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The Executive Officer
Environment, Natural Resources and Regional Development Committee
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13 September 2016

Dear Committee Members,

Submission to the Inquiry into the Control of Invasive Animals on Crown Land

Thank you for this opportunity to contribute to the Inquiry into the Control of Invasive Animals on Crown Land (“**the Inquiry**”), and for the extension of time in which to make this submission.

Who we are

Formed in 2005, Lawyers for Animals (“**LFA**”) is a not-for-profit incorporated association based in Victoria, run by an executive committee of lawyers and with members in various Australian States and Territories.

LFA's objectives include:

1. alleviating the suffering of animals by engaging with those who create or administer laws in Australia to strengthen legal protections for animals;

REG NO A0047100G
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2. promoting better animal welfare practices amongst animal-related industries in Australia; and
3. undertaking educational activities in an effort to dispel myths and increase awareness relating to animals and the law.

LFA also works in partnership with the Fitzroy Legal Service in Melbourne to run the Animal Law Clinic: a free legal advice service with the primary objective of improving animal welfare. The Animal Law Clinic has been operating since April 2013.

Terms of reference of the Inquiry

The Inquiry is tasked with considering and reporting on:

the benefits of Parks Victoria [sic] and other agencies such as the Game Management Authority's use of community hunting organisations and individuals in the control of invasive animals on Crown land including but not limited to the following:

1. *assessment of the biodiversity outcomes, community safety and limitations of the trial conducted by Parks Victoria on control of deer populations in a national park;*
2. *consideration of the application of these types of programs for other invasive animal species in partnership with Crown land managers;*
3. *assessment of the relative costs and benefits, financial or otherwise, of other forms of pest control in national parks.*

LFA will confine its submissions to these terms of reference, with a particular focus on the use of community hunting organisations in the control of wild deer populations, as trialled in the Dandenong Ranges.

Principles guiding LFA's approach to the Inquiry into the Control of Invasive Animals on Crown Land

LFA supports the normative rule (adopted worldwide) that in all situations involving animals under human control and to the extent that wild animals are under human influence, humans are obligated to uphold 'The Five Freedoms'.¹ The Five Freedoms – or basic rights – of animals are:

1. freedom from hunger, thirst and malnutrition;
2. freedom from fear and distress;
3. freedom from physical and thermal discomfort;
4. freedom from pain, injury and disease; and
5. freedom to express normal patterns of behaviour.²

LFA is committed to the ideal of alleviating animal suffering, but it is also an incrementalist organisation working to achieve practical benefits for animals. LFA supports initiatives that will, on bal-

1 An early version of 'The Five Freedoms' was enunciated by the UK Government body: the Farm Animal welfare Council, shortly after its formation in 1979. It drew on conclusions in the 1965 'Report of the Technical Committee to Enquire into the welfare of Animals kept under Intensive Livestock Husbandry Systems', which was commissioned by the UK Government partly in response to concerns raised by Ruth Harrison's 1964 book *Animal Machines*. The Five Freedoms are now recognised by animal organisations worldwide, including the World Organisation for Animal Health (better known by its historical acronym: OIE); various Societies for the Prevention of Cruelty to Animals (SPCAs); and various veterinary organisations including the Australian Veterinary Association and the Federation of Veterinarians of Europe.

2 This version of The Five Freedoms is taken from OIE, Terrestrial Animal Health Code, Ch.7.1 Introduction to the Recommendations for Animal welfare, viewed 7/8/15: http://web.oie.int/eng/normes/mcode/en_chapitre_1.7.1.htm

ance, improve animal welfare in both the short and long term. It is this principled yet pragmatic approach that guides LFA in its response to the Inquiry.

Guided by the Five Freedoms (above), LFA encourages world's best practice in relation to the control and/or eradication of non-native, wild animals on both public and private land.³ In general, LFA is committed to the aspirational goal of undoing human error by eliminating non-native animals from the wild, thus helping to restore natural balance to the ecosystem, including to native fauna. Whilst Victoria does have a history of megafauna larger than deer, LFA considers it unlikely that indigenous flora and fauna have fully adapted to the incursion of hard-hoofed and antlered mammals like deer, who have only been established in significant populations in Victoria for around 40 to 50 years.⁴ By contrast, the Australian ecosystem does appear to have fully adapted to and developed reliance upon the dingo, including some dingo-hybrids, which behave as dingoes but are sometimes mis-described as 'wild dogs'.⁵ Dingoes became established on the Australian mainland between 3,500 and 5,000 years ago.⁶ Ecological adaptation takes time and 50 years – for deer – is a relatively short period in evolutionary and ecological terms.

Context of the Inquiry: the origins of wild deer in Victoria and the conflict between environmentalism and game hunting

In or around March 2014, a permit was issued by the Department of Environment, Land, Water and Planning to manage Fallow and Sambar Deer as part of Parks Victoria's Deer Control Program. Pursuant to this Program, Parks Victoria partnered with the Australian Deer Association and the Sporting Shooters Association of Australia to implement a mass kill of deer in the Dandenong Ranges National Park, Yellingbo Nature Conservation Reserve and Warramate Hills Nature Conservation Reserve. On one view, this partnership rewards game hunters for the unlawful activities of their compatriots (if not, themselves), which has seen deer introduced across much of eastern Victoria, including into many National Parks and State Parks where recreational hunting is not (ordinarily) permitted.

It appears largely undisputed that recreational deer hunters are, in part, responsible for introducing and actively encouraging populations of wild deer in Australia. A helpful summary of this history and of the resulting conflict between the aims of environmental conservation and game hunting, is provided in a 2013 article by Dr. Rohan Bilney, ecologist:

Like rabbits and foxes, all six deer species with recognised wild populations (Fallow, Red, Sambar, Rusa, Hog, Chital) were released into Australia for aesthetic and recreational hunting purposes during the 19th century. In recent decades their populations and distributions have increased dramatically, in some cases due to natural population expansion, and in others through human agency.

Many individuals were released or escaped into the wild following the commercial rise and collapse of deer farms between the 1970s and 1990s. This period also coincided with an increase in hunters deliberately and illegally releasing them into "deer free" areas (especially Fallow, Red, Chital). Together, these activities are considered responsible for over 90% of current deer populations in Australia...

Several more recent studies have been conducted, including the first investigations of ecological impacts of deer. Evidence is revealing that some native plant species and

3 LFA avoids the use of potentially emotive terms such as 'invasive', 'feral' and 'pest' in describing non-native wild animals – except where legally necessary – since these terms can be perceived as mistakenly conferring blame on the animals, themselves, rather than correctly apportioning it to those humans who introduced the animals to the wild, whether accidentally or deliberately.

4 Rohan Bilney, 'The protected pest: deer in Australia', 12 February 2013, available here: <http://theconversation.com/the-protected-pest-deer-in-australia-11452> accessed 8 September 2016

5 Ernest Healy, 'Worth looking after- the dilemma of the dingo', Sydney Morning Herald, 22 Jul 2010, available here: <http://www.smh.com.au/federal-politics/political-opinion/worth-looking-after-the-dilemma-of-the-dingo-20100722-10m5x.html> accessed 12 September 2016

6 See: http://www.nma.gov.au/online_features/defining_moments/featured/arrival_of_the_dingo

ecological communities are being seriously damaged, primarily by browsing/grazing and antler rubbing. In the worst cases deer are altering the structure and composition of vegetation communities and disrupting ecological processes (especially in rainforest).

Additional impacts of deer include: ...

- *maintaining elevated populations of wild dogs (which feed on carcasses dumped by hunters)...*

*Very little is being done to manage the abundance of deer and their environmental impacts. The main management option used, albeit rarely and patchily, is targeted shooting. **Recreational hunting does not provide population regulation and only marginally reduces the rate of population increase.** This is despite an estimated legal harvest of 41,000 deer - including 34,000 Sambar - in Victoria in 2011.*

Some states and territories consider feral deer to be pests (WA, SA, QLD, NT, ACT). But states with the largest deer populations (VIC, NSW, TAS) give deer full or partial protection status and manage deer primarily for recreational hunting...

Effectively, the three south-eastern state governments hold that the desire of some citizens to shoot deer on public land for sport is of greater value than the conservation of our natural heritage and the burden imposed by deer on farmers.

Maintaining deer as protected is a major hurdle preventing the implementation of effective control measures in the parts of Australia where these measures are most needed.⁷ (our emphasis)

Further criticism of the use of recreational hunting as a conservation method is made by the Invasive Species Council:⁸

Recreational hunting ... must not be mistaken for feral animal control. It is ad-hoc, dispersed and opportunistic, conducted by hunters with variable skill levels and often targeting trophy males.⁹

Subsequent to the publication of Dr. Bilney's article, during the 2013–2014 financial year, an estimated 57,945 deer were killed by recreational hunters in Victoria on private land, in game reserves and in other areas where deer-hunting is permitted – excluding State Parks, National Parks, Nature Conservation Reserves and other areas generally off-limits to hunters.¹⁰ This 2014 figure brought the estimated total number of deer killed by recreational hunters over the six years from 2009 to 265,000. It demonstrates a rise of 49.5 per cent over numbers killed from the 2009 season estimate of 39,418¹¹. This may be largely explained by an even greater rise in deer hunters, of around 69 per cent since 2009.¹²

The 2014-2015 estimate of wild deer killed by game hunters has not yet been published,¹³ however

7 Rohan Bilney, 'The protected pest: deer in Australia', 12 February 2013, available here:

<http://theconversation.com/the-protected-pest-deer-in-australia-11452> accessed 8 September 2016

8 The Invasive Species Council's stated purposes are to "... [r]eform laws, policies and practices to increase the nation's capacity to prevent the importation of more invasive species and to limit the establishment and spread of weeds and pests in Australia [and to p]rotect Australia from the most dangerous invasive species by advocating for prohibitions, declarations, and control of particular species." See: <https://invasives.org.au/what-we-do/> accessed 9 September 2016

9 Invasive Species Council, 'Feral deer on the rise', 28 May 2015, available here: <https://invasives.org.au/blog/feral-deer-on-the-rise/> accessed 9 September 2016

10 See: <http://www.gma.vic.gov.au/hunting/deer/where-to-hunt> accessed 12 September 2016

11 Game Management Authority (Vic), 'Estimates of harvest for deer, duck and quail in Victoria – result from surveys of Victorian Game Licence Holders in 2014', 2015 at p.20, available here: http://www.gma.vic.gov.au/_data/assets/pdf_file/0003/317145/Game-Harvest-Report-2014-Final-FOR-weB.pdf

12 The number of Game Licence holders endorsed to hunt deer in 2009 was 16,193, compared with (the peak) reported 27,349 in November – December 2013 – see: <http://www.gma.vic.gov.au/research/hunting/harvest-reports>

13 "Coming soon" according to the Game Management Authority (Vic), see: <http://www.gma.vic.gov.au/research/hunting/harvest-reports> accessed 9 September 2016

the earlier figures and anecdotal sightings indicate that the deer population in Victoria has risen and is now likely to be several hundred thousand, at least, perhaps more.¹⁴ Extraordinarily, the Victorian Government has not yet commissioned a population study to enable the real number of wild deer to be estimated, their locations identified, and associated environmental planning to be undertaken. Some suggest this apparent paralysis on the part of the Victorian Government results from fear of a backlash from hunters whose "... real agenda [is] widespread unsupervised hunting in national parks";¹⁵ yet the Sporting Shooters Association of Australia – Victoria ("**SSAAV**"), is now calling for a population study (see below). LFA supports this recommendation.

The agenda of hunting organisations to protect deer herds and increase opportunities for hunting on Crown land is no secret. On its website, the Australian Deer Association ("**ADA**") describes itself as:

*... a national organisation established in 1969 to be advocates for **our wild deer herds** and deer hunting... dedicated to the retention of habitat for deer and other wildlife, the preservation and **extension of access to public land for hunting** and other forms of recreation, and the sustainable management of deer as a valuable community resource.*¹⁶ (our emphasis).

On its website, the SSAAV states that its purpose is: "... to promote the shooting sports and protect firearm owners' interests."¹⁷

Neither of these two organisations purports to have any environmental motives – although, the ADA is "... dedicated to the retention of habitat for [non-native, wild] deer...", so is (in effect) committed to changing the natural environment through long-term grazing by deer herds. Thus, from the outset of their tripartite partnership, Parks Victoria – which "... must not act in a way that is not environmentally sound"¹⁸ – has had an open conflict of interest with its two partners. All decisions taken by Parks Victoria are required to be "environmentally sound", yet it employs volunteers who openly profess their commitment to the retention of substantial numbers of non-native wild animals on Crown land, which are reported to be damaging the natural environment. For instance, Sambar deer – likely to be Victoria's predominant wild breed – are listed as a potentially threatening process under the *Flora and Fauna Guarantee Act 1988 (Vic)* for reducing the biodiversity of native vegetation.

The SSAAV has issued five key recommendations in its submission to the Inquiry dated "September 2016" [Submission 150]. These are:

[that] PV and other agency programs which use community hunting organisations and individuals in the control of invasive animals should be continued.

[And] that:

- 1. **the status of deer as game species must be continued;***
- 2. further research into deer population density, biology and the behavioural drivers which affect breeding and migration needs to be undertaken;*
- 3. **access by hunters to Crown land, including the permission to destroy pests such as rabbits, foxes, goats, pigs and cats in National Parks and State Game Reserves needs to be increased;** and*
- 4. hunters should have permission to use sound moderators when hunting on Crown land. (our emphasis)*

In relation to this last recommendation, it is notable that the SSAAV submission also advises that:

14 Invasive Species Council, 'Feral deer on the rise' 28 May 2015 available online: <https://invasives.org.au/blog/feral-deer-on-the-rise/> accessed 9 September 2016

15 Ibid

16 See: <http://www.austdeer.com.au/> accessed 9 September 2016

17 See: <http://ssaavic.com.au/> accessed 9 September 2016

18 Section 7, *Parks Victoria Act 1998 (Vic)*

... with the deer programs, spotlighting has been superseded by the use of thermal imaging.

Thus, if the SSAAV's wishes are granted, not only will deer continue to be protected, abundant and freely accessible to their members on Crown land, including in (at least) some National Parks; but such hunting on public land will be undertaken by recreational game hunters using thermal imaging technology at night and firearms fitted with sound moderators, which both reduce sound and disguise the direction from which shots are fired. LFA queries whether the SSAAV has given due consideration to the safety of other human users of Crown land, such as hikers and cross-country skiers, who may find themselves unwittingly caught in the middle of night hunts, without even the minimal warning of highly audible and traceable gunfire or spotlights.

Similar caution is urged by the Alpine Shire Council in its undated submission to the Inquiry, received 30 August 2016 [Submission 139], which states:

The choice of locations whereby volunteer hunting can be safely undertaken, along with the proper means of ensuring legitimate park estate users are excluded from an operational (volunteer hunting) area are paramount to the safe implementation of the program... 98% of Alpine Shire is public-owned land, of which the Alps and foothills are large drawcards for much of the tourism activities in place. With the seasons, Deer are now being observed above the tree line (1600m above sea level) all the way down to the valley floors. With deer now having a wide range, this may bring any potential programs into conflict with existing park users...

The trouble with using recreational hunters to undertake environmental conservation

LFA has four key concerns with the "... use of community hunting organisations and individuals in the control of invasive animals on Crown land" which we urge the Inquiry to consider:

1. That in the case of most (if not all) non-native species that pose a threat in Victoria, shooting – particularly by recreational hunters – is unlikely to help to control population, and may even lead to faster population increase;
2. The killing of animals by recreational hunters occasions extreme animal cruelty which renders it too inhumane to be socially acceptable (particularly, as public awareness is raised);
3. Allowing recreational hunters increased access to Crown land effectively rewards and encourages illegal activity, which will likely increase environmental damage in the future, and is a waste of State resources in terms of the supervision required; and
4. There are more effective and less cruel methods of population control that ought to be explored and utilised in place of recreational hunting.

This submission will address each of these concerns, in turn.

1. Recreational hunting cannot assist population control of non-native animals

Since early last century, an enormous effort has been made to curb the population growth and spread of non-native wild animals in Australia by the targeted killing of large numbers of a particular species, after they became established. With the exception of biological interventions such as myxomatosis and calicivirus to target rabbit populations; and strategic interventions in geographically contained areas (particularly small islands); these programs have ultimately proven unsuccessful. They were thus both fiscally irresponsible and needlessly cruel. The effort expended by humans and the suffering inflicted on target animals has come to nought. In recent decades, science has caught up with nature, to reveal the cause of these failures. A contributing factor in relation to most mammals and deer is a phenomenon known as reproductive rebound, explained here:

Reproductive rebound is a well documented population dynamic in deer and other mammals. Deer conceive multiple embryos but the number of fawns actually born is determined by a number of complex factors including nutrition and herd density. With competition for food reduced by a sudden drop in herd numbers, younger fawns will breed and females will give birth to twins and triplets instead of single fawns. In its 1990 report, "An Assessment of Deer Hunting in New Jersey," New Jersey Fish and Game offered a detailed example of this process. Its report shows that even during hunting seasons in which killing female deer was the objective (antlerless seasons), the remaining females had increased birthrates that not only replaced the ones killed, but increased the overall size of the herd.¹⁹

In 2012, the Invasive Species Council published a review of the scientific evidence suggesting that recreational hunting, even on a large scale – as in the case of bounty programs – is ineffective in curbing the rise of non-native animals in Australia. LFA draws the Inquiry's attention to these extracts:

Ad hoc recreational hunting such as that practiced in NSW state forests breaches feral animal control protocols in virtually every way. There are no defined objectives, no assessment of whether ground shooting is an effective and appropriate method for the purpose, no integration with other programs, no quality control, no monitoring...

[Regarding non-native animals in the wild:] [m]ost young animals do not survive, for there are not enough resources for all that are born. Of feral pigs studied in Kosciuszko National Park, about 15% survived one year. Just 1-10% of rabbits usually survive their first year and only 20% of foxes may do so. The rest (the 'doomed surplus') are killed by starvation, predators or disease.

*So, a hunter who kills a fox is unlikely to have any impact on a fox population, either because the fox would [have] died anyway or **because its death allows another fox to survive due to reduced competition for food and territories.** Most foxes killed by recreational hunters are the less wary juveniles, with low prospects of survival. **Unless hunters kill more feral animals than can be replaced each year, they do not reduce their populations.** This fact is well recognised by feral animal experts, who have learned from past failures about the high levels of control need[ed] to achieve population reductions.*

The thresholds for population reduction vary between species, regions and seasons, but the figures in Table 1 give some idea of how difficult it is to achieve, particularly of the most fecund species... It means that large numbers of feral animals can be killed for no environmental (or agricultural) benefit.

*Table 1. Estimated proportions that need to be killed **annually** to achieve population reduction*

<i>Invasive animal</i>	<i>Maximum annual rate of population growth</i>	<i>Threshold to halt max. population growth</i>
<i>Brown rat (Rattus norvegicus)</i>	<i>471%</i>	<i>95%</i>
<i>Black rat (Rattus rattus)</i>	<i>357%</i>	<i>91%</i>
<i>House mouse (Mus domesticus)</i>	<i>341%</i>	<i>97.00%</i>
<i>Rabbit (Oryctolagus cuniculus)</i>	<i>206%</i>	<i>87.00%</i>
<i>Fox (Vulpes vulpes)</i>	<i>105%</i>	<i>65%</i>

19 Pity Not Cruelty Inc., 'Frequently Asked Questions on Immunocontraception' web available here: http://www.pzpinfo.org/pzp_faqs.html accessed 11 September 2016

<i>Cat (Felis catus)</i>	99%	57.00%
<i>Hog deer (Axis porcinus)</i>	85%	53%
<i>Chital [deer] (Axis axis)</i>	76%	49%
<i>Rusa deer (Cervus timorensis)</i>	70%	46%
<i>Pig (Sus scrofa)</i>	69-78%	~70%
<i>Sambar (Cervus unicolor)</i>	55%	40%
<i>Goat (Capra hircus)</i>	53%	35%
<i>Fallow deer (Dama dama)</i>	45%	34%

Such figures explain why feral animal control generally can't be achieved by ad hoc hunting. They explain why a 2002-03 hunting bounty on foxes in Victoria did not work despite an apparently huge tally of 170,000 dead foxes. A review by government biologists found that the bounty would have reduced fox abundance in less than 4% of the state, that there was a mismatch between hunting effort and where fox control was most needed, and that numbers would quickly bounce back or climb even higher as a consequence of hunting. (The area of NSW state forests open to recreational hunting is about 10% of the area of Victoria, but the numbers of foxes killed in 2010-11 by recreational hunters in the forests was less than 1% of the level achieved under the failed Victorian bounty.) The fox bounty joined the long list of failed bounty attempts in Australia, which have typically reduced targeted animal numbers by only 2-10 per cent, far too little to reduce populations.²⁰ (our emphasis)

Extrapolating the above information to all lethal control methods for non-native animals – when used as the primary population control method – such control is rendered entirely ineffective unless the number of any target species killed is higher than that which will be replaced by natural reproduction. Given that the population of deer in Eastern Victoria is likely to be several hundred thousand (at least)²¹, and above 40 per cent of that population will likely need to be killed in any one year to achieve an overall population reduction – that is, without the substantial complementary use of non-lethal measures such as fertility control – the use of recreational hunting to reduce populations is strategically and financially flawed. Nonetheless, Parks Victoria continues to assert that “[c]o-ordinated ground shooting has proven to be the only effective method of deer control.”²²

LFA submits that non-lethal measures such as fertility control (discussed below) – potentially in combination with less inhumane methods of killing non-native wild animals²³ – offer the best long-term hope for population reduction and (ultimately) elimination from high-value conservation zones. Re-introduction and conservation of the apex predator dingo, also appears to be useful in controlling meso-predators including foxes and feral cats, and is deserving of further trial studies.²⁴

20 Invasive Species Council, 'Recreational hunting NSW: claims v facts', August 2012, available here: https://invasives.org.au/wp-content/uploads/2014/02/fs_rechunt2_NSWfacts.pdf accessed 8 September 2016

21 Invasive Species Council website, 'Feral Deer on the Rise' 28 May 2015, available here: <https://invasives.org.au/blog/feral-deer-on-the-rise/> accessed 9 September 2016

22 See: http://parkweb.vic.gov.au/_data/assets/pdf_file/0010/625177/Deer_Control_Program_QA_2014.pdf accessed 9 September 2016

23 Such as the use of tranquiliser or immobiliser darts utilising high dose sedatives and analgesics, discussed in further detail below.

24 Invasive Species Council 'Dingo: great hunter, great conservation hope?' 11 November 2012, available here: <https://invasives.org.au/blog/dingo-great-hunter-great-conservation-hope/> accessed 10 September 2016

2. Recreational hunting is too inhumane

LFA refers to the useful summary provided by RSPCA Australia in its recent paper detailing why recreational hunting is too inhumane to be justifiable:

Hunting has the potential to result in significant animal suffering: animals are sometimes chased to the point of exhaustion and then killed with methods that do not cause a quick and painless death. Although some hunters may have the skills, knowledge and motivation to minimise the suffering of their prey, many do not and it is inevitable that some animals will endure pain and distress.

With some hunting activities and practices the potential for significant suffering is extremely high, for example where animals are injured but are not retrieved, where dogs are used and are not controlled properly, where hunters lack technical skill, where killing methods do not cause rapid death, or where dependent young are left abandoned. Current regulations and enforcement regimes do not prevent these things from occurring: they are an inevitable consequence of recreational hunting activities...

Unfortunately, there is no legal requirement to demonstrate shooter competency, so anyone who has a firearm licence can obtain a hunting permit regardless of whether or not they are skilled at shooting animals humanely. There is limited monitoring or enforcement, so many animals may suffer pain and distress after being shot but not killed outright by an unskilled hunter. In addition, children as young as 11 years of age [12 in Victoria] can obtain a hunting permit...

*Hunting involves more than just 'shooting'. Hunted animals are often chased long distances, sometimes by dogs as well as people; arrows and knives are sometimes used to kill animals rather than firearms; **other parts of the body are aimed at rather than the head**; wounded animals escape without being followed up and dependent young are often left to fend for themselves...The consequences of these practices are that many animals will endure significant suffering and a protracted death.²⁵ (our emphasis)*

In relation to its Dandenong Ranges Deer Control Program, Parks Victoria claims that: “[d]eer will be shot humanely by skilled, authorised and trained accredited shooters in accordance with prevention of cruelty to animal legislation.”²⁶ LFA submits that it is almost impossible to shoot deer humanely, that is, without inflicting significant suffering. The Victorian Game Management Authority (“GMA”) acknowledges that:

No hunter will dispatch every deer instantly. Sometimes your first shot may not be fatal. If this happens, it is your responsibility to handle the matter swiftly and ethically. This means focusing on the wounded deer – you should follow the deer, find it and ensure that it is dispatched quickly ...²⁷

The pain and suffering experienced by animals who are wounded by gunshot but not rendered insensible to pain by the hunter's first shot, is self-evident. All mammals experience pain in a similar way, and humans are mammals, so we may extrapolate. So too, the suffering of young who witness their mother's death and are then required to be pursued and killed to avoid an even more protracted death from dehydration. Head shots are notoriously difficult, particularly at long range with animals that startle easily. Ample images of animals that have (temporarily) survived such experiences and evaded 'follow up', are available on the internet.²⁸ The GMA instructs:

25 RSPCA Australia, 'Recreational Hunting and Animal welfare', dated June 2016 available here: <http://kb.rspca.org.au/file/116/> accessed 9 September 2016

26 See: http://parkweb.vic.gov.au/_data/assets/pdf_file/0010/625177/Deer_Control_Program_QA_2014.pdf accessed 9 September 2016

27 See: <http://www.gma.vic.gov.au/hunting/deer/ethical-hunting> accessed 9 September 2016

28 For example, see: Five Freedoms Animal Rescue, 'Submission toward An Inquiry into Victoria's Regulatory Framework: Part 2 – Priorities for Regulatory Reform, Draft Report, March 2011' 8 May 2011, available online (link not provided to avoid unintended trauma to readers – contains graphic images) accessed 9 September 2016

It is critical for all deer hunters to be able to identify and hit the target's vital areas, generally the heart/lung zone (just behind the shoulder)... Never attempt head shots. The brain is a small target and one can easily miss, resulting in a non-lethal strike. The animal will run away and you are unlikely to get it even if you follow up immediately.²⁹

Such instructions appear to be intended to reduce the suffering of target animals, but they cannot prevent suffering. As RSPCA Australia explains:

If the correct firearm and ammunition are used, a well-placed head shot (with the brain as the point of aim) will result in immediate unconsciousness. When there is adequate damage to the brain and the animal does not regain consciousness there will be no suffering.

In contrast, with chest shots (which cause damage to the heart and lungs), the time to unconsciousness can range from seconds up to a few minutes. When an animal is shot in the chest, the time to loss of consciousness and the time to death will depend on which tissues are damaged and, in particular, on the rate of blood loss and hence how long it takes for the brain to have insufficient oxygen.

However, compared with head-shot animals, those that are chest shot have a higher risk of remaining conscious and suffering for a short period prior to death...

Unfortunately, it is not uncommon for shooters to aim for the chest as it presents a larger target area compared to the head, thereby increasing the likelihood of shooting the animal, especially for less skilled shooters. The other reason why chest shots may be preferred in recreational hunting is to preserve the head so that it can be mounted as a trophy...³⁰

For these reasons, RSPCA Australia takes the view that: “[t]o avoid suffering, shooters should be required to demonstrate competency in killing an animal instantly using a head shot.”³¹ LFA submits that the risk of head shots being inaccurate, and the effect on animals witnessing the death of the target animal, renders both the head and chest shooting of animals inhumane.

LFA recommends research be commissioned into the use of tranquiliser or immobiliser darts utilising high dose sedatives and analgesics to effect rapid and painless death by overdose in non-native, wild animals that are causing significant environmental damage. Such darts have long been used for the capture of wild animals, including deer, sometimes with the concurrent use of radio transmitters to enable darted animals to be tracked.³² Darts are also commonly used in the administration of liquid immunocontraceptives to wild populations of deer and horses, particularly in North America.³³

LFA further queries Parks Victoria's assertion that all “[d]eer will be shot humanely by skilled, authorised and trained accredited shooters in accordance with prevention of cruelty to animal legislation”; because this implies that the shooters have been accredited for their shooting skills and accuracy. In fact, regarding the accreditation of hunters utilised in the Parks Victoria trial in the Dandenong Ranges, the SSAAV has advised:

29 See: <http://www.gma.vic.gov.au/hunting/deer/ethical-hunting/taking-the-shot> accessed 9 September 2016

30 RSPCA Australia website: http://kb.rspca.org.au/What-is-the-difference-between-head-shooting-and-chest-shooting_538.html accessed 10 September 2016

31 Ibid

32 Food & Agriculture Organisation, 'FAO ANIMAL PRODUCTION AND HEALTH PAPER 27: deer farming guidelines on practical aspects - Chapter 7: deer capture methods and post-capture treatment' 1982, available here: <http://www.fao.org/docrep/004/x6529e/X6529E07.htm#ch7> accessed 10 September 2016

33 For example, see: Allen Rutberg, 'Fact sheet: Deer Immunocontraception' available here: http://www.newtown-ct.gov/public_documents/NewtownCT_BComm/TBDACFR/Attach%206%20Rustberg%20Handout1.pdf accessed 11 September 2016; and Australian Brumby Alliance, 'Overview of Wild Horse Fertility Control' available here: <http://australianbrumbyalliance.org.au/wp-content/uploads/2016/03/5.2-Fertility-Control-Overviewfinal-1.pdf> accessed 11 September 2016

The SSAA Victoria with the approval of PV has established an accreditation course for volunteers participating in its CPM programs. All member volunteers are required to undertake and pass this course prior to being granted access to both the CPM program and involvement in projects in national and State parks within Victoria.

The accreditation course comprises four key theory topics and a practical component. The course has been designed to provide knowledge and skills to volunteers to ensure safe firearm handling and competence in navigation within forest and park environments, to ensure successful and safe outcomes for the program.³⁴

Whilst there is mention of a practical component within this accreditation course, there is no indication that such a component will test the accuracy of the shooter, nor that some shooters will fail to be accredited if they cannot show sufficient skill in marksmanship with moving targets. In fact, the wording used suggests that this practical component – as with the remainder of the course – is designed to “... ensure safe firearm handling and competence in navigation within forest and park environments...” rather than to test marksmanship. Yet it is marksmanship which would be critical in lessening the inhumaneness of the Deer Control Program, particularly when combined with genuine understanding of each animal's intrinsic worth, basic rights, behaviour and physiology. It seems like that those capable of possessing these qualities in unison will be more attracted to lethal darting techniques than sharpshooting with rifles, which still carries a substantial risk of inhumane killing, if recent Olympic sharpshooting competitions are any guide.

During the National Feral Deer Management Workshop held in Canberra in November 2005, RSPCA Australia outlined its policy in relation to control of wild deer populations:

*As an animal welfare organisation, RSPCA Australia accepts the need to control wild populations of introduced animals, provided it is both justified and humane. Therefore, where deer need to be controlled due to their impacts on biodiversity this should be conducted as humanely and strategically as possible. RSPCA Australia supports a deer management program that prevents new populations of deer occurring. It also supports the control of deer populations when they occur at low levels and, if discrete and isolated, that may have the potential to be eradicated. If new incursions and populations are able to increase unchecked, this not only increases the potential impact on Australian ecosystems but also **increases the population size of deer that may need to be killed through control in the future...***

*RSPCA Australia acknowledges that **in certain circumstances it is necessary to reduce or eradicate populations of some introduced animals provided that it is justified and humane, is under direct supervision of government authorities, does not cause suffering to non target animals, and is effectively monitored and audited with resulting data made available for public information.***

***When an animal is killed it must be either killed instantly or instantaneously rendered insensible to pain until death supervenes ... death should be without panic, pain or distress and the method should be able to consistently achieve a humane kill.** Skill of the operator is also critical to achieving a humane kill, therefore RSPCA Australia encourages training and accreditation programs that improve the skills of operators and provide an understanding of welfare issues, animal behaviour and physiology.*

Although RSPCA Australia recognises the need for the control of introduced animals in certain circumstances, RSPCA Australia is opposed to the hunting of animals for sport. This opposition is because:

- *some practices are inherently cruel, especially where hunting dogs are used;*
- *there are difficulties in enforcement;*
- *there is variability in the skill of hunters;*

34 Submission to the Inquiry by SSAAV, dated “September 2016”, received 1 September 2016 [Submission 150]

- *hunters are a diverse group and have different motivators;*
- *gun-shy animals hinders the effectiveness of control programs.*³⁵ (our emphasis)

LFA is broadly supportive of the above strategy, while noting our differing interpretation in relation to the use of shooting to generate humane death. LFA is very concerned that the present consultation is being conducted prior to the public release of critical data from the monitoring and audit of the Dandenong Ranges trial. This undermines the ability of the Inquiry to interpret such data – with input and guidance from independent third parties – and thus to fulfill its Terms of Reference by assessing the “...biodiversity outcomes, community safety and ... relative costs and benefits, financial or otherwise...” of the Deer Control Program, compared with “... other forms of pest control in national parks.” For instance: not being informed of the estimated population of deer in the target areas; nor the number, gender and estimated age of those killed; nor the manner in which they were killed (by single head-shot, or chest-shot, or follow-up shot, or otherwise); nor the financial costs of the exercise; LFA is unable to comment directly on the outcomes of the trial. We therefore strongly recommend that the requisite data be released to the public and a further period of consultation be permitted, to enable the Inquiry to fulfill its function and Terms of Reference.

LFA wishes to draw the Inquiry's attention to a particularly disturbing fact brought to light by the present Inquiry. The Australian Bowhunters' Association's submission to the Inquiry, received 5 August 2016, has helped to highlight the potential cruelty of current forms of recreational hunting permitted in Victoria:

*The Australian Bowhunters Association (ABA) is the peak body for bowhunting and field archery in Australia and currently has 8000 members throughout Australia, of which around 1700 reside in Victoria. ABA has a long history of working with State Governments to **enhance both hunting and archery opportunities on behalf of its members.** ABA has been represented on both the Victorian Hunters Advisory Committee and the Game Council of NSW...*

*In Victoria our members hunt deer under the game licence criteria. In the case of the smaller pest animals, our members can apply for a Registration of interest to hunt pest animals on Crown land which is available from Department of Environment, Land, Water and Planning. **we are already doing our bit to try and reduce the numbers of invasive animals on Crown land.***

LFA is grateful that this Inquiry has brought to its attention the continued practice of bow-hunting in Victoria, by which LFA anticipates the suffering inflicted on targeted animals to be extreme. LFA calls on the Inquiry to recommend that such practices (continue to) be excluded from any and all environmental trials involving recreational hunters, under the Inquiry's Terms of Reference, while a complete ban on bow-hunting is sought.

3. Rewarding recreational hunters by increasing their access to Crown land is both environmentally and fiscally irresponsible

The Invasive Species Council website provides a useful summary of the arguments for refusing to allow recreational hunters to increase their access to Crown land in Victoria:

The NSW and Victorian governments have been funding recreational hunting and opening access to public lands on the basis that hunters can control feral animals.

But evidence (including the failure of numerous bounties) shows that, at best, hunters can supplement more effective methods of feral animal control or provide control in small, accessible areas.

35 Sharelle Hart, RSPCA Australia, 'Management of deer: RSPCA Australia perspective' in Proceedings of the National Feral Deer Management Workshop, Canberra, November 2005, available here: http://www.pestsmart.org.au/wp-content/uploads/2010/03/Deer-Workshop_final.pdf?73302e accessed 9 September 2016

*Funding recreational hunting as a primary method of control is a waste of taxpayers' money. **There is also the risk that opening up public lands to hunting creates an incentive for maverick hunters to shift feral animals into new areas – as has occurred particularly with pigs and deer.***³⁶ (our emphasis)

One of Parks Victoria's partners in the Dandenong Ranges Deer Control Program, the Australian Deer Association, is bold in its assertions regarding recreational hunters' rights to access to public land, and to create and/or protect non-native deer populations. Take, for example, the following extracts from their website regarding hog deer:

*During the 1950s and 1960s the hog deer sank to a dangerously low population level... **The population is now responding to reha- bilitation [sic] measures taken by the combined efforts of hunters concerned for the future of this attractive little deer and the wildlife department...***

Opportunities to hunt hog deer on public land are rare [and] highly prized by hunters.

*There are opportunities on nearby Sunday Island and on private land **but these require substantial investments of time and/or money** in order to secure an opportunity. The overarching principle is that public land should be able to be used by the public.*

Hunting is a legitimate use of public land and this is recognised by both sides of Parliament.³⁷(our emphasis)

In contrast, the Invasive Species Council, reports that:

Deer are probably Australia's worst emerging pest problem, causing damage to the natural environment and agricultural businesses. Populations are expanding and deer are invading new areas, many due to deliberate introductions by recreational hunters.

*NSW has listed the damage caused by deer as a key threatening process and Victoria has listed sambar impacts as a [potentially] threatening process. Yet both states, as well as Tasmania, protect deer as a hunting resource.*³⁸ (our emphasis)

LFA submits that for more than a century, various Victorian Governments have irresponsibly encouraged recreational game hunting groups by failing to declare wild deer species an 'established pest animal' under Schedule 4B of the *Catchment and Land Protection Act 1994* (Vic). To grant recreational hunters a further role in (purportedly) controlling non-native wild animals on Crown lands will not only perpetuate the dangerous myth that hunting controls non-native wild animal populations; but will reward the hunters for past misbehaviour. This encourages further misbehaviour in the generation and/or protection of non-native wild game populations, including deer and exotic birds.

LFA submits that in view of the environmental damage likely to be caused by a rapidly rising population of deer, it is high time that the interests of Victoria's environment and the estimated 5.9 million Victorians who do not hunt game animals³⁹ are afforded priority over the relatively small number who do. No further encouragement or reward should be offered to game hunters, and nature tourism (particularly from China) might then become a new focus for economic development in regional Victoria.⁴⁰

36 Op cit, Invasive Species Council, available here: <https://invasives.org.au/project/hunting-conservation/> accessed 10 September 2016

37 See: <http://www.austdeer.com.au/fact-sheets/> accessed 10 September 2016

38 Invasive Species Council, available here: <http://invasives.org.au/project/feral-deer/> accessed 11 September 2016

39 Based on subtraction of estimated 60,000 duck and deer game licence holders from Victoria's population estimate of 5.962 Million in 2016, drawn from: <http://australiapopulation2016.com/population-of-victoria-in-2016.html> accessed 11 September 2016

40 The town of Sea Lake in Victoria is a prime example of developing Chinese interest in nature tourism, see: <http://www.abc.net.au/landline/content/2016/s4506192.htm> and <http://www.abc.net.au/news/2016-03-24/sea-lake-chinese-tourism-drought-grain-rural-environment-water/7272248> accessed 11 September 2016

4. Alternative population control research and strategies ought to be undertaken

Fertility control is an ideal tool in the long-term management of non-native wild mammal populations since it works to counteract the phenomenon of reproductive rebound, described above (at pages 6 to 7). Since about approximately 1990, there has been significant international development of fertility control technologies and techniques for wild animal populations.⁴¹ In relation to one liquid form of the Porcine Zona Pellucida (“PZP”) immunocontraceptive, a Canadian animal welfare group has reported that:

*Once injected into a doe, SpayVac typically prevents conception for five years or more. That means for every doe vaccinated, there will be 1-3 fewer fawns born each year.*⁴²

The Canadian developers of SpayVac™ are more conservative in their estimate of the vaccine's period of effect, recording it as 3 years and also providing significant details about its development and practical application on their website,⁴³ which does not appear to be up to date. The Bureau of Land Management in the United States utilises another liquid form of the PZP immunocontraceptive, known as Zona-Stat-H™, in its ground darting program to control fertility among wild horses across approximately 12.8 million hectares of American rangeland.⁴⁴ Similar but smaller-scale fertility control programs for wild horses are undertaken elsewhere.⁴⁵

Australia, meanwhile, has lagged behind in both fertility control research and application, in part, because the Invasive Animals Co-operative Research Centre (“Invasive Animals CRC”) which co-ordinates federal government funding of research, appears to have overlooked this crucial population management tool.

That is not to say that staff at the Invasive Animals CRC have been unaware of the potential benefits of fertility control in managing some wild animal populations. In March 2010, for instance, Tony Peacock former Chief Executive Officer of the Invasive Animals CRC wrote in response to a blogger's appeal for brumby fertility control:

*For fertility control to work, we still need a big removal of the population and fertility control applied afterward in an attempt to keep the population low - it would have been ideal for example following the 2003 bushfire.*⁴⁶

To admit that fertility control “would have been ideal” following a major bushfire event, yet to have committed no resources toward research and preparation for the roll-out of fertility control programs before the next bushfire, or beforehand, in combination with other removal methods; appears either disingenuous or negligent.

Following the February 2009 Black Saturday bushfires in Victoria, the Department of Sustainability and Environment undertook a study of the impact the fires had on the Sambar Deer population, which is thought to be Victoria's most populous wild deer species. Their report states:

we conclude that Sambar Deer abundances were greatly reduced by the large-scale and

41 Humane Society of the United States web, 'Questions and Answers about Immunocontraception' undated, available here: http://www.humanesociety.org/issues/wildlife_overpopulation/qa/q_and_a_pzp.html?credit=web_id469539132 accessed 11 September 2016

42 Urban Wildlife Stewardship Society website, available here: http://www.deerplanoakbay.ca/media_release_citizen_s_group_secures_a_contraceptive_vaccine_for_non_lethal_deer_management accessed 9 September 2016

43 SpayVac for Wildlife Inc. website, available here: <http://terramarresearch.com/about.html> accessed 11 September 2016

44 See: Bureau of Land Management (US) website, available here: http://www.blm.gov/wo/st/en/prog/whbprogram/science_and_research/fertility_control.html and http://www.blm.gov/wo/st/en/prog/whbprogram/science_and_research/usgs_partnership.html accessed 11 September 2016

45 For examples, see: Australian Brumby Alliance, 'Overview of Wild Horse Fertility Control' available here: <http://australianbrumbyalliance.org.au/wp-content/uploads/2016/03/5.2-Fertility-Control-Overviewfinal-1.pdf> accessed 11 September 2016

46 Available here: http://feral.typepad.com/feral_thoughts/2010/03/another-viewpoint-in-the-brumby-debate-.html#more accessed 9 September 2016

*high-intensity Black Saturday fires, but that nearly all burnt habitat was occupied 16–24 months later. However, it is expected that Sambar Deer populations in some areas (e.g. part of Kinglake National Park) will take many years to reach pre-fire abundances.*⁴⁷

LFA notes that owing to the current large number wild deer, any fertility control program would initially need to be combined with humane but lethal methods of population reduction (as proposed above, at page 10). In relation to brumbies, it is hoped that such lethal population control methods may be avoided, and replaced by fertility control, where necessary in combination with the passive capture and re-homing of fillies and colts.⁴⁸

In relation to non-native wild animals for which immunological fertility control has not yet proven successful – such as foxes – LFA recommends further research be undertaken in Australia. LFA further submits that methods of lethal darting using a combined sedative and analgesic overdose (potentially including aerial targeting) be explored. However, we note that until fertility control is available to help combat reproductive rebound, the benefits of killing established non-native wild animals are unlikely to justify the expense. Only where populations are very small, not yet established or substantially contained by geographical features or well-designed fencing; will lethal darting – without fertility control of a substantial number of reproductive females – be likely to have a significant impact in controlling populations of non-native wild animals.

Final words: on avoiding an animal welfare, sociological and environmental disaster

The Inquiry is tasked with considering the benefits of controlling invasive animals on Crown land through the use of community hunting organisations and individuals by Parks Victoria and other agencies such as the Game Management Authority. LFA has already commented on the conflict of interest inherent in asking recreational hunters, whose principal motivations are unlikely to be genuinely environmental⁴⁹, to perform an environmental function. LFA now highlights an even more dangerous conflict of interest should the Victorian Government appoint the Game Management Authority to supervise recreational hunters in purported environmental control programs.

The Invasive Species Council advises:

*In Victoria, the Game Management Authority was created in Jul[y] 2014. This body, modelled on the flawed NSW Game Council, has a clear conflict between its dual roles of promoting hunting and regulating hunting. The abolition of the NSW Game Council in 2013 is an important improvement.*⁵⁰

The GMA's website appears to confirm that it suffers the conflict of interest identified by the Invasive Species Council. Under its first menu, titled 'Hunting', the GMA website states:

Victoria has some of the best game hunting opportunities in Australia. There are generous open seasons and bag limits for game deer, duck and quail and about 8 million hectares of public land available for hunting...

47 David Forsyth, Andrew Gormley, Luke Woodford and Tony Fitzgerald, DSE Victoria, 'Effects of the Black Saturday fires on Sambar Deer occupancy and abundance - Black Saturday Victoria 2009 – Natural Values fire recovery program', October 2011, available here: http://www.depi.vic.gov.au/_data/assets/pdf_file/0020/203951/VBRRR-report19-web-rev.pdf accessed 9 September 2016

48 For further detail on this brumby proposal, see Lawyers for Animals 'Submission to Kosciuszko National Park Wild Horse Management Plan Review', 23 August 2016, available here: <http://lawyersforanimals.org.au/wp-content/uploads/2016/08/LFA-submn-to-NSW-Govt-re-brumbies-23-Aug-2016-final-2.pdf> accessed 11 September 2016

49 For example: a 2012 University of Queensland survey asked 6,884 hunters “What motivates you to hunt?” allowing them to select up to 8 responses. 87% selected 'pest control'; 85% selected 'recreation'; 80% selected 'meat'; 65% selected 'conservation'; 35% selected 'trophies'; and 5% selected 'other' – quoted in: RSPCA Australia, 'Recreational Hunting and Animal welfare', dated June 2016 available here: <http://kb.rspca.org.au/file/116/> accessed 9 September 2016

50 Invasive Species Council, 'Is hunting conservation?' web available here: <https://invasives.org.au/project/hunting-conservation/> accessed 10 September 2016

This website will provide you with information to help you enjoy responsible hunting in Victoria.

In Victoria, recreational game hunting has occurred [sic] for well over 150 years and has been regulated since the early 1860s.

There are approximately 45,000 licensed game hunters in Victoria who in 2013 contributed around \$439 million to the Victorian economy through game and pest animal hunting activities.⁵¹

The GMA clarifies this statement by noting on a separate webpage:

In 2013, licensed Victorian game hunters contributed about \$59 million dollars to the Victorian economy hunting rabbits, goats, wild pigs, foxes and wild dogs to name a few of the most popular pest species.⁵²

Hence game hunters are purported to have contributed an estimated \$380 million to the Victorian economy in 2013, through the hunting of deer and native water-birds, and around \$59 million through hunting declared 'pest animals'.

LFA fears that the GMA may be overstepping its promotional function by propagating and disseminating pro-hunting propaganda concerning the financial contribution of recreational hunters to the Victorian economy. In light of the information (above) suggesting that recreational hunting is incapable of contributing to the control of introduced species in any meaningful way – and that hunters may do more environmental harm than good – LFA questions whether recreational hunting is providing any net benefit to the Victorian economy. The estimate of a \$439 million contribution to the Victorian economy by recreational hunters is drawn from a report titled 'Estimating the economic impact of hunting in Victoria in 2013', commissioned by the former Victorian Coalition Government, and presented by former Minister for Agriculture, Peter Walsh, on the final day of the native duck and water-bird shooting season in 2014.⁵³ The figure of \$439 million was calculated via a survey of 1,000 recreational hunters holding game licences. The figure includes an estimated \$262 million in flow-on – rather than direct – employment:

The total expenditure for hunting game animals was estimated to be \$282 million. When pest hunting by game licence holders is included the estimate is \$417 million. 42% was on off-trip expenditure items and 58% on on-trip expenditure items... There were an estimated 1,115 jobs (full-time equivalent) generated directly by hunting-related expenditure with a further 1,268 jobs stemming from flow-on employment, giving a total employment impact of 2,382 jobs. When pest hunting (by game licence holders) is included, that is, to give the economic impact of all hunting by game licence holders, the direct impact is \$177 million, flow-on impact of \$262 million, with a total impact of \$439 million⁵⁴.

The survey method is outlined as follows:

A list of possible expenditure items related to hunting was created and categorised into on-trip and off-trip expenditure. For items such as vehicles, boats, clothing etc. that could be used for other purposes, respondents were asked the proportion of that item used for hunting.⁵⁵

LFA contends that this survey method is significantly flawed. For instance: it asks participants to estimate their capital expenditure on significant items such as cars and boats, and then attributes a portion of that value to recreational hunters' contribution to the Victorian economy, despite the fact that cars and boats would likely be purchased by the survey participants even if they were not used

51 See: <http://www.gma.vic.gov.au/hunting> accessed 12 September 2016

52 See: <http://www.gma.vic.gov.au/hunting/pest-animals> accessed 12 September 2016

53 Department of Environment and Primary Industries (Vic), 'Estimating the economic impact of hunting in Victoria in 2013', 2014, available here: <http://ssaa.org.au/assets/news-resources/hunting/estimating-the-economic-impact-of-hunting-in-victoria-2013.pdf> accessed 8 September 2016

54 Ibid, p.ii

55 Ibid, p.10

for recreational hunting. In relation to boats, for instance, we note that 86.8% of the hunters surveyed reported that they also participate in fishing.⁵⁶ The survey also fails to identify the time scale over which the estimates of capital expenditure are apportioned – the survey purports to estimate an annual contribution, but cars and boats are not purchased annually, nor is the specialised clothing and equipment used by hunters. It is unclear how the longevity of goods has been factored in – if it has. The indirect employment generated by recreational hunting is also of dubious assistance, given the potential for employment to be generated by other activities – nature tourism, for example – were recreational hunting not dominant in certain areas of the State.

The report fails to take account of the opportunity costs generated by recreational hunting, in terms of the greater value which might be derived from alternative income-generating activities, were recreational hunting not permitted. The potential bias of the survey participants towards exaggerating expenditure in order to strengthen the profile of recreational hunting in Victoria, is not factored in. In short, the survey appears to have been undertaken primarily to boost the popularity of recreational hunting with the public at a time when the Victorian Government was under heavy criticism for its failure to ban duck-shooting. The results are heavily compromised by these facts and the GMA is, in turn, compromised by its promotion of such flawed data.

With the GMA apparently allied strongly with recreational hunters – perhaps largely as a result of its role in promoting hunting in Victoria and the staff if it (consequently) attracts – it is little wonder that various hunting groups are lining up to support the appointment of the GMA to administer and oversee any future animal control programs which would involve increased access by hunters to Crown lands.⁵⁷ Giving the GMA responsibility for fulfilling what should be a function of environmental and animal welfare protection, is akin to placing the fox in charge of the hen-house, so to speak. Recreational hunting has no genuine (evidence-based) environmental function. The GMA's environmental and animal welfare motivations are secondary to its promotion of recreational hunting. Hence LFA strongly recommends that the GMA not be entrusted with environmental and animal welfare responsibility in overseeing control of non-native wild animals, since this would present an inherent conflict of interest for the GMA with its promotion of recreational hunting.

Conclusion

In summary, LFA's ten key recommendations to the Inquiry are as follows:

1. That the Committee call upon Parks Victoria to publicly release a full summary of all information relevant to the Inquiry's Terms of Reference in relation to their Deer Control Program in the Dandenong Ranges, including details of:
 - the number, gender, approximate age and species of all animals killed;;
 - all reports of incidents concerning animal welfare, community safety or environmental damage; and
 - the financial costs of the program.
2. That, following the public release of such information by Parks Victoria, the Committee then allow a reasonable period of time for further public submissions to be provided, solely relating to the information released by Parks Victoria.
3. That the Committee recommend that the State of Victoria commission a study into the current population of each wild deer species in Victoria including their distribution; density; and factors affecting their reproduction and migration – with a view to listing several or all species as established pests (in the wild) under Schedule 4B of the *Catchment and Land*

⁵⁶ Ibid, p.59

⁵⁷ For example: Deerstalkers Club (subgroup of the SSAAV) submission 63, received 1 August 2016; Game Management Council submission 153, received 2 August 2016; and Victorian Deer Association, submission 84, received 5 August 2016

Protection Act 1994 (Vic).

4. That the Committee recommend that the State of Victoria commission research into the potential use of tranquiliser or immobiliser darts, utilising high dose sedatives and analgesics to effect rapid and painless death in non-native, wild animals listed as established pests under Schedule 4B of the *Catchment and Land Protection Act 1994 (Vic)*.
5. That, for community safety reasons, the Committee recommend that any and all further night shooting on Crown land only be undertaken by professional sharpshooters, employed under the direct supervision of State public servants who are both legally obliged and primarily motivated to ensure the least inhumane and most environmental outcomes. This would exclude employees of the Game Management Authority, who are obliged to promote as well as regulate hunting in Victoria.
6. That the Committee make a finding – based on the preponderance of scientific studies and international best practice – that in the case of most (if not all) non-native species that pose an environmental threat in Victoria, recreational hunting and the use of recreational hunters by Parks Victoria and/or other agencies, is unlikely to assist in controlling populations, and may even contribute to population increase in the target species.
7. That the Committee make a finding – based on the preponderance of scientific studies and international best practice⁵⁸ – that the killing of animals by recreational hunters occasions animal cruelty, rendering it inhumane.
8. That the Committee make a finding that utilising recreational hunters for environmentally motivated population control programs is a waste of public resources; effectively rewards and encourages illegal activity by some recreational hunters; and may increase environmental damage in the future.
9. That the Committee recommend that the State of Victoria commission an urgent trial among wild deer and brumby populations in the Victorian Alpine region of SpayVac™, ZonaStat-H™, and any other immunocontraceptive able to be administered remotely (via dart gun) to achieve multi-year fertility control in wild deer and horses.
10. That the Committee recommend that the State of Victoria commission urgent research and development of long-term immunocontraceptive fertility control, utilising remote darting and target identification technology for non-native, wild animals listed as established pests under the *Catchment and Land Protection Act 1994 (Vic)*.

Thank you for considering this submission. Should the Committee have any queries concerning its content, please contact Lawyers for Animals via email: enquiries@lawyersforanimals.org.au

Yours faithfully,

Nichola Donovan
President
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58 Costa Rica formally banned recreational hunting in 2012 by a unanimous vote of parliament. - see: Reuters, 'Costa Rica Hunting Ban Passed Unanimously by Congress', Huffington Post online, 10 December 2012, available here: http://www.huffingtonpost.com/2012/12/11/costa-rica-hunting-ban_n_2275529.html accessed 11 September 2016. we note that recreational hunting may be distinguished from environmental and agricultural hunting in that recreational hunting is undertaken for fun and/or for meat, rather than by professional sharpshooters for a genuine environmental or agricultural purpose or by farmers with the intention of protecting their own livelihood.