**Introduction**

Wild horses have occupied the Australian Alps for over 150 years, since being introduced by early European settlers.

Despite the strong cultural and emotional attachments some people have to wild horses in the Victorian Alps, they are an environmental threat to the area, therefore land managers such as Parks Victoria and the Department of Environment and Primary Industries need to find ways to reduce their impacts.

The current size of the wild horse population in the Victorian Alps is thought to be the largest it has ever been. The most recent aerial survey (undertaken in 2009) estimated that approximately 2600 – 4300 horses were present in the surveyed parts of the Alpine National Park alone (Dawson 2009). This represents a population increase of approximately 21% per annum since the previous survey, which was undertaken following broad-scale bushfires in 2003. This population growth has occurred despite ongoing efforts to control the wild horse population through roping and trapping in the Alpine National Park.

The true size of the wild horse population in the Victorian Alps is expected to be significantly higher than indicated by aerial surveys as these estimates cover less than half the area occupied by wild horses and there is no indication that the population has stopped growing since 2009. Population modelling suggests that the entire Victorian Alps wild horse population is now approximately 8200 – 10 900 horses (ELA 2012).

While it is agreed by Parks Victoria and the Department of Environment and Primary Industries (DEPI) that wild horse management is required to manage impacts, population size and horse welfare, formal management strategies for the methods and extent of control are yet to be determined.

It has been argued that because wild horses “evoke greater animal welfare concerns than most other pest animals” the control techniques available to managers may be limited (Dawson et al. 2006, p.71). The approach taken to management requires sensitivity, careful planning and evaluation.

**Historical management**

Wild horses have been ‘managed’ in the Victorian Alps in various forms since their introduction to the region. Historically, a range of techniques including trapping, shooting and roping were used in the Victorian Alps to control wild horse populations.

Pastoralists also used mustering and trap yards to capture younger horses for domestication.

**Current Management**

Parks Victoria and DEPI are yet to develop and implement formal management plans for wild horses in the Victorian Alps. However Parks Victoria does implement wild horse control methods within the Alpine National Park. Currently the broad management approach is to contain and minimise the impact of wild horses east of the Benambra-Corryong Road, significantly reduce populations on the Bogong High Plains and remove isolated populations from
other areas, such as the Mt Wellington area, north of Heyfield.

In the Alpine National Park, wild horses are controlled through roping, trapping and the fencing of some sensitive areas. Roping (sometimes called brumby running) has been a regulated activity in the Alpine National Park since 1989 and is currently contracted to the Australian Brumby Management Association (ABMA) by Parks Victoria.

Roping and trapping are undertaken in the eastern Alps by the ABMA under a contractual arrangement with Parks Victoria. Parks Victoria undertakes trapping to remove horses from the Bogong High Plains and emergent populations in other areas. All horses captured as part of the Bogong High Plains trapping program are offered for re-homing (donation to carers on private properties) through an arrangement with the Victorian Brumby Association (VBA). Horses removed from other areas are either: re-homed, sold at saleyards or taken to abattoirs.

There is evidence that illegal wild horse removal activity still occurs within the Alpine National Park and surrounding State forests. While a reduction in wild horse numbers is required, it is highly undesirable in an unregulated form as welfare issues and environmental impacts cannot be monitored.

Aerial surveys indicate that the wild horse population has increased rapidly at approximately 21% per annum between 2003 and 2009 despite ongoing efforts to control the population through roping and trapping in the Alpine National Park (Dawson 2009).

The average number of wild horses removed from the Alpine National Park over the past five years has been 160 per annum, which represents less than 25% of the annual population increase seen between 2003 and 2009.

Population modelling suggests that to stabilise the Victorian Alps wild horse population at its current estimated size (8200 – 10 900 horses) around 350 – 600 horses would need to be removed annually (ELA 2012).

Population modelling can also provide estimates of the number of horses that would need to be removed to achieve ‘target’ population sizes. For example, modelling suggests that to return the population size to 2001 levels (around 5000 horses) from the current estimated population size (8200 – 10 900 horses) that around 1500 – 1900 horses would need to be removed annually for five years (ELA 2012). Once this population size is reached approximately 900 horses would need to be removed each year to maintain the population at this level (ELA 2012).

**Animal Welfare**

Animal welfare and the ‘humaneness’ of control methods are central issues in wild horse management. All active control methods will have some degree of impact, stress and risk of injury to the wild horse. In order to minimise suffering, the most humane options available must be employed.

Victoria has a range of legislation, Codes of Practice and Standard Operating Procedures to protect the welfare of captured wild horses and ensure they are treated humanely.

If a wild horse control program involves non-lethal techniques, wild horses will need to be captured and removed. This will involve confinement, handling and transport.

Wild horses are not used to human contact and will be affected by the cumulative stressful effects of capture and prolonged handling. The transportation of wild horses involves additional stress to animals, particularly when they are transported over long distances. Injuries and stress are most likely to occur during loading and unloading operations.

Due to the potential stress and risk of injury during capture and removal, the Model Code of Practice suggests that a more humane option may be to euthanase wild horses where they are caught (Sharp and Saunders 2008).

No matter how wild horses are captured, they will need to be either: relocated to a horse sanctuary or reserve, re-homed, sold individually for domestic use, sold for consumption or put down. Due to the often old age, poor conformation and wildness of captured wild horses many are unsuitable for re-homing and may be sent to abattoirs. It is worth noting that an estimated 30 000 – 40 000 horses are sent to abattoirs for slaughter every year, with around 20% of these being wild horses and the remaining 80% being domestic and race horses (DAFF 2011).

It is argued that due to the issues presented above and logistical constraints re-homing has limited use and is impractical for wide-scale control (Dobie et al. 1993; Sharp & Saunders 2008). However re-homing may form part of an integrated management program.
**Costs Associated with Wild Horse Control**

Wild horse management is expensive particularly when populations are large and remote and the chosen control program is labour and time intensive.

The costs of taking no action are also substantial and include management of environmental impacts (which are sometimes irreversible), repair of assets and visitor safety.

Costs of control will vary greatly with different methods and will depend on factors such as personnel, equipment and time required; number of horses removed; fate of horses; and environmental impacts (and associated restoration). Research and monitoring costs as well as communication and education programs should also be taken into account.

The monetary value of economic impacts caused by pest animals can be easily estimated using market values. Environmental, social and cultural impacts however, generally occur outside the market system and their value cannot be easily quantified in monetary terms.

**Evaluating Suitable Control Methods**

The selection of control methods should be rigorous, transparent and systematic.

In accordance with the Model Code of Practice for the Humane Control of Wild horses, Parks Victoria will use the following criteria to analyse the various wild horse control methods:

- Humaneness of the method
- Safety of those involved and the general public
- Effectiveness of method
- Logistics – terrain, equipment etc.
- Environmental impacts
- Social acceptability of the technique
- Cost-effectiveness

Each method must be considered specifically in the context of the Victorian Alps.

A wild horse management program may involve implementing an integrated program that includes a combination of several control methods.

**No Control**

‘No control’ would mean taking no action to control current and future populations of wild horses in the Victorian Alps. Aerial surveys indicate that wild horse populations can grow at a rate of 21% per annum, despite control programs being in place. If no control is undertaken the wild horse population is likely to continue growing at a rapid rate. Due to the negative impacts of wild horses, the lack of natural predators and statutory requirements and obligations, not controlling wild horses in the Victorian Alps is not an option.

**Roping**

Roping (sometimes called brumby running) involves chasing wild horses on horseback, capturing them with a rope and leading them to where they can be loaded onto a vehicle and removed. Muzzled dogs may be used under strict permit to locate wild horses but are not used for capturing or loading. Horses may be held by rope for up to 24 hours before loading.

Roping undertaken through the ABMA contract is currently one of

![Wild horse trap yards established on the Bogong High Plains to capture wild horses lured to the trap using salt (Parks Victoria).](image1)

![Wild horse exclusion fencing established at The Playgrounds to protect sensitive species and communities (Parks Victoria).](image2)
the main control techniques employed on Parks Victoria managed land.

**Muster**

**Active Mustering** of wild horses is a method that uses horse riders, motorcycles and/or helicopters to gather and encourage mobs towards concealed winged fences that lead into a large yard. This method enables a large number of wild horses to be captured in one event, although there is a danger that wild horses which escape mustering can become accustomed to helicopters and/or horseback operators and become ‘unmusterable.’

**Low-Stress Mustering** involves the installation of large, specifically constructed trap paddocks with strategically located entry points. Wild horses are moved into the trap paddocks where they are gradually educated to fencing and quietened for handling and removal. Low-stress mustering may involve the use of specially trained ‘coacher’ horses to assist during musters.

Mustering is not a technique that is currently used to control wild horses in the Victorian Alps. Mustering is considered humane when performed by skilled operators; however, the terrain of much of the Victorian Alps and the dispersed population of wild horses reduce the potential effectiveness of this method.

**Trapping**

Trapping involves using lures (such as salt, water or mares) to encourage horses to enter trap yards of their own accord. Once inside the trap yard a trip wire triggers the closure of the entry gate, effectively capturing horses in the trap yard.

In areas of limited water sources, yards erected around watering points are considered to be the most effective technique. The use of other lures is more effective in areas of abundant water sources such as most of the Victorian Alps.

Trapping is currently used in the Victorian Alps. It is considered to be a humane control method, but has limited application for large-scale reduction of widely dispersed horse numbers.

**Fertility Control**

Fertility control is a passive, non-lethal option for horse control. There is a range of fertility control techniques including surgical sterilisation, contraceptive implants in mares and immunocontraception (uses immune response to disrupt reproductive function).

Surgical implants require the capture and restraint of wild horses.

Immunocontraceptive vaccines can be delivered using a projectile syringe or bio-bullet. However, need to be administered at close range (less than 20m) and it is likely that wild horses would need to be yarded to achieve this (English 2001). Trials have successfully prevented pregnancy in mares in the USA, but the contraceptive is short term and needs to be reapplied regularly (Kirkpatrick & Turner 2008). A single dose of some immunocontraceptive vaccines is able to reduce fertility in wild horses for up to four years; however the vaccines must be delivered by injection to achieve this longer lasting effect (Killian et al. 2008; Gray et al. 2010).

Fertility control appears to be suitable for a small, confined, accessible mob. However, it is not a practical or cost-effective technique for managing large, dispersed populations in remote and difficult terrain.

Fertility control methods are still under development in Australia and are not currently in a form that can be delivered effectively to large, dispersed wild horse populations, such as those in the Victorian Alps. Even if logistical issues were overcome, it would not necessarily replace conventional control methods, but may be effective in the future to stabilise a population of horses that has already been reduced by some other form of control.

Advancements in fertility control may allow it to become a more practical option in the future.

**Fencing (Exclusion Zones)**

The strategic placement of fences can prevent wild horses from accessing and damaging sensitive areas. Strategically placed fences can also assist with directing horses away from areas where they are difficult to control (such as rugged terrain) into areas where they are easier to control.

Fencing is a method used for small, fragile areas, often with threatened or endangered species, where failure to exclude horses would likely result in permanent loss of significant natural values. This method is currently being used in the Victorian Alps in four locations.

Fencing is considered humane, but is not practical in rough or remote areas and may re-distribute impacts elsewhere.

**Shooting**

Shooting involves hunting and shooting free ranging wild horses, either from the ground or from the air. Shooting is not currently practiced in Victoria. Ground and aerial shooting are not being considered as options for
controlling Victoria’s wild horses as part of the current consultation.

Shooting is an active, target specific, lethal control method. It may involve ground shooting to remove isolated wild horses or aerial shooting for rapid large scale culling operations in difficult terrain or a combination of both.

Ground and aerial shooting can be effective, humane methods when:

- carried out by skilled, experienced shooters using appropriate firearms and ammunition;
- the animal is within close range and can be clearly seen;
- the correct shot placement is used; and
- wounded animals are killed quickly (Sharp and Saunders 2008).

**Ground Shooting**
Ground shooting involves hunting and shooting free ranging wild horses. Ground shooting is generally used for removing a few wild horses from an area, i.e. horses that cannot be mustered or trapped, or for sick or injured horses. It may be appropriate in open, accessible country but is considered labour intensive and impractical where large-scale control is required or in rough terrain.

**Aerial Shooting**
Aerial shooting is an active lethal control method that is conducted from helicopters. It is considered to be an effective method where lethal control is desired and where numbers are high. It allows shooters to locate and get in close range to the wild horses (even in difficult terrain) quickly pursue and kill wounded animals.

**Chemical Immobilisation**
Chemical immobilisation involves the close range delivery of a tranquiliser dart into a wild horse, effectively immobilising it. The wild horse is then approachable and able to be euthanased with an injection of barbiturates.

This technique is not practical or cost-effective for large-scale control.

**Summary**
Aerial surveys indicate that the wild horse population in the Victorian Alps has grown rapidly since 2003 despite ongoing efforts to control the population.

Formal strategies for the management of wild horses in the Victorian Alps are yet to be developed. Parks Victoria currently implements wild horse control within the Alpine National Park using roping, trapping and exclusion fencing as control methods.

All active wild horse control methods will have some degree of impact, stress and risk of injury to the wild horse. Horse welfare is a critical issue and in order to minimise suffering, the most humane options available must be employed.

The selection of control methods should be rigorous, transparent and systematic and consider: the humaneness of the method; the safety of those involved; effectiveness; logistical requirements; environmental impacts; social acceptability and cost-effectiveness.

Wild horse control methods include: roping, mustering, trapping, fertility control, exclusion fencing, ground shooting, aerial shooting and chemical immobilisation. Ground shooting and aerial shooting are not being considered as options for controlling Victoria’s wild horses as part of the current consultation.

No single method is likely to effectively control wild horse activity in the Victorian Alps. In national and international case studies, a variety of methods are used, including mustering, trapping and aerial shooting.

An integrative approach within an adaptive framework of monitoring and evaluation will be required for the effective management of wild horse impacts.

**References**


