OUR AUSTRALIAN ALPS ARE CHANGING:
..... FOR THE WORSE

PART TWO

WILD HORSE IMPACTS TO OUR AUSTRALIAN MOUNTAIN ANIMALS
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For The Worse

Part Two: Wild Horse Impacts To Our Australian Mountain Animals

• This August 2015 report was prepared by Graeme L. Worboys and is available at www.mountains-wcpa.org

• The “Australian Alps are Changing .... Part Two: Impacts to our Australian Mountain Animals” statement is based on peer reviewed published literature, advice from many experts and the expertise, experience, active field research and observations of the author in the Australian Alps protected areas that spans a period of 42 years. The document is a private statement and responsibility for it rests with the author.

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Cover photo: The Mountain Pygmy Possum (Burramys parvus) in the hand of a zoologist/researcher, Australian Alps national parks. Source: Australian Alps Liaison Committee
THERE ARE JUST TOO MANY WILD HORSES IN THE AUSTRALIAN ALPS

THEY ARE DIRECTLY AND INDIRECTLY IMPACTING OUR AUSTRALIAN MOUNTAIN ANIMALS
INTRODUCTION

In 2015, invasive wild horses are impacting the National Heritage listed Australian Alps national parks right across their mainland mountain environments (Worboys et al, 2015). They are directly and indirectly impacting our endangered and other Australian mountain animals.

In Kosciuszko National Park (part of the Australian Alps national parks), the introduced wild horse population has increased by 30% in just 5 years from 4,200 (2009) to 6000 (2014) despite authorised control methods being in place. In 2015, this distribution has spilled over into the ACT from NSW and into the water supply catchments of Canberra. Current wild horse control actions in NSW and Victoria are inadequate, underfunded and inconsistent with Federal and State legal responsibilities to protect threatened Australian species. They are also inadequate for meeting the requirements of the Japan Australia Migratory Bird Agreement. Wild horse impacts to mountain native animals are getting worse as horse numbers grow.

In this Part Two of “Australian Alps Are Changing ... For the Worse” we highlight the potential for extinction of some threatened native Australian mountain animals caused directly and indirectly by invasive wild horse impacts.

“Part Two”:

- Emphasises just how small Australia’s only mainland subalpine and alpine area is relative to the rest of our continent. It is the equivalent of high mountain islands surrounded by “endless” lowlands. It means our native sub-alpine and alpine specialist animals need to survive in these “islands”. They have nowhere else to go.

- Introduces all of our mountain island (alpine and sub-alpine) native animals and identifies that some of these species are not found anywhere else on Earth. Eleven selected examples of native amphibian, bird, mammal, reptile and invertebrate species are then presented including their conservation status and the nature of wild horse impacts affecting them.

- Concludes by calling for the removal of wild horses from the Australian Alps national parks to help conserve our Australian mountain native animals and calls for any other additional actions needed to help prevent any native mountain species extinctions.
Australia

The average elevation of Australia is 330 metres. Few areas are higher than 600 metres.

The 1400 metre+ winter snow covered sub-alpine and alpine areas are tiny, being less than 0.3% of the continent.

The Australian Alps sub-alpine and alpine areas are rare high mountain “islands” in a flat continent.

For many Australian mountain species, it is the only home they have. There is no where else they can go.

1.69 million hectares of these mountain environments have been reserved in 11 contiguous protected areas. It is one of the few examples on the Australian continent where there is an adequate conservation representation of a major Australian environment type. Managed effectively, it is an opportunity to conserve this environment type.

HIGH MOUNTAIN “ISLAND” HABITATS

“(…) as time passes, we are losing the ecological fingerprint of the land before European colonisation – that benchmark has shifted, and we lose our connection to the natural state, and increasingly regard the transformed state as the familiar norm.” (Woinarski and Blakers 2015).
"HIGH MOUNTAIN ISLANDS"
The alpine and sub-alpine areas of the Australian Alps National Parks

White: National Heritage listed Australian Alps National Parks
Pink: Sub-alpine areas (1400-1850 metres)
Purple: Alpine areas (greater than 1850 metres)
Green: "The richest area for montane and sub-alpine mires in Australia (Hope 2012)"
Our mountain animals.... “Nature’s Gifts”

• Our rare native mountain animals are classic examples of Australia’s “nature’s gifts”

• They have been present in our mountains for millennia. They have been in Australia for hundreds of thousands of years and some, for millions of years. They are part of the fabric of our country.

• Our mountain native species can be rare, cryptic, beautiful, interesting, fascinating or all of the above. They are part of the discovery and rich stories that are truly Australian and what are special about our iconic Australian Alps.

Mammals

• A total of 42 mammal species are found within Kosciuszko National Park (KNP), with 21 of those species being found in the sub-alpine and alpine areas (Mansergh et al, 2004).

• Nine Kosciuszko mammals are threatened, with four of these species being found in the sub-alpine and alpine areas. One mammal, the Endangered Mountain Pygmy Possum, is only found (on Earth) in the Alps national parks.
Amphibians
• 15 frogs are found in Kosciuszko National Park, with 6 of them inhabiting the sub-alpine and alpine areas. Three of these high country species are threatened. Three are not found anywhere else on Earth (Mansergh et al, 2004).

Reptiles
• 41 reptiles are found in Kosciuszko National Park and 15 inhabit the sub-alpine and alpine areas (three of these are threatened).
• The diversity of reptiles above the snowline is internationally significant. Four species are not found anywhere else on Earth (Green and Osborne 2012).

Birds
• 197 birds are found in Kosciuszko National Park and 61 species are found in the high country in summer with 13 birds over-wintering in the sub-alpine and alpine areas.

Invertebrates
• Invertebrates of the sub-alpine and alpine are rich in numbers though low in diversity, with grasshoppers, ants, wasps and bees being important. Two Endangered freshwater crayfish are present and the alpine thermocolour grasshopper is one of the few insects that changes colour with temperature changes.

Rare, threatened and only found in our mountains
• The presence of these mountain animals are significant reasons why the Australian Alps have been protected as national parks and why they have achieved their prestigious National Heritage listing status.
WILD HORSES: THEIR MULTIPLE IMPACTS

- Transporting root fungus pathogens
- Transporting weed seeds, horse dung
- Creating tracks in dense bush
- Vegetation grazing impacts in drought times
- Trampling of streams causing stream erosion
- Trampling and opening up of valley and stream side vegetation
- Trampling and opening up of wetlands
- Trampling and opening up of sod-grassland tracks
- Compacting soils (and consequent drying out)
- Polluting water from horse dung and trampling
- Vegetation grazing impacts in drought times
- Trampling and opening up of wetlands

Sub-alpine and alpine environments

Wild Horse impacts

Thredbo River at Dead Horse Gap, Kosciuszko National Park. Source: Australian Alps Liaison Committee
WILD HORSES: INCREASING NUMBERS (despite authorised control methods)

A 30% increase in just 5 years (2009 – 2014)
WILD HORSES: RIGHT ACROSS THE AUSTRALIAN ALPS (2014)

(2014 mapped wild horse presence based on interviews with protected area staff)
Wild Horse impacts

Birds:
2 Migratory Birds

Amphibians:
1 Threatened Frog and 1 Rare Frog.

Reptiles:
2 Threatened Reptiles

Mammals
2 Threatened Mammals

Invertebrates:
2 Threatened Crays and 1 Common Insect

IMPACTS ON MOUNTAIN ANIMALS: 11 EXAMPLES
Background
• 94% of Australia’s frogs are not found anywhere else in the world
• 4 Australian frogs have become extinct since European settlement
• 4 frogs (of 5) above 1500 metres in Kosciuszko National Park are threatened (Mansergh et al, 2004)

EXAMPLE ONE: The Northern Corroboree Frog (Pseudophryne pengilleyi)
International status, IUCN Red List: Endangered
EPBC Act status: Critically Endangered
NSW status: Critically Endangered

• The vivid and attractive colours of the Northern Corroboree Frog ensures that it is one of Australia’s most famous frogs, though the only place it is found in the world is the Australian Alps above 1300 metres. The Corroboree Frog has been impacted by the chytrid fungus and the early drying of breeding pools. Breeding habitats include wet grassland, wet heath or sphagnum bog.

• Wild horses: The preferred grazing of wetland areas by heavy, invasive wild horses throughout the sub-alpine and alpine areas (Worboys et al, 2015) directly impacts the habitats of the corroboree frog through trampling, pugging, grazing and causing the incision of streams. Eroding streams result in a lowering of the water table and the drying of wetlands. The drying of peat in the former wetland increases a site’s vulnerability to fire.
Northern Corroboree Frog

*Pseudophryne pengilleyi*

- **White**: National Heritage listed Australian Alps National Parks
- **Orange**: 2014 recorded distribution of wild horses
- **Green**: Atlas of Living Australia records for Northern Corroboree Frog
EXAMPLE TWO: The Southern Toadlet (Pseudophryne dendyi)

• With distinctive, artistic abdomen markings, Dendy’s Toadlet (or the Southern Toadlet) is an attractive Australian frog. It is only found in south-eastern Australia and up to an altitude of 1700 metres. It has become rarer in the sub-alpine, and may also be affected by the chytrid fungus and the drying of wetlands. Breeding is in shallow seasonal pools in wet heaths or fens or other seepage areas.

• **Wild horses:** The preferred grazing of wetland areas by heavy, invasive wild horses throughout the sub-alpine areas (Worboys et al, 2015) directly impacts the habitats of the Southern Toadlet through trampling, pugging, grazing and causing the incision of streams. Eroding streams means a lowering of the water table, the drying of wetlands and the drying of peat in the former wetlands.
Dendy's Toadlet
*Pseudophryne dendyi*

**White:** National Heritage listed Australian Alps National Parks

**Orange:** 2014 recorded distribution of wild horses

**Green:** Atlas of Living Australia site records for Dendy's Toadlet
MOUNTAIN REPTILES

Background
- 93% of Australia’s reptiles are not found anywhere else on Earth.
- Kosciuszko National Park is renown internationally for the number of reptiles above the snowline (15) versus very few in other parts of the world (Mansergh et al, 2004).
- The recorded densities of some populations of these reptiles are the highest recorded anywhere in the world (Mansergh et al, 2004).
- Of the 3 skinks restricted to the alpine zone, 2 are Endangered.

EXAMPLE ONE: The Guthega Skink (*Liopholis guthega*)
EPBC Act Status: Endangered

These are large, secretive lizards that live in colonies in open woodland, tall and short heathland, and dry tussock grassland and it is associated with granite boulders and rock slabs. The Guthega Skink is confined to areas above 1600 metres and constructs elaborate tunnels in the soft granite soils. It has been recorded at 1940 metres and is one of Australia’s highest living lizards.

Wild Horse impacts: The impacts are indirect but expansive. Horse trails and vegetation compaction in the dry tussock grassland, heath and woodland habitats opens up the Guthega Skink habitat areas to easier fox and feral cat predation. The skink does not disperse far, so any horse impacts greatly assist foxes and cats.
Guthega Skink
*Liopholis guthega*

**White**: National Heritage listed Australian Alps National Parks
**Orange**: 2014 recorded distribution of wild horses
**Green**: Atlas of Living Australia records for the Guthega Skink
EXAMPLE TWO: The Alpine She-Oak Skink (*Cyclodomorphus praealtus*)
**EPBC Act Status:** Endangered  
**NSW:** Endangered

- Alpine She-Oak Skinks are uncommon and secretive lizards that live in open shrubland with a thick cover of tussock grassland. It is found in areas above 1500 metres and up to 2160 metres.

- **Wild Horse impacts:** The impacts are indirect. Horse trails and vegetation compaction in the dry tussock grassland and shrubland habitats opens up the Alpine She-Oak Skink habitat areas to easier fox and feral cat predation.
Alpine She-oak Skink
*Cyclodomorphus praealtus*

White: National Heritage listed Australian Alps National Parks
Orange: 2014 recorded distribution of wild horses
Green: Atlas of Living Australia records for the Alpine She-oak Skink
EXEMPLE ONE: The Mountain Pygmy Possum (*Burramys parvus*)
International Status, IUCN Red List: Critically Endangered
EPBC Act Status: Endangered

- On planet Earth, the Mountain Pygmy Possum is only found in the Australian Alps. It is the only Australian mammal confined to the Australian Alps and is a most ancient resident of the mountains with fossil evidence dating back to 30,000 years ago. It is the World’s only hibernating marsupial. It is impacted by habitat loss and predation by foxes and cats.

- **Wild Horses**: Indirect impact: The possum needs to move considerable distances at some times of the year and vegetation trampling and tracks created by horses in heathland and other habitats open up the dense protective bushland cover and compound a problem of cat and fox predation.
Mountain Pygmy-possum

*Burramys parvus*

White: National Heritage listed Australian Alps National Parks
Orange: 2014 recorded distribution of wild horses
Green: Atlas of Living Australia records for Mountain Pygmy-possum
EXAMPLE TWO: The Broad-Toothed Rat (*Mastacomys fuscus*)
NSW Status: Vulnerable

- This is a rare, good looking “old endemic” Australian animal that is much appreciated by those that have the opportunity to witness its rich furry coat and docile character. It is known from the fossil record to be in existence for at least 5 million years and has been in the mountains (as we know them today) for thousands of years, though its distribution has contracted in recent times (Green and Osborne 2012). Its habitats include alpine tussocky grasslands where there are numerous boulders and heath and woodland habitats, with thick cover. It has quite distinctive sub-snow runways.

- **Wild horses**: Direct and indirect impact: Population numbers have declined in areas where wild horse trampling and track formation have destroyed runways and opened up thick tussock grasslands for easy fox access.
SUMMER MOUNTAIN MIGRATORY BIRDS

Background
- 45% of Australian birds are not found anywhere else on Earth
- 22 birds have become extinct since European settlement
- The alpine and sub-alpine areas receive seasonal bird migrations that are dependent on healthy environments
- Mountain wetlands are visited in summer by the international migratory bird, Latham’s Snipe

EXAMPLE ONE: Latham’s Snipe (*Gallinago hardwickii*)

Victoria status: Vulnerable

- This relatively common species is an international migratory bird. It breeds in northern Japan and Russia and migrates to south-east Australia for our summer. Latham’s Snipe is the subject of the Japan-Australia Migratory Bird Agreement (JAMBA) where Governments have formally agreed to protect the habitats of this species. Its feeding habitats are shallow, fresh water wetlands and they feed in the mountain fens, bogs and wet grasslands.

- **Wild Horse impacts:** The trampling, pugging, grazing and consequent draining of wetlands by wild horses is directly impacting this international migratory species by destroying its Australian mountain destination habitats.
EXAMPLE TWO: The Australasian Pipit (*Anthus australis*)

- This relatively common species migrates from lower altitudes to the higher mountains each summer and occupies tall alpine herbfield and tussock grassland habitats. It nests at ground level amongst thick vegetation such as grass and candle heath. It is a bird that is commonly seen by visitors walking in the high country.

- **Wild horse impacts**: Keeping the common species common is an important conservation outcome for Australia. The common Australasian pipits have their nests in open tussocky grasslands and are highly susceptible to trampling by large heavy animals. These native species have a right to be undisturbed in their natural habitat. Disturbance also opens up their habitat for fox predation.
EXAMPLES ONE AND TWO: 
Freshwater Spiny Crayfish (*Euastacus rieki* ) and the Alpine Spiny Crayfish (*Euastacus crassus* )

IUCN Red List Status: Endangered (*Euastacus crassus* and *Euastacus rieki*) 
Victoria Status: Endangered (*Euastacus crassus*)

• The endangered alpine spiny crayfish (*Euastacus crassus*) is found in clear alpine and subalpine streams in the ACT, west of the Snowy Mountains and in Victoria. Habitat disturbance by heavy animals and predation by foxes are key threats.

• The endangered freshwater spiny crayfish (*Euastacus rieki*) is found from an area of only 322 Km2 and has a fragmented distribution. It is found in the ACT and Kosciuszko National Park near the summit (it is the highest altitude crayfish in Australia) and in the Kiandra and Yarrangobilly areas. It is an inhabitant of bogs. The freshwater spiny crayfish contributes importantly to the alpine wetland ecosystems. Their burrowing moves sand and gravel to the surface of the bog, their burrows are utilised by the alpine water skink (*Eulamprus kosciusko*).

Wild horse impacts: Wild horse trampling and destruction of bogs and wetlands, the destruction of stream banks, the horse facilitated stream erosion and the consequent drying of wetlands all directly impact the crayfish. Horse disturbance also facilitates fox predation access.

*Fox impacted freshwater crayfish (*Euastacus rieki*), Kosciuszko National Park. Source: Genevieve Wright*
Freshwater Crayfish
_Euastacus rieki_

**White:** National Heritage listed Australian Alps National Parks
**Orange:** 2014 recorded distribution of wild horses
**Green:** Atlas of Living Australia records for the Freshwater Crayfish
Alpine Spiny Crayfish
_Euastacus crassus_

White: National Heritage listed Australian Alps National Parks
Orange: 2014 recorded distribution of wild horses
Green: Atlas of Living Australia records for the Alpine Spiny Crayfish
EXAMPLE THREE: Swamp Tigertail Dragonfly (*Synthemis eustalacta*).

- This species is relatively common bog-dwelling dragonfly where it is dependent on creeks, wetlands and sphagnum bogs with reliable water for the nymph stage of its life cycle. Witnessing the to and fro darting of glistening dragonflies in the high country is a special part of experiencing the mountains, especially for young children.

- **Wild horse impacts:** The destruction of natural wetlands (as shown here) by trampling, pugging, causing stream erosion and the consequent lowering of the water table destroys the habitat of the dragonfly.
“Because of self-interest, disinterest or folly of previous generations, our generation will never see alive that marvellous of Australian animals, the thylacine; nor any other of the many Australian species that are now extinct. Our generation is the poorer for such loss. It will be our fault if we similarly diminish the natural legacy that we should bequeath to future generations”
Woinarsi and Blakers 2015

Continued direct and indirect impacts by wild horses on our Australian mountain native animals could ultimately contribute to the extinction of some mountain species.

The Thylacine (Thylacinus cynocephalus) of Tasmania ... or the Tasmanian Tiger, the largest living marsupial carnivore at the time of European settlement. It is now extinct. (Source: Web Commons)
CONCERN FOR POTENTIAL AUSTRALIAN MOUNTAIN SPECIES EXTINCTIONS

“The extinction rate of Australian species is unabated, with at least three endemic Australian animal species (two mammals and a lizard) becoming extinct since 2009”
(Woinarski and Blakers 2015)

Internationally
“Global species extinctions currently exceed the background extinction rate [the extinction rate evidenced by the geological record] by several orders of magnitude” (Evans et al, 2011)

Australia
[For threats to species in Australia] “We found that habitat loss is the greatest threat affecting extant threatened species in Australia (81% of species) (...). Introduced species were found to threaten a large proportion of Australia's threatened species (61%)” (Evans et al, 2011).

Australian alps national parks
“Horse and deer numbers have increased substantially in the Australian Alps over the past decade and removal of these feral animals needs to be made a high priority for national biodiversity conservation” (Williams et al, 2015).

“The chief threatening process for peat communities [and their associated animals] in the Australian Alps is physical damage by trampling leading to the loss of cover and alteration of local hydrology which leads to channelling of water flow through the bog. Trampling by feral horses is an increasing threat (...”). (McDougall and Walsh, 2007).

Kosciuszko National Park
“Thirteen taxa with populations in the park are listed as threatened (endangered and vulnerable) or near threatened by the IUCN (...)” (Mansergh et al, 2004)

“(...) the individual and combined grazing pressure of introduced species (...) is substantial. (...) Species such as horses that can persist at higher elevations(...) are of particular concern. From a nature conservation perspective, horses should be eliminated. Control measures that only ‘harvest’ the natural increase or less will not decrease the population” (Mansergh et al, 2004).

“Horse numbers have continued to rise (...). Populations are high in both southern and northern areas of Kosciuszko National Park, having been only slightly reduced by a costly program of trapping and removal. Until large grazers are removed, rehabilitation [of peatlands and their associated animals] is pointless” (Hope, 2012).
CONCLUSION

“We have introduced to Australia a Pandora’s Box of foreign plants, animals and diseases: many are now uncontrollable; many are themselves are capable of transforming our lands and waters, creating a hybrid of less special nature. Many of these introduced species now greatly outnumber and exert more ecological influence than native species”. (Woinarski and Blakers 2015)

- Non-native wild horses are directly and indirectly impacting the mountain habitats of native Australian animals creating a less-special nature.

- Many of the impacted Australian mountain animals are threatened and have special management intervention needs in order to prevent their potential extinction.

- Despite authorised control methods, wild horse numbers have grown by 30% in the past 5 years and they have spread across the entire Australian Alps landscape.

- There are far too many (non-native) wild horses causing impacts in the Australian Alps national parks. Most Australian mountain species need thick cover for their breeding and survival such as dense tussocky grassland, thick shrubland or dense bushland.

- Trampling and track blazing by wild horses are opening up these habitats and exposing Australian species to very efficient introduced killers: the feral cat and the fox.

- Wild horses are attracted to mountain bogs and wetlands for water and feed. The very large numbers of wild horses across the alps are destroying these precious wetland animal habitats.

- Wild horses directly and indirectly impact native Australian mountain animals species in the very national parks established to protect them and that urgent action is needed to remove these ecological change agents.
DISCUSSION

“We should have a moral obligation to live in this country in a manner that does not cause the extinction of other species. Our nature will be marginalised and continue to diminish if we do not explicitly accept responsibility for it” (Woinarski and Blakers, 2015)

PREVENTING NATIVE ANIMAL EXTINCTIONS IN THE AUSTRALIAN ALPS

• There is no need for any native Australian mountain animals to become extinct due to the direct and indirect impacts of wild horses.

• Removing the non-native wild horses from the National Heritage listed national parks in a humane manner is the responsible answer to this threat.

• It means statesman-like decisions from politicians that achieve the conservation of these native Australian mountain species. Such decisions would instruct park agencies to remove wild horses, to restore mountain habitats and to undertake other necessary actions needed to prevent extinctions of native mountain animal species. The decisions would be of intergenerational significance.

• The decisions would mean that park staff would be provided with adequate policy, financial and other support resources needed to be effective with this work.

• The decisions would be dignified and respectful to many people with a commitment to the 200 year cultural history of the wild horse in the mountains. The decisions could recognise off-park opportunities to recognise and maintain this history.
CALL TO ACTION

[The conservation reserve system] “(…) needs to be better resourced and managed. Many of Australia’s most important conservation reserves are failing to maintain their most valuable species.” (Woinarski and Blakers 2015).

“(…) successive governments have avoided their responsibility to protect threatened species habitat and have instead entrenched the process of extinction” (ACF 2015)

There is no need for any native Australia mountain animals to become extinct due to introduced horses, foxes or cats or other introduced animals.

It is possible, through active and adequately resourced management, to prevent any extinctions of our mountain native animals caused by these introduced animals.

This call to action seeks:

• An urgent decision by governments to act to remove the non-Australian wild horse from the National Heritage Listed Australian Alps national parks;

• The adequate empowerment and resourcing of park agencies to ensure the urgent and effective implementation of the government decisions;

• The adequate resourcing of park agencies needed to effectively undertake restoration work and other species protection works; and

• An assessment for how the 200 year cultural heritage history of the wild horse in the mountains can be best recognised off-park.
REFERENCES


