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Dear Reviewers,

Submission to Kosciuszko National Park Wild Horse Management Plan Review

Thank you for this opportunity to contribute to the Review of the Kosciuszko National Park Wild Horse Management Plan, 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:

- alleviating the suffering of animals by engaging with those who create or administer laws in Australia to strengthen legal protections for animals;
- promoting better animal welfare practices amongst animal-related industries in Australia; and
- undertaking educational activities in an effort to dispel myths and increase awareness relating to animals and the law.

LFA also works in partnership with 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.

Principles guiding LFA's approach to the Kosciuszko National Park Wild Horse Management Plan Review

LFA supports the normative rule (adopted worldwide) that in all situations involving animals under human control or 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 we are also an incrementalist organisation working to achieve practical benefits for animals. We support initiatives that will, on balance, improve animal welfare in both the short and long term. It is this principled yet pragmatic approach that guides LFA in our response to the Kosciuszko National Park Wild Horse Management Plan.

LFA's response to the Kosciuszko National Park Wild Horse Management Plan

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

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

³ LFA avoids the use of potentially emotive terms such as 'invasive', 'feral' and 'pest' in describing non-native wild animals, 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.

all non-native animals from the wild and thus helping to restore natural balance to the ecosystem, including to native wild animal populations. LFA does not believe that the ecosystem of Australia is likely to have adapted to the incursion of hard-hooved mammals, including brumby populations who have only been broadly established for about 200 years. By contrast, the Australian ecosystem does appear to have fully adapted to and become reliant upon the dingo (including dingo-hybrids which behave as dingoes) which became established between 3,500 and 5,000 years ago. Ecological adaptation takes time and 200 years is a relatively short period in evolutionary and ecological terms.

1. Elimination and Prevention Management Zones

The Kosciuszko National Park Draft Wild Horse Management Plan 2016 (“**the 2016 Plan**”) states that it proposes to:

- *Reduce the overall impact of the wild horse population by reducing it from 6000 to less than 3000 horses in five to 10 years [using predominantly lethal methods]*
- *Reduce the overall population of wild horses to approximately 600 (400–800) horses within 20 years...*
- *Once the overall population has been sufficiently reduced, adopt an approach of minimal management intervention incorporating fertility control and small-scale, non-lethal harvesting (trapping, mustering, removal and rehoming). This approach will limit population growth and also reduce or negate the need to apply lethal control methods [The 2016 Plan at page 23]*

LFA has serious doubts concerning the accuracy of the 2016 Plan's population estimate of 6,000. The Kosciuszko National Park Horse Management Plan published in December 2008 (“**the 2008 Plan**”) states:

Montague-Drake undertook a survey of horse numbers in 2005 using similar methods to Walter, and estimated that the population of horses in the southern part of Kosciuszko was about 590 with a density of 1.56 horses per km², while the northern end had about 1120, with a density of 1.67 horses per km². This gave a total of 1,700 horses in the park. The average group size recorded on the surveys was 4.38 for the south and 4.17 for the north. [at pages 13-14]

Earlier, the 2008 Report states:

Horses normally foal during spring and summer, with a single foal born following a gestation period of 336 days (Dobbie & Berman 1990). They are generally seasonal breeders with oestrus determined by day length. Females reach sexual maturity in 12 to 24 months and although mature females are capable of foaling every year, they usually raise one foal every two years (Wagoner 1977). The horse population can increase by up to 20% per year when conditions are good, but the population growth rate in Kosciuszko is expected to be closer to 8% (Dobbie and Berman 1992; NPWS 2003). [at page 12]

Applying an annual population growth rate of 8% to the 2005 population estimate of 1700, the 2016 population of brumbies should be around 3,200 (assuming that the 8% figure allowed for compound population growth in terms of new fillies breeding). This figure more closely accords with the current estimate of 3,000 generated by members of the Snowy

Mountains Bush Users Group, which questions the methods by which the estimate of 6,000 was reached.⁴

Setting aside our concerns that the 2016 Plan may be founded on an inflated and inaccurate estimate of brumby numbers in the Kosciuszko National Park, LFA vehemently opposes the proposal to kill up to 5,400 brumbies. This proposal is contrary to international best practice for the management of wild horse populations and, if implemented, will result in an animal welfare catastrophe.

LFA commends the New South Wales Government for its recent recognition of its electorate's growing awareness of and distaste for animal cruelty, reflected in its decision to ban greyhound racing. We query whether the 2016 Plan was drafted prior to and/or without full appreciation of this electoral trend and marked developments in international best practice since 2008, partly aided by scientific progress in horse fertility control.

Heeding the Five Freedoms with regard to wild species that are able to be domesticated, LFA strongly opposes the killing of any brumby, unless in circumstances requiring euthanasia. Instead, we support the use of non-lethal and less inhumane methods of population control, in accordance with world's best practice. Based on our research, it would appear that a leading method is the fertility control utilised by the Wild Horse and Burro Program implemented by the Department of Land Management ("**BLM**"), within the US Department of the Interior,⁵ particularly if it is combined with passive trapping and adoption programs. With regard to fertility control, the BLM advises:

Currently the most promising agents are porcine zona pellucida (PZP) vaccines that were developed starting in the 1990s. The BLM currently uses PZP in two formulations. The most effective is a one-year liquid vaccine that must be re-administered annually. The BLM administers this vaccine, known as ZonaStat-H, through ground-darting programs in several Herd Management Areas where the wild horses are approachable. However, ground darting is generally not practical for BLM because it is difficult to approach most wild horses closely enough on vast and open Western rangelands.

The BLM also uses a longer-lasting pelleted PZP agent known as PZP-22, which is effective for approximately 22 months. The pelleted vaccine is typically hand-injected after the mares have been gathered from the range. This method of treatment means that during gathers, more mares need to be captured (for treatment and release) than would actually be removed from the range. While this is usually possible, it can be difficult to capture a large enough fraction of a herd's population so that significant numbers can be treated and released in order to slow population growth. Once enough horses have been captured to bring the population down to AML [Appropriate Management Level], catching the small number of remaining horses becomes challenging because they are scattered over larger areas and many have become more evasive.

⁴ Telephone discussion between Nichola Donovan of Lawyers for Animals and Cameron Jackson of SMBUG, 1 July 2016

⁵ For a full outline of BLM strategies, see:
http://www.blm.gov/wo/st/en/prog/whbprogram/herd_management/comprehensive_animal.html

We note that the BLM is responsible for administering its program across almost 12.8 million hectares of American rangeland. In comparison, Kosciuszko National Park comprises about 689,600 hectares, 331,000 of which currently contain brumby populations.⁶ In view of this, we note that the BLM fertility control results are unlikely to be as effective in the US as they would be if applied to the far smaller range and population of wild horses in Kosciuszko National Park. Instead, we note the following projections of a 2001 study of Kaimanawa wild horses in New Zealand, which we submit are likely to be more comparable to Australian outcomes of fertility control programs:⁷

We found that if all the mares that were caught in a muster were vaccinated (and assuming the contraceptive was 100% effective at stopping foaling), the contraceptives had to have a life of more than 2 years to be an effective management strategy. If the theoretical contraceptive has a longer life then its ability to reduce population growth markedly increases. The contraceptive would need to last 2-3 years and musters with new mares to be treated undertaken every 2-3 years to achieve zero population growth. The ideal contraceptive simulations provided more predictable outcomes than removal strategies, and suggested that if the removal of juveniles could be combined with fertility control, more effective strategies result that have more predictable outcomes. [at page 138]

We refer to the following excerpts from the undated report titled: 'Assessing the humane-ness of wild horse management methods, Kosciuszko National Park Wild Horse Management Plan: A report on the outcomes of a humane-ness assessment panel assembled on behalf of the Independent Technical Reference Group (ITRG)' ("**the Humaneness Report**") upon which the 2016 Plan is purported to be based:

At present, the only method employed in the Park is passive trapping followed by removal of horses for either domestication or slaughter. The outcome for the majority (70%) of horses removed via trapping is slaughter in an export abattoir or knackery, with only 30% of horses being 'adopted' for domestication. [at page 4]

Rather than reducing populations of overabundant wildlife by killing animals, fertility control aims to reduce population growth rates by reducing fecundity, and thereby potentially reducing population size in the longer term. This can be challenging for long-lived species with low fecundity, such as wild horses (Dawson and Hone 2012), but much research has been performed for this species, especially in the USA (Killian et al. 2008), with some promising results in terms of effectiveness in achieving reproductive control over a number of years. Turner et al. 2007; Gray et al. 2010). However, population size reduction using contraception involves a delayed response of around 8 years (Kirkpatrick & Turner 2008) as no horses are immediately removed, and is dependent on the proportion of mares that are treated.

While some fertility manipulation approaches have used surgical techniques or hormone supplementation, many modern approaches use a technique known as immunocontraception. This refers to inducing immunity to naturally occurring reproductive proteins in an animals' body. Antibodies are then produced that neutralise the reproductive protein, making it ineffective and thereby disrupting

⁶ 2016 Report at page 34

⁷ E.Z. Cameron et al, 'Population dynamics 1994-98, and management, of Kaimanawa wild horses' Department of Conservation, New Zealand 2001

fertility. These may be tissue proteins such as the zona pellucida (ZP) in a female egg or a circulating hormone such as gonadotrophin-releasing hormone (GnRH). Two recently developed commercial products that have been identified as being potentially suitable for wild horses are Gonacon® and Spayvac® (Killian et al. 2008; Gray et al. 2010).

1. GnRH vaccine

The GnRH vaccine prevents reproduction through endocrine suppression and has been shown to be effective in many wildlife species (Powers et al. 2014). GnRH vaccines have been used in male animals but this would likely not be considered in wild horses due to interference with androgenic behaviours in stallions. All approaches manipulating GnRH levels have the capacity to alter natural behaviours in both sexes but these effects are currently poorly understood.

2. ZP vaccine

Immunocontraception using a zona pellucida vaccine is used to target only mares and affects reproduction by preventing fertilisation. There are no known effects on circulating hormone levels, and hence no endocrine suppression. The main animal welfare concern raised with this technique is the potential for foals to be born 'out of season' (Kirkpatrick and Turner 2003) and that some mares treated multiple times become infertile (Kirkpatrick et al. 1992).

Both vaccines offer comparable efficacy (3 years infertility) and ease of administration (one-dose darting every 3 years). The important difference to note from an animal welfare perspective is that GnRH has the potential to alter reproductive cycling patterns and associated behaviours by interference with reproductive hormone levels (endocrine suppression) while the zona pellucida vaccine allows mares to continue to cycle without becoming pregnant.

The animal welfare impact of fertility control methods were assessed from the point where an individual horse is injected through to the full impact of treatment, using Part A of the model. However it should be noted that fertility control with an injectable vaccine is actually a two-stage process that includes the way in which the injection is delivered as well as the impact of the injection itself. Fertility control requires another technique to facilitate injection of vaccines, such as passive trapping or mustering, followed by darting in yards or restraint for hand-injection, or aerial or ground pursuit to deliver the vaccine by darting. A full assessment of the cumulative animal welfare impact of fertility control should include the impact of the method of delivering the treatment and take into account the required frequency of repeated treatment and potential impact on non-target animals (i.e. stallions), once an agreed methodology has been decided on. [at pages 8-9]...

Further research and the development of standard operating procedures are required for those methods where there was insufficient information to conduct an assessment (these were: domestication practices; on-site humane killing; and delivery of fertility control). [at page 11]

We further highlight the following additional information about the use of PZP vaccine as

provided in Appendix 2 to the Humaneness Report, in the form of the Humaneness Assessment Panel worksheet dated 24 April 2015. Unfortunately, the pages of Appendix 2 are not consecutively numbered, but the relevant worksheet appears to comprise pages 64-67 of the electronic version of the Humaneness Report.

Control method: Fertility control of wild horses with PZP vaccine

Assumptions:

- *Currently there is no standard operating procedure for use of this method.*
- *Liquid formulations of the vaccine can be administered using a dart (e.g. shot from a helicopter) or by hand injection to a confined animal (e.g. trapped and mustered and held in a yard). However, pelleted PZP must be injected by hand because darts cannot provide adequate pressure to release pellets into the animal effectively. SpayVac®(liquid formulation) can be given by hand injection or dart.*
- *Mares aged 5-10 years are the targets for the vaccine and some females in each band are left unvaccinated. [at page 64]*

PZP vaccines cause females to have an extended breeding season, which in turn requires males to defend females longer. This could have a considerable impact on the well-being and body condition of stallions. Debilitating long-term effects have not been observed in any species of wildlife treated with PZP. In the case of wild horses, long-term effects (15–20 years) of treatment include a significant improvement in body condition, significantly increased longevity and decreased mortality. These positive long-term effects are thought to be due to the decrease in physiological costs of pregnancy and lactation rather than a direct physiological effect of treatment [8]. It is important to note that fertility control is not a useful tool for reducing population size, but can be effective for preventing population growth. Treating horses with fertility control will not have any effect on existing levels of impact by horses, but will potentially prevent escalation of impacts by limiting population growth. Reduction of population size must be achieved by another method. The most effective strategy for reducing the population growth rate involves a combination of removal and fertility control [9]. [at page 67]

8. Kirkpatrick, J. F., Rowan, A., Lamberski, N., Wallace, R., Frank, K., & Lyda, R. (2009). The practical side of immunocontraception: zona proteins and wildlife. *Journal of Reproductive Immunology*, 83(1–2), 151–157. doi:10.1016/j.jri.2009.06.257

9. Cameron, E. Z., Linklater, W. L., Minot, E. O., & Stafford, K. J. (2001). *Population Dynamics 1994-98, and Management of Kaimanawa Wild Horses*. New Zealand Department of Conservation -DOC Science Publishing. Retrieved from <http://www.doc.govt.nz/upload/documents/science-and-technical/sfc171.pdf>

In 'Table 1: Assessment scores and key assumptions for each control method and stage' [at page 12 of the Humaneness Report] the impact of fertility control delivery via the GnRH vaccine and the PZP vaccine were assessed using the 'Model for assessing the relative humaneness of pest animal control methods'⁸ ("**the Model**"), Part A of which examines the impact (including duration) of control methods on overall welfare. Under Part A of the Model the most humane method should receive a score of 1 whilst the least humane method should score 8. Both vaccines were assessed as having a mild welfare impact with a duration of weeks and an overall score of 6.

⁸ Sharp and Saunders, 2011 available here: http://www.pestsmart.org.au/wp-content/uploads/2011/02/humaneness-pest-animals_June2011.pdf

However, this assessment and scoring is rendered meaningless when compared with the results for lethal techniques. For instance, both “Ground shooting (head shot)” and “Ground shooting (chest shot)” were assessed under Part A as having a mild welfare impact with a duration of days and an overall score of 5, suggesting they have a less adverse impact on a brumby's welfare than fertility control. “Ground shooting (head shot)” and “On-site humane killing” were both assessed under Part B – which evaluates the intensity of suffering and duration of suffering caused by lethal techniques – as having no intensity of suffering and very rapid duration, with an overall score of “A”, making them equal with “Aerial shooting (scenario 1)”. Under Part B of the Model the most humane method should receive a score of A, whilst the least humane method should score H.

Leaving aside the ability of any sophisticated mammal to experience extreme fear prior to being killed by a human – particularly if it has previously witnessed others being so killed – in order to assess the impact of killing on the welfare of the horse as “None”, the assessor must accord no value to the horse's desire to continue living, and no value to the desire of its mob for it to continue living. This is speciesism at its worst, for it only takes a simple reversal of the question: would a person suffer no adverse welfare impact if shot and killed, to highlight the absurdity of the assessment. LFA submits that any rational assessment must conclude that non-lethal methods of fertility control and passive trapping (with short transport to new homes), are superior from a welfare perspective to any lethal method.

Despite these flawed welfare assessments, the Humaneness Report does suggest that immunocontraception of brumbies utilising the PZP pellet (hand darting) method can provide effective contraception for up to 3 years with minimal if any detrimental effects on the mares so treated. LFA is not alone in seeing the significant welfare benefits to be derived from this technique, not merely in sparing thousands of brumbies a violent, terrifying and premature death – and in sparing the Australian public the commensurate shame, anger and distrust of government – but in effectively reducing populations to the point where final brumbies may be passively trapped and removed from the park, thus eliminating populations in the proposed elimination and prevention zones. The Australian Brumby Alliance has highlighted the potential cost efficiency of fertility control and the inflated estimate of costs utilised by the 2016 Plan.⁹

2. Containment and Population Reduction Management Zone

The 2016 Plan proposes that a Containment and Population Reduction Management Zone be established wherein:

A low density population will be permitted ... in acknowledgement of the cultural, community and social values of wild horses in the park. The target density for this zone is less than 0.4 horses per square kilometre. [at page 36]

LFA recognises that the lives of wild brumby mobs living in the Australian bush can be harsh, with lack of veterinary care, extremes of climate, and periods of food and water limitation. Without any veterinary care, brumbies may be expected to die slow and painful deaths, for instance: from malnutrition (potentially from untreated dental issues); dehydration; parasitism; cancer; disease; natural poisoning; injury and sepsis. The average life expectancy of wild horses can, in some circumstances, be significantly shorter than domestic

⁹ Australian Brumby Alliance, 'Overview of Wild Horse Fertility Control', dated 23 March 2016, available here: <http://australianbrumbyalliance.org.au/wp-content/uploads/2016/03/5.2-Fertility-Control-Overviewfinal-1.pdf>

horses. A 2012 study of brumbies in the Australian Alps found that around one in ten foals will not live to adulthood, with the annual mortality rate among adult brumbies also averaging one in ten.¹⁰ We have found average natural longevity – a reliable indicator of welfare, which can be compared with that of domestic horses – much harder to quantify. The 2008 Plan states:

The main causes of death for feral horses are starvation, thirst, ingestion of toxic plants, and internal parasites in foals. In an environment such as Kosciuszko National Park there is little to limit the lifespan of a feral horse. Snowfalls in most areas are light and winters short, there are no predators, and there is abundant water and grass even in times of drought. Although domestic horses can live for more than 30 years, research in other areas has shown that life expectancy in the wild would be less (NSW NPWS 2006). The favourable conditions in Kosciuszko National Park mean that horses could be expected to have longer life spans than those in other parts of Australia however there has been no research into this to date. [at page 12]

Similarly, the 2016 Plan reports:

The only real checks on wild horse populations are people and natural events like fire, drought and heavy snowfalls (Walter 2002). It is likely that horses in Kosciuszko National Park would have longer life spans than wild horses in other parts of Australia due to the more favourable conditions in the park. For example, currently there is abundant water and food sources even in times of drought. Snowfalls in most areas of the park are light and winters are short. There are no natural predators in the park, however, there are anecdotal reports of foals being taken by wild dogs [at page 11]

In the absence of clear contra-indicators for welfare, and balancing environmental, social and animal values, LFA conceives that exceptions to our general rule may arise, that is, where it will be better to 'control' non-native wild animal populations in the long term, rather than to 'eliminate' them. This may occur, for instance, where:

- the brumbies are judged not to have caused significant damage to the natural ecosystem and environmental value of a particular site;
- the brumbies' continued presence contributes to the social heritage value of the site;
- the brumbies may be humanely confined to that site (perhaps with the assistance of fencing in selected areas); and
- (most critically) the Five Freedoms are best upheld by allowing the population to abide on the site, but with veterinary oversight and treatment where necessary from a welfare perspective, including to restrict population growth through immunocontraception.

We note that among such 'controlled' populations, even brumby deaths from natural causes could be rendered inhumane if analgesia and euthanasia were reasonably practicable, but not provided. Hence LFA's support for the maintenance of brumbies within the Containment and Population Reduction Management Zone, as proposed by the 2016 Plan is contingent on the provision of veterinary oversight and treatment when this

¹⁰ Dawson & Hone, 'Demography and dynamics of three wild horse populations in the Australian Alps' Austral Ecology Volume 37, Issue 1, pages 97–109, February 2012 at page 1

becomes necessary from a welfare perspective.

Conclusion

LFA commends the 2016 Plan's proposal to use fertility control and passive trapping and rehoming of brumbies in the Containment and Population Reduction Management Zone; but strongly recommends that over the next 20-30 years, this same strategy be used – instead of lethal methods – both to reduce the population in this zone and to eliminate the population in the Elimination and Prevention Management Zones. LFA submits that a substantial investment in fertility control over the next 10-20 years via the use of:

- (a) PZP ZonaStat-H annual liquid vaccine by ground-darting mares; and/or
- (b) PZP-22 biennial pelleted vaccine administered by hand-injection to mares who could be passively trapped and momentarily held in a race;

should negate any need to kill brumbies in Kosciuszko National Park.

We further recommend that a new study of population be carried out, perhaps with the assistance of those who undertook the 2005 study, to regain the confidence of the public, whose distrust in the present figures is not without reason, given previous population estimates and projections. Finally, we recommend that a non-speciesist welfare assessment be undertaken of all population control techniques which may be used to gain a more realistic determination of welfare impacts.

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

Yours faithfully,

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