Managing Feral Horses in Namadgi National Park, Australia: A Sensitive Operation

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ABSTRACT: Managing populations of feral horses is a highly contentious issue, not the least because of the high regard in which horses are held by the community. Past attempts to manage them in Australia and internationally, especially where it has involved aerial culling and little effective consultation with key stakeholders, have drawn considerable criticism from a wide diversity of groups and individuals. Consequently, managers often find it difficult to effectively manage the damage due to feral horses. Here, we report on a program that has been successful in removing feral horses that enter Namadgi National Park in the Australian Capital Territory (ACT) from the adjoining Kosciuszko National Park. The program was developed in close consultation with key stakeholders including the Royal Society for the Prevention of Cruelty to Animals, adjoining landholders, and the ACT Animal Welfare Advisory Committee. A management plan was developed and endorsed by the relevant Government Minister. The approach taken was to entice animals into yards where they were trapped and euthanised. The plan contains a communication strategy that includes key messages and frequently asked questions. Key elements of the success of the program have been open consultation with key stakeholders; developing trust and maintaining lines of communication; and strict adherence to nationally endorsed animal welfare codes of practice and standard operating procedures for managing pests.

KEY WORDS: animal welfare, Australia, community engagement, consultation, *Equus callabus*, feral, horses, Namadgi National Park, reduction of damage, strategic pest management

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INTRODUCTION

The management of few exotic species engenders more passion and controversy than the management of wild or feral horses (*Equus callabus*). This is certainly the case in Australia but also elsewhere, including in New Zealand and mustangs in the United States of America (see Figure 1). It is not surprising, considering the close association between humans and horses over thousands of years. They have been essential to the development of agriculture, for transport, for exploration and the opening up of new lands, and in war. While some of these uses have declined, horses are still important for recreation, be that for sport or recreational horse riding. When considering the management of feral horses, it is even more important to understand that while they might be a pest to one individual or group, they may be highly prized by another. This variation in perception about non-native animals and the need to manage them is what makes pest management so complex. Consequently, pest management requires that we openly consult with those concerned about a particular pest; have a clear definition of the problem to be addressed; define options on how they should be managed; and cooperatively develop and implement a plan that aims to reduce the damage to an acceptable level (Braysher et al. 2012). Development of a feral horse management plan for the Namadgi National Park (NNP) in the Australian Capital Territory (ACT) followed the ACT Pest Animal Strategy 2000 (ACT Government 2002), a strategy which has recently been updated to the ACT Pest Animal Management Strategy 2012-2022 (2012).

Figure 1. Examples of headlines associated with wild horse management in Australia.

BACKGROUND

There are approximately 300,000 feral horses in Australia (www.feral.org.au; accessed January 2014). Most occur in the drier more remote parts of Australia (Dobbie et al. 1993). While management of these populations has been of concern, they have not caused as much controversy as the management of wild horses in the more populated areas of eastern highlands of Australia, especially in the sub-alpine and alpine parks. Two examples illustrate the passion and controversy: aerial culling of 33 wild horses in NNP in 1987 (ACT Parks Conservation and Lands 2007) and the 600 culled

in Guy Fawkes National Park in northern New South Wales (NSW) in 2000 (English 2000). Both were undertaken to reduce clearly evident damage that feral horses were causing to native habitat, and both used experienced shooters following standard operating procedures (SOPs). However, both were undertaken with little prior consultation with those groups and individuals that have concern about feral horses and their management. The vocal and highly organised community response (Figure 1) to the shooting has made governments very wary about feral horse management, especially where it involves aerial culling, resulting in a moratorium on aerial shooting of horses within protected areas in NSW.

Current Wild Horse Situation in the ACT and Surrounding Parts of NSW

Namadgi National Park occupies the southern and western portions of the ACT at the northern end of the Australian Alps network of national parks. It is recognised internationally for its unique natural and cultural values. At 106,662 hectares, NNP is approximately 46% of the area of the ACT. The park includes the headwaters of the Cotter River, which provides the main source of water for the 380,000 people of Canberra, the national capital, and Queanbeyan. A feature of the Cotter River catchment is the large number of sub-alpine wetlands. They are important both for their biodiversity and because they store water and release it steadily through all months of the year, keeping the sub-alpine sphagnum swamps moist. These wetlands are regionally important and 11 are listed as wetlands of national significance, while some also are of international significance and are listed under the Ramsar Convention, an international treaty developed to ensure conservation and wise use of wetlands. Figure 2 shows the historical distribution of feral horses in NNP and the current distribution within the northern part of Kosciuszko National Park (KNP).

In 2006, small groups of feral horses were observed within NNP. They most likely came from the expanding eastward edge of the feral horse population in the northern end of KNP (Figure 2). This northern population was largely unaffected by the major bushfire that burnt into Canberra in 2003 (Walter 2002), and prior to 2003 was the largest population in KNP. This KNP horse population in the area adjoining NNP is not limited by food, and it is increasing at up to 22% per year (Dawson 2009). Currently management in KNP consists of limited trapping and rounding up of horses but little wide-scale management, although it is anticipated that a feral horse management plan will be developed. In 2009, the estimated feral horse population in the Australian Alps including KNP was 7,600 (Dawson 2009). In the meantime, without action, the horse population in NNP is expected to increase at the same rate of 22% per year, causing increasing damage to fragile alpine habitat (Dawson 2009).

What Damage are Feral Horses Causing?

While the environmental damage due to feral horses has not been well quantified, there is strong evidence that it is significant (Berman and Jarmann 1988, Dyring 1990, Dobbie et al. 1993, Australian Alps Liaison Committee 2004). Horses create networks of trails, compact soil, cause widening and collapse of stream banks, damage wetlands, and contribute to erosion (Dyring 1990, ACT Parks Conservation and Lands 2007, Australian Alps Liaison Committee 2004) (Figures 3 and 4). The stream banks and bogs of the Snowy Mountains are extremely important habitat for threatened species such as the Corroborree frog (*Pseudophryne corroboree* and *P. pengilleyi)* (Osborne 1989). Horses feed between 51% and 75% of the time, and their numbers are normally concentrated in grasslands and heath; eventually the ecology of these areas will be altered (Dyring 1990). Dyring (1990) also found that fewer plant species and fewer plants were found on trampled sites, with less native species diversity, but with higher exotic species abundance. Horses also contribute to the spread of weeds in grassland areas of KNP (AALC 2004). Horses have also been shown to adversely impact native fauna such as reptiles and small mammals (Beever 2013) and contribute to habitat loss in the Australian Alps due to overgrazing and trampling of grasslands. The loss of habitat impacts on a number of endangered species such as the mountain pygmy possum (*Burramys parvis*) and the broad-toothed rat (*Mastacomys fuscus*) (AALC 2004).

Consultation

Because of community concern, feral horse management needs to be carefully planned, adequately resourced, and carried out in a humane and professional manner in accordance with the ACT Pest Animal Strategy 2012-2022. A program that does not meet nationally accepted animal welfare codes of practice (COPs), or where there is inadequate consultation with stakeholders, has the potential to attract negative media attention with the potential to jeopardise feral horse management across all Australian jurisdictions (Dawson et al. 2006).

The Namadgi National Park Feral Horse Management Plan (ACT Parks, Conservation and lands 2007) was developed in consultation with ACT government stakeholders, two external reviewers, the local Royal Society for the Prevention of Cruelty to Animals (RSPCA, the Australian equivalent of the Humane Society), members of the interim Namadgi Management Board that included the local indigenous community, and 3 relevant ACT advisory committees, namely: the Animal Welfare Committee, Flora and Fauna Committee (provides professional advice on conservation), and Natural Resource Management Advisory Committee.

In addition, neighbouring land holders and managers were advised of the ACT's intention to carry out feral horse management in NNP. Because of the potential implications for managing feral horses in the adjoining KNP, the New South Wales National Parks and Wildlife Service (NSW NPWS) was provided with detailed information on the planned management to enable their staff to handle public enquiries that actions in the ACT may generate. The consultation process was time consuming but considered an essential component to gain acceptance of the management plan within the ACT

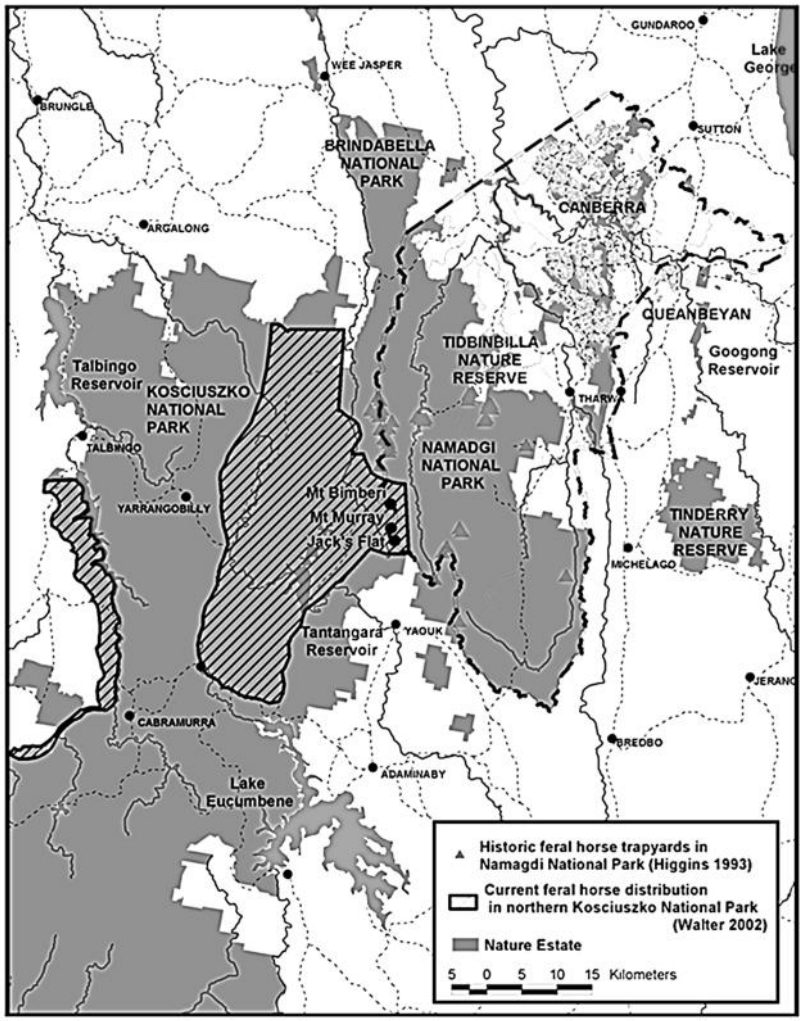

Figure 2. Historical distribution of wild horses in Namagdi National Park and the current distribution within the northern part of Kosciuszko National Park.

Figure 3. Feral horse damage to wetlands in Namagdi National Park.

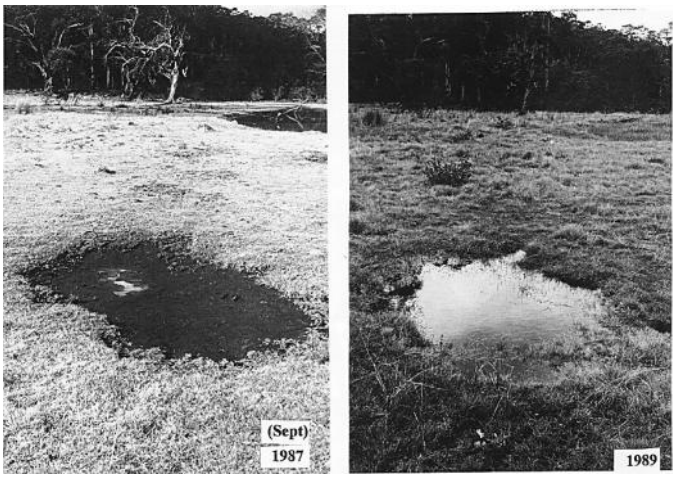

Figure 4. Recovery of Smokers Gap (Namagdi National Park) following removal of feral horses

community. While key stakeholders were consulted, it was decided not to release the plan for wide community consultation. That approach might be advisable for a much larger feral horse management operation where there has been extensive previous concern and public interest such as in KNP.

The management of feral horses in NNP required adherence to the 3 essential requirements for pest control outlined in the Model COP for the Humane Control of Feral Horses (Sharp and Saunders 2012), namely: a clear demonstration for the need to undertake management, for the strategy to be effective, and to meet acceptable standards of humaneness.

The planning group was clear about the necessity to manage feral horses as soon as possible on both environmental (before impact increases) and animal welfare grounds (before larger numbers of horses require removal). Horses are large, conspicuous, and relatively slow-breeding animals (in comparison to pests such as rabbits and foxes), so a control program initiated while numbers are low also stands a good chance of being effective in the long term. The management options considered had been selected to cause the least amount of pain and suffering to the least number of feral horses, along with the least harm or risk to non-target species, people, and the environment. This approach is more acceptable to animal welfare groups than major and less frequent culls, because fewer animals need to be taken overall.

Management Options

The planning group and the consultation process made it clear that management should be effective and defendable. Initially, two strategies were considered suitable to manage the small population of feral horses within NNP: 1) trapping, followed by euthanasia at the trap yard, and 2) aerial shooting (culling), employing the Model COP for the Humane Control of Feral Horses (Sharp and Saunders 2012). A comparison of the two techniques is shown in Appendix 1.

An aerial feral horse cull conducted in the Guy Fawkes River National Park in NSW in 2000 attracted considerable media attention and highlighted that shooting feral horses from helicopters was still opposed by many interest groups within the general community (English 2000). Consequently, careful consideration was given to this approach before including it as a potential management option for managing feral horses in the NNP. After considerable deliberation, trapping and euthanasia was chosen as the preferred management option within NNP. Aerial shooting was not dismissed but considered as a secondary management technique, in recognition of the possibility that some horses may be extremely resistant to trapping. In situations where the presence of feral horses is causing unacceptable damage to an environmentally sensitive site (e.g., a sphagnum bog that provided habitat for the endangered northern Corroboree frog an alternative, effective technique would be required if horses could not be trapped easily.

Although unpopular among some sections of the community, aerial culling is a humane technique provided it is carried out by properly trained and accredited shooters following approved procedures (SOP and COP). The mobility of the shooters in a helicopter ensures that, unlike ground shooting in rough and remote terrain, any wounded horses can be rapidly followed up and dispatched. Thus, it is not an appropriate technique in forested areas.

Trapping and Euthanasia

Trapping followed by euthanasia at the trap yard was the primary method employed for removal of the current population of feral horses inhabiting NNP. Salt blocks and molasses were used to attract horses to the trap yard (Figure 5).

Figure 5. Trap yards: salt blocks were used to attract the horses.

Trapping and euthanasia were carried out in accordance with relevant COP and SOP including the Model Code of Practice for the Welfare of Animals – Killing or Capture, Handling and Marketing of Feral Livestock Animals, and the Model Code of Practice for the Humane Control of Feral Horses and Standard Operating Procedure (Sharp and Saunders 2012). The main conditions (from the SOP for feral horses) under which trapping and euthanasia were used are summarised in Table 1.

A sedative administered by darting, prior to euthanasia by a headshot, was used to minimise stress to horses within the yard when several horses were captured together. Carcasses were removed from the water catchment area and buried in a pit, as they could pose a risk of contaminating the domestic water supply. The removal was done discretely and immediately after euthanasia to minimize the likelihood of park visitors encountering carcasses.

Darting and euthanasia were performed by a minimum number of staff (2 people) to reduce the stress experienced by the trapped horses. Staff were trained in the use of the dart gun and required to have a valid standard firearms license. One staff member was the ACT Government Veterinarian.

A RMCam solar powered and wireless Remote Monitoring Camera (rmTek Pty Ltd., Armidale, NSW, Australia) was used to monitor the yards (see Figure 6).

Table 1. Conditions for trapping and euthanasia of feral horses in Namagdi National Park.

- Trap yard to be large enough to avoid over-crowding, of circular design to avoid accumulation of animals in corners, and of solid construction (not wire) to avoid potential for injuries to horses.
- Trap yard to be placed where vegetation can provide shelter and shade.
- Trap yard to be checked daily. The efficiency of this condition was vastly increased through the use of remote, back-to-base cameras and prompt response by helicopter to treat trapped animals.
- Trapping to be conducted when there is little likelihood of foals being present.
- Avoiding periods where interaction with the public would be greater, e.g. holiday periods.
- Any severely injured horses within trap to be killed quickly and humanely.
- Water to be provided in yard, and feed to be supplied if horses were held longer than 24 hours.
- Horses not to be held in trap yard for extended periods (not longer than 3 days).
- Number of operators to be kept to a minimum to minimise stress to trapped horses. NB it was important to select competent staff and to fully brief them on the need to follow all procedures especially Codes of Practice. This included the involvement of the Government's veterinarian.
- Horses to be euthanased by head shot (as per SOP for feral horses).
- Death of shot animals to be verified as soon as it is safe for operator to enter yard.

Figure 6. RMCam remote camera in situ.

Initially, the yards were monitored by helicopter for the presence of horses every day that the trap was set. Due the cost of hiring the helicopter (approximately AU $1,000/hr) and poor weather, the time that the trap could be left open was severely restricted. The RMCam system enabled the trap to be left open much longer. A motion detector activated the camera, and the photos were transmitted to a secure website that could be accessed at anytime. While the initial cost of the equipment and its installation was high (AU$14,500), the system freed staff for other duties and reduced the need to send staff into areas with difficult access, and often under poor weather conditions. The recurrent cost of the remote system is less than 2 hours of helicopter hire.

Since the program commenced in 2007, 24 horses have been trapped. No horses have been trapped since 2011. The presence of additional horses with NNP is determined by aerial survey supported by ground surveys of frequently used sites.

Communications Strategy

An essential component of each pest management plan is an appropriate communication strategy. This is especially important for management programs that are likely to engender passion and diverse public opinion, such the management of feral horses. It is essential that those involved in the management program have a clear understanding of what it is meant to achieve and how it will be conducted. In other words, there needs to be a consistent message, ideally delivered by one or maybe two experienced spokespersons, especially when speaking to the mass media. Key stakeholders were informed prior to the commencement of the annual trapping and removal program, as opposed to notification for each operation.

To assist is giving a consistent message to the relevant stakeholders, a series of Frequently Asked Questions were prepared as a guide for external communication on the program (ACT TAMS 2013).

DISCUSSION

Since the start of the program in 2007, 24 horses have been trapped and removed. Continual surveillance of the border with NNP will be required while there are significant populations of feral horses in the adjoining area of KNP. During the operation of the plan there has been very little public comment. This is in contrast to the ongoing and often heated debate about the management of feral horses in KNP.

Several factors contributed to the success of the program. These are considered to be:

1) Adherence to the strategic planning approach as set out in the ACT Vertebrate Pest Strategy, 2000 and the ACT Pest Strategy 2012-2022 (see Figure 7). This included a) A clear definition of the problem; b) Open and transparent consultation with key stakeholders. Rather than trying to circumvent groups that may have concerns, such as the RSPCA and others cornered with feral horses and their management, representatives of these groups were engaged upfront to help develop and implement the plan. c) Using skilled, experienced personnel including a veterinarian.
2) Strict adherence to nationally endorsed animal welfare COP for managing feral horses and the SOP for managing feral horses.
3) Developing a comprehensive communication strategy before implementing the program. This included preparing a fact sheet of FAQ that all

members of the management team were aware of and spoke to as one voice.

4) Using one or two spokespersons experienced in dealing with the media to speak on the program.

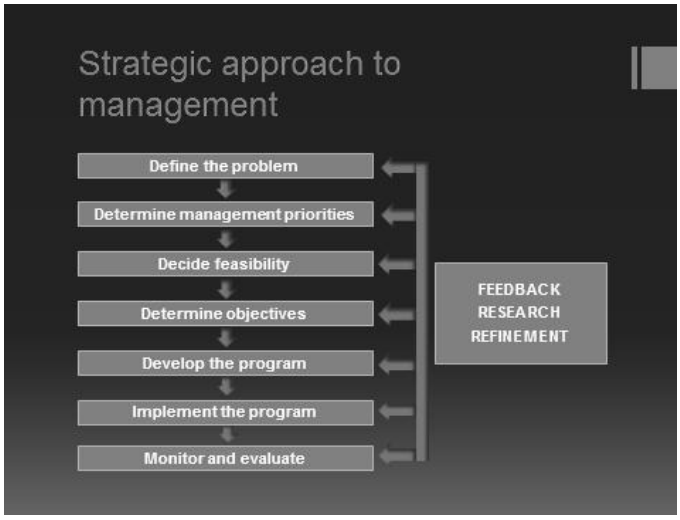

Figure 7. Summary of the strategic approach to pest animal management (Braysher et al. 2012)**.**

LITERATURE CITED

AALC (Australian Alps Liaison Committee). 2004. Feral Horse Management Workshop, Thredbo, 29-31 March 2004.

ACT Government. 2002. ACT Pest Animal Strategy. Environment ACT, Canberra.

ACT Pest Animal Management Strategy 2012-2022. 2012. Available online.

ACT Parks, Conservation and Lands. 2007. Namadgi National Park Feral Horse Management Plan. Available online.

ACT TAMS (ACT Territory and Municipal Services). 2013. FAQs for feral horse management. Website, Australian Capital Territory.

Australian Alps Liaison Committee. 2004. Feral Horse Management Workshop, Thredbo, 29-31 March 2004.

Beever, E. A. 2013. *Equus caballus* [ISC]. Invasive Species Compendium, Commonwealth Agricultural Bureau International, Oxfordshire, UK.

Berman, D. McK., and P. J. Jarman. 1988. Feral horses in the Northern Territory, Vol. IV. Environmental impact of feral horses in central Australia. Internal document, Conservation Commission of the Northern Territory, Alice Springs, Australia.

Braysher, M., T. Buckmaster., G. Saunders., and C. Krebs. 2012. Principles underpinning best practice management of the damage due to pests in Australia. Proc. Vertebr. Pest Conf. 25:300-307.

Dawson, M. J., C. Lane, and G. Saunders (Editors). 2006. Proceedings of the National Feral Horse Management Workshop - Canberra, Australia, August 2006.

Dawson, M. 2009. 2009 Aerial survey of feral horses in the Australian Alps. Australian Alps National Parks. Report prepared for the Australian Alps Liaison Committee. Available online.

Dobbie, W., D. Berman, and M. Braysher. 1993. Managing Vertebrate Pests: Feral Horses, Bureau of Rural Sciences, Canberra, ACT, Australia.

Dyring, J. 1990. The impact of feral horses on sub-alpine and montane environments in Australia. M.Sc. thesis, University of Canberra, Australia.

English, A. 2000. Report on the cull of feral horses in Guy Fawkes River National Park in October 2000. A report prepared for NSW Department of the Environment. Available online.

Osborne, W. S. 1989. Distribution, relative abundance and conservation status of Corroboree frogs, *Pseudophrne-Corroboree moore* (Anura, Myobatrachidae). Austral. Wildl. Res. 16(5):537-547.

Sharp, T., and G. Saunders. 2012. Model code of practice for the humane control of feral horses. Dept. of Sustainability, Environment, Water, Population and Communities, Invasive Animals CRC. 15 pp. Available online.

Walter, M. 2002. The population ecology of wild horses in the Australian Alps. Ph.D. thesis, University of Canberra Australia. Available online.

Appendix 1

Comparison of the Selected Management Options for Feral Horses in NNP
(ACT Parks, Conservation and Lands 2007)

Considerations	Trap and Euthanase at Yards	Aerial Shoot
Animal welfare	Humane provided trap yards checked daily and euthanasia is performed in a manner that limits stress to the trapped animals.	Humane when carried out by experienced operators and the animal can be clearly seen. Any wounded horses must be followed up and dispatched rapidly.
Operator safety	Relatively safe technique provided operators do not enter the trap yard with live horses present.	Shooting from helicopters is hazardous but risks can be minimised by using experienced pilots, and trained, experienced shooters such as Feral Animal Aerial Shooting Team (FAAST).
Contract or 'in-house' operation?	Could be carried out using the skills of existing staff.	Contractor required – impracticable to appropriately train ACT staff.
Infrastructure setup required	Trap yard in place at Jack's Flat. Trap yard would require moving or additional yards building for trapping at other locations.	No infrastructure required.
Efficiency	Access to remote locations not accessible by vehicle. Several trapping events required to remove larger groups. Trap shy animals will remain. Trap requires daily checking.	Potentially very efficient. Likely to remove all horses from a group at one time. Not humane or effective in areas of heavy cover e.g. forest, since horses may be concealed and difficult to locate from the air.
Capacity to remove horses rapidly from environmentally sensitive sites	Removal unlikely to be rapid. Potential to exacerbate environmental damage in immediate vicinity of yard during trapping operation.	Rapid removal achievable if arrangements/approvals to engage aerial shooters have been made in advance and horses are in an area where aerial shooting is appropriate (see above).
Carcass removal	Required near yards so as not to deter other horses entering the trap. Remove from water catchment.	Remove from water catchment.
Acceptability to 'concerned' public	Probably more acceptable than aerial shooting.	Has low acceptability in some sectors despite being a humane technique for euthanasia in remote areas.