PO Box 3276
Victoria Gardens
Richmond, Vic 3121

Phone : (03) 9428 4709

info@australianbrumbyalliance.org.au
www.australianbrumbyalliance.org.au
ABN : 90784718191

Key concerns about Brumby negative impact study claims

Submitted by the Australian Brumby Alliance to the
Alpine-Bogong-Barmah Round Table meetings 14/15-Feb-17

Management of Wild Horses in Victoria
The Greater Alpine National Parks (GANP) plan (p11) states "management will be based on science", however the Australian Brumby Alliance Inc. (ABA) questions the use of the word *Science* when the studies used as reasons to remove horses have not been exposed to criticism from an independent and international audience.

Lack of Peer-review study issues, for example:
Nimmo (2007) asserts "We agree with Linklater (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) state: "Further confounding results is the fact that past research into the effects of feral horses have typically included only a small number of response variables ([siting] Beever et al. 2003), usually measuring direct effects of disturbance on a few plant characteristics, ignoring both direct effects on other taxa ([siting] Beever & Brussard 2004) and indirect effects occurring concurrently and subsequently from the formation of feedback loops ([siting] Beever & Herrick 2006)."

Greater alpine national park management plan;
The GANP 2016 reports that its plan area contains "*a wide range of native flora and fauna, including threatened species not found anywhere else*" and that the region contains "*those* (species) *with highly specialised habitat needs*" and "*diverse vegetation communities*" are found inside the GANP region (p17), we note Brumbies have been present for 200 years.

The GANP plan seems inconsistent in reporting horse impacts, for example; (p33) states;
"*feral horse impacts are major and increasing in the Eastern Alps area and deer impacts are major and increasing in the Bogong, King-Howqua and Upper Murray areas of Alpine National Park*". And
"*the Alpine Ecosystem is recovering slowly from the long term impacts of grazing and areas increasingly affected by feral horse and deer impacts; areas in Alpine National Park are* ***recovering well following past fires, especially mossbeds, grass-lands, heathlands, and threatened flora***."

Impact claims have been described as:

1. Negative: Wild Horses cause impacts in delicate park environment because they are:

A) an introduced animal,
B) compact soils (i.e. horse tracks) & trample (i.e. walk on)
C) heavy and hooved animals which the environment evolved without
D) urinate, defecate and smell unpleasant
E) break down stream banks
F) eat grass (flowers, shrubs and small plants also mentioned?)
G) spoils the view for people who just want to see native animals

2. Positive: Wild Horses create positive impacts in moderate numbers including:

A) increased biodiversity,
B) increased water retention capacity of soils,
C) reduced fuel loads,
D) inspired countless people since early settler times to visit and record their lives.

The ABA supports lowering overabundant Brumby populations to moderate levels, however too many of any species, including humans, can cause environmental problems. To manage appropriately **we need peer-reviewed research**, on any factor that may, or may not, result in an impact, to ensure future generations can enjoy seeing healthy environments and species.

The ABA response to horse impacts claims include the following;

A) Negative claim - An introduced animal,

ABA response - The desire to remove non-native species, apart from post settler citizens, is presumably to turn the Australian 'landscape clock' back to pre-Settlement times, a concept that many in the scientific community would consider neither realistic nor practical to follow. It is also inconsistent with the increasing use of parks by humans for recreational activities such as hiking, four wheel driving, cycling, skiing and the associated infrastructure required.

ABA response – when does introduced become native? Environments and their species are in a constant state of change. Humans bringing horses and other species to Australia is one more variation of change and a relatively benign variation compared to human parkland foot prints.

B) Negative claim - Compact soils (i.e. horse tracks) & trample (i.e. walk on)

ABA response - All species in some way leave their mark: pigs wallow in mud and root up ground looking for feed; deer leave hoof marks and humans leave a range of "foot prints". Is a horse track called an impact just because the animal creating the track is feral? Consider:

- Kangaroos create tracks that are called Kangaroo pads, not impacts,
- Humans create tracks that are called walking tracks, not impacts,
- Bicycles create tracks that are called cycling tracks, not impacts
- Vehicles create tracks called access tracks or roads, not impacts

C) Negative claim - Heavy and hooved animals which the environment evolved without

ABA response - Australia's continent evolved with 9 megafauna' species weighing 1,000-2,000 kilograms, including one with hoof like feet, and 9 megafauna species weighing 100-1,000 kilograms, as compared to an adult Brumby weighing around 300 - 400kg.

D) Negative claim - Urinate, defecate and smell unpleasant

ABA response - Adda Quinn (1998) researched potential risks of horse manure, concluding; "*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*."

Note: Anecdotal reports explain that horse manure only smells when it is fresh.

E) Negative claim - Break down stream banks

ABA response - Detecting stream health impacts of horse riding and 4WD vehicle water crossings in South East Queensland: Redfearn & Hadwen (Griffith School of Environment). Negus, Blessing and Marshall, (Water Planning Ecology, Qld Environment and Resource dept) reported "Severe fires and storms are the greatest mover of soil structures into streams".

F) Negative claim - Change in vegetation (i.e. eat grass)

ABA response - Dawson's 2011 background paper 1 (p9) concluded from detailed vegetation monitoring of exclosure plots at Cowombat Flat and Native Cat Flat, as well as monitoring of stream bank condition, disturbance and erosion undertaken in 1999 and 2005 (Prober & Thiele 2007) that~~;~~ "*Results demonstrate that with the exception of increased vegetation height, **exclosure from horse grazing had minimal impact of vegetation composition***."

ABA response – Robertson et. al. 2015 p18 of: *Assessment of feral horse impacts on treeless drainage lines in the Australian Alps 2015* recorded that: *"84% of the length of streams show some evidence of grazing, compared with eight per cent in the horse absent sites"*. Society knows that horses graze in areas they inhabit, but what does this mean for the environment in terms of positive and/or negative impacts?

Vic Jurskis in his book 'Firestick Ecology', echoes our concerns:

- *Unfortunately, modern research often begins at the 4th step by testing a preconceived hypothesis or, just as bad, bypasses the scientific method and uses data collection and statistical gymnastics to search for insights into perceived problems. This invariably gets people into trouble because they focus on association and neglect logical cause."*

G) Negative claim - Spoil the view for people who just want to see native animals

ABA response - There are many areas in the Victorian Alps for visitors to enjoy without Wild Horses. People visit parks for range of interests, including to see Brumbies living wild.

The ABA positive horse impact claims include the following:

A) Increased biodiversity~~,~~

Connell (1978) proposed that species diversity was maximised under intermediate levels of disturbance. At low levels of disturbance, diversity is reduced by competitive exclusion, possibly resulting in the dominance of a particular species, desirable or undesirable.

Robertson (2015) quotes (p21) *(Prober & Theile 2007; Wild & Poll 2012)* "*At these sites* (exclusion zones), *vegetation inside horse exclosures comprises a dense sward of sedges and grasses, whereas outside the exclosure plots, vegetation is typically a low herbfield turf*.

The Independent Technical reference group (ITRG) report to the National Parks and Wildlife Services (NPWS) states that Wild Horses "*Increased species diversity*" in Sub-alpine and montane regions siting; *(Fahnestock and Detling 1999, Austrheim and Eriksson 2001, Fahnestock & Detling 2002, Ostermann-Kelm et al. and 2009 Stroh et al. 2012.),* and that

- Some studies fail to find an effect, or
- may even find a positive impact (e.g. Fahnestock & Detling 1999).

Zalba & Cozzani (2004) found "avian richness and diversity were higher in areas subject to moderate levels of grazing than areas in which horses had been excluded".

B) Increased water-holding capacity of soils,

Organic components of faeces and urine from grazing animals can build soil organic matter reserves, resulting in soils having increased water-holding capacity, in-creased water infiltration rates, and improved structural stability. These changes can decrease soil loss by wind and water erosion (Hubbard et al. 2004).

D) Reduced fuel loads,

The ITRG report 2015 states Wild Horses can cause a "*Reduction of fire severity*" in Forest and sub-alpine, montane, siting; (Silvers 1993 & Davies et al. 2015)

D) Inspired countless people since early settler times to visit and record their lives.

Many poems, songs, ballads and books have been written to express the joy of watching Brumbies living wild and many Australian and overseas people come to see Wild Horses.

Enclosure plots, not peer reviewed and other study concerns

Exclusion fenced plot studies were raised to evidence horse impacts, however we note:

- controlled experimental studies are rare, and most rely on a correlational approach and are often complicated by the presence of other herbivores (Beever & Brussard 2000).
- (Rogers 1991 & Linklater 2000), demonstrated that positioning of horse exclosures can result in impact measurements unrepresentative of the broader system,
- Most research on the ecological effects of feral horses has occurred at single, small, spatial scales (Beever et al. 2003), and
- Sites investigated may not be representative of the system in general, which means that broad management regimes derived from such research may be erroneous (Bestelmeyer and Wiens 2001; Beever and Brussard 2004).

In conclusion;
Generations of Wild Horses have served Australia for 200 years since settlement, their vital contribution to our heritage history " *Reflect the diversity of our communities, telling us about who we are and the past that has formed us and the Australian landscape*" (Burra Charter). The Charter also states heritage is "*Irreplaceable and precious and must be conserved for present and future generations in accordance with the principle of inter-generational equity*". It is time to move on from conflict, follow the Burra Charter's approach that "Co-existence of cultural values should always be recognised, respected and encouraged", and work to identify how Wild Horse populations can co-exist with native species inside our national parks.

Jill Pickering, Australian Brumby Alliance Inc. 13-Feb-2017