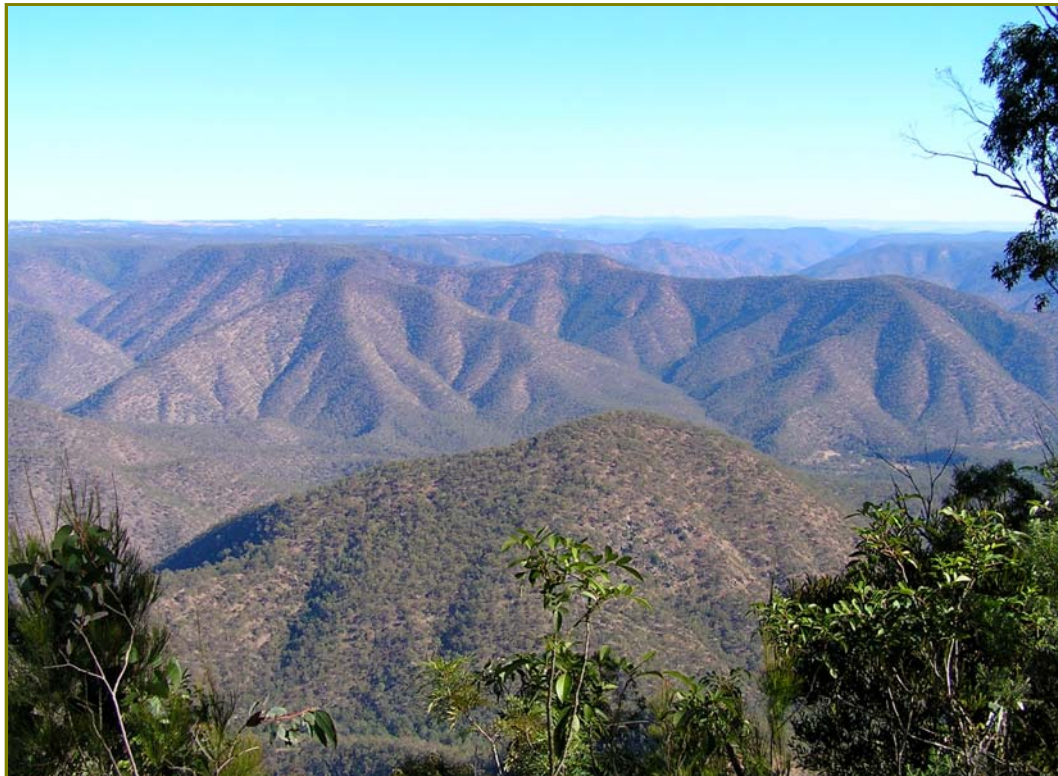


# Guy Fawkes River National Park

## *Horse Management Plan*



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Main cover image: View of Guy Fawkes River National Park (Sean Leathers © DEC)

Inset images (from left):

- Mare and foal (Brad Nesbitt © DEC)
- Trap at Wonga Flats in operation (Brad Nesbitt © DEC)

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## Executive Summary

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The Guy Fawkes River National Park is regarded as a “biodiversity hotspot” with over 40 different vegetation communities, 28 threatened plant species, 24 threatened fauna species and significant areas of old growth forest protected within the reserve. It contains spectacular examples of valley and rugged river gorges including the deeply incised Guy Fawkes River Valley and the rugged gorges of the Aberfoyle, Sara and Henry Rivers. It also conserves one of the most significant areas of wilderness in northern NSW.

The National Parks and Wildlife Service (NPWS), which is part of the Department of Environment and Conservation, has a legislative responsibility to protect native habitats and wildlife within its reserves. It also has a responsibility to minimise the impact of introduced species including horses. Horses have been bred on lands in the vicinity of the park since the 1830s and since the 1930s have been present in a wild state in the area which, in 1972, became the Guy Fawkes River National Park. Management of horses in the national park began in the early 1990s, with capture and removal programs focused on removing horses from river flats along the Guy Fawkes River. Horse management, however, became particularly contentious following an aerial cull of horses in October 2000 and subsequent community concerns regarding management of the horses, and heritage values.

In response, the Minister for the Environment commissioned a study into the heritage value of horses in the park and indicated that, should the horses be found to have genuine heritage significance, they would be humanely removed from the park so that they can be managed properly in another location by people with an interest in their heritage value. In February 2002 the Heritage Working Party reported that the horses have significant local heritage value.

The NPWS recognises that there is a wide range of views in the community about the management of horses in conservation reserves. For this reason it was decided that the community must be involved in the development of long term solutions for managing the horses in the park. In recognition of the local community’s interest and identified local heritage value, the NPWS established the Guy Fawkes River National Park Horse Steering Committee. This local community-based committee was instrumental in the development of this plan.

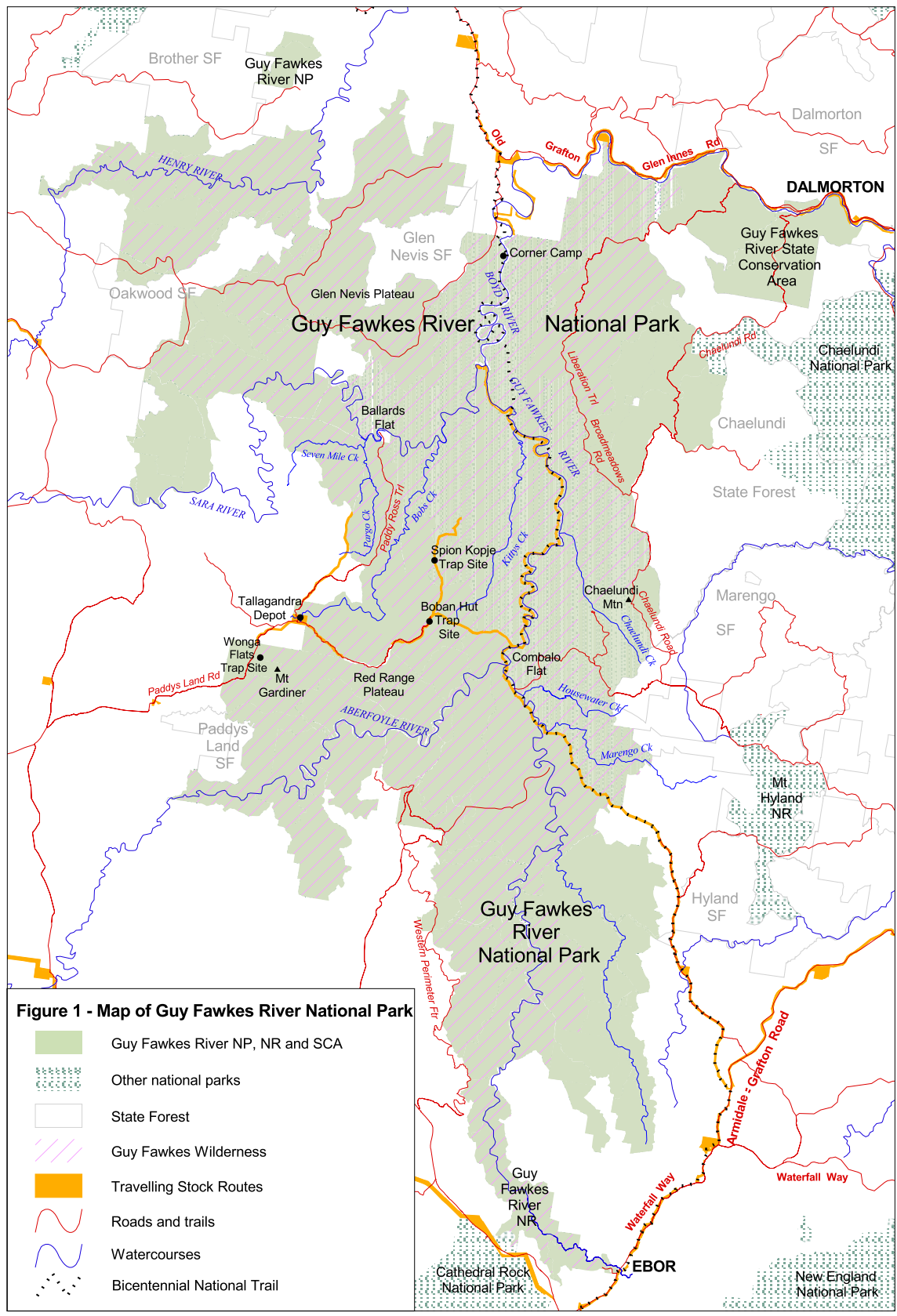
This document examines the range of horse management methods available, including immobilisation using tranquillisers, fertility control, fencing, shooting and roping, and discusses issues associated with each of the methods. During preparation of this plan, three control methods were trialed and evaluated for their effectiveness in humanely capturing and removing horses from the park. Key recommendations from the trial are included in this plan.

The main objectives of this plan are to:

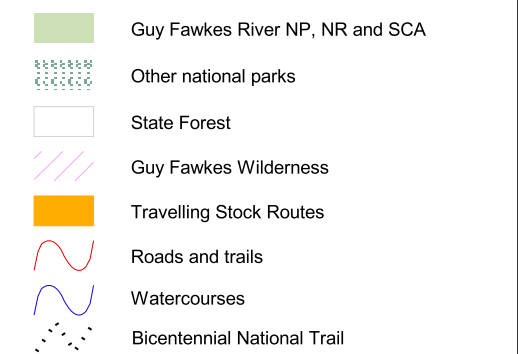
- 1) conserve and protect the natural values of the Guy Fawkes River National Park by removing horses and to ensure the park remains free from horse impacts; and
- 2) provide for the humane capture, handling and removal of horses from the park and make them available to people interested in them.

The NPWS does not retain responsibility for horses once they are removed from the park.

The desired outcome of the plan is the park being managed free of horses, with the local heritage significance of the horses conserved by others through their management outside the park.



**Figure 1 - Map of Guy Fawkes River National Park**



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# 1. Introduction

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The area managed for conservation around the Guy Fawkes River includes the Guy Fawkes River National Park, Nature Reserve and State Conservation Area in addition to lands recently acquired and in the process of gazettal (Figure 1). For the purposes of this plan these areas are collectively referred to as the park. The park covers an area of 106 803 hectares and is located 100 km north-east of Armidale (30°30.6'S 151°40.2'E). It reserves a diversity of land systems, including a section of the Great Escarpment, part of the eastern edge of the New England Tableland, the deeply incised Guy Fawkes River Valley and the rugged gorges of the Aberfoyle, Sara and Henry Rivers. The Park is renowned for its wild and scenic river country and protects the second largest declared area of wilderness in northern NSW.

The Guy Fawkes River National Park (GFRNP) is regarded as a “biodiversity hotspot” with over 40 different vegetation communities, 28 threatened plant species, 24 threatened fauna species and significant areas of old growth forest protected within the reserve. The park is part of the traditional lands of the Gumbaynggirr, Ngarabal, Banbai and Bundjalung Aboriginal nations. It includes numerous Aboriginal and European cultural heritage sites. The spectacular gorge systems and waterfalls of the park ensure that most of it is relatively inaccessible, however, a range of recreational opportunities still occur such as walking, camping, swimming, canoeing and liloing, abseiling, bird watching, photography, sightseeing, and horse riding on the Bicentennial National Trail.

Horses have been known in the area since the early 1830s. Management of horses in the national park became particularly contentious following the October 2000 aerial cull and subsequent community concerns regarding management of the horses and heritage values.

In March 2001 the Minister for the Environment commissioned a study into the heritage value of horses in the park. The Minister indicated that, should the horses be found to have genuine heritage significance, they would be humanely removed from the park so that they can be managed properly in another location by people with an interest in their heritage value. In February 2002 the Heritage Working Party reported that the horses have significant local heritage value.

In September 2002 the National Parks and Wildlife Service (NPWS) established the Guy Fawkes River National Park Horse Steering Committee, a local community-based steering committee to assist the process of consultation, the humane removal of horses from the park and their appropriate management outside the national park.

This plan includes:

- a description of the significance of the Guy Fawkes River National Park and why it must be protected;
- an historical overview of the issue of horses in the park;
- an overview of the research available about horses and their impacts in the park;
- an examination of the wide range of attitudes held by the community about horses in national parks and their management and how the community has been involved in developing this plan;
- the role and responsibilities of the NPWS and how legislation and relevant codes relate to this issue;
- the objectives of this plan and an examination of the range of control methods currently available for managing horses;
- a report on the trial of identified methods for capturing horses; and

- key areas for future horse control, and methods of monitoring and evaluating the program.

The outcome sought in this plan is to manage the park free of horses while protecting the heritage significance of the horses through their management outside the park.



## 2. Background

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In Australia, an unowned free-ranging horse is generally known as a brumby, wild horse or feral horse. The term brumby is attributed to Sergeant James Brumby's horses, which were left to run loose on his land in NSW when he was transferred to Tasmania in the 1830s. From then on, horses running loose began to be called brumbies (HWP 2002). A 'feral' animal is defined as an exotic or non-native animal originally introduced for domestic purposes, which has survived in the wild. Horses can become feral if they are left to fend for themselves (Dobbie *et al.* 1993). The use of the term feral horse, wild horse or brumby is often contentious depending on experiences with and personal views on these animals. For the purposes of this report, the term horse or free-ranging horse will be used. This plan does not relate to horses under saddle on the Bicentennial National Trail.

Horses first came to Australia with the First Fleet in 1788. The First Fleet horses originated from Cape Town, South Africa, and are believed to have been Cape horses or Barbs. The seven horses comprised three mares, a stallion, a colt and two fillies. Subsequently, a steady stream of horses arrived at the colony (HWP 2002). In eastern Australia horse numbers increased substantially from 14 000 in 1830 to 160 000 in 1850. Australia now supports the largest population of free-ranging wild horses in the world estimated at more than 300 000 in 1993 (Dobbie *et al.* 1993).

### 2.1 Overview of the History and Management of Horses in the Park

Horse and cattle breeding first commenced in the Guy Fawkes area in the 1830s with the establishment of the Guy Fawkes Station and the Little Guy Fawkes Station by Major Edward Parke and Major Rigney respectively. These stations adjoined one

another on the site of the current Ebor township. By the early 1850s cattle stations had been established in the northern, eastern and western region of the Guy Fawkes catchment. Cattle and horses were bred on these stations, significant proportions of which were never fenced (HWP 2002).

In the 1890s a number of stations in the Guy Fawkes area became involved in breeding horses for the remount trade. Exports were initially to the British army in India, and then to South Africa, Palestine and other countries. Horses at this time were valuable and bred in large numbers (Fahey 1984) particularly when cattle and sheep prices were low.

Horse breeding for this purpose continued until the early 1940s. Some horses bred in the Guy Fawkes River area, were drafted for use by the Light Horse in the New England district during the Second World War.

The Heritage Working Party (2002) reported that unclaimed horses had been sighted predominantly in the northern areas of what is now the GFRNP since the 1930s. Prior to the purchase of lands in the area by the NSW National Parks and Wildlife Service, most unclaimed horses in the area were controlled by the property owners/lessees. Wright (1971) reported in the early 1900s "we used to shoot them (wild horses) to keep their numbers down". However, during the wars, management became less controlled due to a shortage of labour. The first record of capturing unclaimed horses by local residents for their own use was in 1931 (HWP 2002). After declaration of the park in 1972, management of unclaimed horses in the park area largely ceased until the early 1990s.

#### 2.1.1 History of control

Trial programs for the capture and removal of horses in the park commenced in 1992.

Various methods of control were attempted, including chemical immobilisation, trapping and mustering, and were carried out predominantly by men on horseback, occasionally assisted by helicopter. Helicopters in these instances were most commonly used to locate and shadow horse bands, applying pressure to quietly move them to areas where horse riders could then take over. Trap construction evolved over time, with the most effective being traps constructed of heavy gauge synthetic netting.

Of the 156 horses removed from the park between the period 1992 and 2000 some have become exceptional riding horses, others pets. Many however were not valued in this way and were sent to the abattoir. This fate is common for horses that are not valued due to their age, poor conformation, or wildness. This is also the case for wild horse programs in the USA and New Zealand.

In October 2000, following a prolonged dry period, a severe wildfire occurred in GFRNP. This burnt out almost all the lands occupied by horses and feed resources for the horses were severely limited. A decision was made to aerial cull the horses in the park because the horses were suffering from the lack of feed. A total of 606 horses were culled during the three-day program, which was carried out in accordance with best practice techniques. The cull received national media attention and, although supported by conservation groups, was for the most part reported with condemnation.

### 2.1.2 Horse home ranges

The living area (home range) of a free-ranging horse depends on the type of country and the season, and so varies across the landscape, both in Australia and other countries. Documented home ranges vary from seven square kilometres (km<sup>2</sup>) (Berger 1986) to 32 km<sup>2</sup> (Feist 1971) in North America, and approximately 70 km<sup>2</sup> in central Australia (Dobbie & Berman 1990).

Limited information is available on the home range of horses in GFRNP. In 1998 three horses (a mare, a stallion and a colt) were fitted with radio collars and their locations recorded over a 17-month period. The mare remained within a 3.5 km section of the Guy Fawkes River with a home range of 1.4 km<sup>2</sup>. The stallion remained within a 4 km section of the Guy Fawkes River with a home range of 1.2 km<sup>2</sup>. In contrast, the colt travelled widely along the steep slopes of the Aberfoyle and Guy Fawkes Rivers and, in late autumn, had climbed off the river along steep slopes and ridges through an elevation of 550 m onto the Red Range Plateau. Its calculated home range was 9.76 km<sup>2</sup>.

A ground survey of horses during 2002-03 on the Red Range Plateau suggests a seasonal movement of horses from either the Bobs Creek or the Lower Sara River onto this area of the western plateau. Counts over the four seasons varied from 29 to 127 horses (Schott 2003).

Apart from this seasonal movement, mature horses do not willingly move from their home range. Many horse bands in the park have established territories, from which they strongly resist being moved even when pressured by horsemen and/or helicopter. This has also been recorded with horses in central Australia (Dobbie & Berman 1992). The maximum distance horses have been moved along the Guy Fawkes River is 6 km.

### 2.1.3 Horse population and distribution

Horses commonly occur along the grassy river flats of the Guy Fawkes and Sara Rivers, and their tributaries including Kittys, Bobs, Chaelundi and Housewater Creeks. Figure 2 shows the current known horse distribution in the park based on aerial and ground surveys. Figure 3 shows the potential area that will be occupied by horses if there is no control of horses in the park.

Horses normally breed during spring and summer with foaling concentrated over the

same period (Dobbie & Berman 1990). Eberhardt *et al.* (1982) found that horse populations could increase by 20% per year when resources are not limiting. Females reach sexual maturity in 12 to 24 months and once mature are capable of producing a foal each year. However pregnancy stress usually results in the raising of one foal per 2 years, the intervening year allowing them to recover sufficient body condition to support another pregnancy (Wagoner 1977).

Foaling rates in GFRNP have not been studied, although there is information on foal numbers from aerial surveys. An early summer survey in 1998 recorded 13 foals among 133 horses. As females comprise approximately 42% of the population (see section 2.1.4), this suggests a foaling rate of ~23% for that year. During the trial capture program on the Red Range Plateau during April to December 2004, 114 horses were captured. All mares 12 months or older were found to be either pregnant or had recently foaled. This may be a response to that year's good conditions, with abundant feed and water available in this area of fertile soils and improved pasture.

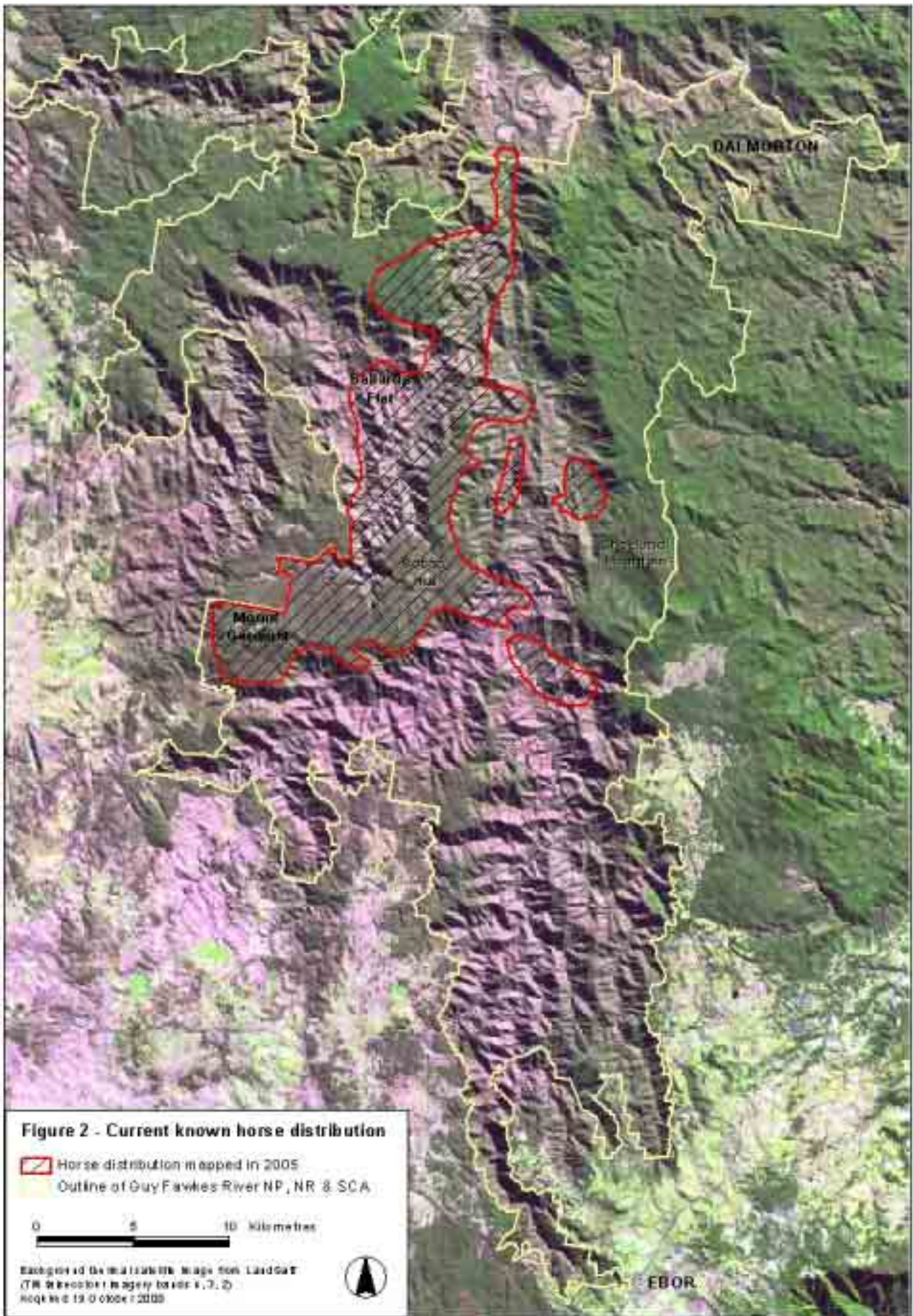
In the wild, the main causes of death are associated with drought (through starvation, thirst and eating poisonous plants) and internal parasites in foals (Dobbie *et al.* 1993). The abundant grasslands and permanent water present in the GFRNP means that thirst, starvation and plant poisoning are not often a significant population control in the park.

The percentage of foals that survive to breeding age in the park is not known.

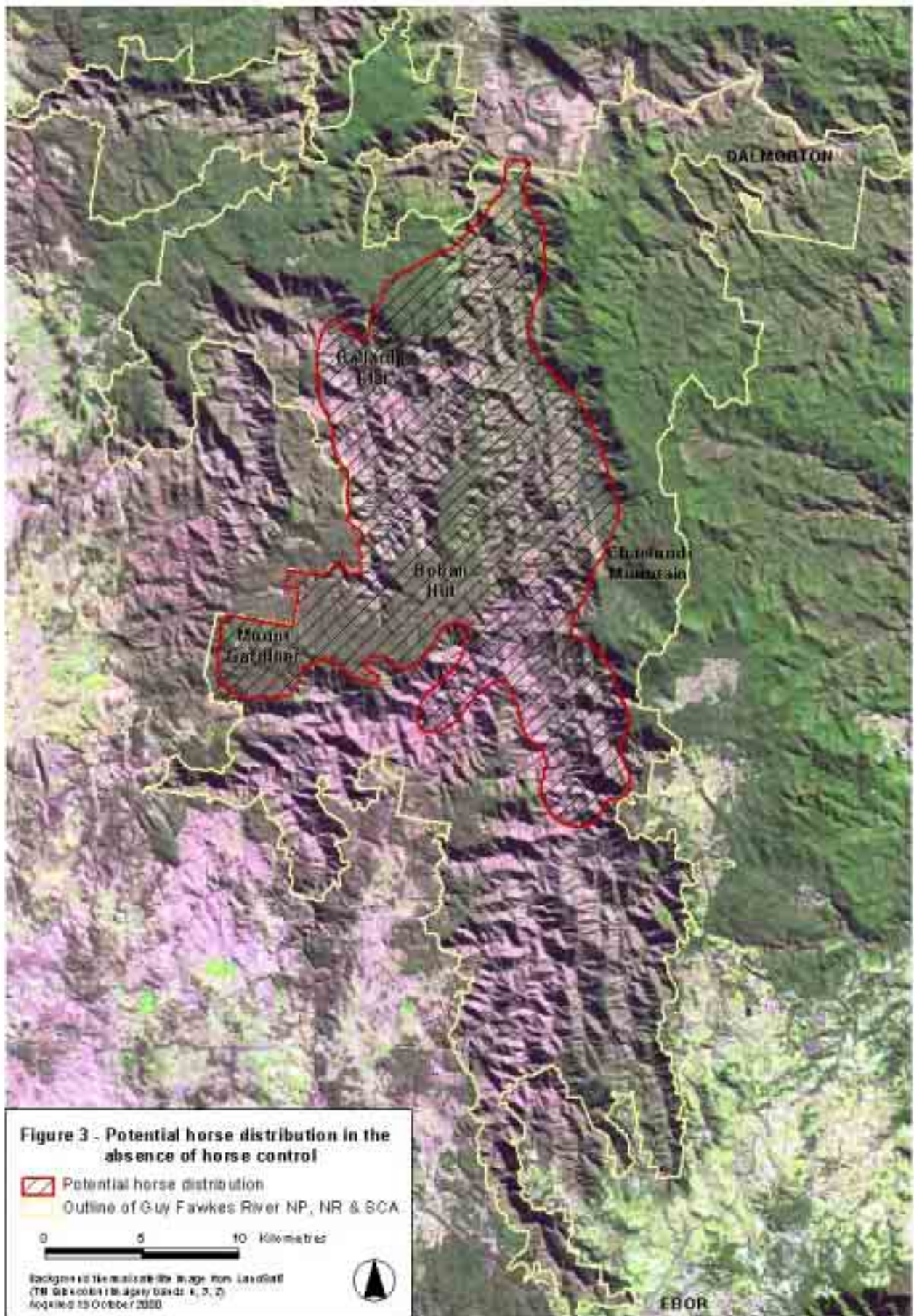
The population growth rate of free-ranging horses in Kosciuszko National Park has been estimated at 8% per year (NPWS 2002). In the Guy Fawkes, a physical examination of a sample of 58 horses in 2000 showed 33% of the horses were under 2 years of age suggesting the population growth rate in the GFRNP may be as high as 16% per year. Section 8.2 considers the implications of population growth on the proposed horse capture and removal program in the park.

The NPWS is working with researchers from the University of New England to investigate methods of improving estimates of horse density, distribution and population in the park. Population modelling, based on an aerial survey in 2005 and ground counts, indicates that the population of horses in the park may be in excess of 300 horses. It is important to note however that there are populations of managed and free-ranging horses on adjoining lands that can make their way into the park. The NPWS is working with neighbours to develop strategies to manage the movement of horses between neighbouring lands and the park.

Assessment of the total horse population and population growth rate within the park will be continued. This information will guide monitoring programs to assess the extent to which horse removal techniques are successfully reducing the overall horse population.







#### 2.1.4 Horse band size and composition

A sample of 122 horse bands from 5 different horse surveys conducted in the park between 1997 and 2001 shows the most common band size is 5 horses. Larger bands of up to 45 horses have been recorded during periods of severe food shortage and during large-scale wildfires in the park. These larger bands are possibly due to a breakdown in territorial boundaries during these extreme conditions.

A sample of 58 horses in 2000 showed the average age of horses in the park is 4.7 years with the oldest recorded at 18 years of age. The majority of the horses were 5 years or younger (68%), with 33% less than 2 years old and 8% over 10 years of age. Sex ratio was 58% males and 42% females.

The majority of the horses in the park are bays or browns representing together 61% of the population. The next most common coat colour is buckskin (14%) with the remaining 25% made of various colourations. Some local horse breeders group cream, buckskin, dun, paint and cremello colours together as one group called “creamies”. When this is done, the “creamies” represent 30% of the population.

### 2.2 Significance of the Guy Fawkes River National Park

The park protects one of the most significant areas of wilderness in northern NSW. It contains spectacular examples of valley and rugged river gorges including the deeply incised Guy Fawkes River Valley and the rugged gorges of the Aberfoyle, Sara and Henry Rivers.

Twenty-eight threatened plant species and twenty-four threatened animal species have been recorded within the area. It is one of a few remaining areas where the presence of dingoes and rock wallabies indicates a more intact native fauna. Vegetation

communities that are found within the reserve, especially river flats, forest red gum and yellow box woodlands, tableland forests and kangaroo grass, are poorly conserved elsewhere.

The geology, landform, climate, and plant and animal communities of the area, plus its location, have determined how it has been used by humans. The park area has a varied land use history including Aboriginal resource use, grazing, clearing, mining, recreation and other uses which have had a marked influence on the landscape.

The park area forms part of a large linked complex of native vegetation that stretches north and south along the Great Dividing Range, taking in large areas of escarpment, plateau and tableland habitat. State forest areas adjoining the park provide important forested links to Mann River Nature Reserve and Nymboida, Chaelundi and Cathedral Rock National Parks.

### 2.3 Impact of Horses in the Guy Fawkes River National Park

Introduced plants and animals have a significant impact on the park. The NPWS is implementing control programs to manage these impacts. Lantana and blackberry are controlled annually along the river flats where they threaten riverine and woodland communities. NPWS is working with neighbours to address the impacts of stray cattle, which trample and graze native vegetation and spread weeds, through strategic fencing, maintenance of flood gates and stock removal. On the plateau area, wild dogs and foxes are controlled to minimise dog impacts on neighbouring pastoral operations and fox predation on threatened native fauna.

There have been several studies on the impact of free-ranging horses in the park.

A study by Andreoni (1998) found extensive erosion associated with horse movement, with the majority of erosion commonly occurring on steeper slopes in woodland areas (see **Figure 4**). Andreoni



reported a high density of manure pads in the park with an average of 51 pads found along 100m x 10m transects on the valley floor and within grassland communities, covering an average of 184 m<sup>2</sup> per hectare.

Taylor (1995) undertook glasshouse germination trials of free-ranging horse manure collected from the park. On average, one free-ranging horse is capable of passing 19 412 seeds per day, of which 6.7 % are viable. Weed species which survived gut fermentation were *Bidens pilosa*, *Chenopodium* sp., *Einadia nutans*, *Cucumis zeyheri*, *Plantago* sp., and the introduced grasses, *Cynodon dactylon* and *Eleusine indica*. The transference of these results to on site impacts in the park needs further study.

A study on the habitat use, densities and the impacts of horses on Paddys Land Plateau was undertaken in 2002 (Schott 2003). This study recorded numerous areas where horses have been chewing the bark of various eucalypt species (see **Figure 5**).

Further work on bark chewing was undertaken by Ashton (2005) who identified bark chewing as being more likely to occur in drainage lines; 10.9 % of trees in drainage lines sampled were affected. Bark chewing has the potential to impact upon species composition and structure of the vegetation along drainage lines in the Red Range Plateau (Ashton 2005). It is suspected that this behaviour stems from horses seeking minerals not available elsewhere in the environment but this is yet to be confirmed.



**Figure 4. A network of horse pads causing erosion on steep slopes in the Bobs Creek Catchment.**

(photo by Brad Nesbitt)

**Figure 5. Tree chewing by horses on the Red Range Plateau.**

(photo by Sean Leathers)



In addition to these studies, the University of New England (UNE) has undertaken an overview study to evaluate the impacts of free-ranging horses on the park. The findings suggest a relationship between horse densities and soil compaction in the park. In contrast to the work on the Red Range and Paddys Land Plateaus, this study found no evidence of horses damaging saplings or trees in the Guy Fawkes River valley (Jarman *et al.* 2003).

The UNE study (Jarman *et al.* 2003) also included an assessment of the feasibility of using various catchment areas of the park for more detailed research projects to determine the impact of horses on vegetation, fauna and soil erosion in the context of the NPWS horse removal program. Jarman *et al.* 2003 recommended an integrated set of studies taking maximum advantage of the short-term presence but forecasted removal of the horses (see Section 8. Monitoring and Evaluation for further detail on research recommendations).

The impact of free-ranging horses has also been studied in central Australia by Berman and Jarman (1988), in the southern highlands of south-eastern Australia by Dyring (1990) and in the Tasmanian alpine environments by Whinam *et al.* (1994). A comprehensive review of horses, their impacts and management is contained in *Managing Vertebrate Pests: Feral Horses* (Dobbie *et al.* 1993).

The presence of free-ranging horses in the GFRNP is a common part of the experience of visitors to the northern and western parts of the park (Jarman *et al.* 2003). The sighting of free-ranging horses in the river valleys and western plateau country may for some visitors be a pleasurable experience. For others the sighting of a horse, or horse sign, in a declared wilderness within a national park can detract from the wilderness experience. Research by Andreoni (1998) and Jarman *et al.* (2003) showed that a walker or camper in the main valley would frequently encounter horse dung at close

range. Jarman *et al.* (2003) also reported that free-ranging stallions behave in ways that some walkers or riders will perceive as aggressive and will therefore try to avoid.

Recreational riding is popular in the park along the Bicentennial National Trail (BNT). Since its outset, users of the BNT have been advised that “Brumbies are a constant threat with individual bands protecting territorial boundaries at each bend of the (Guy Fawkes) river so travel as a tight group to discourage the stallions from interfering” (BNT 1991). The draft code for horse riding in national parks along the BNT states: “Avoid using stallions and mares in season in areas where brumbies are known to run. Horses have been lost from yards due to brumbies.”

## 2.4 Legislative Framework

There is a range of legislation that provide the framework for the management of horses within Guy Fawkes River National Park. These are listed in the Appendix.

## 2.5 Horse Management Elsewhere in Australia and Overseas

There are several examples of the management of free-ranging horse populations in fragile environments.

The Bureau of Land Management, USA, has a policy which aims to have a self-sustaining population of healthy free-roaming horses and burros in balance with other uses and the productive capacity of the habitat. Under their regulations (BLM 1971), a wide range of management practices is available, while penalties are listed for prohibited acts.

The Kaimanawa Wild Horse Plan (DoC 1996) has sought to preserve and limit free-ranging horses at Waiouru, New Zealand. This plan has looked at the range of their associated values, benefits and liabilities. It recommends a strategy that includes a review of location options for



the horses based on monitoring. In accordance with the plan, the herd was reduced significantly in 1997 with a remnant herd of around 500 horses retained in the southern section of the Waiouru Military Training Area. A revised plan has now been prepared (DoC 2004).

Approximately 400 horses were present in Coffin Bay National Park, South Australia, when it was gazetted in 1982. Although they were initially proposed to be removed, an agreement was made between NPWS SA and the Coffin Bay Pony Society (CBPS) in 1991/92 to allow a herd of 20 mares and their suckling foals plus one stallion to remain in the park as a managed herd. Under the agreement the CBPS were required to manage the herd. Ponies in excess of the allowable 21 head were transported off park and sold to CBPS who, in turn, sold them on at auction. Additional horses were initially trapped in yards set up around water holes in summer but later lured into trap yards using hay bales. The remaining horses were removed in February 2004 and are now managed on private holdings by the Coffin Bay Pony Society.

In the 1980s a cull of free-ranging horses in Namadgi National Park in the ACT was carried out by shooting. While this was successful in removing a small population of horses there was mixed public reaction about the cull.

A Wild Horse Management Plan for the alpine area of Kosciuszko National Park was prepared in 2002 by NPWS and the Kosciuszko Wild Horse Management Steering Committee. The Plan was produced in order to reduce the impacts of horses that had begun to move into the fragile alpine areas of the park in summer. As part of the Plan, three capture and removal methods were trialed: trapping, roping and mustering. The implementation of the Plan is proceeding using trapping under a contract agreement.

### 3. The Public Consultation Process

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There is considerable public interest in the management of horses on conservation lands in NSW.

In October 2000, a cull of free-ranging horses was carried out in Guy Fawkes River National Park (GFRNP) which received national media attention. In response to community concerns, the NSW Minister for the Environment banned the aerial culling of horses in national parks in NSW and set up an independent inquiry into the cull and the future management of free-ranging horse populations in GFRNP and parks elsewhere in NSW (English 2000, 2001a, 2001b).

A workshop was held in February 2001 at Dorrigo to consider local community opinions on the management of horses in the GFRNP. The objectives of the workshop were to:

- establish a clear picture of local community issues on the management of horses in the park; and
- establish what the local community sees as suitable methods to reduce the number of horses in the park without using aerial shooting.

One of the outcomes of the workshop was that some members of the local community wanted acknowledgment of the heritage and historical value of free-ranging horses in the GFRNP.

In March 2001, in response to the outcomes of the Dorrigo workshop and the recommendations from the independent inquiry into the aerial cull (English 2000), the Minister for the Environment commissioned a study into the heritage value of horses in the park. The study was to provide an opportunity for a thorough investigation into the view of many locals of the area that these horses are of historical significance. The Minister indicated that should the horses be found to have genuine heritage significance then the horses would be humanely removed from the park so that they can be managed

properly in another location by people with an interest in their heritage value.

The Heritage Working Party comprised five local community representatives who had an acknowledged involvement with, and an interest in the history of horses in the GFRNP, a representative from the Waler Horse Society and a member appointed by the NPWS. The working party was chaired by Associate Professor Frank Nicholas from the University of Sydney's Centre for Advanced Technologies in Animal Genetics and Reproduction. In February 2002 the Heritage Working Party (HWP) reported that the "... horses have significant local heritage value, sufficient to warrant their being managed on this basis" (HWP 2002). In response to this finding the Minister announced a local community-based steering committee to assist the process of consultation and the humane removal and appropriate management of horses from the Guy Fawkes River National Park outside the park.

#### 3.1 Guy Fawkes River National Park Horse Steering Committee

The GFRNP Horse Steering Committee included representatives from the Heritage Working Party, RSPCA, veterinarians, experienced local horse handlers, local landholders, local horse interest groups, the NPWS Regional Advisory committee, the Rural Lands Protection Board, the Local Aboriginal Land Council and the NPWS. The steering committee's terms of reference were to assist the process of consultation and the humane removal and appropriate management of horses from the Guy Fawkes River National Park outside the park. The establishment of the steering committee also provided the opportunity for local people with experience in handling horses in rugged country to be involved in developing the most appropriate method to humanely remove the horses from the park.

The objectives of the steering committee were:

- to identify and advise on the most appropriate techniques for the humane and efficient capture and handling of wild horses in the park;
- to identify and advise on the most appropriate methods for the removal of captured horses from the park;
- to assist in the production of a strategy for the capture, handling and removal of wild horses from the GFRNP;
- to identify and advise on options for the future management of the wild horses once removed from the park and preserve identified local heritage significance;
- to ensure capture and transport methods comply with the “Code of practice for the capture and transport of feral horses” (English 2001b);
- to represent the community’s views on the future management of wild horses removed from the park;
- to ensure capture and removal methods do not cause a significant impact on the environment; and
- to ensure the safety of all personnel involved in capture and removal operations.

The steering committee met on five occasions between October 2002 and July 2003.

### 3.2 GFRNP Horse Reference Group

In December 2004 the GFRNP Horse Reference Group was established to provide expert advice and assistance to NPWS in the ongoing planning and implementation of horse management in the park. This small, specialist group includes representation from the RSPCA, researchers, the National Parks Association, horse interest groups, local landholders and the NPWS Regional Advisory Committee.

### 3.3 Community Consultation

It is important, through the consultation process, to identify the range of values held by people and the range of issues that need to be considered in developing a horse management plan for the GFRNP. It is evident from the outcomes of the Dorrigo workshop and from the horse management workshops and information sessions held in Kosciuszko NP that the management of free-ranging horses is a very polarised issue. It is also evident that some people view horses differently to other feral animals such as foxes, wild dogs, pigs and goats.

The NPWS has adopted a staged approach to community consultation on this issue. These stages are as follows:

#### Stage 1: Public Workshop (February 2001)

This local community stakeholder workshop was held in Dorrigo to gauge public views on future management of horses in GFRNP.

#### Stage 2: GFRNP Heritage Working Party (March 2001 – February 2002)

The working party was set up in response to the outcomes of the public workshop, and following recommendations from an independent inquiry into the aerial culling of horses in the park. The Minister for the Environment established the working party to undertake a study into the heritage value of horses in the park.

#### Stage 3: GFRNP Horse Steering Committee (October 2002 – July 2003)

Established to assist the process of consultation and the humane removal and appropriate management of horses from the Guy Fawkes River National Park outside the park.

**Stage 4: Exhibition of Draft Horse  
Management Plan  
(December 2003 - March 2004)**

The draft version of this plan was placed on public exhibition between 17 December 2003 and 26 March 2004. Two public meetings were held in the local area (at Dorrigo and Guyra) to raise awareness and assist those seeking to comment on the proposed plan. A total of 76 submissions, covering 23 issues, were made on the draft plan.

**Stage 5. GFRNP Horse Reference  
Group  
(December 2004 - Present)**

Established in December 2004, this expert reference group was set up to assist NPWS in reviewing the planning and implementation of the GFRNP horse capture and removal program.

**Stage 6: Keeping the community  
informed  
(Ongoing)**

Community updates on the implementation of the GFRNP Horse Management Plan will be provided into the future.

## 4. Objectives

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The primary objectives for a Horse Management Plan for the Guy Fawkes River National Park are to:

- conserve and protect the natural values of the Guy Fawkes River National Park by removing horses and to ensure the park remains free from horse impacts; and
- provide for the humane capture, handling and removal of horses from the park and identify options for the appropriate management of the horses once removed from the park.

Further guiding principles are to:

- ensure the humane treatment of horses throughout the process;
- ensure the capture and removal methods do not cause a significant impact on the environment;
- liaise with park neighbours to ensure surrounding horse populations do not encroach on park lands;
- ensure continued community involvement in the process;
- ensure that all control programs comply with the National Parks and Wildlife Act and other relevant planning instruments, legislation, policies and guidelines;
- ensure that all operations are carried out to ensure the safety of NPWS staff, contractors, volunteers and the public; and
- ensure that removal methods are evaluated and modified as appropriate.

## 5. Horse management methods

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Horses have a high public profile, and horse management practices by conservation agencies receive close scrutiny from a range of interested groups. Techniques employed in GFRNP must satisfy a wide range of criteria and must be continually refined from the basic outlines presented below and the techniques discussed in various horse management references (including Dobbie & Berman 1992; Dobbie *et al.* 1993; English 2001a). An overriding consideration in managing horses in the park is to ensure humane treatment of the horses.

Different horse management techniques are required depending on issues such as band size, sex and age structure, access, geography and season. A variety or combination of different techniques may give the most effective results, however, some methods will not be suitable for certain circumstances. For effective control of horse populations all options should remain available. The park's remoteness and limited road access also poses significant restrictions on the type of capture and transport techniques that can be used.

The effectiveness of the horse removal program will be assessed by measuring the reduction over time of the park's horse populations and preventing increases in local density and expansion of horse distribution.

The following control methods have been considered in the development of this plan.

### 5.1 Immobilisation Using Tranquillisers

The use of dart rifles to deliver tranquilisers to immobilise horses for transport is seen as a humane and non-lethal way of solving the problems involved in mustering horses. It is however impractical for large-scale horse control as the tranquiliser dosage must be calculated for each horse based on its estimated

weight. It is also technically very difficult to dart horses in terrain such as occurs in the GFRNP due to the requirement to approach horses as close as 40-60 metres to ensure effective use of dart rifles (English 2001a). Even if this problem is overcome by the use of salt licks or other attractants, there is still a potential problem in the way that an animal may behave when it is darted. Some may in fact subside with little problem, but others will certainly move away and may stumble or fall in rocky ground. There is almost no way of controlling the situation once a horse is darted and until it falls down, with an ever present potential for injuries or worse to occur.

The use of chemical immobilisation is considered an impractical, expensive and labour-intensive option. The method may well be considered for the capture of specific horses but it certainly is not suitable as an option for the removal of large numbers of horses from GFRNP.

### 5.2 Fertility Control

Several techniques of fertility control can be used or are under development, however they vary in cost and effectiveness. Alternatives include surgical desexing (males and females), contraceptive implants (mares) and immunocontraception (where males and females are immunised against their own sperm or eggs). All three techniques currently require horses to be captured and handled so the method has practical and financial limitations. However, there continue to be advances in this field and future refinements may allow this approach to become a more practical option. There are reported developments being made in delivery of the immuno-contraceptive by dart rifle. Research by the US Bureau of Land Management is looking at delivery of an immuno-contraceptive via a time-release pellet that could provide 3-4 years of fertility control.

The use of fertility control as a primary technique in the GFRNP is not consistent with the objectives of this plan. The technology may however have a place controlling breeding in captive herds of horses once they are removed from the park and being managed elsewhere. The NPWS will continue to review developments in this technique and their applicability to management of free-ranging horses.

### 5.3 Fencing

Fencing along park boundaries may be required to stop free-ranging horses from moving into the park from adjoining lands. Restricted access, cost and rugged terrain limit the suitability of this technique, although the NPWS will continue to investigate options to fence the boundaries of the GFRNP.

Erection of temporary holding paddocks and training fences, including electric fencing, within the park could be used to help educate horses to human-made barriers. The paddocks would require several gates/entrances that are closed one by one, once the horses are familiar with the enclosure. The inclusion of mineral blocks, artificial feed, and a watering point would encourage the horses to move into and out of the area. Once the last gate is closed and adequate food is provided, the horses can be left in the enclosure for a period before gentling and removing them.

### 5.4 Shooting

Views within GFRNP horse steering committee on this technique varied. Some members supported the use of ground-based shooting for problem horses and horses which cannot be relocated, but only where it is implemented by appropriately trained and skilled persons working to strict protocols. Others on the committee only supported shooting sick or injured horses. Despite majority agreement at the Dorriggo community workshop (held in February 2001) for retaining ground shooting as a technique for the control of

selected horses, there remains strong opposition to the shooting of horses in some sectors of the community. English (2001a) reported that ground shooting can be a humane means of killing a horse when done correctly.

Ground shooting will not be used as a primary method of removing horses from the park. Shooting will be permitted where a horse is found to be in a condition that it is cruel to keep it alive, or its age and physical condition are such that it cannot be re-homed. Animal welfare experts will determine the process by which this decision can be made. A report form to document the reasons for the animal's euthanasia on animal welfare grounds has been developed in conjunction with the RSPCA. The RSPCA has advised that in some circumstances it may be more appropriate to euthanase horses in the park rather than put them through the unnecessary stress associated with loading and transport, particularly where it is unlikely that a home will be found. Consideration will also be given by NPWS to the use of shooting to euthanase horses that threaten the success of trap sites or threaten the welfare of horses within trap sites.

Aerial shooting of horses in national parks in NSW is banned. The Senate Select Committee on Animal Welfare investigated aerial shooting in 1991. The committee reported that shooting horses from helicopters is the only practical method for quick, large-scale and humane culling of large animals in inaccessible locations (Dobbie *et al.* 1993). The main advantage of aerial shooting is that shooters can locate and get close to the animal and any wounded animals can be followed up and killed. There is however national and international concern with the large-scale aerial shooting of horses. It must be noted that the GFRNP horse steering committee held differing views about the humaneness of aerial culling as a means of managing the impacts of free-ranging horses on the park. Some animal

welfare groups are opposed to the use of aerial culling as a means to control horses.

## 5.5 Capture and Removal

A key objective of this plan is to ensure the humane treatment of horses throughout the process of capture and removal from the Guy Fawkes River National Park. There are a number of horse capture and removal techniques. Issues associated with capture and removal techniques include:

- environmental impacts associated with horse riding;
- stress on horses as a result of the capture and then transportation from the park;
- risk of injuries to riders and horses;
- environmental damage associated with construction of horse traps;
- conflicts with horse riders and other park users;
- the issue of horse riding (for management purposes) in wilderness areas;
- various degrees of efficiency among the different methods in capturing horses; and
- high spring and summer temperatures can create welfare issues for both captured horses and riders' horses.

### 5.5.1 Trapping horses in yards using lures

This technique involves attracting horses to an area using a mineral block or combination mineral block and artificial water point, where water availability is limited.

Trap yards using a salt block as a lure have been successful in Kosciuszko National Park (KNP). A salt block may not be attractive to all horses and other mineral blocks may need to be trialed. A mineral block with a high molasses content may increase palatability and desirability.

In KNP the block is placed on the ground or suspended from a tree. Once it is observed that the horses are using the

block, portable yards are erected which allow the horses access to the block. A trigger is then set which activates a gate trapping the horses inside. The horses captured are then led by mounted riders and loaded onto a truck to remove them from the park. In KNP the number of horses in the trap determines the number of riders required to lead horses out. Generally two riders are required to lead each horse, depending on the terrain.

The method is labour intensive. It requires scouting to determine where horses are frequenting an area to ensure that placement of the mineral block is effective. It then requires regular checking of the use of the mineral block before the decision is taken to erect the horse yards. Once yards are erected they need to be checked regularly. This becomes more critical when the trap is set. The yards will always be in relatively remote locations, so this process will always require a large commitment of time and people.

Horses are known to frequent dams situated on the Red Range Plateau of GFRNP. This may provide an opportunity to trap horses. The technique would require fencing some dams on the plateau, leaving one dam available to horses, around which a large yard is constructed with numerous exit/entry points. A mineral block placed in the trap or suspended from a tree may assist in attracting horses. Once horses are moving in and out of the yard, exit points are closed off and the horses trapped. A one-way gate could be utilised as an alternative in this design. Once trapped, horse-handlers then work the horses and prepare them for leading out or loading directly onto a transporter.

### 5.5.2 Trapping horses in a specially constructed trap paddock

A trap paddock is constructed with several points of entry. The paddock may be constructed in stages to allow horses to become used to the concept of a fence barrier. It is preferable that the location of a trap paddock contains a water point



within the paddock. A mineral block placed in the paddock or suspended from trees may assist in attracting horses. Once horses are moving in and out of the trap paddock the exit points are closed off until eventually all exits are closed and the horses are trapped. The horses are then brought into a smaller trap yard. Horse handlers then work with horses and over time quieten and prepare the horses for leading out or loading onto a transporter.

### 5.5.3 Mustering horses into a net trap

This technique involves the mustering of horses into a trap yard constructed of high strength fishing net. Long hessian wing fences that funnel horses into the trap opening assist the effectiveness of the trap. This technique requires searching out a band of horses and studying their movement, including behaviour and routes of travel when they are put under pressure. A trap site is identified along this route. Mustering into the trap is principally by horse riders. Mustering may be assisted by a helicopter which locates and shadows the horse band gently applying pressure to move them in the direction of the trap, where horse riders take over and run the horses into the trap opening.

This is a labour intensive approach, which relies heavily on finding a suitable location for the trap to be effective. The trap must be constructed quickly so horses are not aware of the activity. It can however, where horse densities are high, capture a large number of horse bands. A separate holding enclosure could be set up as an annex to the net trap yard. Once in the trap, horses could be moved into the yards, then held, quietened and in time led by horse riders to trucks for removal out of the park.

### 5.5.4 Mustering using coacher horses

This technique involves combining educated, domesticated horses to free-ranging horse bands before the muster. The presence of coacher horses has been shown

to reduce stress in the free-ranging horses during the muster. Horse riders then muster the horses towards the trap site. Presence of coacher horses may, where the herd becomes unruly, allow the musters to turn the herd until it settles and forward movement in the desired direction can commence again. Once the horses are moving in the desirable direction horses are mustered into a trap or large yard. Where this technique has been used in central Australia, the yards are very large to allow horses to enter the yard at a reasonable pace and still be able to pull up and settle before encountering panels. Injuries may occur if horses run into steel panels. In the Guy Fawkes, captured free-ranging horses could be educated to fencing and trained to take artificial feed and then released as coacher horses. These horses could assist to educate other horses to take artificial feed and respect barrier fencing.

### 5.5.5 Mustering using Low Stress Behavioural Technique

Low stress mustering uses basic natural animal instincts combined with principles on working with the stock's natural instincts to produce low stress outcomes. If implemented effectively free-ranging horses can be moved using this technique without stress. This technique can be applied by people working on foot, horseback or helicopter. Using this technique horses could be moved into a large paddock where they could be educated to fencing, then moved into smaller paddocks where horse handlers work with the horses to quieten and prepare the horses for leading out or loading onto a transporter.

### 5.5.6 Roping horses

Roping is a method of capturing horses from horseback. It involves the roping of horses from horseback, then leading the horses to where they can be loaded onto a truck and removed.

This method has been used in Victoria to reduce horse numbers in remote areas. For

example, Parks Victoria records show that during the past few years an average of 200 horses per year were removed by this method. Recent research also indicates that the average catch of wild horses using this method as reported by the Alpine Brumby Management Association (ABMA) of Victoria is one horse every one to two rider/days, depending on the skill of the rider.

The steering committee considers that this technique is not appropriate for the capture and removal of horses from the Guy Fawkes River National Park due to the following reasons:

- The method results in a relatively low number of horses taken.
- It is stressful on the horse and there is a risk of injury to the horse.
- It requires skilled riders and the number of riders with sufficient skills to capture horses is limited.
- There is a risk to riders in remote and difficult terrain.
- There are environmental impacts associated with running horses.
- The activity may cause conflicts with other park users, particularly in wilderness areas where horse riding is not permitted except for management purposes.

#### 5.5.7 Implementation of capture and removal techniques

There are various methods by which a capture and removal program may be implemented in the Guy Fawkes River National Park. These include implementation by NPWS staff, contracting the work to appropriately experienced individuals or associations, using the assistance of appropriately experienced volunteers, or by a combination of these options.

Local NPWS staff have been managing horses within the park for many years, however there are also competing interests for staff with other park management responsibilities. Staff have detailed

knowledge of the reserve, experience working in and the risks associated with operating in this very remote area. Some staff also have good knowledge of local horse behaviour and distribution.

Contracting provides the opportunity to utilise the horse handling expertise within the local horse community. Contracts can be developed which are performance based and therefore cost effectiveness can be monitored. Contractors would need to have appropriate specialist skills and experience. Contracting arrangements could be to individuals or to appropriately constituted associations.

Contracting for horse capture and removal currently occurs in Victoria where Parks Victoria have contracted the Alpine Brumby Management Association (ABMA) for this work. Only a financial member under subcontract to the ABMA is permitted to capture horses in the park. The contract indemnifies Parks Victoria from claims, requires public liability insurance, regular reporting and strict adherence to animal welfare legislation and codes of practice. In Kosciuszko National Park, NPWS contracts out the trapping component of that park's horse removal project.

NPWS has an existing program that allows for volunteers to undertake activities within national parks. Where approved, these activities are covered by insurance. Mustering and trapping of horses by volunteers has previously occurred in the GFRNP. Volunteers would need to have appropriate specialist skills and experience.

Arrangements for the capture and removal of horses from the park must address ownership of the animals captured, to ensure to the extent possible that horses removed from the park can be managed properly by people with an interest in their heritage value (see Section 7 on future use of horses removed from the park).

### 5.5.8 Horses which cannot be captured and relocated

It is likely that individual horses that evade capture on one or more occasions will become increasingly more difficult to capture. It can also be expected that as the population of horses in the park is significantly reduced it will become increasingly harder to locate and capture the remaining horses. These situations may be addressed by a proportional increase in catch effort and resourcing. Further modification of capture techniques may also be required to achieve the aim of all horses removed from the park including a reconsideration of alternative control methods including ground shooting.

## 6. Trial of horse removal methods

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There has been vigorous public debate about the options for managing wild horses. However when the various options are fully explored, it is apparent that there are only a few options that provide humane treatment of horses, are practical, cost-effective, environmentally sound, and meet legislative and policy requirements.

In accordance with the recommendation from the Guy Fawkes Horse Steering Committee, several capture and removal methods were investigated, trialed and evaluated in the park to determine their effectiveness in the passive humane removal of horses from the park. The trial commenced in 2004 with capture effort focused in the south west of the park (including the Mt Gardiner, Red Range Plateau, Tallagandra and Boban Hut areas).

Following the trial, each method was evaluated against the following factors:

- humane treatment of horses (based on advice from animal welfare experts);
- safety/injuries to people involved;
- number of horses removed;
- environmental impacts of the removal operations;
- resources required, including personnel and funds;
- impact of the various methods on park visitors; and
- success of contract arrangements.

The outcomes of the trial are documented in a separate report (DEC 2005). A summary of the relevant findings in relation to each method trialed is provided below.



**Figure 6. Trap located at Boban Hut**

(photo by Brad Nesbitt)



**Figure 7. Transporting the trapped horses**

(photo by Brad Nesbitt)

## 6.1 Trap Yards and Paddocks

A series of trap paddocks and yards of varying dimensions and configurations were installed at strategic locations in the park. Yards were located near Boban Hut, Tallagandra Depot and Wonga Flats. Feed stations were located at Mount Gardener, Boban Hut, Dingo Spur, '300 acre paddock' and Spion Kopje (see **Figure 6**).

These locations were used to trial three broad horse capture techniques. Techniques included: use of feed-based lures to attract horses; use of coacher horses to encourage horses to enter the capture areas; and low stress behavioural techniques for mustering horses into capture areas.

All trap paddocks were successful in capturing horses but some configurations were more efficient. The optimal trap paddock size was approximately 16 hectares (40 acres) and contained a small amount of natural shelter. Trip gate entries were found to be most effective. However, special care is required to ensure the safety and wellbeing of foals within trap yards.

Trap yards were most effective when:

- used in conjunction with lures;
- linked with trap paddocks;
- located in areas where a number of horse territories overlap;
- located in a sheltered area;
- yards are of adequate size to minimise social conflict when horses are confined (at least 30 panels); and
- used in conjunction with manually operated or remote trip gates are used to enclose horses.

### 6.1.1 Trapping using lures

Salt was the most effective lure, but it was only effective for the first few days of contact. Hay was the second most effective feed-based lure, with molasses being slow to attract horses but effective once horses were established. Feed-based lures were effective in attracting horses from

inaccessible areas and attracting horses into trap paddocks.

### 6.1.2 Trapping using coacher horses

Three horses were selected from wild herds and educated to accept human contact and handfeeding in the yards. The horses were released to rejoin wild herds wearing radio collars. Coacher horses were useful to:

- bring wild horses from trap paddocks into trap yards;
- bring stray individuals back to captured herds;
- teach wild horses to accept feed and human contact with a minimum of stress; and
- assist in loading horses onto transport.

### 6.1.3 Trapping horses using low stress behavioural techniques

Ground based and helicopter based low stress stock handling mustering techniques were trialed. Helicopter mustering using low stress techniques was effective in inaccessible areas. Ground mustering using the same low stress principles was effective in manoeuvring horses into trap paddocks and in educating horses once contained in trap yards.

## 6.2 Mustering Horses into a Net Trap

The original framework for the horse removal trial identified mustering horses into a net trap as a technique to be evaluated. It was decided not to trial this method after the more passive entrapment methods proved successful.

## 6.3 Trial horse capture and removal program

The trial was conducted during April to October 2005. The results of the trial showed that horses in the park can be trapped effectively in both steel yards and

trap paddocks. As a result of the eight-month trial, 19 horse mobs totalling 114 horse were captured. The combination of a trap paddock linked to steel yards with multiple holding pens proved the most effective method. The use of feed-based lures and coacher horses greatly assisted capture success.

Once captured, horses required approximately 4 to 5 hours of humanisation to prepare them for transportation. A modified horse crate fixed to a 4WD truck was used to transport horses from the remote capture sites at Boban Hut to a transfer point on the Wonga Plateau. A commercial 2WD stock transporter was then used to transport horses out of the park to a holding property run by the Guy Fawkes Heritage Horse Association (see **Figure 7**).

No horses were injured during the capture phase of the trial. One horse however was euthanased on site after injuries sustained in the wild were assessed as too serious to be treated and one horse died during loading. The program was supervised by the RSPCA and reported as a success.

## 7. Future horse control program

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### 7.1 Contractor Requirements

Future contracts for the capture and removal of horses from the park will require contractors to:

- provide evidence of skills and experience in the humane capture and handling of horses;
- comply with legislative provisions relating to the care, capture and transport of horses, including the Code of Practice for the Capture and Transport of Feral Horses (English 2001b);
- minimise environmental impact at capture sites; and
- record and report to the NPWS on the results of any capture and removal operations. This information will include:
  - a record of all horses removed, including sex, colour and age;
  - completion of a Horse Identification Record Form for each individual horse captured;
  - numbers/locations of horses sighted;
  - record of daily activity at feed stations and trap sites; and
  - advice on any accidents or injuries to any horse or rider.

NPWS may provide assistance and material where specific traps and fencing structures are required to be constructed. The type of assistance and materials will be specified in the contract.

### 7.2 Key Areas for Future Horse Control

Given the success of the trial program, the NPWS is considering contracting capture and removal programs in other areas of the park. The identification of key areas within the park for future horse control programs have been based on horse population

distribution, access for capture and removal, and suitable landform for set-up of trapping infrastructure. These areas (described below) include:

- the Red Range Plateau,
- Glen Nevis Plateau,
- Ballards Flat,
- Upper Pargo Creek Catchment,
- Boyd River,
- Chaelundi Creek, and
- Combalo Flat and Housewater Creek.

The Red Range Plateau area is a large plateau area in the central western area of the park and divides the Aberfoyle, Guy Fawkes and Sara River catchments. This area was the site for the trial trapping program and all trapping to date. This area currently contains the Wonga, Boban Hut and Spion Kopje trap sites. The area will also play a significant role in the removal of horses from the Bobs, Boban and Kittys Creek catchments.

Glen Nevis Plateau area is a plateau area bounded to the north by Razorback Creek, the Sara River to the south, and Boyd River to the east. This area has had no control programs to date, however it has a significant horse population and will be an integral area for trapping horses from the Sara River catchment as well as the plateau itself.

The Ballards Flat area is adjacent to the Sara River between its junctions with Seven Mile and Bobs Creeks. Located in the centre of the largest populations of horses, it is an area which will play a key role in trapping horses from the Sara River and lower parts of Bobs and Pargo Creeks. No trapping has been carried out to date in this area due to the condition of the access road. Once Paddy Ross Trail is upgraded in 2006-07, trapping and transport will be possible.

The Upper Pargo Creek catchment has a considerable population of horses. The

Spring Creek section of the catchment is a recent addition to the park and, as a former grazing lease, it has good access and some dam development which would assist in running trapping operations. It provides trapping access to the rest of the Upper Pargo Creek catchment.

The Boyd River area includes all the river flats between the Sara/Boyd junction and Corner Camp. The area has vehicle access into the gorge as well as along the river. This will give scope for good trap site selection and operational support. The largest population of horses in the main Guy Fawkes/ Boyd Valley occurs in this area.

The Chaelundi Creek area encompasses the catchments of Chaelundi, Petrogate and Mest Creeks to the east of the Guy Fawkes River below Chaelundi Falls and the Lucifers Thumb geological feature.

The Combalo Flat and Housewater Creek areas lie in the central area of the Guy Fawkes River Valley. While this section of the park has lower numbers of horses, it is the only part of the central to upper parts of the Guy Fawkes River accessible by vehicle.

These sites may need to be expanded as the horse population is reduced or when opportunistic trapping is required.

### **7.3 New Additions**

The park has expanded in recent years with additions from land purchases by NPWS. Some of these new additions have included lands containing free ranging horses. New additions in the Mount Gardiner and Red Range Plateau area have included in excess of 100 horses.

### **7.4 Horses on Neighbouring Lands**

Free ranging horses are also known to occur on neighbouring lands to the west and north of the park. NPWS will work with neighbours to expand horse control to these areas where appropriate to minimise the movement of horses from private lands onto the park. Where possible, fencing of boundaries will occur.



## 8. Future use of horses removed from the park

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The future management of the horses removed from the park must take into consideration that the horses have been reported to have local heritage significance (HWP 2002). The key objectives of the plan, as stated above, are to conserve and protect the natural values of the Guy Fawkes River National Park by removing horses and to ensure the park remains free from horse impacts, as well as providing for the humane capture, handling and removal of horses from the park. The issue of how best to preserve the local heritage value of the horses is addressed within the context of these objectives.

The GFRNP Horse Steering Committee considered a variety of future management options for the horses once they are removed from the park. These options include:

- private ownership via a horse adoption system;
- ownership by an association, with horses fostered out in family groups;
- creation of a Wild Horse Sanctuary in the local area;
- establishment of a joint TAFE / Local Aboriginal Land Council horse training program for Aboriginal trainees; and
- establishment of an Australian Stock WHIP (Wild Horse Incarceration Prevention) program.

These and other options will continue to be considered as options for the future management of the horses once removed from the park.

It is expected that some horses removed from the park will be highly valued and be trained as riding horses, carriage horses or kept as pets. Of the 156 horses known to have previously been removed from the park prior to the trial, some have become exceptional riding horses, others pets. Many however were not valued in this way and were sent to the abattoir. This has also

been the case in horse programs in the USA and New Zealand where horses end up being destroyed or sent to an abattoir because they are not valued due to their age, poor conformation, or wildness.

The recognition that Guy Fawkes horses have local heritage significance creates the potential that many more of these horses, once removed from the park, will be valued and retained.

Horses removed during the 8 month trial capture program were provided to the Guy Fawkes Heritage Horse Association (GFHHA), previously known as the Guy Fawkes Wild Horse Management Association. This association was formed with the specific objective of overseeing management of the horses once they are removed from the park. The purposes of the GFHHA include:

- to take possession of wild horses removed from the GFRNP;
- to maintain the heritage value of the wild horses;
- to oversee the management of the wild horses once they are removed from the park;
- to maintain the Guy Fawkes Register to enhance the value of the horses removed from the park;
- to sell suitable horses outright and re-home suitable family groups to retain their heritage value; and
- to maintain the search for a suitable sanctuary.

Over 90% of the 114 horses received by the GFHHA during the trial capture program were either re-homed or retained as breeding horses by the association. All horses sold by the GFHHA are recorded on the Guy Fawkes Heritage Horse stud database and are eligible to be registered as a Guy Fawkes Heritage Horse.

In June 2005 the NPWS advertised an expression of interest for organisations to take possession of horses captured in the

GFRNP. Requirements for organisations taking receipt of horses include:

1. The organisation on receipt of horses from the GFRNP will have sole responsibility for the horses' welfare and maintenance.
2. All horses must be branded before disposal or sale.
3. Horses may not be located, under any circumstances, on lands that adjoin or are in close proximity to NPWS reserves.
4. The organisation agrees to not sell, loan or lease any horses to individuals who intend to locate the horses on lands that adjoin or are in close proximity to NPWS reserves.
5. The organisation or subsequent owner agrees to pay the cost of retrieving any horses they have take possession of that are subsequently found on NPWS lands.
6. The organisation agrees to make available for inspection by the NPWS and RSPCA any sites where horses will be retained by the organisation.

Two organisations were selected from the expressions of interest: the Guy Fawkes Heritage Horse Association and the Save the Brumbies Inc. Horses removed in future programs will be offered to these two groups.

The purposes of Save the Brumbies Inc. include to:

- further the welfare and well-being of brumbies;
- publicise the plight of brumbies, particularly those in national parks;
- ensure no action of the association will lead to the destruction of a brumby; and
- provide permanent or temporary sanctuary for brumbies.

Some of the horses received by Save the Brumbies will be located on a local property owned and operated by the Dorodong Aboriginal Association (DAA). Under this arrangement DAA will work jointly with TAFE to undertake a horse-training program on the property to train local Aboriginals in horse-handling skills.

All Guy Fawkes horses placed by Save the Brumbies are eligible for registration with the Australian Brumby Horse Register and are also eligible for registration on the Guy Fawkes Heritage Horse stud database.

NPWS will continue to consider other options listed above for the future management of the horses once removed from the park.

## 9. Monitoring and Evaluation

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Monitoring and evaluation procedures need to be able to measure the success and or failure of this plan in achieving its stated objectives. The objectives are:

1. to conserve and protect the natural values of the Guy Fawkes River National Park by removing horses and to ensure the park remains free from horse impacts; and
2. to provide for the humane capture, handling and removal of horses from the park and options for the appropriate management of the horses once removed from the park.

The plan is a flexible document with the potential to develop as the various control methods are implemented, evaluated and where necessary modified.

### 9.1 Monitoring the Humaneness of Capture and Removal Program

An important purpose of trialing capture and removal techniques was to ensure that animal welfare was not compromised. A trial approach allowed for modifications to techniques to be introduced at the appropriate time. Animal welfare experts will continue to be involved at appropriate stages in the further development and implementation of this program, to advise on horse welfare issues.

### 9.2 Evaluating the Effectiveness of Capture and Removal Program

The effectiveness of the horse removal program will be assessed by measuring the reduction over time of the population and density of horses in the park, as well as their distribution within the park. While the current horse population is not known, an estimate based on initial population modelling indicates the population may be in excess of 300. The NPWS is currently working with researchers from the

University of New England to investigate ways of improving the methods of measuring change in horse population density and distribution.

It is important to note that the horse population will increase if the capture program removes fewer horses than the annual horse population growth. Projections for horse population growth, based on a stable environment, can be calculated if assumptions on total horse population and growth rate are made. The limited data available suggest the growth rate per year may be between 10 % and 20 % (see Section 2.1.3). Table 1 shows the number of horses which need to be removed each year to reduce the horse population in the park to zero in five years, based on a range of scenarios based on horse population size and growth rate. Horse population projections based on an estimated population of 300 horses, with an annual growth rate of 15% indicate that:

- 78 horses must be removed every year to reduce the population theoretically to zero in five years;
- if no horses were removed, the population will continue to increase and in five years the population would be in excess of 600 horses; and
- the horse population will increase by 45 horses each year so a reduction in the population in the first year can only be achieved if more than 45 horses are removed in that year.

It is important to note that horses will be harder and harder to locate and capture as the population is reduced and gets closer to zero. This may be addressed in part by a proportional increase in catch effort and resourcing. It is also advisable to focus on removing a significant percentage of the population in each year of the program rather than removing the same set number of horses each year. This approach means in the last years of the program there will only be a few remaining horses, however

there may be a requirement for the same or more time and resources to locate and capture these horses. Capture techniques during these later stages may also need to be modified. This plan proposes the removal of all horses from the park over a five-year period. As the current horse population is not known, it is advisable to focus on a high population estimate to ensure catch effort is aimed at removing a significant proportion of the horse population. It is recommended to reduce the horse population by 50% each year until the population is small enough that only a few horses remain to be removed in the final year of the program. Assuming the population may be as high as 300 horses, then the capture program should aim to remove 150 horses in the first year. For this to be achieved, appropriate resourcing and well-developed capture techniques will be required. An assessment of the horse population will be required each year to identify the number of horses which should be targeted for removal in the following year.

The density and distribution of horses in the park will continue to be monitored using the following methods:

- Population modelling from data collected during aerial surveys of horses in the park using aerial mark recapture technique (Freeman 2005). Survey techniques will continue to be refined to increase their accuracy in determining horse population density and distribution.
- Reports of horses from NPWS staff working in the park.
- Reports received from the public about the presence of horses in the park.

This information combined with reports from contractors (see section 6.4.1) will form the basis upon which to evaluate the effectiveness of the program.

**Table 1. Projections of the number of horses that must be removed from the park annually to reduce the horse population to zero in five years**

<b>Estimated Horse Population Size</b>	<b>Number of horses to be removed annually if population growth rate is 10%</b>	<b>Number of horses to be removed annually if population growth rate is 15%</b>	<b>Number of horses to be removed annually if population growth rate is 20%</b>
150	36	39	42
200	48	52	56
250	60	65	70
300	72	78	84
350	84	91	98
400	96	104	112

Note: calculations do not include population change due to horses dying naturally or movement of horses on and off the park.

### 9.3 Monitoring the Impact of Horses on the Flora, Fauna and Soils

This plan recommends an integrated set of studies, as recommended by Jarman *et al.* (2003), which takes maximum advantage of the short-term presence but forecasted removal of horses.

Recommended studies include the following:

1. An enclosure study to reveal the short-term effect (mainly on plant growth and phenology, and on soil characteristics) of horse removal by exclusion.
2. An experiment to test the sensitivity of selected native plant species to browsing pressure from horses.
3. Monitoring, within several major catchment areas, of the responses of environmental variables to the local removal of horses or reduction in horse density, focusing on vegetation cover, vertebrates and invertebrates, and establishing benchmark values for possible long-term monitoring of these variables.
4. Tests of the feasibility and effectiveness of using remote sensing to monitor and evaluate changes in ground cover resulting from the removal of horses and cattle.
5. Monitoring of stock densities across the whole of the park, to provide a spatial database for research and management.

### 9.4 Monitoring the Environmental Impact of the Removal Program

The NPWS will undertake environmental assessment of activities related to the capture and removal of horses from the park. It is important that removal techniques do not cause greater

environmental damage than the existing presence of free-ranging horses in the park.

#### 9.4.1 Horse Trap Sites

The set up and running of trap sites, depending on construction technique and location, may impact on the local environment. Salt lures placed on the ground can kill vegetation and soil fauna. When using traps and trap paddocks there is a concentration of horse impacts within the trap and associated yard or paddock. The erection of fences may impact on native fauna movement and cause injuries or death from entanglement.

Where feasible, existing fences and yards will be used. Impacts at trap sites will be monitored using fixed photo points at each site. Photo points will include the trap site, yards and surrounding area. Impacts of fences on native fauna, including incidences of fauna injury due to fences, will be recorded. At the completion of the program, all fencing and trap materials will be removed from the park. If necessary, trap sites may require active intervention to restore the site to a natural condition.

#### 9.4.2 Accessing remote locations

Access may need to be provided to remote areas of the park for the transport of materials in to construct traps and for the removal of horses from trap sites. Decisions on the type and provision of this access by NPWS will be made on a case by case basis and subject to appropriate environmental assessment.

Where road or track works are carried out, photo points will be set up to monitor the impact at these sites and to provide a guide for restoration works once the horse control program is completed. At all times environmental impact at these sites will be kept to a minimum.

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## Appendix

**Table 2. NSW legislation and guidelines relevant to horse management**

National Parks and Wildlife Act 1974	<ul style="list-style-type: none"> <li>▪ Establishes the National Parks and Wildlife Service</li> <li>▪ Provides for establishment and management of conservation reserves and the protection of native flora and fauna and Aboriginal relics.</li> <li>▪ Requires the NPWS to carry out works considered necessary for the management or maintenance of NPWS lands. This includes management of feral species.</li> <li>▪ Requires that a Plan of Management be prepared for each reserve. The NPWS is required to give effect to plans of management.</li> </ul>
Threatened Species Conservation Act 1995	<ul style="list-style-type: none"> <li>▪ Aims to conserve biodiversity by protecting and encouraging the recovery of threatened species, endangered populations and endangered ecological communities in NSW.</li> </ul>
Wilderness Act 1987	<ul style="list-style-type: none"> <li>▪ This Act states that wilderness areas must be managed to protect or restore their unmodified state in the absence of significant human interference and permit opportunities for appropriate self-reliant recreation.</li> </ul>
Environment Planning and Assessment Act 1979	<ul style="list-style-type: none"> <li>▪ Regulates land use within NSW.</li> <li>▪ Requires the NPWS (and other government agencies) to consider the environmental impacts of management programs.</li> <li>▪ The framework used to carry out this assessment is given by Part 5 of the Act. NPWS produces a review of environmental factors (REF) for all developments. Where a significant effect is likely, the Act requires the preparation and exhibition of an environmental impact statement (EIS). Where there is likely to be a significant effect on threatened species, populations or ecological communities, a species impact statement is required.</li> </ul>
Prevention of Cruelty to Animals Act 1997	<ul style="list-style-type: none"> <li>▪ Prohibits cruelty to animals.</li> <li>▪ Imposes obligations for persons in control of an animal to provide (among other things) food, drink, shelter, and veterinary care for the animal under their control. This is relevant where an animal's movement is restricted, for example in a trap yard.</li> <li>▪ The Royal Society for the Prevention of Cruelty to Animals NSW (RSPCA) has been granted law enforcement powers under this Act.</li> </ul>
Heritage Act 1977	<ul style="list-style-type: none"> <li>▪ Protects the State's environmental heritage, which has significant value from an historical, scientific, cultural, social, archaeological, architectural, natural or aesthetic point of view.</li> <li>▪ Heritage items of state significance are listed on the State Heritage Register. Any works, which may impact listed items, require the approval of the Heritage Council.</li> </ul>