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## *Attachment - 1 to the*

# ABA response to Parks Victoria's "Assessing the Impacts of Feral Horses on the Bogong High Plains (January-2018)

**Introduction** - Parks Victoria's responsibilities include compliance with:

- The National Parks Act 1975 whose objectives include 4.(a) to make provision, in respect of national parks ..... And 4.(a)(ii) for the preservation and protection of indigenous flora and fauna and of features of scenic or archaeological, ecological, geographical, historic or other scientific interest in the park; and (iv) for the responsible management of the land in those parks, and
- The Flora & Fauna Guarantee Act 1988 (FFG) which lists *degradation & habitat loss* caused by feral horses as a threatening process.
- The heritage Context review was commissioned by NPWS NSW, with Parks Victoria's support, to assess NSW/Vic Alpine Brumbies against Australia's National Heritage List criteria. Context 2015 found that Wild Horses are attribute associated with the cultural heritage significance of Kosciuszko National Park and Alps Victorian regions.

This is a significant step forward as it requires Parks Victoria to keep moderate Wild Horse numbers in the Alpine areas where they have historically evolved. Therefore from a Heritage Wild Horse view point it is essential to identify the number of Heritage Wild Horses able to be retained in park areas that do not directly result in degradation and habitat loss.

Responsible management of Brumbies the park requires a '*World First*' scientific study to **target degradation and habitat loss** that is proven to be only attributable to Brumbies in parklands where they have evolved to live in for over 150 years.

The Australian Brumby Alliance (**ABA**) with its 10 years of experience in the Wild Horse area and hands on handling, gentling and rehoming experience, has reviewed Parks Victoria's (**PV**) Bogong High Plains (**BHP**) "Assessing the Impacts of Feral Horses on the Bogong High Plains, Victoria by Dr Arn Tolsma & Dr James Shannon January 2018 [*the Impact report*].

Our thanks also for the background information Dr. Dave Berman, Wild-life Ecology and Wild Horse behaviour expert, offered the ABA on the BHP Impact report.

The ABA response will explain why we believe that the BHP Impact report fails to deliver any scientifically robust evidence to show that removing the remaining 64-80 BHP Wild Horses will enable Parks Victoria to meet its responsibilities under the Act and FFG - to preserve and protect Victorian parks. Neither has the Impact report factored in the increasing impacts of the past few years from an exploding Samba deer populations or PV's BHP deer culling roll.

## ABA response to the BHP Impact Study released 16-Jan-18

Note; The ABA response to the BHP Impact report has coded words from the report in [blue](#)

The ABA objects strongly to the highly questionable action by Parks Victoria to release their Final Bogong High Plains Brumby impact study *halfway* through the public feedback stage.

Is this an attempt to deliberately limit our opportunity to have the significant flaws in this report addressed? The timing of this BHP flawed study's release implies a complete lack of *process* transparency by authorities that undermine confidence in the plan's outcome.

The BHP impact report's conclusion "*There is unlikely to be a minimum population size for feral horses that would not lead to incremental, on-going degradation*" is based on biased, incorrect and misleading information, which we now expand upon and highlight below;

["Damage to alpine ecosystems by feral horses has been well-demonstrated in the past"](#) (p1); Where and by who? There has been one detailed Masters study (Dyring 1990) and some enclosure work (Theile and Prober 1999; Prober and Theile, 2007; Williams et al. 2014) that we know of and **neither of these demonstrate damage**. They demonstrate impact.

Impact is not synonymous with damage, but rather with effect. And the above mentioned studies illustrate that the presence of horses within the alpine national park has an effect on the environment, which is to be expected. In the case of Prober and Theile (2007) the effect was less plant biomass. After 6 years of enclosure from horses there was no reduction in native species, no increase in weeds, just an increase in biomass.

The **impact measured is very small** (5.8 km of horse tracks per square km) (Dyring 1990). That means if the tracks are 30 cm wide the area in 1 square km (1 million metres squared) with impact is 1740 square metres or 0.174% of the area which means that **99.826% of the area is not subjected to the impact of horses walking along tracks**. The impact may in fact **be positive with increases in diversity of plant species** (Williams et al. 2014).

This is a good document for promoting (to the uninformed) the unsubstantiated belief that feral horses cause damage no matter what their density. While horses may cause damage at even the lowest population density in the Victorian Alps, a scientific assessment needs to be unbiased.

If the damage is truly there and substantial then it should be able to be clearly measured and proved. To be scientific there needs to be no fear of finding the "wrong" result. *The whole project appears designed to ensure the preconceived "correct" result is achieved.* This is not science, this is propaganda.

The Flora & Fauna Guarantee Act 1988 (FVG) - Lists degradation & habitat loss caused by feral horses as a threatening process. That means the *target is degradation and habitat loss*.

Management of Wild Horses needs to be done in a way to prevent any further degradation and habitat loss caused by feral horses. Therefore, there needs to be a good measure of *degradation and habitat loss caused by feral horses*.

**The work reported in this document does not provide this. Consequently, future costly management actions may be conducted under false pretences or with no way of assessing whether degradation and habitat loss caused by horses has been stopped.**

Any change caused by the presence of horses is impact. As stated above, impact can be **positive** or **negative**. Negative impact is damage. Impact is not necessarily degradation or habitat loss. Some *impact may enhance habitat for native species*.

**3.2 Contemporary damage – field visits (p2)** - *Little obvious evidence of horse hoof prints in the photos of mud and bare ground. In fact, the disturbance is more consistent with cloven hooves of deer rather than horse hooves (see deer print example below).*



Desktop google search deer prints to compare with the Impact report photographs. [https://www.google.com.au/search?client=firefox-b&biw=1366&bih=656&tbm=isch&sa=1&ei=eZRUWqzqKIL68gXCqPqDQ&q=samba+deer+foot+prints&og=samba+deer+foot+prints&gs\\_l=psy-ab.3...63812.65686.0.67703.6.6.0.0.0.404.1618.2-5j0j1.6.0...0...1c.1.64.psy-ab..0.2.641...0i13k1j0i13i5i30k1.0.eaUNQoOM1s#imgrc=nFJkXhDXoHyAM](https://www.google.com.au/search?client=firefox-b&biw=1366&bih=656&tbm=isch&sa=1&ei=eZRUWqzqKIL68gXCqPqDQ&q=samba+deer+foot+prints&og=samba+deer+foot+prints&gs_l=psy-ab.3...63812.65686.0.67703.6.6.0.0.0.404.1618.2-5j0j1.6.0...0...1c.1.64.psy-ab..0.2.641...0i13k1j0i13i5i30k1.0.eaUNQoOM1s#imgrc=nFJkXhDXoHyAM)

**Study site selection** - By surveying sites where you think horses are, and not looking where you think horses are not, you are biasing the results. This simply may confirm that horses are where you thought they were.

99 bogs selected to monitor deer, cattle and horse impacts (p3 & 21),

56 sites revisited and assessed for horse damage (p3), and

Priority sites were visited (p3); Were they? This is a *biased selection* of sites. Also noting:

“In cases where plots are *not randomly assigned* to different treatments (i.e. grazed or ungrazed), and when researchers do not have data from before and after imposition of the treatment for both control and experimental plots, it is **not possible** to attribute observed differences unequivocally to the effect of the treatment.” (Beever and Brussard 2000)

**Wet Areas** - “The preference shown by feral horses for wet areas....” (p9) What makes you think this? Have you compared wet and dry areas? Horses need to drink so will walk to creeks or water-holes to drink but they generally dislike and *will avoid soft muddy areas*. That is unless that is where the only suitable food or water is.

And Dyring (1990) suggested that horses avoid the softer ground stating that “they tended to avoid tracking the soft *Sphagnum*, probably because of the inability of this vegetation to support their weight” (Dyring, 1990 pg 116).

## Dung

“number of dung piles” (p3) - When you say dung piles do you mean stallion piles or both stallion piles and single dung deposits?

“Dung deposition was common” (p15) - *A scientific report should be able to quantify this better.* How common? How many deposits per square km? What proportion of the land is covered by dung? What proportion of the vegetation is near dung? In Argentina where there was an incredibly high density of horses (approximately 32 per square km) and there was still 97.5% of the area not covered by dung.

“The amount of dung across the plains is expected to increase several-fold over the coming years if horse numbers remain at the current level, because dung takes around five years to decompose under alpine conditions (Meagher 2004)” (p25): - We note that D. Meagher 2004’s study was on *cattle droppings* in Pretty Valley, Bogong High Plains. Horse dung in the alps area decomposed in a quarter of the time, averaging just over 1 year. See below:

- Zabek (2015) found dung disappeared at a rate of 444 ( $\pm$  150.7 SD) days in the Toolara forest.
- Linklater (2001) found the average rate ( $\pm$  SE) in alpine conditions was slightly less at **424  $\pm$  34** days in his study on New Zealand’s Alpine Kaimanawa Heritage Horses.

“with 18 discrete piles of dung counted along a single 50 m” (p15) : Where is the table with data on all dung deposits found in each 50 m transect. 18 is a big number *but is it a lot of dung in terms of mass?* The report viewed an area of 2000 sq. m, with the average area covered by a dung deposit [ $18 \times 2 = 36 \times 100 = 1.8$  rounded to 2%] that is less than 2 square metres which is *under 2% of the area.* That means that **more than 98% of the area has no impact from horse dung.**

The other point about this is what actual damage does dung do? It is basically broken up pieces of dead grass in piles. If the horse didn’t eat the grass the grass would die and dead pieces of grass would fall on the ground. *What is the difference? How does the dung damage native plants and animals?*

Noting: “Antelope in arid grassy dunes that spent much time under shade trees were found to trample soil locally but *also enrich it with their faecal pellets.* (Dean and Milton 1991 in (Beever et al. 2008)

“Grazing, through the action of hard hooves on organic soils, can act to maintain or increase the amount of bare ground, leaving the soil susceptible to frost heave and erosion” (p16): How much bare ground is there that was caused by horses and their hard hooves?

“Interestingly, two foal carcasses were found in the bogs (which form the headwaters of mountain streams) in the Wild Horse Creek valley” (p16). - What makes this interesting? Foals die. 10% to 17% die (Dawson and Hone 2012). *Frogs die. Fish die.*

In addition we know that horse carcasses have been previously found in bogs as Dyring (1990) stated this fact close to 30 years ago. Two small foal carcasses over the whole region surveyed is not noteworthy. How many native animal carcasses were within the bogs, how many carcasses of other introduced species. Was the water quality of this region tested and found to be affected, if so why were these results not included in this report.

Why not factor in the strong possibility these foals were shot during the 2015 deer shoot in this area organised by parks Victoria? Ref: <http://www.theage.com.au/victoria/feral-deer-damaging-alpine-national-park-to-be-culled-in-parks-victoria-trial-20150722-gii2th.htm>



Photo: Supplied by Parks Victoria. In **2015** AGE link.

Deer damaging an Alpine bog on the **Bogong High Plains**



Australian Alps national parks - February 7, 2017 · Keith Primrose on [Bogong High Plains deer wallow](#)

<https://www.facebook.com/australianalpsnationalparks/photos/a.236737706737526.1073741828.232547660489864/253749725036324/?type=3> Participants at the alpine ecology course visiting a Sambar deer wallow near Mount **Nelse** on the **Bogong High Plains**. A small upland wetland turned to mud and the beginnings of a gully. Sambar are a big problem up here.

“General trampling was observed over a large area along with pulling of vegetation (Figures 26 & 27), including pulling of *Poa* in grasslands, and *Empodisma* and *Astelia* in EPBC-listed alpine bogs” (p20): Over a large area... this could be measured and reported as an area in square km. How can you tell the “pulled vegetation” is not insect damage? *Such damage is or at least used to be commonly caused by insects* (Carr, 1959 #213).

Also, sambar deer love the tasty end part of Flax and tend to pull the flax out and only chew the white part on the end. <http://www.sambardeer.co.nz/nature.html>

Increased stream bank disturbance from ungulates without distinct hoof prints (p21): *How do you conclude it was ungulates without distinct hoof prints? With this complete lack of clear evidence how can you go on to say that this suggests that damage is cumulative that is, with even a small number of animals, the rate of damage is greater than the rate of natural repair.*

**Attributing the Blame** - Past reports were blaming cattle for the damage. Has that damage mended or *are you now blaming* the horses for the damage previously attributed to cattle? Noting: Eroding *peat surface recovered after removal of cattle*. (McDougall 2005)

If even a small number of horses can cause “cumulative damage” (p22) - how come 14 bogs in the southern Bogong High Plains, where the highest number of horses are, were deemed to be in the same state? Two sites had *improved* even with horses being present at one of these and horses being present at one that remained the same state.

“Overall, 7 of 23 bogs previously assessed on the southern end of the Bogong High Plains experienced an increase in the intensity of feral horse activity” (p21) - you need to have some quantified measure to show changes in horse activity. “For example, dung increased from 3 piles to 18 piles along the transect” (p22) - At last some data but still the area influenced by dung has changed from a very small amount to a bit larger *very small amount*.

“Despite a relatively small number of horses being present, soil and vegetation condition has measurably declined in many sites for which previous survey data were available, supporting the concept of cumulative damage. There is unlikely to be a minimum population size for feral horses that would not lead to incremental, on-going degradation” (p22): these statements need to be supported by something. Where did the concept of cumulative damage come from? *What do you base the statement that there is unlikely to be an acceptable minimum feral horse population size?*

Later the impact study refers to damage being cumulative over time, and gives a reference. “The findings of this (Impact study) research supports the claims in the scientific literature (but no references cited) that damage caused heavy grazing animals is cumulative over time. For example, pastures that are lightly grazed will eventually reach the same compacted state as pastures that are heavily grazed (Greenwood and McKenzie 2001) – this reference is a massive stretch from the truth because the 2001 study is based on a farming paddock density study - rotational grazing etc!

During the 1890s over 800 horses and over 1000 cattle grazed the Bogong High Plains (Lawrence, 1995). During the 1990s over 3000 cattle grazed the region (Lawrence, 1995) with an unknown number of Wild Horses.

In 2002 it was estimated that Wild Horse numbers were around 200, by 2005 they had fallen to around 100 (Dawson & Miller, 2008 and today there is between 55-80 (Cairns, 2015).

This report states that *over the period 2006 – 2008*, less than 4% of bogs assessed on the Bogong High Plains showed evidence of feral horse impacts.

By 2017, when the population of horses is at its lowest in over 120 years, this has increased to approximately 32%.

It is much more likely that a change or error in collection method would create this increase in impact rather than cumulative impacts that did not begin culminating until after 2008.

Alternatively one could say that a reduction in the horse population has led to worse outcomes for the bogs, and hence population reduction should be immediately halted.

Many larger animals, native and non-native wallow; horses usually have a quick roll as they feel more vulnerable when not on their feet and ready to flee danger.



For example on the left a Bison Wallow (ref. photo link)

[https://www.google.com.au/search?q=sambar+alps+wallow&client=firefox-b&dcr=0&tbn=isch&source=iu&ictx=1&fir=vawXMJq7Ev8i2M%253A%252CnnqH6hrm0CbuM%252C&usq=i43xDPAWT1pp\\_JsTDTBzqvHCCpk%3D&sa=X&ved=0ahUKEwiR5orY3MLYAhUEJQKHxu1BCQQ9QEIMDAB#imgsrc=q7i40164F\\_dbJM:](https://www.google.com.au/search?q=sambar+alps+wallow&client=firefox-b&dcr=0&tbn=isch&source=iu&ictx=1&fir=vawXMJq7Ev8i2M%253A%252CnnqH6hrm0CbuM%252C&usq=i43xDPAWT1pp_JsTDTBzqvHCCpk%3D&sa=X&ved=0ahUKEwiR5orY3MLYAhUEJQKHxu1BCQQ9QEIMDAB#imgsrc=q7i40164F_dbJM:)

Kangaroo Damage at Oakvale Farm and Fauna World August 2016 – Kangaroos have dug holes to camp in to escape the heat of the day. Common phenomenon in wild populations, easily googled, clearly creates pads of bare earth similar to the roll pads created by horses.



Many animals lie on the ground. These 4 photos show how kangaroos use areas of bare ground to camp in during the heat of the day (photos: Madison Young Nov 2017).

Brumbies sleep standing up, but do take the weight off their legs for short periods each day. Horses feel vulnerable on the ground so take short rolls as needed.

So native and introduced spend time on the ground what is the difference?

## Many benefits have been recorded from moderate grazing levels, such as;

But what is the true impact on native plants and animals? Is it positive or negative? For example, **“avian richness and diversity were higher in areas subject to moderate levels of grazing** than areas in which horses had been excluded (Zalba and Cozzani 2004).

**“In particular it is interesting that the richness and diversity of species are slightly greater in areas of moderate grazing than in the enclosures,** as predicted by the theory of intermediate disturbance” (Connell, 1978). These results are interesting in the light of the discussion concerning whether or not exotic herbivores should be eradicated from protected natural areas (McCoy, 1994; Houston & Schreiner, 1995).

“While many studies simply compare 'grazed' to 'ungrazed' conditions, grazing is not an all or nothing proposition and the **intensity of grazing is likely to be of utmost importance**”. Also “In the context of grazing, this suggests that **plant diversity may be greater at a light or moderate level of grazing than with either grazing exclusion or heavy grazing**”.

(<http://iopscience.iop.org/article/10.1088/1748-9326/11/11/113003>)

“Research has also found that for some plant species grazing can stimulate net primary productivity, with the maximum stimulation at intermediate grazing intensities (McNaughton 1983, 1985). If this holds true for the plant community in any given site, the wildlife communities that depend on these plants may also show similar patterns and be found in greatest diversity or abundance at intermediate grazing intensity.”

Other grazing benefits are available, such as increased species diversity in Sub-alpine and montane areas (Fahnestock & Detling 1999, Austrheim & Eriksson 2001, Fahnestock and Detling 2002, Ostermann-Kelm et al. 2009 and Stroh et al. 2012.) and the reduction of fire severity, Forest, sub-alpine, montane, (Silvers 1993 and Davies et al. 2015)

## Concluding observations

It is very difficult to separate factors that cause erosion or what looks like degradation and assign a cause. Some of these changes are natural. **Without controlled experiments the evidence is circumstantial. Consider, for example “Improvement in condition will occur in the absence of grazing.”** (Wahren et al. 1994)

Damage and impact are assumed wrongly to be the same in the BHP impact report. For people who hold strong beliefs that horses should not be in National Parks because they are introduced, hard hooved animals that did not evolve in Australia, any sign of Wild Horses is seen as damage.

However, we know that long ago Megafauna (*one species with a hoof like foot*) roamed the Australian continent, including the alpine areas. J. Flood's PhD. Thesis on the Bogong Moth explains “large game such as the diprotodontids, macropodids (Sthenurus, Macropus etc), Thylacoleo and Sarcophilus might have been found roaming the alpine shrub and herbfields of the tablelands.”





The Greater Alpine National Parks Management Plan August 2016 (p61) refers to “rolling schedules of fuel treatments identifying locations of burns and other fire risk mitigation works such as **slashing** and fire break maintenance” ..... **Do we really want to replace Wild Horse grazing with mechanical, costly alternatives?**

Or have Parks Victoria committed to ongoing costs for to slash grass by machine or manually (photo on left 2014 Parks Victoria sign referring to their ‘slashing’ program and explaining the need to ‘slash’ grass to protect vulnerable Fauna species.

Grazing animals can have beneficial impacts on native plants and animals (Schultz *et al.* 2011) and protect endangered plants (Gilfedder & Kirkpatrick 1994). It would be a shame to remove all horses and find that this causes the decline or extinction of some native plant or animal.

*J. Pickering*

Australian Brumby Alliance Inc. Written on 9<sup>th</sup> February 2018

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END