

The Australian Dingo: Cultural icon *Or* *Cunning Infiltrator?*

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Introduction

The Australian Dingo, also referred to as the *Australian wild dog*, is an untame and free-roaming canid of the remote Australian outbacks. It bares resemblance to both wolf and dog and its origin has been a subject of speculation for centuries. Taxonomically the Dingo is currently placed in a sub-group of the gray wolf (*canis lupus*) as *Canis lupus dingo* however its name has changed several times over the years and at one point the Dingo was termed as *Canis familiaris dingo* which assumed it to be a subspecies of the domestic dog – *Canis familiaris*.¹

Morphologically the Australian Dingo bares resemblance to the South Asian domestic dog. However more detailed studies of skeletal morphology show that it also greatly resembles the Indian pariah dogs and wolves. Regarding skull morphology the Dingo falls somewhere between the domestic dog and the wolf¹, leaving scholars and scientists baffled as to the origin of this beautiful animal.

***Domestic dog turned Feral- or Wild at Heart?* Can the study of Mitochondrial DNA give us the answer?**

Ever since the arrival of Europeans to Australia in the 18th century the origin of the Australian Dingo has been a subject of great public interest. Baring such resemblance to both wild and domestic canids has posed questions of whether this was a previously domesticated dog turned feral or whether it in fact is a true wild canid. The Dingo has also gained a reputation of cunningness, due to its ability to mediate life between domestication and wilderness, thus enabling it to survive in both "worlds".² This only complicates the puzzle as to the origin of the Australian wild dog.

Archaeological data suggests that the Dingo arrived to mainland Australia between 3500 and 12000 years ago and that regardless of route there would have to be an involvement of minimum 50 km travel over open sea.³ No examples exist of terrestrial mammals having made this kind of travel without human aid, which suggests that the Dingo was introduced to Australia by humans. Suggestions of routes, however, are many and varied. One hypothesis is that East Asia is the likely origin due to its relatively close proximity to Australia.⁴

A second hypothesis suggests an introduction from India ⁵ which coincides with the time-line of backed-blade-stone-tool first appearing in Australia at the same time as the Dingo was first encountered in addition to the Dingo's close resemblance to the Indian Pariah dogs and wolves. ⁶

A third hypothesis argues against the involvement of other countries and states that the Australian Dingo is simply a result of Domesticated dogs turned Feral. ⁷

In order to obtain a detailed picture of the Dingo's heritage, a study was conducted by P. Savolainen, T. Leitner, A. N. Wilton, E. Matisoo-Smith, and J. Lundeberg based on the mtDNA of 211 Dingo's which were compared to a world-wide sample of 676 dogs. ⁸

The study was based on the following elucidations:

- General mtDNA sequencing of the Dingo which might prove its origin from domestic dogs.
- Estimation of the number of mtDNA introductory types and the number of times they were introduced .
- Comparisons of the mtDNA found in Dingo's to the geographical distribution of said types among dogs in order to establish a place of origin.
- Calculations of genetic divergence among Dingo mtDNA types compared with founder type(s) in order to estimate a time for the first introduction of the Dingo to Australia.

The study poses a number of interesting findings which can help us understand the origin and history of this fascinating animal.

It was found that the Dingo originates from a population of East Asian dogs. Several types of these dogs were brought into Islands of South East Asia but only one type, type A29, was brought to mainland Australia. The study tells us that the Dingo population most likely was founded from a smaller group of these animals, even from a single event, due to their mtDNA type that remains singularly isolated from other dog populations. The study also suggestst that the Dingo may have arrived around 6000 years ago from China, at which point there had been domestic dogs in exitence for thousands of years and the semi-domesticated state of the Dingo may be due to their long existence as a feral animal. ⁸



Dingo Control: **Numerous and unaffected or socially disturbed?** *How control might not be all about the numbers*

Paradoxically, as much as one might want to find out where the Dingo originates from, it also seems just as important for Australians to find out how to get rid of it. In the light of Dingo eradication programs it is all about population control. In reducing the numbers, one apparently saves livestock and believes that the situation is as it should be.⁹ However little research is done on the effect that population control has on the *integrity of social structure*, especially when it comes to top-predators with complex and sensitive social attributes such as the Wolf, and also the Dingo.¹⁰

The Dingo was classified as vulnerable on the *Red List of Threatened Species* in the year 2004. The reason for this was that the number of "pure Dingo`s" had been reduced to 30% as a result of inbreeding with domestic dogs.¹¹ In spite of this, the Dingo is considered "abundant" and is being attempted eradicated in a number of ways due to its apparent threat to livestock.¹² The Dingo Barrier Fence, built to try to eradicate Dingos from the whole of Southern Australia, is the longest man-made fence in the world, proving how serious a threat the Dingo is considered to be.¹³ Poisoning with sodium fluoroacetate is one of the main methods of control today and areas of fencing are regularly baited with this deadly poison.¹²



Poisoning with Sodium Fluoroacetate remains the most popular method of Dingo control in Australia.

Although the number of Dingoes may remain seemingly abundant, little is known about the effect that the eradicator programs may be having on their social structure and thus, ability to live according to their ecological needs.¹⁰ The Dingo displays characteristics of social complexity similar to that of the wolf. In order to understand the control of population it is important to first understand the social structure of the pack and how this might have the same or even more of an impact on control rather than sheer number.¹⁴

A study was carried out by A. D. Wallach, E.G. Ritchie, J. Read, and A. J. O'Neill in an attempt to map the effect that control has on the social structure of the Dingo¹⁴. The study was based on Dingo abundance and territorial behaviour at seven sites across the South Australian arid zone expressing differences in management practices at the sites. At five sites dingoes had been controlled within two years and at two sites there had been minimal control for at least five years leaving the animals relatively undisturbed.

Scent markings and howling were aspects of territorial behaviour that were studied. Scent-marking for pack members is used to communicate such things as pack size, pack composition and individual social and breeding status. It is also used to advertise ownership and territory boundaries.¹⁵ A reduction in scent-marking following the breakdown of a pack for example through control or disease, may then be followed by a rapid shift in territory boundaries and infiltration of floaters (free roaming individuals)¹⁷. Like scent-marking, howling communicates a diversity of messages such as identity, location, age, size, aggressiveness, social and breeding status, and pack size and composition¹⁶ Howling and scent-marking are both more common among pack members than among free-roaming individuals¹⁷.

The results of the study showed several interesting findings. Sites where the Dingo had been *left undisturbed* were consistently scent-marked at water points, carcasses, nests, roads etc. In these areas howling was also heard most nights. On sites that were *subject to Dingo control*, there was a recognizable lacking in scent-marking, regardless of population size, suggesting that pack-disintegrating lead to a decrease in territorial behaviour.

Additionally, one of the most interesting findings was that the symptom of pack disintegration showed an **increase in attack rates on livestock**. Calf losses were reported to be **higher** in areas where dingoes were baited¹⁸

Paradoxically there were no reports of cattle loss in areas where the dingoes were left undisturbed. In one area, 24-30 sheep were killed but not eaten two weeks after the area was baited. This suggests that the stress of pack disintegration is in fact contra-indicatory of eradication programs and may increase the dingoes effect on livestock. ¹⁹

Conclusion



After Thousands of years, the Dingo still has not earned its place as a natural inhabitator of the Australian fauna. On the one hand, it is a mysterious animal that baffles historians and scientists, on the other hand it is considered a pest that must be eradicated much like an insect disturbing a crop.

The Dingo is the only large terrestrial mammalian predator in Australia¹⁴. Regardless of its origin, be it from China, India or a pack of domestic dogs, it is important to realise the necessity of such an animal in a country that has suffered the worst rate of mammalian extinction worldwide in a crisis which is linked directly to the control of dingoes ^{20, 21}.

In Australia there is an abundance of large prey, extending from feral pigs and goats, to feral donkeys and cattle. As the largest predator, the Dingoes role in the control of these species must not be overlooked merely in favour of preserving livestock, and much greater consideration should be paid to the effect of control on the social structure of this animal. This is the only way one can ensure that in future the Dingo may be in a position to do its predatory job and avoid a national ecological imbalance of Australia that may result in the erratic eradication we are witnessing in the country today.



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