

**Submission
No 57**

**INQUIRY INTO PROPOSED AERIAL SHOOTING OF
BRUMBIES IN KOSCIUSZKO NATIONAL PARK**

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Please review the facts that we know ..

Arial culling is NOT the way to manage our heritage horses.

Wild horses form tight-knit stallion and elder- mare-governed bands. Over time, each band searches out and establishes its own home range, which may cover hundreds of square miles annually in drier regions. The ecological mosaic that results among all such particular band home ranges in a given area prevents over-crowding and overgrazing.

Once available habitat is filled, the horse, as a climax species, limits its own population as density-dependent controls are triggered. In the immediate future, true wild-equid- containing sanctuaries need to be established. Here livestock should be excluded or at least greatly minimized and wild quids allowed to establish viable populations in the thousands of individuals (Duncan 1992). These fairly populated sanctuaries will be viable in the long-term and preserve the vigor of the horses they were designed to conserve.

Wild horses complement an ecosystem, or life community, in many direct and obvious as well as more subtle ways. This they do when permitted their natural freedom to move and interrelate over a sufficiently extensive intact habitat and time period.

Dietary benefits, buildings, dispersing viable seeds Equids possess a caecal, or post-gastric, digestive system. This enables them to take advantage of coarser, drier vegetation and, through symbiotic microbial activity, to break down cellulose cell walls to derive sufficient nutrients from the inner cell without overtaxing their metabolism. In drier regions, this can give quids a distinct advantage.

The horse's post-gastric digestive system does not emit as much gas as is the case with pre- gastric ruminant grazers, and permits them to greatly reduce dry, fire-prone vegetation over vast areas without overtaxing their metabolism. Thus, they help to prevent catastrophic fires that global warming, or more to the point, human civilization's pollution of the atmosphere, is causing.

By drying out vegetation and provoking catastrophic fires - in Australia, and much of the world - the catch-all "global climate change" threatens planetary life as v 12 it. This will especially be the case if gl unidid Cenfidic ocean currents stop circulating because of glacial and ice cap melting, etc. Wild equids can greatly help to save the day if allowed to play their own special role in reducing flammable vegetation, in building soils, in seed dispersal, in preventing catastrophic natural disasters.

Equid feces build the humus content of soils to a substantial degree. This humus allows soil to gain more texture and retain more water, which dampens out fires; humus promotes more productive and bio-diverse plant and animal communities. Because their feces are not as thoroughly degraded in the gut as those of ruminant grazers, they contribute more to food chains/webs, e.g., dung beetles to birds and lizards to higher trophic predators such as cats and eagles, etc.

Equine feces aid the watershed by creating damper conditions, because the soil particles to which they reduce (micelles) retain more moisture, i.e., more water adheres to the surface area of these particles. Hence ground water tables are replenished, feeding more seeps and springs more continuously. And upon these springs and seeps, many species of plants and animals depend. Some, LIQUOR benefit to an ecosystem, but fires thi LAND consume, over-extend, and over-inter X set the evolution of a terrestrial life community way back and result in a very

Equids' relationship to biodiversity

Equid species diversify and strengthen the community they inhabit in a variety of ways when allowed to achieve population stability over time and when not over-imposed upon by humanity. The process of natural selection must be allowed to operate sufficiently long for this to be the case. Then these equids can and do create a greater variety of environmental conditions that make possible a greater variety of niches that can be occupied by the species that are coevolving with them.

Being large, powerful animals, equids can push their way through thickets of brush to form trails. Specifically, they open thick vegetative understories to light and air, and the more diverse exposures resulting from equine activities create conditions intermediary to the extremes of wind, temperature, and various soil conditions.

This physically defines a greater variety of niches fillable by a more diverse array of species.

When allowed to integrate into wilderness, the individual life histories of wild equids come to reflect natural oscillations, such as annual seasons and more long-term cycles. This they do along with the plants and animals that share their habitat. They harmoniously blend over time.

As large animals that eat relatively large quantities and disperse their grazing and browsing activity over broad areas as semi-nomads, equids can become the harvesters and the renewers over vast ecosystems, true to their keystone role. Their cropping of vegetation, often dry and coarse, reduces the possibility for major, soil-sterilizing fires.

This cropping sparks vegetative renewal, the re-budding of new and tender shoots of greater nutritional value, especially to ruminants whose digestive and metabolic systems are over-taxed by the coarse, dry vegetation that quids can better handle. And thus the overall productivity of the land is annually increased, as studies prove (Fahnestock, JT and Detling, JK. 1999

This orchid species is listed as critically endangered due to its small population size of ~400 plants (it is assessed as a naturally rare species).

The whole population exists on less than 1 hectare at McPherson's Plain, outside of any conservation area including KNP. It primarily occurs on Forestry land.

The list of threats in order of significance include: • logging • changes in drainage patterns due to dam water storage • rooting by pigs • slashing of vegetation for fire control • competition from weeds • grazing from stray livestock • environmental and demographic stochasticity due to its small population size

This species does NOT occur in the national park & therefore cannot be included under the list of threatened species reported to be negatively impacted by brumbies within the Park. A pattern is emerging, which suggests the Invasive Species Council are looking for anything they can scrape up to pin blame on the brumbies!

The Guthega Skink is endemic to NSW and Victoria, where it is restricted to the sub-alpine and alpine zones (> 1,500 m a.s.l.). In NSW, the Guthega Skink has only been observed within Kosciuszko National Park extending from Ramshead Range in the south to Schlinks Pass in the north (NSW Wildlife Atlas 2016; Z. Atkins, unpublished data).

Areas preferred are usually associated with a substrate of granite boulders or sub-surface boulders hidden beneath decomposing granite soils or thick vegetation (Donnellan et al. 2002; Green and Osborne 2012).

This species constructs burrows in the soft soils beneath shrubs, rocks and logs (Green and Osborne 2012). Soil and snow cover provide important insulation from the winter cold (Donnellan et al. 2002).

As a result of its narrow altitudinal range and specific habitat requirements, the Guthega Skink has a limited capacity for dispersal (Atkins et al. 2015; Chapple 2003). Most sites occupied by the Guthega Skink are separated by distances that are thought to be beyond the dispersal ability of the species (> 300 m).

Brumbies & Mountain Pygmy Possums

This tiny possum is restricted to boulderfield habitat at elevations > 1500m (KNP). Mountain pygmy possums prefer to feed on Bogong moths which make up about a third of their diet. This moth species (*Agrotis infusa*) migrates to the high alpine mountainous regions during the spring and summer months.

During these months, mountain pygmy possums utilise Bogong moths as their principal food source. In the autumn months, Bogong moths depart from the mountain ranges and mountain pygmy possums must supplement their diets with fruits and seeds.

The preferred habitat of these pygmy possums is within deep boulderfields in alpine regions. The biggest threats to the mountain pygmy possum populations include habitat destruction and fragmentation, climate change, predation by feral cats and red foxes, and threats to their prime food source, the bogong moth.

The construction of ski resorts in the alpine regions in which the mountain pygmy possums inhabit has been one of the greatest factors attributed to population decline.

Climate change is another serious threat to the mountain pygmy possum. *Burramys parvus* is the only Australian mammal which is completely restricted to the alpine regions. The species is well adapted to the seasonal availability of Bogong moths and other food resources.[5]

Be sensible .. make the right decisions for the right reasons.

There must be a review and recount of existing numbers before any further action can take place ..

On behalf of humanity and on behalf of kindness and compassion not just apparent science and lack of common sense.. this is a National issue that requires a National outcome .. not state by state ..

First a recount and then a National round table with all relevant stakeholders to decide next steps