FRIENDS OF CURRANGO

Ian Dunn, President
Friends of Currango
227 Scotchmer Street
FITZROY NORTH Vic 3068

31st May, 2018

The Hon. Josh Frydenberg, MP
Minister for the Environment and Energy
Electoral Office
695 Burke Road
Camberwell, VIC, 3124

Dear Minister,

We are writing to you following the recent announcement by Mr John Barilaro that brumbies in the Kosciusko National Park (The Park) are to be recognised as protected.

Friends of Currango (FoC) is deeply concerned by this announcement. We now set out why we are concerned, and why we request that you should intervene.

Background

In 2015 The NSW government set up the Independent Technical Reference Group to examine whether there was a problem relating to feral horses in the Kosciusko National Park. FoC, like dozens of other bodies and individuals, made submissions. Our submission is attached (Attachment 1). It describes FoC, its history and purpose. It also sets out our involvement with Currango Homestead and surrounds over what then was 45 years. It demonstrates our knowledge of the area, particularly the area known as Currango Creek, which was previously an important tributary of the Murrumbidgee River, but which now flows into Tantangara Reservoir. Tantangara is a critical component of the Snowy 2 project.

Importantly, the submission has both maps and photos which clearly demonstrate the matters set out below, including photos of the headwaters of Currango Creek, before the damage caused by horses occurred.

The submission includes the following as a “snapshot” of horse numbers.

Up to the mid 1990s we might see a single small mob of horses over a week at Currango.

By contrast, on March 8, 2015, by our count there were around 150 horses milling around Currango Creek as we arrived at Currango. Of these, about a quarter to a third were juveniles. The site at which we encountered these horses was very close to the point where Currango Creek entered Tantangara Reservoir. That evening I decided to sit on the bank of Tantangara to observe a beautiful sunset. The entire bank – every square metre – was covered in a layer of old horse manure.

The following day four of us walked up towards the headwaters of this once beautiful Creek. As set out in the FoC submission, the swamp or wetland at the head of the Creek no longer exists. The banks of the Creek have been trodden down so that the Creek, instead of being 2m wide and often 1½ m deep, is now 4-5 m wide and only 10 cm deep.

That day, as we approached the headwaters and particularly the area which was previously swamp, we could see dozens of horses in and around the Creek. It was a warm day, in Autumn. It is these conditions which prompt horses to look for green feed and water. So, it is at this time that wetlands throughout The Park are vulnerable to horse invasion. It goes without saying that at every point, there was horse manure, some fresh, some old, in the water, on the banks and on adjoining ground.

This scene was repeated a month later when another party of walkers approached from the other direction. Lest it be thought that the horses have now moved on, they were again seen in droves, in this area in December 2017.

Whilst obviously the area around Currango attracts our highest attention, it is not the only wetland which is being severely damaged. Photos of the streams and wetlands at the head of the Murray show similar frightful degradation (Attachment 2).

The Findings of the Independent Technical Reference Group

The Reference Group (RG) released its findings in May 2016.

This report set out a great deal of detail as to damage caused by horses within the Park.

It concluded that numbers of horses had risen significantly, from a few hundred in the 80/90s, to several thousand by the time of the massive 2003 fires. Plainly, a lot of horses were killed in those fires. The RG estimated that after the fires there were about 2,000 horses. It estimated that by 2014 there were about 6,000. (Estimates by scientists and others are that this is a conservative figure). The RG calculated that, left untouched, numbers were increasing by 25-30 percent each year, hence they would double over 4 years.

This appears consistent with several earlier studies A detailed study in the Victorian Alps between 2003 and 2009, showed annual growth in numbers of 22% (3). A study in 2012 showed annual adult survival of 91%, juvenile survival of about 86%, with between 0.21 and 0.31 foals per adult female (3).

The RG noted that at that time the NPWS was taking steps to remove some horses. In the years leading up to 2014, up to 670 had been removed. After any

horses which were sought for rehoming had been selected, the remainder were removed to abattoirs and slaughtered. (4)

However in the past two years the number has reduced to about 140. Therefore, on any calculation, the number of horses must now be considerably higher than the 6,000 estimated, after aerial survey in 2014.

Actions Recommended by the Reference Group

The RG made many recommendations. The most important was that 90 percent of the horses should be removed, with 3,000 to be removed in the initial 5 years. It recommended retention of some 600 horses to be located in non sensitive areas. It specifically recommended protection from horses for the Currango Creek wetlands and other sensitive areas.

The RG did not recommend aerial shooting, but rather, the collection of horses for truck removal. As many as possible should be rehomed, but the others would be euthanised

The Response of the Australian Brumby Alliance

It is interesting to note the response of the Australian Brumby Alliance (ABA) to the RG report.

Whilst Australian Brumby Alliance challenged the accuracy of the 6,000 figure, it did not suggest an alternative figure. It acknowledged that there might be too many horses in certain areas but disputed that, in order to reduce numbers, horses had to be yarded and, in many cases, slaughtered. It claimed that a great many could be rehomed. As to the balance, it suggested that fertility control could be exercised.

In our view the ABA response indicated that that the Alliance was acknowledging that numbers had to be reduced, at least in certain areas.

The Response of the NSW Environment Minister

At that time, May 2016, Mr Mark Speakman was Minister for the Environment. He commented that:

> " . . . while wild horses would always be part of the cultural heritage of the KNP, current numbers were unsustainable and the horses were damaging the park's fragile and sub-alpine environment".

Rehoming of Horses

The horses hitherto removed from the Park have been made available to numerous organisations which claim that they can rehome wild horses. In fact the number which has been rehomed has never exceeded 140 per annum. The number is dropping, which is not surprising. There will be a finite number of people who can offer a home to a wild horse. Many who believe they can, have already done so. Another problem is that only certain categories of horses, notably young mares, fillies, and young males are attractive to rehomers. A very

high proportion of wild horses are entirely unattractive to someone contemplating offering a new home.

I should stress that FoC supports the rehoming of any horse which can be found a home outside the Park. But experience both in Australia and USA demonstrates that the number of wild horses which can be rehomed is far fewer than horse lovers believe to be possible.

Our belief is that if every possible horse is rehomed, in the absence of any other method for reducing numbers, there will still be a substantial increase in numbers each year. If, contrary to our view, there are only 6,000 feral horses in the Park at present, the number of births will be approximately 1,500-1,800 each season. No-one has ever suggested that a number such as this can be rehomed. Whilst, of course, there are deaths of, say, 500 each year, it is plain that the recent rapid growth in numbers will continue unless something is done to prevent this from happening.

Whilst dealing with numbers, it is important to stress that the wild horse cohort in the Park consists largely of young animals. Horses may live for thirty years or more, and mares may reproduce until well into their teens. But the huge proportion of Park horses have been born recently. Very few were born before the 2003 fires.

The Proposed NSW Legislation

Effectively, by the Bill it now proposes, the NSW government is proposing to hand over to a new Advisory Committee responsible for this issue. Note there is no place for any scientist or, perhaps more remarkably, anyone from the NPWS on the Advisory Committee. Just how the Advisory Committee is to discharge its responsibilities is not clear. But from the second reading speech a couple of matters are specified.

There is to be no culling of horses. Rehoming is emphasised, with an education and marketing campaign to be funded. There is reference to birth control measures being used. It is proposed that certain parts of the Park be designated as appropriate for horses.

Designated Areas

From the above it may be deduced that Deputy Premier Barilaro recognises that certain parts of the Park are more vulnerable than others. Perhaps it is intended to try to protect the wetlands whether at the head of Currango Creek, or for example, at the head of the Murray where the damage is equally bad.

But if horses are to be allowed in areas deemed suitable, those areas must contain wetlands otherwise the horses will perish for lack of water, any time from December to April. It might well be possible to confine them to higher areas in Winter and Spring when there is an abundance of both water and grass (5).

But unless it is intended that these wild horses are man-fed and watered at dry times of the year the "designated areas" idea cannot work.

Of course, if the Government proposed alternative areas outside the Park, to which horses could be transported and in which they could be allowed to graze – no doubt on the basis that the State provides fodder – then reductions in numbers would be possible. This is the option which has been adopted in USA, but the financial implications are very serious. Some 120,000 are now treated in this manner in designated grazing areas. The cost is over US$80m pa.

Controlling Numbers by Fertility Reduction Measures

When assessing fertility control, the following must be considered.

It cannot be carried out from on high, as some have suggested. The whole herd will have to be mustered into yards, which don't exist, or at least at close range of marksmen who can inject them using a gun designed for the purpose. If this is done, females can be identified and injected with a birth control hormone which lasts 15-18 months. The females are not rendered permanently sterile.

It will thus be seen that the costs of such a programme will be huge. It will require erection of yards, the rounding up of the herd, selection of, and injecting of females probably every two seasons. Furthermore CSIRO has recently examined this issue and reported that birth control is not effective in reducing numbers (6). It might be possible for an effective programme to be carried out if numbers were limited to a few hundred and within limited areas. But with the numbers as they now are, and having regard to the terrain with which we are dealing, with no vehicular access to the regions with highest density of horses, we submit that to rely upon fertility control measures to reduce numbers, is unrealistic. See, also, (7).

Conclusions – Likely Numbers

From the above it may be concluded that there will be no reduction in numbers. Indeed the Second Reading Speech suggests that such a reduction is not contemplated. Instead, the result, if the Bill is passed, is that numbers must increase. The Management Plan, followed by the NPWS since 2008, pursuant to which the NPWS has attempted to retain some control by removal of some number of horses, is to be abandoned.

NSW Threatened Species Scientific Committee

In May 2018 the above-mentioned Committee published a "Preliminary Determination" proposing that "habitat degradation and loss by feral hoses" be listed as a Key threatening process in Schedule 4 of the Biodiversity Conservation Act 2016 (NSW).

Submissions as to the Preliminary Determination are called for by 22 June 2018.

The Preliminary Recommendation is succinct, and is attached (8). We refer you particularly to paragraph 7 (dealing with habitat damage in streams and vegetation), paragraph 8 (effects upon slow-growing grasses, animals affected, etc) and 9 (effect of grazing horses upon a number of threatened or vulnerable species).

This Preliminary Determination could hardly be clearer or more definite in its assessment of the damage caused by feral horses. Whilst it is only "Preliminary", it is submitted that its narrative will not be changed, and that it may be relied upon.

Why you should intervene

As will be clear from the above, a continuation of the present situation is completely inconsistent with the Snowy 2 proposal. The quality of water presently entering Tantangara Reservoir is plainly badly affected by damage caused by horses. If the banks of Tantangara are to be covered by faecal matter public approval for the project must surely suffer.

But the consistency of water run-off will also be affected. Denuded wetlands do not hold their water. The swamp described earlier in this submission previously retained 10cm of water in the native grasses, in Autumn, let alone much greater depth at other times. Contrast this with the situation in March 2015 when we walked across the ground previously swampland, in ordinary boots without getting wet. Instead of the water coming in from various tiny creeks, spreading through the swamp and ultimately falling into Currango Creek, it is now collected in the wide "gutters" created by the horses and sent off downstream in its filthy condition immediately.

This means that at dry times the volume of run-off will be diminished. By contrast, at times of heavy rain, there will be a spate flood. At either time, the quality of the water emerging from KNP must be diminished. The last of the 2015 photos (Attachment 1) showing water from Currango Creek flowing into Tantangara demonstrates this quite remarkably. Note also the build-up of horse manure on the bank of Tantangara Reservoir to which we have referred previously.

The Environmental Protection and Diversity Conservation (EPBC) Act

This Act confers powers upon you as Minister. The damage caused by horses is affecting numerous threatened species. One might refer to the Eastern Bush Rat or various skinks (eg, the alpine water skink). We see no point in listing the danger to various threatened or vulnerable species, which of themselves, invoke your jurisdiction.

But one other glaring example may be illustrative.

Pursuant to the Act your Department has published (2015) the National Recovery Plan for the Alpine Sphagnum Bogs and Associated Fens (9).

At para 4.5 (page 18) under the heading “Feral Horses” it is stated –

> In alpine, subalpine, and montane areas of the Australian mainland, along with domestic stock, feral horses are the largest animals to impact on the ecological community, and represent a threat that requires complex management strategies (O’Brien and Wren, 2002).

> Feral horse populations in NSW and Victoria have been increasing at a rate that has outpaced active management. The number of feral horses in the Australian Alps national parks increased by approximately 20 per cent annually between 2003 and 2009 from an estimated 2,500 to 7,600 (Dawson, 2009). Worboys and Pulsford (2013) observed the direct impacts of a 'very large number of horses' and considered the damage to be comparable to the worst historic domestic grazing pressures that triggered the removal of stock from Kosciuszko National Park in the 1940s. Preliminary numbers from the latest aerial count of feral horses in April and May 2014 found that horse numbers increased in Kosciuszko National Park to 6,000 horses, an almost 50% increase since the last count in 2009 of 4,200 horse (AALC).

The photos accompanying this Paragraph from the Plan show denuded ground absolutely similar to that in Currango Creek or the wetlands at the head of the Murray. Sphagnum moss was a great feature of the terrain at the head of Currango Creek. Much of it now has ceased to exist. Small remnant parts struggle to hang on despite the constant degradation caused by hard hoofs.

The NSW Bill makes no reference to this issue. The passage of the Bill in its present form is utterly inconsistent with the objectives set out in the Plan.

Many other examples of threatened or vulnerable species are listed in the Preliminary Determination by the NSW Threatened Species Scientific Committee referred to above.

Actions you might take

In our submission it is desirable that the passage of the NSW Bill be stayed. Passage of the Bill followed by later intervention may be unfortunate. If you determined to conduct your own investigation as to the matters we have referred to, some "breathing space" would be available.

Apart from the matters which give rise to our primary concerns, there is also the matter of the welfare of the horses. We have referred to the 2014 paper demonstrating dead and dying horses with starving horses in the snow eating their own. How will the community react to the spectre of an increased number of starving horses?

We are grateful for your consideration of these issues . If we can supply any further information we shall of course do so.

(Professor) Ian Dunn
President,
Friends of Currango

References

1. Friends of Currango (April 2015) Submission to Independent Technical Reference Group – *Wild Horse Damage around Currango Homestead*
2. Worboys, G.L. and Pulsford, I. (2013) *Observations of Pest Horse Impacts in the Australian Alps*, Canberra (www.mountains-wcpa.org)
3. NERP (National Environmental Research Program) (2014) *Wild horses in the Australian Alps – using satellite date to monitor impact: Information sheet* (www.lifeatlarge.edu.au/__data/assets/pdf_file/0010/622819/Wild-Horse-Detection-Summary.pdf).
4. ITRG (2016) *Final report of the Independent Technical Reference Group: Supplementary to the Kosciuszko National Park Wild Horse Management Plan*, report by the Independent Technical Reference Group to the Office of Environment and Heritage NSW, Sydney.
5. But, see: Driscoll, D., Banks, S. (September 23, 2014) *The grim story of the Snowy Mountains' cannibal horses.* The Conversation https://theconversation.com/the-grim-story-of-the-snowy-mountains-cannibal-horses-31691
6. Hobbs Rebecca J., Hinds Lyn A. (2018) *Could current fertility control methods be effective for landscape-scale management of populations of wild horses* (Equus caballus) *in Australia*?. Wildlife Research , -.; https://doi.org/10.1071/WR17136
7. Harvey, A., Joone, C., Hampton, J. (May 28, 2018) *Hold your horses – brumby fertility control isn't that easy.* The Conversation https://theconversation.com/hold-your-horses-brumby-fertility-control-isnt-that-easy-97313
8. NSW Threatened Species Scientific Committee (2018) *Preliminary Determination – Habitat degradation and loss by Feral Horses, Equus caballus*
9. Department of the Environment (2015) *National recovery plan for the Alpine Sphagnum Bogs and Associated Fens ecological community.* Department of the Environment, Canberra.

ATTACHMENT 1

Submission to:	Dr Mark Lonsdale Independent Chair Independent Technical Reference Group
Re:	Wild Horse Damage around Currango Homestead
Made by:	Friends of Currango Inc. (FoC)
Date:	13 April 2015

Background – Currango.

The name Currango is associated with:
- the former sheep and cattle station established in the mid 1800s in the north east corner of what is now the Kosciusko National Park; and
- the station homestead building complex now managed by the NSW National Parks and Wildlife Service.

The relevant map for the area is 8626-4S Rules Point, 1:25,000. From this it can be seen that what is now locally referred to as Currango Creek, is in fact Gurrangorambla Creek down to its confluence with Mosquito Creek, then Mosquito Creek down to its confluence with the Murrumbidgee River in Tantangara Reservoir.

The Currango Homestead precinct is located to the east and south of Currango Creek and its surrounding plain, and now consists of around eighteen late 19th and early 20th century timber buildings.

Friends of Currango Inc. (FoC)

FoC is an association incorporated under the Victorian Associations Incorporation Act 1981, formed in May 1990. FoC took over from an earlier informal group established in 1976, called the “Currango Club”.

The Currango Club was formed initially to support the long-term caretakers Tom and Mollie Taylor in their management of Currango. After Tom and Mollie’s retirement in the late 1980s and our incorporation as FoC, we worked with the NPWS in the maintenance and restoration of the Currango buildings.

Physical involvement in maintenance activity ceased in 2005 due to insurance and OH&S concerns. Since that time FoC has continued its involvement in the management of Currango under the terms of a Memorandum of Understanding with the NPWS. In the early 2000s we had substantial involvement in the development of the Conservation & Management Plan under which Currango is now managed.

The present office bearers in FoC have been visiting Currango since 1970. Most have attended Currango at least once, and some of us up to four times per year. All of us are able to testify to the matters referred to below.

We have been familiar with Currango Creek and its valley ever since we commenced visiting in the early 1970s. The Creek is shown on the map as originating in wetlands. The wetlands have previously been best described as swamp, and this is the description we now use.

In short, the swamp has previously contained rushes with a coverage of water usually knee deep even in summer and autumn. Water has gently moved through the swamp and has cascaded into Currango Creek before making its way to the south and west to join the backed up waters of Tantangara Dam.

The prevailing condition the swamps 20 to 30 years ago is clearly shown in attached photographs numbers 1 to 3. In photo 2, the height of the grass is clearly evident in relation to the remnant fence line. The fence line is also evident in photo 3, but harder to detect as it is further away.

Horses on Currango Plain

When we first commenced visiting the creek and valley, while frequently seeing numerous wild dogs and pigs, we rarely saw horses. In a visit of a week, we would have counted ourselves lucky to see a single horse, let alone a mob. When we did encounter them, they were always a considerable distance away, and immediately upon seeing us would bolt. We are agreed that this was the situation up until the mid 1990s.

Since then the situation has changed completely. Last year we wrote to the NPWS pointing out the explosion of numbers, and a copy of that letter is annexed. It sets out our considered view as to the increase in numbers.

Recently we have been able to carry out closer inspections of the creek and valley. On Sunday 8 March a group of four members walked up Currango Creek from the causeway on the Port Philip track.

We found that the water in the lower reaches appeared to be clear enough. However, an aerial photo (Google Maps) that we now supply shows the entry of water from Currango Creek into Tantangara, and it can be seen that the inflowing water is discoloured. This was not previously the case. A rising Tantangara Reservoir usually inundates this lower part of the creek above and below the Port Phillip Fire Track causeway for a few weeks each year.

As we got closer to the previous site of the swamp we could see many mobs of horses. As we approached, many of the mobs of horses galloped up a hill to the east, while others went to the west towards Old Currango.

At this point there was an overwhelming change in the creek, its bed and surrounds. Whereas, downstream the creek banks, although damaged, are still well defined, from here on upstream, the banks are significantly trodden down. This is evident in attached photos 4 to 8.

Instead of a well-defined creek (as in photos 2 and 3) flowing through banks pocked with holes left by platypus and yabbies, the water, now a milky grey colour, sits in a wide and shallow cavity. There is no longer any obvious vegetation either nearby or in the water, and much of the creek bed has been hollowed out, and is now showing the bedrock

A couple of small tributaries to the creek were unrecognizable from twenty years ago. Their banks could no longer be discerned. It was a dry day, and

instead of green banks surrounding the small creeks there was simply dust, with an ooze of water creating mud.

The lower swamp no longer consists of wetland. One can now walk across it on vegetation 3 to 4 cm high, with no prospect of getting one's feet wet. At all points in this region, including what used to be the swamp, the creek surrounds were covered in horse manure.

In late March, another four of our members conducted a further investigation. They entered the creek where it is tiny, at the bridge on Pockets Saddle Road, and then walked downstream. They found similar conditions to those referred to above. The banks of the creek have been destroyed and there is no wetland where previously water was 20cm deep across the swamp. See photos 10 to 14.

Thus, to our observation the entire wetlands surrounding Gurrangorambla Creek from the Pockets Saddle Road down to Mosquito Creek, and Mosquito Creek down to Tantangara Reservoir appear to have been destroyed. In many places the principal bed of the creek is now abandoned. On the west side of what used to be the swamp is an eroded watercourse many metres wide, with no vegetation whatsoever.

Whereas the stream and adjoining swamp, as shown in photos 1 to 3, were permanent features of the landscape as recently as approximately ten years ago, these features have now completely disappeared.

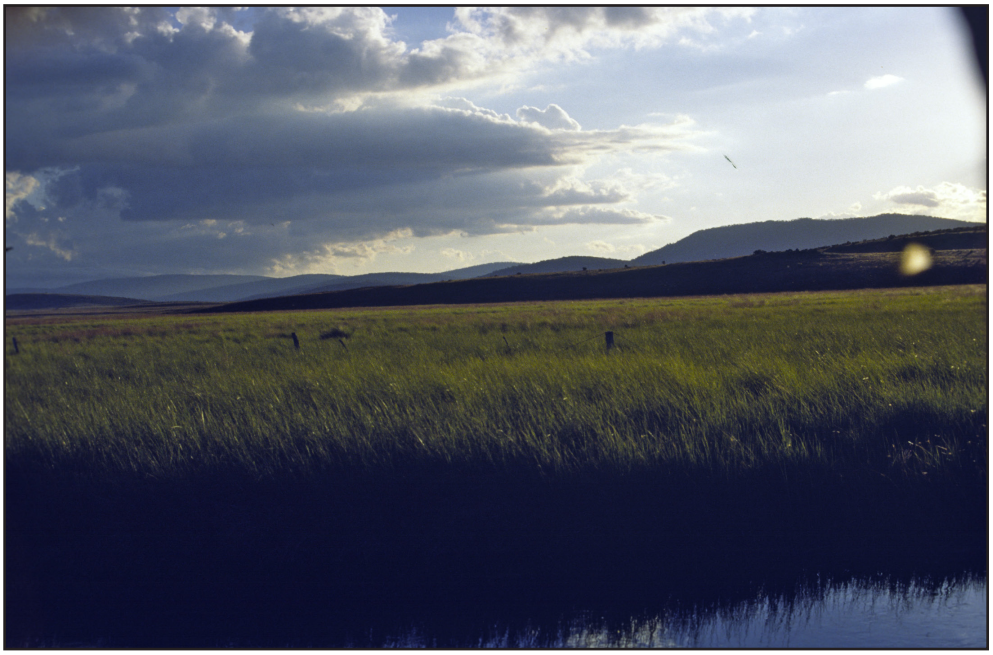
All of this has occurred in a very short time. And what is still more alarming is that, of the 150 horses sighted on March 8, about one third were juveniles. We understand that In the nearby area known as Long Plain, there has been a recent roundup and removal of some hundreds of horses. In our view such action is desperately needed in the Currango valley.

We hope this is of assistance to you.

Should you require any further information please contact either:
• Ian Dunn on 0401 107 092, and <iandunn227@gmail.com> or
• Kim Jelbart on 0427 826 820, and <kjelbart@erasystems.com.au>

Ian Dunn
President
Friends of Currango Inc.
13 April 2015

1



2

3

Photos of the swamp from about thirty years ago. The fence line in Photos 2 and 3 gives an idea of the height of the vegetation, the base of which sat in about a foot of water. The foreground of Photos 2 and 3 demonstrates the presence of a clean, significant, well-defined stream

4

5

6

6

Walking north along Currango Creek, from about 1km above the Causeway

March 2015

(1)

7

8

Walking north along Currango Creek, from about 1km above the Causeway

March 2015

(2)

Walking south from the Confluence of Currango Creek and Gurrangorambla Creek

March 2015

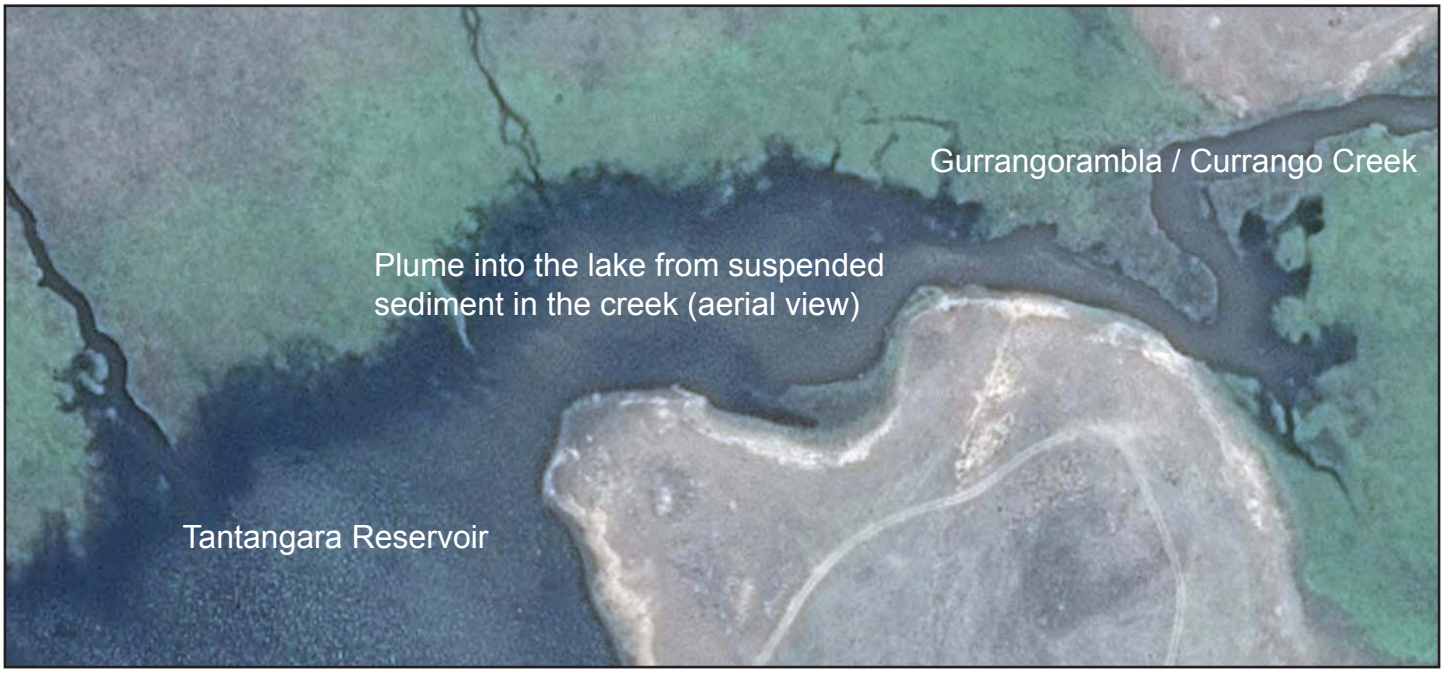
9

10

Dry and denuded swamp

11

Aerial View of Gurrangorambla / Currango Creek Entry to Tantangara
(from GoogleEarth, 29/1/14)



Annex – Email to NPWS of September, 2014

From: Ian Dunn [mailto:iandunn227@icloud.com]
Sent: Thursday, 25 September 2014 6:20 PM
To: Bowden Megan
Subject: Horses in the Kosciusko National Park

Horses in the Kosciusko National Park

Dear Megan

We have been invited to take part in an Internet forum on this subject. F.OC does not wish to do so having regard to the vitriol on the part of some contributors.

We have previously written at length to you on this subject. Our view is that you (The NPWS) have more information than any other potential contributor to the debate. We note, for example, that some have claimed there are no more horses in the Park than previously. Such a claim is nonsense.

We reiterate, that, based upon information supplied by 4 or 5 committee members who have visited the Park every year since 1970, we can report that numbers of horses in the northern part of the Park near Currango, have escalated extraordinarily. From perhaps in, say 1980 ,one sighting of a dozen horses during a week's visit, most recently in a single day we saw perhaps 200 horses, a considerable proportion of which were juvenile. Furthermore, whereas when originally we sighted horses, they were at a distance and immediately galloped away, most recently they have lounged around tracks, enabling a vehicle to drive through them.

We reiterate that Currango Creek is now a muddy smelly mess quite unsuitable for fishing, picnicking or other pleasurable activity, and similarly other smaller creeks have been trampled down. Horse manure is everywhere and during hotter months in particular it contributes to a quite unpleasant scenario.

The effect upon the sphagnum moss bogs has been horrible. They have been trodden into muddy swamps.

This email is being sent prior to any visits in Spring of 2014 and therefore without knowledge as to whether the winter just passed has lead to horse mortality. Based on the numbers seen in the Autumn it would seem quite likely that not all would survive. Whilst horses are feral , nevertheless it is a disaster if feed is insufficient to sustain them. At the same time it must be said that we have known at least 2 winters which have resulted in mass deaths of kangaroos. It is inevitable that the infestation of horses must have severely reduced the amount of feed for 'roos

Without doubt, visitation to Currango by FOC members and our wider community, has reduced as a result of the matters referred to above.

We believe that you know the extent of the problem and what the most appropriate solution is. We beg you not to delay implementing that solution.

With our best wishes

Ian Dunn
President
Friends of Currango

ATTACHMENT 2

Observations of Pest Horse Impacts in the Australian Alps, March 2013

Graeme L. Worboys and Ian Pulsford

This report has been prepared by Graeme L. Worboys and Ian Pulsford and is available at: www.mountains-wcpa.org

Important notice:
This "Observations" Report is produced for general information and is a record of personal observations made by the authors for the Mt Pilot area of Kosciuszko National Park in 2013. It has been prepared within the context of the authors participating in inspections of this area over a period of 40 years from 1973 to 2013. Responsibility for the report contents rests with the authors.

Citation: Worboys, G.L. and Pulsford, I. (2013) *Observations of Pest Horse Impacts in the Australian Alps*, Canberra, Available at: www.mountains-wcpa.org

Cover photo:

Photo of a Cowombat Flat pest horse exclusion plot established in 1999, Alpine National Park Victoria showing a 14 year ungrazed area within the exclusion area (photo-left) and all other areas accessible to pest horse grazing, pugging and disturbance to native vegetation (Source: Graeme L. Worboys).

2013 Observations of Pest Horse Impacts in the Australian Alps

[Observations arising from an inspection of the Big Boggy River, Cascade Creek, Ingegoodbee River and Murray River headwater catchments, Kosciuszko National Park, 22 and 23 March 2013.]

Dr Graeme L. Worboys, Adjunct Fellow, Australian National University;
Protected Area Management Specialist and former Senior Protected Area Manager
Email: g.worboys@bigpond.com

Ian Pulsford, MSc. Environment, Protected Area and Linking Landscapes Specialist and former Senior Protected Area Manager
Email: ianpulsford@homemail.com.au
18 May 2013

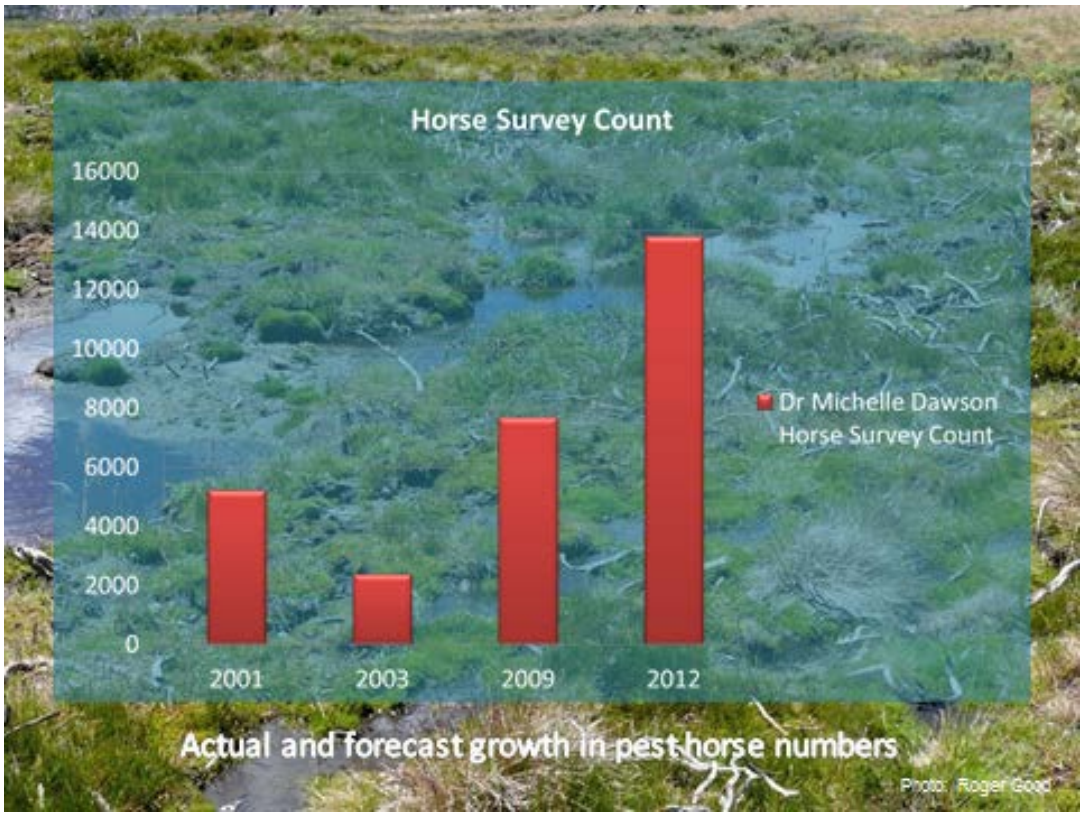
Introduction

Observations on the 22 and 23 March 2013 identified unprecedented, pervasive and destructive pest horse impacts for over 43 kilometres of the highest headwater catchments of the Murray and Snowy Rivers south of Thredbo. These impacts were the worst ever observed in 40 years of personal inspections of the Dead Horse Gap to Tin Mines section of the Pilot Wilderness of Kosciuszko National Park (KNP) in New South Wales (NSW) and Cowombat Flat area of the Victorian Alpine National Park. Both of these parks form part of the Australian Alps national parks.

Horses are a non-native species in the Australian Alps parks. They are wild populations that are often referred to as wild horses, brumbies, feral horses and pest horses. Michelle Dawson (2005) notes that horses were first introduced into Australia in 1788 and with many escapes and the establishment of wild population that were regarded as a feral pest in the 1860's. Eric Rolls states in his landmark book "They All Ran Wild" (1969) that "Between the late 1860's and 1890's horses were a major nuisance in NSW and Victoria – *a very weed among animals…the squatters shoot him off in organised battues to prevent the lawless depredations upon unfenced sheep walks*". In the Australian Alps, some graziers regularly shot and eradicated these pests while others actually released horses into new areas (Dawson 2005). We use the description pest horse here given they are a highly damaging introduced animal in some of Australia's most iconic and important mountain national parks.

The Mount Pilot area as part of Kosciuszko National Park was reserved in 1944 and during our patrols of this area in the 1970's and early 1980's we witnessed pest horses and horse impacts, but the impacts were not nearly as bad as those we observed in March 2013. These were the worst we had ever seen. Researchers have identified a rapid growth in the number of horses in recent years and this helps establish why such observations were made. In 1990, researcher Jenny Dyring estimated there were several hundred horses in south Kosciuszko (which includes the Big Boggy River, Cascades Creek, the Ingegoodbee River and Cowombat Flat) and 11 years later, researcher Michelle Dawson conducted an aerial survey

(2001) that estimated the horse population to be three times that number with densities in the Big Boggy of about 2 horses per square kilometre and Cowombat populations stable to be 6.4 per square kilometre (Dawson 2005). She also estimated horse numbers to be about 5200 horses for all aerial surveyed areas in the Australian Alps national parks. This population count was completed immediately prior to the 2003 Australian Alps fires. A post fire 2003 aerial survey found horses to be impacted by the event and the population was estimated to be about 2369. A 2009 aerial survey found the population to be about 7679 and this represented an annual increase of 21% per annum from 2003 (Dawson 2009a). This was despite live capture and removal action by park agencies. Michelle Dawson (2009) also forecast a pest horse population of 13,800 by 2012 (Figure 1).



(Figure 1) Pest horse population estimates and forecast growth (After Michelle Dawson 2009a).

In 2013, we observed the direct impacts of a very large number of horses. We believe this damage to be as bad as the worst historic grazing impacts to the high mountain catchments that triggered the 1940's removal of stock grazing from Kosciuszko National Park. The Mt Pilot area was still recovering from these grazing era impacts and it is being impacted yet again. Our observations of these horse impacts are illustrated and are briefly described by this report.

IMPACTS OBSERVED

Pest horse impacts observed included grazing, trampling, dust baths, soil compaction, soil erosion, pugging, stream bank destruction, stream course disturbance and incision and sphagnum bog and wetland destruction. The impacts were along the entire length of the

headwater streams of the Mount Pilot area (part of the Great Dividing Range) and for at least 43.5 kilometres of these streams. Impacts were directly observed on this inspection:

1) for two kilometres of the 9.5 kilometres of the Big Boggy River upstream of the Alpine Way (Snowy River Catchment);

2) for about a kilometre of the six kilometres of the upper Cascades Creek (Murray River Catchment);

3) for about 8 kilometres of the 27 kilometres of the Ingeegoodbee River headwaters in NSW (part of the Snowy River catchment); and

4) for about a kilometre of the very headwaters of the Upper Murray River at Cowombat Flat.

Vegetation destruction

The excessive numbers of pest horses were observed to be directly destroying sub-alpine native vegetation and this was best illustrated in 2013 at pest horse exclosure plots established at Cowombat Flat in 1999. These Victorian Cowombat Flat exclosure plots are 14 years old and are located about 100 metres from the unfenced NSW (and Kosciuszko National Park) border. The plots were established to assess the impact of pest horses on streams and vegetation. The impacts were visually very clear. However researchers Thiele and Prober (2007) confirmed that the horse grazing, trampling, and pugging resulted in bare ground in the stream channel and stream banks in the unfenced areas and prominent vegetation regeneration and diffuse stream flow occurred in the exclosure plots. In addition, it is known that pest horses have a preference for valley bottoms, wetlands, alpine bogs, peatlands and stream side areas (Dawson 2009b) and this means that the integrity of the important mountain catchment habitats were selectively impacted.

Horse impacted vegetation surrounding a 1999 exclosure plot with its protected vegetation, Cowombat Flat, Victorian Alpine National Park, near the NSW border, 23 March 2013 (Source: Graeme L. Worboys).

1999 exclosure plot fence with protected (left) and unprotected vegetation, Cowombat Flat, Victorian Alpine National Park, 23 March 2013 (Source: Graeme L. Worboys).

Creek (flowing from right to left) bank impacted by horses as it emerges onto Cowombat Flat from dense re-generated wetland habitat within a 1999 exclusion plot (Source: Ian Pulsford).

Pest horses grazing in wet heath habitats, Ingeegoodbee River near Tin Mines Hut, 23 March 2013, Kosciuszko National Park, (Source: Graeme L. Worboys).

Grazing impacts on vegetation have noticeably increased in 2013 from observations made on patrols in the 1970's and 1980's.

Grazing and trampling of sphagnum and wetland species (an Endangered Ecological Community), Tin Mines Track between Cascades Hut and Tin Mines Hut, Kosciuszko National Park 22 March 2013 (Source: Graeme L. Worboys).

Stream bank destruction

Based on our observations, it is estimated that more than 43 kilometres of stream bank impacts including vegetation destruction and stream bank collapse have occurred.

Horse trampling impacts to stream banks and stream bank collapse, headwaters of the Ingeegoodbee River near Tin Mines Hut, Kosciuszko National Park, 22 March 2013 (Source: Graeme L. Worboys).

Horse trampling impacts to stream banks and stream bank collapse, headwaters of the Ingeegoodbee River near Tin Mines Hut, Kosciuszko National Park, 23 March 2013 (Source: Graeme L. Worboys).

Flat compacted and altered vegetation combined with stream bank trampling and grazing impacts by horses, headwaters of the Ingeegoodbee River between Tin Mines Hut and Freebody's Hut, Kosciuszko National Park, 23 March 2013 (Source: Graeme L. Worboys).

Former sub-alpine riparian bog trampled and transformed into a large mud pan by horses in the upper headwaters of the Ingeegoodbee River, 23 March 2013 (Source: Ian Pulsford).

Horse use of a crossing of the Big Boggy River, headwaters of the Thredbo River and a tributary of the Snowy River, Kosciuszko National Park, 22 March, 2013 (Source: Graeme L. Worboys).

Natural stream banks in subalpine streams are typically vegetation rich, stable with no organic soil showing and they are not eroding. These environments, in an undisturbed state, host a range of Australian native species, some of which are restricted to these subalpine and alpine environments.

Pest horse impacts at the very headwaters of the Murray River, Cowombat Flat, Victoria, upstream of the exclusion plots, Victoria Alpine National Park, (and 100 metres from the NSW and Kosciuszko National Park border) 23 March 2013 (Source: Graeme L. Worboys).

Interior of a small pest horse grazing and trampling exclusion plot that has been free of pest horse impacts for 14 years; headwaters of the Murray River, Cowombat Flat, Victoria, Victorian Alpine National Park (100 metres from the NSW and Kosciuszko National Park border) 23 March 2013 (Source: Graeme L. Worboys).

Wetland pugging

Wetlands are one favoured environment of the pest horses. These sub-alpine environments are listed as *Endangered Ecological Communities* under the *EPBC (1999)* Act.

Trampling impacts to a sub-alpine bog near Tin Mines Hut, Kosciuszko National Park, 23 March 2013 (Source: Graeme L. Worboys).

Trampling impacts to a former wet heath and sub-alpine bog between Cascades Hut and Tin Mines Hut, Kosciuszko National Park, 22 March 2013 (Source: Graeme L. Worboys).

Trampling impacts to a wetland area at Tin Mines Hut, Kosciuszko National Park, 23 March 2013 with remnant soil pedestal (Source: Ian Pulsford).

Trampling impacts to a wetland area between Tin Mines Hut and Mt Pilot, Kosciuszko National Park, 23 March 2013 (Source: Graeme L. Worboys).

Dec 1986: Original photo of Ingeegoodbee River wetlands at a time of lower pest horse population numbers; Ingeegoodbee River Flats, Kosciuszko National Park south of Freebody's Hut, (Source: Di Thompson).

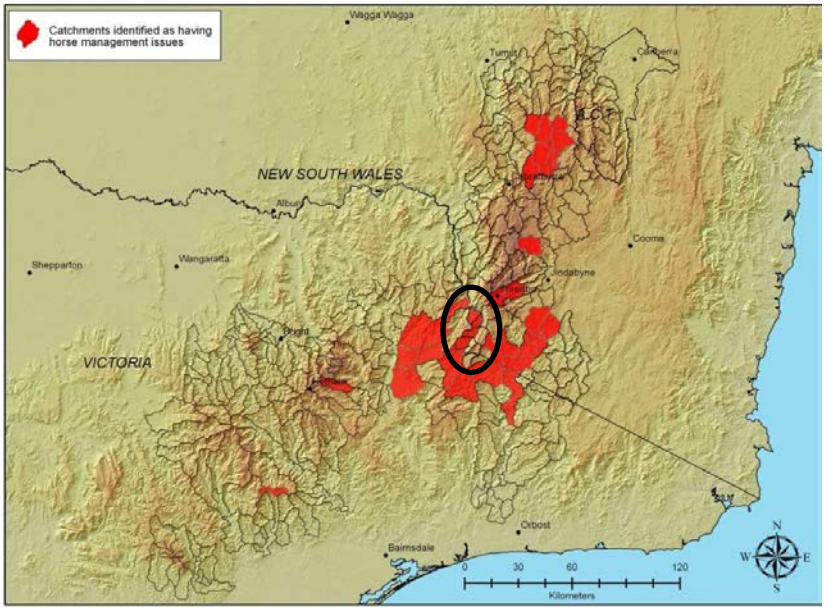
March 2013: Comparative photo taken 27 years later of pest horse damage Ingeegoodbee River Flat wetlands, Kosciuszko National Park, south of Freebody's Hut (Source: Graeme L. Worboys).

Dust bath impacts

Dust baths are used by the pest horses to roll in as part of their cleansing and are a ubiquitous feature of these disturbed landscapes.

Horse dust bath, Cowombat Flat, Victoria, 100 metres south and east of the NSW border (Source: Graeme L. Worboys).

Observations: Catchments with pest horse problems



In 2010, a Technical Report on the condition and trend in condition of all of the Australian Alps catchments mapped the distribution of identified pest horse threats in red (Worboys and Good, 2010). Observations made during the 2013 inspection indicate that the pest horse problems have expanded beyond the 2010 mapped areas.

Observations: Catchment change in condition

The streams and rivers observed are within Australia's highest catchments; they are found along the continental divide and they are in protected areas. This is where Australia's water should be at its purest and the catchments should be in their best condition. The condition of the observed catchments (circled) was assessed in 2010 and it was found that they were mostly in a moderate condition (Figure 2) but declining (Figure 3). The same catchments observed in March 2013 were estimated to be in a poorer condition than assessed in 2010 and were observed to be in a state of further decline.

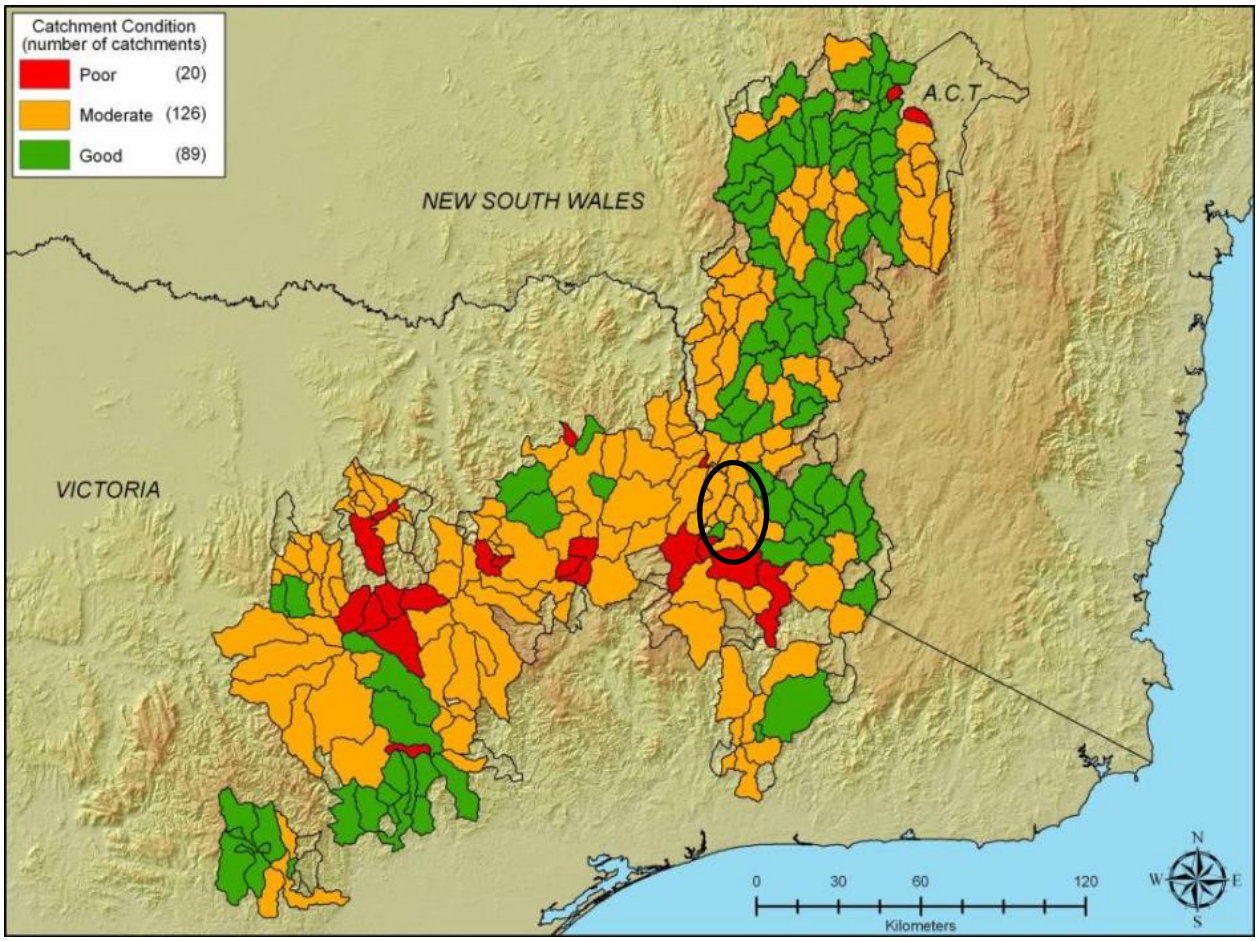


Figure 2. Condition of the Australian Alps Catchments (Worboys and Good, 2010).

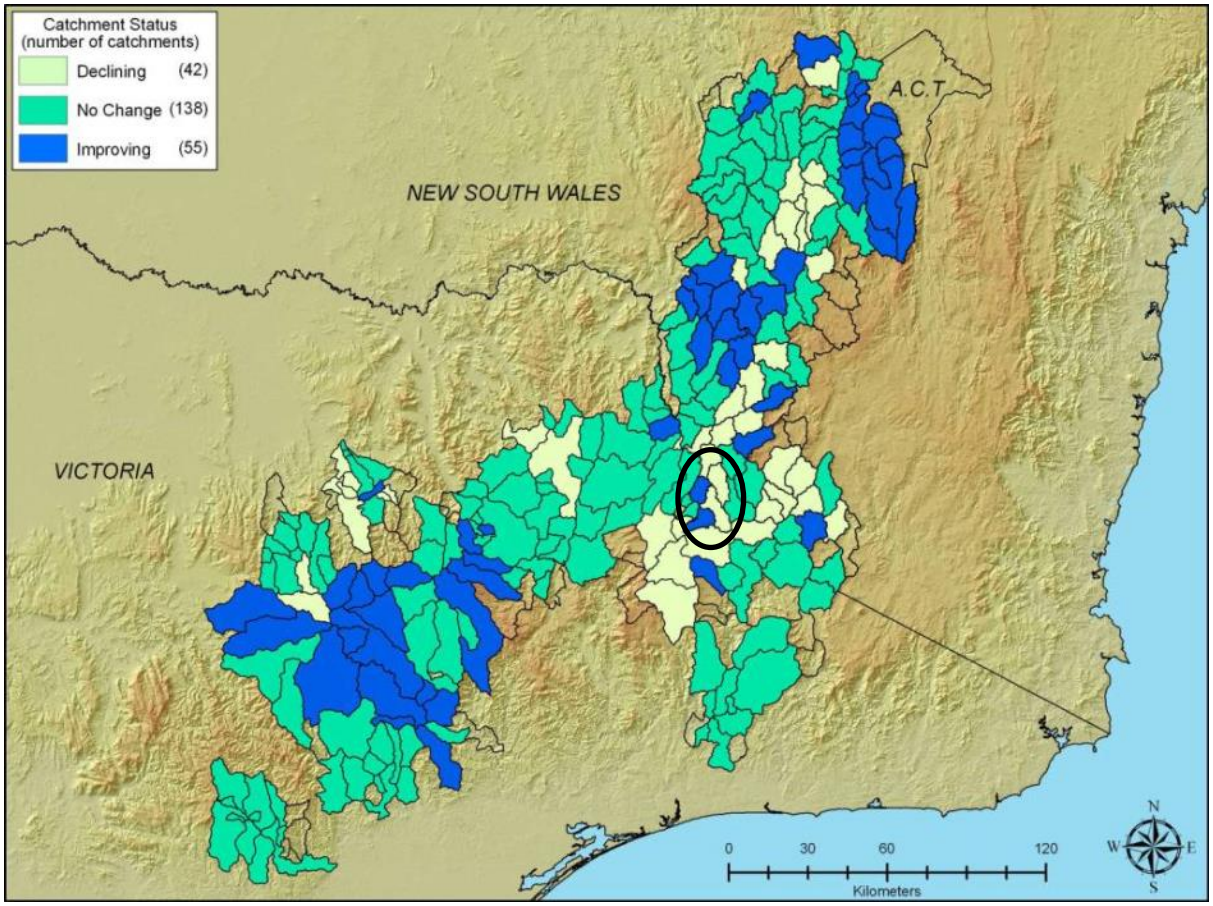


Figure 3 Trend in condition of the Alps catchments (Worboys and Good 2010).

Observations: Victoria's water catchments and environmental water flows

The catchments of the Pilot, Jacobs and Ingeegoodbee Rivers of the Pilot Wilderness area of Kosciuszko National Park, NSW are special. They are free of any Snowy Mountains Hydro-electric engineering modification; they provide critical snow-melt water in spring to downstream environments and year round environmental water flows to an otherwise highly modified flow regime of the Snowy River. This high mountain catchment water is of utmost importance to Victoria. Observations along the 27 km's of the Ingeegoodbee River in NSW identified substantial disturbance and degradation of this transboundary catchment which means higher sediment loads and changed river flow regimes.

Observations: Impacts to water flow regime

Disturbance and removal of stream side vegetation in organic soil rich sub-alpine environments causes more rapid run-off, stream incision, a higher load of eroded sediment and short sharp pulses of higher energy water flow during rainfall events. This is distinctly different to the more orderly undisturbed (natural) streamside vegetation that filters water flows and reduces the energy of water run-off. Pest horse impacts are changing the natural flow regimes of mountain streams at a time when climate change forecasts identify more severe storms in the catchments and an increased need for stable, natural catchments (Worboys and Good 2010).

Observations: Impacts to water quality

Horse disturbance to stream-banks, rapid run-off and stream down-cutting were observed to be causing non-natural sediment loads to be transferred downstream. In steep country, multiple horse tracks along contours and through dense as well as more open shrubby understorey were observed. These maintain soil disturbance and subsequent soil erosion and siltation of streams. It is known from research that the historic natural "chain-of-ponds" that occurred during periods of low flows along rivers and which maintained deep cold water in streams suitable for native fish and invertebrate populations and riverside biodiversity, have disappeared in the Snowy River. In addition faecal contamination of the mountain streams is enhanced by the copious and ubiquitous (often territorial marker) piles of pest horse faeces.

Streamside trampled *Sphagnum* moss (the light coloured plant) and horse faeces and between Cascades Hut and Tin Mine Hut, Kosciuszko National Park. The sp0nge-like Sphagnum helps to filter and slowly release water from stream side bogs (Source: Graeme L. Worboys)

Observations: Impacts to water yield

Wetlands were impacted in all of the catchments observed. Disturbance means that they were more open, exposed and water yield can be expected to be lowered in the mountain catchments through enhanced evaporation of these exposed water bodies.

Observations: Biodiversity impacts

Pest horse disturbance has trampled and selectively grazed vegetation communities leading to the physical destruction of habitats (Dawson 2009b). The disturbance of streamside vegetation and bogs and fens has lowered the water table and changed (or is changing) the composition of vegetation communities. In an undisturbed state, the valley bottom streams, wetlands and their bog and fen communities include rich concentrations of biodiversity.

Australian native animal species found in these sub-alpine environments include the Broad-toothed Rat; the Eastern Bush Rat; Dusky Antechinus; Alpine Water Skink; She-oak Skink; Mountain Swamp Skink; the Southern Toadlet; Latham's Snipe (an international migratory species subject to the CHAMBA and JAMBA agreements); the White Lipped Snake; Mountain Copperhead Snake; Flame Robin; Freshwater Crayfish and many invertebrate species. These Australian native species are all dependent on these sub-alpine habitats being healthy.

Observations: Impacts to Endangered species and Endangered Ecological Community

The She-oak Skink, an *Environmental Protection and Biodiversity Conservation (EPBC) Act 1999* listed endangered species and a species endemic to the Australian Alps is known from the subalpine grassland environments of Cascades Creek. The Australian Alps is the only place in the world where this species is found and its habitats are being impacted. In addition, the alpine and sub-alpine bogs and associated fens so disturbed by the horses are an *Endangered Ecological Community* listed under the Australian Government's *EPBC Act 1999*. Pest horses are officially recognised as a potential threat to this species and to this ecological community. Our observations identify that they are a destructive threat.

Conclusion

Based on our observations of the 22 and 23 March 2013, the impacts of pest horses in the Pilot Wilderness of Kosciuszko National Park were much greater and more pervasive than we had witnessed in over 40 years of intermittent observations. Horses are estimated to have substantially impacted more than 43 kilometres of the high mountain headwaters of the Snowy and Murray Rivers and their commensurate sub-alpine streamside habitats for Australian native species. These impacts are affecting water flow regimes, water quality and water yield of catchments of vital importance to the environmental flows of the Snowy River and downstream water users in Victoria; and, they are affecting the headwaters of the Murray River. The grazing, trampling, compacting and soil pugging impacts were observed to have enhanced erosion of stream banks, bogs and fens and have directly impacted habitats of rare, threatened and endangered Australian native species and could help lead to the loss of Australian species. There are too many pest horses; they are increasing in numbers; they are excessively impacting Australian native animal habitats and they are severely degrading the headwaters of our most important rivers. We conclude that urgent and effective action is needed to end forever these pest horse impacts; to restore the damage to the water catchments and to help conserve Australia's native species.

End Note

Both authors have the highest regard for horses and appreciate and support their place in most areas of Australia such as farms, towns and sporting tracks. We understand, appreciate and share the delight and companionship horses bring to many people. This report is not an attack on horses per se. Rather; it is about raising awareness of too many horses and unacceptable and excessive impacts in one of Australia's most important conservation areas, the Australian Alps national parks.

Acknowledgement

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Pest Horse damage to stream banks, Ingeegoodbee River, near Tin Mine Hut, 23 March, 2013 (Source: Graeme L. Worboys).