



The Australian Brumby Alliance

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Submission to Kosciuszko National Park Draft Wild Horse Management Plan August 2016 **Att.2 - Impacts in perspective**

The ABA supports the management of sustainable Wild Horses living in sustainable wild environments, and that high densities of any species can cause excessive environmental impacts. We differ from NPWS in that we do not assume all negative impacts are solely due to Brumbies if they are seen in the area – only peer reviewed, published studies can resolve this. Att.2 gives reasons to why we question studies used by NPWS to guide their plans.

WHMP p17 - *They (Wild Horses) spend most of the time feeding and therefore numbers are concentrated in their preferred grazing areas: grasslands and heath.*

ABA response – This sentence seems low in objective rigour, for example:-

- Grazing Brumbies move throughout their home range, spreading (not concentrating) impacts which allows grass and heath land to recover by the time they return.
- Duffey (1974) examined the spatial redistribution of nutrients, finding “that the more acid conditions generated in areas of dung and urine concentration allowed the easier release of calcium, aluminium and manganese ions for subsequent plant utilisation”

We (Nimmo & Miller 2007) agree with Linklater et al. (2002) that **the peer-review process is the best** mechanism for illuminating the quality of research to the public, by exposing it to criticism from an independent and international audience. In the case of feral horse management, to our knowledge, **this standard is yet to be achieved** in Australia for both ecological and human dimensions research [Nimmo & Miller 2007]

WHMP p17 - Figure 4 States: *Examples of track formation and trampling of vegetation caused by horses in the Rams Head area of Kosciuszko National Park* (Photos: K Green)



Photo-1 WHMP p17 (undated)



Photo-2 ABA comparison (Googled)

Photo-1 (taken before the 2003 plan), is **repeated** in the **three** NPWS KNP management plans of **2003 – 2007** – and again in the current draft **2016**.

Photo-2 Shows hikers on an apparently similar width path and Alpine elevation (undated).

ABA response

Photo-1 This undated photo was first used on p5 of the NPWS KNP management plan (2003) then again on p8 of the NPWS KNP management plan (2008);

- Using the same photo for over 13 years cannot show change or current status. Why has this track not been monitored, if it is such a concern to NPWS?
- Where is evidence of horse prints, grazing or dung. How do we know the track was not started by visitors walking to Mt Kosciuszko's summit via Rams Head?
- Or stockmen searching for cattle well before 2003?
- Once a track starts, humans and other species will use the way of least resistance.

Photo-2 Hikers in an alpine area use a track of similar width/depth to photo 1

In 2015 a hiker took an amazing series of photos through Ramshead and areas around Mount Kosciuszko summit. One of the photos may even be from a similar spot as photo 1. Examples of the hikers photos taken in 2015 (and link to them) are shown at the end of this attachment.

Interestingly, in relation to tracks, Drying 1990 [Ref-16] states:

- Exotic species colonised tracks, but not at the expense of the native species,
- Similarly, the reduced occurrences of exotics in the un-trampled areas suggested the inability of exotics to compete with native species in unstressed situations, and

Ken Thompson's book: Story & science of invasive species] cautions against assuming impacts are from the most prominent cause you easily see, for example;

Recognition of loosestrife as a problem was based largely on anecdotal observations, which are likely to be particularly unreliable in the case of tall species with such bright, obvious flowers.

and

This is a well-known problem that **standard textbooks warn against**: it's easy to conclude that an otherwise rather dull wetland has been completely taken over if you look at it when loosestrife is in flower (especially if this is what you *expect* to find, even if a more careful examination would reveal no such thing. [Ref-3]

WHMP p8 - High quality water supplies for towns/cities, for power generation and irrigation depend on the protection of these catchments, and (p14) Impacts on water catchment values of the Australian Alps, of which KNP is a significant and critical component.

The draft plan also fails also acknowledge other reported impacts on water quality, such as:

- Severe fires and storms are the greatest mover of soil structures into streams [Ref-17]
- Runoff during storms and floods especially in Parks downstream of pastures and residential areas, was potentially "much greater than anything that occurred during the anthropogenic disturbances" captured during the 2011 study [Ref-18]
- The 2003 fires caused loss of human life, unprecedented erosion and siltation of water supply catchments, killed many rare and endangered plants and animals [Ref-17]
- Neither background reviews recognised that extreme wildfires and mining operations had caused erosion [Ref-17]

- The (2003) fires severely reduced vegetative cover, both pastures & native vegetation – creating a high risk for destructive soil erosion [Ref-19]
- Downstream of Jindabyne dam, the loss of fish represents only one revenue loss caused by the (hydro) Scheme, saline intrusion up the mouth of the Snowy River has “caused multiple fish kills and destroyed river bank vegetation, giving rise to additional erosion management and bank stabilisation costs”. [Ref-20]

WHMP p20- (Horses) are known to carry the parasite *Cryptosporidium parvum*, which can cause serious gastroenteritis in humans if it contaminates drinking water (TAMS 2007).

ABA response – Adda Quinn (1998) researched the potential risks of horse manure, and concluded: *The chemical constituents of horse manure are not toxic to humans. Horse guts do not contain significant levels of two waterborne pathogens of greatest concern to human health risk, Cryptosporidium or Giardia, neither do they contain significant amounts of the bacteria E. coli 0157:H7 or Salmonella.* [Ref-21]

WHMP p17- *This preference for grassland and heath habitats is likely to eventually alter the ecology of these areas by selective grazing (Dyring 1990).*

ABA response – (Dyring 1990) also recommended that, for example;

- Long term monitoring of erosion is a prerequisite for establishing rates of environmental change that the horses are imposing on natural systems. [ABA: NPWS long term monitoring plots **fail to** isolate horse impact from other excluded grazers].
- Rates of erosion, rather than quantified losses at points in time, are essential in understanding the effects of the introduced animals.
- Monitoring may be achieved through the use of counters (infra-red at mechanical) to estimate track use. The placement of sand along portions of tracks near the counters would determine which animal species frequent the area.
- To record soil loss, periodic track profile measurements and permanent photo-points are necessary every 50 - 100 m along tracks and stream banks. Monitoring should continue for a minimum of five years to determine trends.

WHMP p17 - Many alpine plants along Main Range are small shrubs and ground hugging plants which are very sensitive to damage by heavy animals such as horses.

ABA response – This sentence seems low in objective rigour, for example:

- How is ‘damage’ described/quantified over short and long term periods?
- Deer, goats, pigs, kangaroos etc are a similar weight to KNP horses, and
- What damage percentage is caused by horse vs all grazers (including natives)?

WHMP p17- *Horses prefer to cross streams from more ‘solid’ ground beside an established crossing rather than risk falling on a churned up track, therefore stream crossings are constantly being widened.*

ABA response – This sentence seems low in objective rigour, for example:-

- Does this assume horses alone of all animals prefer solid ground when crossing?
- What proportion of stream length are impacted in this way? and
- Is the impact overall? or local traffic hotspots from all animals/human traffic passing?

We highlight gaps in the literature and suggest that more peer-reviewed research would be beneficial in reducing the current public controversy surrounding management of feral horses. [Nimmo & Miller 2007]

WHMP p17- A study in Kosciuszko National Park found that dry soils needed only 20–50 passes by unshod horses before significant compacting occurred (Drying 1990 [Ref-16])

ABA response – This sentence seems out-of-context, for example (Drying 1990 **also states**);

- Trampling by **humans**, animals and **vehicles** has been shown to reduce aeration, water infiltration and vegetation regrowth because of increased compaction (citing Dale & Weaver 1974), MCQuaid-Cook 1978, Weaver & Dale 1978, Dadkhah & Gifford 1980, 1980).

WHMP p18- (G Robertson et al. 2016) Data analysis on average, over 50-metre long sites of the Robertson 2016 study (We've labelled 'a' to 'd' for clarification) shows the following:

a) 76% of the length of stream banks in sites where horses are present have some level of degradation, compared with 11% in sites where horses are absent.

ABA response – This sentence seems low in objective rigour, for example:-

- How is 'degrading' quantified?
- Other specie density/types i.e. pigs, deer, goats, dogs, kangaroos in the area? and
- How were horse specific impacts separated, from other species in the area?

b) 56% of the length of stream beds have a moderate to high sediment load, compared with less than one per cent in the horse absent areas.

ABA response – This sentence seems low in objective rigour, for example:-

- What other animals access the water in both sample areas?
- How far does sediment travel from the impact site in both sample areas?
- How does this sediment level compare to storm run-off damage?

c) 82% of the length of streams have moderate to high levels of pugging in horse present sites, compared with one per cent in the horse absent sites.

ABA response – This sentence seems low in objective rigour, for example:-

- What data exists to describe/quantify positive or negative aspects of pugging, and
- (Duffey 1974) examined the spatial redistribution of nutrients and found that the more acid conditions generated in areas of dung and urine concentration allowed the easier release of calcium, aluminium and manganese ions for subsequent plant utilisation.

d) 84% of the length of streams show some evidence of grazing, compared with eight per cent in the horse absent sites.

ABA response – This sentence seems low in objective rigour, for example:-

- Grazers graze, how does this study isolate horse grazing from other grazers?

- Is it assumed that where horses graze, no other animals graze?
- If this sentence is intended to state grazing is negative why has the ‘evidence’ not been quantified for both **negative** and **positive** impacts implied?
- What is the seasonal recovery of grazing in these areas? and **what are the**
- Emerging trends of grazing seen on ‘some’ stream banks where horses are?

[ITRG report p12] Cautions the following;

“Despite the study’s encompassing of alpine and sub-alpine regions of Victoria, NSW and the ACT, it (*Robertson et al.2015*) **focuses only on treeless ephemeral** drainage lines within those regions”
and

“This focus should be noted and care taken **not to extrapolate** the findings across all drainage line types or types of impacts in other habitats.”

The ABA was surprised to magnificent photos taken by a hiker in 2015, without reference to horse impacts or a horse presence. While (fig4 2016 KNP WHMP p17) is titled “Examples of track formation and trampling of vegetation caused by horses in the Rams Head area”.

Link <http://bushwalk.com/forum/viewtopic.php?f=9&t=19277> (hiker photos taken in 2015)

Starting below Dead Horse Gap, on the AAWT I walked over the Rams Head Range. Then I turned around at Rawson Pass to follow the elevated lame-way South, back to Thredbo Top Station and took the chairlift down to the village. That was about 14 clicks all up, on the day.

*Next four images are **Ramshead**, from below the escarpment - shots within 5 mins of each other.*



Snowy River near North Ramshead, looking into Wilkinsons Valley, where the Snowy flows beneath the Summit Road.

ABA note: Could the lower right photo include same track NPWS draft WHMP p17 described as a horse track?



Snowy River, the Ramshead Range.

North Ramshead

Please feel free to contact the ABA with any queries about our submission to the draft plan by emailing Jill Pickering via pickjill@hotmail.com

Yours sincerely

J. Pickering

Australian Brumby Alliance Inc.
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Att-2 references are listed at the end of the main ABA submission.

ABA Main Submission

- Att.1 Managing Viable Brumby Populations
- **Att.2 Impacts in perspective**
- Att.3 Straight Talk Consultation