They are a regular feature in Storytelling, rituals, ceremonies, art, songs and dances. The significance of the Dingo is unique to different Indigenous groups.

In September 2023, more than 20 Indigenous groups signed a National First Nations Dingo declaration(Guenzler, 2023). The declaration outlines that Dingoes represent a vital connection to Country. That they mapped ancestral song lines across the continent, formed lands, waterways and constellations and are essential to keeping storylines, custom and culture alive.

The declaration recognises the importance of the dingo as an apex predator and its environmental role: “Dingoes are Boss of Country. They belong in the landscape. Their presence in the ecosystem ensures natural systems remain in balance. This role is greatly under-appreciated. The direct and indirect effects of the Dingo on native and pest species are clear and apparent.”

It outlines that the use of the term ‘wild-dog’ is not supported by First Nations people as it diminishes the Dingo and ‘disrespects and disregards culture’.

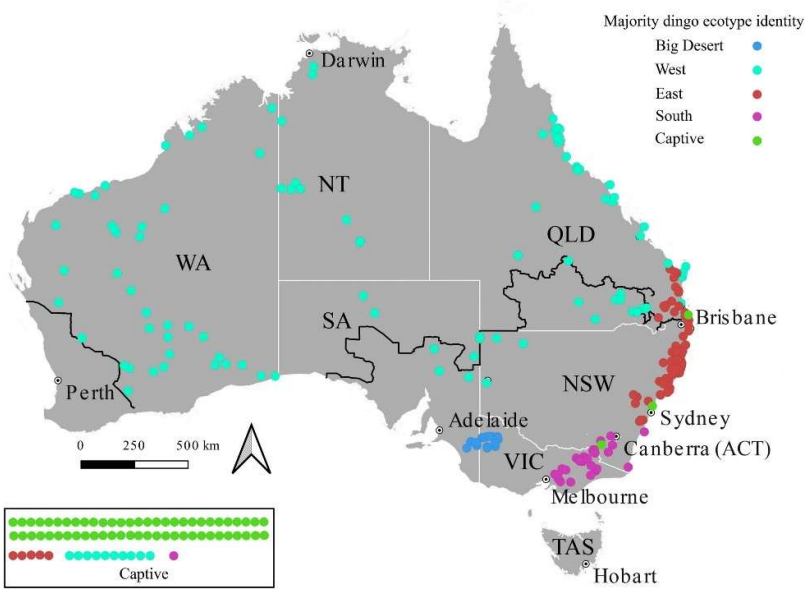
Is it a “wild dog” or a dingo?

Historically, skull morphology and fur were used to discriminate dingoes from dogs and identify dingo × dog hybrids (Newsome & Corbett, 1985; Newsome, Corbett, &

Carpenter, 1980). However in 1999, this changed with the first application of DNA-based testing (Wilton et al., 1999). It was concluded that in south-eastern Australia, ≤1% of the wild canid population were pure dingoes. This was further reinforced by a 2015 study (Stephens et al.) which concluded similar hybridisation. The fundamental flaw in this work is that it used central Australian dingoes as an example of "pure dingoes" due to their geographic isolation and assumed that differences were the result of hybridisation.

However, more recent studies(K. M. Cairns, Crowther, Parker, Ostrander, & Letnic, 2023) (analysing 195,474 genetic markers vs 23 in the 2015 work) show that genetic variation that was previously thought to indicate dog x dingo hybridisation was largely a result of variation between different subspecies of dingo. It found that there were at least five distinct dingo populations across Australia with limited evidence of dog x dingo hybridisation in wild dingo populations.

These potential subspecies include the Big Desert, West, East and South (or Alpine) Dingo subtypes.



The reported low occurrence of pure dingoes in Southern and Eastern Australia in particular has been a key factor driving government policy and practice (Allen et al., 2017; Bird & Bowman, 2016; DEPI, 2013; Major, 2009; NWDAP, 2020). Government policy and communications widely use the term 'wild dog' rather than dingo to emphasise the mixed ancestry of wild dingo populations and the presence of feral dogs (Letnic et al., 2012)

Government policy in managing wild dogs

For 200 years, land holders have used lethal measures to manage a perceived threat to livestock, including trapping, ground-baiting and shooting(Lily M. van Eeden, Smith, Crowther, Dickman, & Newsome, 2019). The prevailing socio-cultural contexts, governing institutions, and 'perverse' economic incentives have resulted in a 'lock-in' of lethal control of so-called "wild dogs" (Boronyak, Jacobs, & Smith, 2023).

Lethal control programs have been extended into conservation areas (K. Cairns et al., 2023), including national parks, with the ostensible purpose of minimising livestock losses on neighbouring lands. During 2020-2021, NSW dropped more than 200,000 1080 poisoned meat-baits from planes and helicopters to suppress "wild dogs".

This year Victoria renewed its "wild dog bounty" program. It pays landholders A$120 per wild dog body part. Under the scheme, about 4,600 "wild dog" body parts have reportedly been redeemed since 2011 (K. Cairns et al., 2023).

Dingo's role in the environment

Perversely, the lethal control program may be doing more harm than good for graziers.

Recent research highlights the vital role that dingoes play in maintaining a balanced and healthy ecosystem. They achieve this by controlling herbivore populations like kangaroos and goats (Glen et al., 2007), as well a]"|
s competing with and preying on smaller introduced predators such as red foxes and feral cats. The absence of apex predators, such as dingoes, can lead to unstable food web pathways, causing over-abundance of prey species, heightened plant consumption, and adverse effects on native plant communities, reducing habitat and food for smaller animals (Caughley, Grigg, Caughley, & Hill, 1980). A recent study showed that calf stock losses were not lower in baited areas than in baited areas (11) This is thought to be because younger, surviving dingoes that move (Greg Campbell et al., 2019)


Alpine Dingo

Moreover, the widescale killing of dingoes is thought to have a negative impact on biodiversity generally (Christopher N Johnson, Isaac, & Fisher, 2007; Chris N. Johnson & VanDerWal, 2009). They argue that the behaviour of dingoes as top predators will likely have strong effects on the distribution and abundance of mesopredator species such as the red fox and that suppression of mesopredators by top predators is a potentially important process that could protect small prey species from unsustainable predation.

Across Australia the loss of dingoes has been linked to widespread losses of small and medium-sized native mammals, the depletion of plant biomass due to the effects of irrupting herbivore populations, and increased predation rates by red foxes (Colman, Gordon, Crowther, & Letnic, 2014; Cupples, Crowther, Story, & Letnic, 2011; Letnic, Ritchie, & Dickman, 2012)

In a controlled experiment, a male and female dingo removed 7 introduced foxes within a 37 km2 fenced paddock in arid South Australia within 17 days of their introduction and 6 feral cats within months. (Moseby, Neilly, Read, & Crisp, 2012)

However, it is also true that dingoes do also impart economic and social costs through the predation of domestic livestock(P. Fleming & Korn, 1989), and while the benefits of dingoes may be large, they are also often intangible or difficult to measure while direct impacts are obvious. Consequently, as for many other apex predators around the world, dingo management in Australia is highly contentious (Letnic, Ritchie & Dickman 2012) and human perceptions and politics will ultimately determine acceptance of positive dingo management. (P. J. S. Fleming, Allen, & Ballard, 2012)

A species in serious decline

DEECA estimates total Victorian dingo numbers at 4,900 (90% CI 2,640-8,880) with some sub populations already in an inevitable decline to extinction. DEECA also advised that this number is a snapshot, and cannot speculate on a trajectory. This ignores the documented trapping data which has a strong negative correlation and is therefore strongly indicative of a major downward trend.

This is no surprise given the fact that there is deliberate, annual dingo kills of some 1-2,000 Dingoes. (This comprises some 500 via the Wild Dog Program and around

another 500 from the Wild Dog Bounty Program and an estimated additional 1,000 dingoes killed from ground and aerial baiting).

If so, then somewhere in the order 20-40% of the dingo population is being killed annually in Victoria. This statistic has not been made available to the public.

Conversations with Professor Weeks on the genetic viability of the dingo population in Victoria suggest that the "effective population size" (as opposed to census size) will likely be as low as 100.

Given the small numbers, even smaller effective population size, overall downward trend and potentially large and essentially unknown or unpublished proportion of this population being killed annually, how can any measure that continues to allow dingoes to be killed be considered "reasonable and proportionate".

Lethal control measures

By their very nature, lethal control measures are brutal.

The predominant mode of killing dingoes is with sodium fluoroacetate (1080) laced baits. Sherley (2007) and others (RSPCA, 2021) consider that 1080 is not a humane poison. Moreover,1080 is very indiscriminate. Australia is only one of a handful of countries world-wide that still allow 1080. It is banned in most countries, including the US, where it was outlawed around 50 years ago.

1080 baiting efforts are extremely comprehensive with aerial baiting supplemented by ground baiting across great "swathes" of the country (K. Cairns, 2024), causing "horrifically painful and slow deaths for dingoes".

Trapping is only second to baiting. Traps are almost exclusively leghold traps which are generally considered barbaric (K. Cairns, 2024). Dingoes caught in these traps whimper in terror and pain and can frantically struggle for days before "wild dog" controllers return to kill them.

State government dingo killing program

The Victorian state government has a "Wild Dog Program"[2]. It is a department of 20 people, within the Department of Agriculture, likely costing some several million dollars per annum with the sole purpose of killing and helping others kill this small number of threatened dingoes.

We note that the head of the Wild Dog Program acknowledged that "we don't always use lethal control. Sometimes it is not possible". By implication, lethal control is the

[2] Recently renamed "Vertebrate Species Management Program"

norm and any claim that non-lethal methods are being properly explored is just not supported by his statement.

“Non-lethal control methods don’t work” was another statement, made by the head of the Wild-Dog Program. This statement bears further consideration. There is a body of evidence that supports non-lethal methods. However, it is cultural and institutional barriers, rather than practical barriers, that are preventing its implementation (Boronyak et al., 2023).

It appears that, given the statements made by the head of the Wild Dog Program and the routine use of lethal control, this Program is acting as a cultural, institutional and financial barrier to the implementation of non-lethal methods. They simply haven’t been properly, funded, supported or trialled in Victoria.

Alternatives

There are many options for minimising the perceived damage done by introduced species to agricultural farmland and our environment - yet they are often under researched or under utilised in favour of the toxic alternative.

The long term success of Maremma Sheep Dogs in protecting farm animals is well documented, with farmers using flock guardians losing far less animals to predation compared to those relying on 1080 baits. In fact it is thought that Maremmas, in protecting his or her sheep, not only keep foxes and wild dogs away but also protect local native wildlife from predation.

Electric fencing around property boundaries is another humane option to keep out both native and non-native animals from a particular property - in fact a NSW study has previously shown that wild dogs will by-pass farms with effective electric fencing in favour of those who do not have them, suggesting they are an effective method of protecting all native and non-native animals within the fenced area (B. P. Smith, Appleby, & Jordan, 2021).

Inquiry into Ecosystem Decline :

There was extensive consultation undertaken as part of the Inquiry into ecosystem decline in Victoria (Parliament of Victoria, 2021) with extensive factual and scientific evidence submitted to the enquiry, including that:

- almost all so called wild dogs are not hybrids as previously thought, but pure dingoes,
- annual stock losses due to predation are in the order of 1,500 sheep out of a total population of some 14,000,000 sheep,

- whilst there is evidence that sheep are sometimes in the diet of dingoes (scats or stomach contents), they are not the dominant prey item,
- continued lethal control of dingoes under the name 'wild dog' harms ecosystem resilience and the recovery of dingoes as a threatened species in Victoria, and
- current management is not in line with community expectations and the Victorian Government's obligation to protect and conserve the dingo in accordance with Action Statement No. 248, under the Flora and Fauna Guarantee Act 1988 (Vic)

The report made a number of strong recommendations regarding dingoes, however the Victorian Government is yet to respond to this report.

Stock Losses in Context:

1,500 annual sheep losses to predation by dingoes is "corroborated by the data that DELWP/DEDJTR (Parliament of Victoria, 2021) out of a total sheep population of 14 million (Parliament of Victoria, 2021).

Different sources all estimate lamb losses before marking in Australia in excess of 20% (Australian Wool Innovation, 2003; Meat and Livestock Australia, 2001, 2024; Vialoux, 2020). Victoria accounts for some 18% and Meat and Livestock Australia (MLA) projections for flocks for 2024 are that Victoria will produce around 5.9 million lambs this year, with over 1.3 million expected to die prematurely from exposure, starvation and other causes.

Lambs at the farmgate based on current prices are in the range of $100 per head. Aside from the perilous state of the dingo population, it is an egregious waste of taxpayer money to spend multiple million killing dingoes, to save a few thousand.

The real issue for farmers is not stock loss due to predation but overall farm profitability. An increase of just one percent in sheep survival rates is worth ten times the value of the current stock losses. This highlights the fact that the farmer outcry at sheep losses due to predation is misplaced and driven by emotion and fear mongering rather than data and research.

Moreover there is a substantial body of evidence that dingoes will actually have a positive effect on both grazier profits and biodiversity generally (G Campbell, Emmott, Pollock, & Traill, 2022; Hunter & Letnic, 2022; Letnic et al., 2012)

Legislative Framework

A major problem for those charged with protecting Australian wildlife and particularly the dingo, is that there are acts of parliament that both protect dingoes and call for their eradication. In some jurisdictions it is both a pest that must be eradicated and a native animal that is protected.

For example: in New South Wales the Companion Animal Act 1998 assigns no special status to the dingo. Under this Act the dingo is a dog and can be kept as a pet in most of the State. However, under the Rural Lands Protection Act 1998 and the Wild Dog Destruction Act 1921 the dingo is a wild dog, a pest species and therefore requires land owners to destroy the animals. On the other hand, the National Parks and Wildlife Act 1974, the Forest Act of 1916 and the Threatened Species Conservation Act 1995 protect native fauna and “native” is defined as a species being present in Australia prior to 1788 (Davis, 2001).

A summary of the various legislation is included in Appendix 1

In Victoria, Canis lupus dingo is listed as Vulnerable under the Victorian Flora and Fauna Guarantee Act (1988), which affords them protection under the act. However, despite this, they are explicitly unprotected by an “Order in Council” which was extended in September 2024 and is due to expire on January 1, 2028. This is an extension (with minor variations) of past orders. The order(s) are also controversial in that they have in the past acknowledged that they limit the distinct cultural rights of Aboriginal Victorians as set out in Charter of Human Rights and Responsibilities Act (Vic) 2006 and may not comply with the requirement to have a Regulatory Impact Statement.

Summary:

Given the small numbers, even smaller effective population size, the likely downward trend and a large and potentially unknown proportion of dingoes being deliberately killed annually, dingoes generally, and the Alpine dingo in North East Victoria in particular, are in a perilous plight. If nothing changes they are destined to join the Mallee population of dingoes in an extinction vortex.

We deliberately kill these pure dingoes at immense cost and effort to save a small number of livestock and at the same time cause irreparable harm to biodiversity.

We hope that evidence and science prevails over hyperbole, emotion and anecdotes.

Appendix 1 – National & State Legislation Affecting Dingoes

State/Territory	Act	Status	Comments
NT	Territory Parks and Wildlife Conservation Act (2000)	native and protected	Dingoes in the Northern Territory are regarded as having an important conservational value since interbreeding of dingoes and other domestic dogs is low in the area. However dingoes can be legally killed when they are a danger for the livestock industry
WA	Agriculture and Related Resources Protection Act 1976	controls to stocked land	Populations have to be controlled and can be kept as pets under certain conditions. Control measures are strictly confined to livestock areas and other domestic dogs are controlled in general.
	Western Australian Wildlife Conservation Act (1950)	unprotected fauna	Although not protected, dingoes are normally not hunted without permission in conservation areas
SA	Animal and Plant Control Board (Agricultural Protection and Other Purpose) Act (1986)	declared pests in the sheep zone south of the DBF*; unprotected wildlife north of the DBF	The South Australian Dingo Policy restricts dingo control beyond a 35km baited buffer zone north of the DBF (Dingo Barrier Fence). Dingos have to be controlled and can only be kept in captivity of authorized zoos and wildlife parks.
QLD	Rural Lands Protection Act (1985)	declared pests	All landowners are legally committed to reduce the number of all wild dogs on their lands.
	Nature Conservation Act (1992)	native wildlife in Protected Areas, unprotected outside protected areas. Dingo	regarded as a natural resource (therefore protected) in conservation areas such as Fraser Island; however a management strategy exists which allows for the culling of any dingo considered dangerous (LK Corbett, 2009) Outside of these areas dingoes are not regarded as native Australian and are not protected. Dingoes and their hybrids can only be kept in wildlife parks and zoos with ministerial agreement.
NSW	Rural Lands Protection Act (1998)	noxious animal	This Act allocates wild dogs the status of pests and demands from landowners, that they shall be decimated or eradicated
	National Parks and Wildlife Act (1974)	unprotected	unprotected under the Act but offered protection in protected areas

	Threatened Species Conservation Act (1995)	native species	As these dogs had established populations before the European colonization.
	Wild Dog Destruction Act (1921)	Western Division of NSW mandatory control .	This law only affects the western part of the state, where landowners are committed to control wild dogs. The law forbids the ownership of dingoes in that region, except when you have legal permission.
	Companion Animal Act (1998)		can be kept as pets except in the western division
ACT	Nature Conservation Act (1980)	protected	control subject to permit. On private land killing of wild dogs is allowed when you have permission from the state.
VIC	Catchment and Land Protection Act (1994)	established pest animal	landowners (except from the Commonwealth) have the legal duty to hinder the spreading of wild dogs on their lands and to eradicate them as much as possible The term wild dog includes here all dingoes, feral domestic dogs, dogs who became wild and crossbreeds (except for recognized breeds like the Australian Cattle Dog).
	Domestic (Feral and Nuisance) Animal Act (1994)		commits every dog owner to have their dogs under control at all times.
	National Parks Act (1975)	protected in protected areas subject to management policy	Since 1998 it is possible to own dingoes as pets
	Victorian Flora and Fauna Guarantee Act 1988	listed as a Threatened species	
	Order in Council	Declaration Of The Dingo To Be Unprotected Wildlife	Tuesday 24 September 2024, replacing prior orders
TAS	National Parks and Wildlife Act (1970)	never colonised, import ban	
	Dog Control Act (1987).		This manages dogs that attack livestock

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