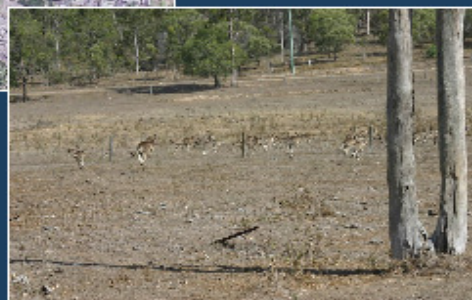

Wacol government precinct kangaroo management strategy

Conservation management report



DRAFT



Contents

- 1 Summary**
- 2 Introduction**
 - 2.1 The Wacol Government Precinct
 - 2.2 The Eastern Grey Kangaroo
 - 2.3 Legislative and management environment
- 3 Management issues**
 - 3.1 Vehicular accidents
 - 3.2 Tick Fever Research Station
 - 3.3 Conservation
 - 3.4 Other negative impacts
- 4 Management strategies and objectives**
 - 4.1 Traffic management
 - 4.2 Management of habitat and non-natural food and water resources
 - 4.3 Monitoring the effectiveness of management
 - 4.4 Direct management of kangaroo population
- 5 Future landuse and development at Wacol**
- 6 Implementation**
- 7 References**

1 Summary

The Wacol Government Precinct is an area of approximately 1200 ha of state and local Government-owned land located between Wacol and Gables in Brisbane's south-west (see Figure 1). The area is bounded to the south-east by the Ipswich Motorway and to the west by the Brisbane River. The site currently supports a population of some 1300 eastern grey kangaroos and since the mid-1990s the EPA/QPWS have been working with landholders and the community to conserve and manage this local kangaroo population.

The existence of an eastern grey kangaroo population in the midst of such an intensely urbanised part of Brisbane has led to a number of management issues and conflicts. These have included road accidents involving kangaroos and impacts on pastures and sporting facilities. Due to its proximity to the Brisbane CBD the kangaroo population is valued by sections of the local community. The EPA/QPWS has convened a working group of landholders, scientists, and conservation and animal welfare interests to assist in the development of strategies for the management of the population. Aerial surveys conducted by QPWS in April 2007 estimated a total kangaroo population of 1,352 over the 1,231 ha² area representing an average density of 1.10 kangaroos/ ha.

Conserving kangaroos in the Wacol Government Precinct and reducing the incidence of negative kangaroo-human interactions will depend on the application of a range of management strategies. Information compiled from past and present studies has guided the development of strategies to manage kangaroos in the Wacol Government Precinct. This information is summarised in the supporting document attached to this draft management strategy.

The strategies centre on:

- traffic management;
- management of habitat and non-natural food and water resources;
- monitoring of effectiveness of management; and
- if required after monitoring, direct management of the population.

The overall objectives of this draft kangaroo management strategy are to:

- conserve a sustainable wild kangaroo population at Wacol;
- reduce the risks along regularly used public roads in the Wacol Government Precinct;
- reduce the potential for other negative impacts by kangaroos on residents, users and environmental values of the Wacol Government Precinct to the greatest extent practicable;

Achieving these objectives requires a co-ordinated and integrated management response by the various affected and interested parties. The following strategies to manage kangaroos in the Wacol Government Precinct form components of that response:

Strategy 1

Traffic management actions and awareness programs promoting appropriate vehicle speeds and driver behaviour in order to reduce vehicle strikes on kangaroos in the area.

Strategy 2

Programs reducing/limiting the availability of non-natural food and water sources for kangaroos in order to bring the existing kangaroo population into balance with the seasonal availability of natural foods.

Strategy 3

A program of further monitoring and review will be conducted to determine the effectiveness of kangaroo management strategies in achieving the objectives of the strategy.

Strategy 4

Consideration will be given, including community consultation, to further management options, including direct management of the population, if monitoring shows the population is not in balance with the seasonal availability of natural foods and if negative interactions, including vehicle strikes, cannot be reduced effectively using other means.

Actions involving direct management of kangaroos such as culling may not be required but, if they are, these should not need to continue indefinitely. The components of the overall strategy that will require ongoing implementation are those involving changes to driver behaviour and measures to limit non-natural food and water sources. If these strategies are successful during the first few years of the program, direct control of kangaroo numbers may not be required.

Implementation of this draft strategy would be by landholder groups including state government agencies, local government, community, individual groups and private sector organisations with interests in the Wacol Precinct.

2 Introduction

Conserving kangaroos in the Wacol Government Precinct and reducing the incidence of negative kangaroo-human interactions will depend on the application of a range of management strategies. The purpose of this draft management program is to propose strategies and to provide a means of informing the effected parties and the general public about the diversity of issues affecting kangaroo management in the area.

2.1 The Wacol Government Precinct

For the purposes of this management strategy, the Wacol Government Precinct is considered to encompass both the state government and adjacent lands, including land administered by Brisbane City Council and a small number of freehold residential and industrial properties. The Precinct has an area 1230ha, dominated by state government (790ha); Brisbane City Council (260ha); golf courses (~75ha); and some residential and industrial properties (~105ha).

The state government interests incorporate several institutions and facilities including a number of correctional facilities (such as the Sir David Longland Correction Centre); the Mental Health Centre (The Park); the Wacol Waste Water Treatment Facility; and the Department of Primary Industries and Fisheries (DPI&F) Tick Fever Research Station. Brisbane City Council owns and manages a significant bushland reserve to the east of the Precinct, colloquially known as "Pooh Corner". Two golf courses (Wolston Park and Gables); and approximately 250 residential and industrial properties are also encompassed within the Precinct for management purposes.

The Precinct is located 16km from Brisbane CBD, between Wacol and Gables in Brisbane's south-west (Figure 1). The Precinct is bounded to the south by Woogaroo Creek; to the east by Ipswich Motorway and the Ipswich to Brisbane railway line; to the north by easements for electricity transmission lines and the housing estates of Riverhills and Summer; and to the west by the Brisbane River. These barriers have effectively isolated the resident kangaroo population as a geographically independent group, and necessitates their administration as a single management unit as described by Moritz (1994).



Figure 1 Location and plan map of Wacol Government Precinct.

2.2 The eastern grey kangaroo

The eastern grey kangaroo is primarily a grass eater and indications are that it is selective. Dietary studies show that it is not averse to coarse native perennial grasses in its woodland and forest habitats but that it appears to select shorter, low fibre grasses if these are available.

Investigations of the population dynamics of *M. giganteus* have found that populations have a maximum rate of increase of 35% per annum where rainfall is above average, and a rate of increase of 25% per annum at average rainfall. Due to this the species is susceptible to rapid increases in population size in response to temporary or long term increases in the availability of food and water. Populations decline only when rainfall is well below average.

Aerial surveys conducted by QPWS in April 2007 estimated a total kangaroo population of 1,352 over the 1,231 ha² area representing an average density of 1.10 kangaroos/ ha. This density is extremely high when compared with densities recorded for free living "wild" kangaroos from other rural regions of Queensland. Broad scale aerial surveys across Queensland record maximum regional densities for eastern grey kangaroos in the range 0.2-0.5 per ha.

2.3 Legislative and management environment

Under the *Nature Conservation Act 1992*, the eastern grey kangaroo is a protected species. Consequently, an eastern grey kangaroo cannot be interfered with unless the chief executive has granted a permit or authority.

The eastern grey kangaroo is listed as 'least concern wildlife' under the *Nature Conservation (Wildlife) Regulation 2006*.

Under the *Nature Conservation (Wildlife Management) Regulation 2006* a damage mitigation permit may be granted for 'least concern wildlife'. Before issuing a damage mitigation permit, the chief executive must be satisfied:

- that significant economic damage is being caused or is likely to be caused by specified least concern wildlife; or
- the ecological sustainability of nature is likely to be harmed; or
- wildlife represents a threat to human health and well-being; and
- the proposed method of taking provides an effective method of minimising the impact of the wildlife; and
- that any technique used for taking the wildlife is humane; and
- the impact of the activity will not detrimentally affect ecological sustainability.

The QPWS also has obligations to ensure that its management of kangaroos is ethical and humane.

3 Management Issues

Since the mid 1990s the EPA/QPWS have been working with landholders and the community to address a number of concerns with regards to the management of the eastern grey kangaroo population at the Wacol Government Precinct. The EPA/QPWS has convened a working group of landholders, scientists, and conservation and animal welfare interests to assist both in identifying management issues and in developing and implementing strategies for the management of the population.

3.1 Vehicular accidents

Kangaroo-vehicle accidents have been an issue in this precinct since the mid 1990s. Figures provided by RSPCA for the 20 months prior to April 2007 showed 80 vehicular accidents or an average of 4 per month. However, the accident rate escalated between 1 April 2007 - 19 April 2007 with 14 incidents over the 19 day period, equating to almost one report per day. Records from Brisbane City Council relating to dead animals for collection and disposal represent additional animals not reported to the RSPCA. Between 23 April 2005 – 5 September 2006 Brisbane City Council reports showed 34 dead animals in the precinct with the majority located on Wacol Station Road (13), Grindle Road (11) and Wilruna Road (5).

3.2 Tick Fever Research Station

The Tick Fever Research Centre of the Queensland Department of Primary Industries and Fisheries (DPIF) at Wacol first contacted QPWS in 1997 regarding the kangaroo population at Wacol. Their concern at the time was three fold;

1. consuming pastures grown for the cattle; and
2. compromising the quarantine status of the facility; and
3. vehicle /kangaroo collisions.

In December 2000 DPIF commissioned the University of Qld, School of animal Studies to conduct a survey of the population of eastern grey kangaroos on DPIF controlled land at Wacol. This survey estimated the numbers in the DPI controlled land as 1000 animals and recommended a 50% cull as the preferred short term solution. The recommendations also suggested that chemical contraception may become viable in the future. No Damage Mitigation Permit was sort by the DPIF and the recommended cull never took place.

In May 2003 a further survey was conducted by the University of Qld. The estimate from that count was 1800 animals. The action by the university was only a survey of numbers and did not propose any management solution. No application for a damage mitigation permit was made.

During mid to late 2003 the DPIF commenced fencing part of the land used for cattle in order to limit/exclude kangaroos.

3.3 Conservation

In the longer term, overpopulation of kangaroos may lead to overgrazing of the vegetation and erosion of the areas.

There are small numbers of red neck wallabies in the area and historically there were swamp wallabies. Anecdotal evidence suggests that the numbers of these species have dwindled as the numbers of eastern grey kangaroos increased. It may be that the conservation of other species may be compromised with excessive numbers of kangaroos.

3.4 Other negative impacts

The Wacol area presently has two golf courses and a number of sports grounds. While it is a pleasant experience to view animals in the wild around these facilities there is potential of danger from large aggressive animals.

The proposed Police facility may also have several management issues. Because the facility will attract international visitors, the capacity to see an iconic animal in the wild in the Brisbane area will be a major asset that will require some management to ensure visitor safety. There will also be other training areas where the presence of kangaroos may not be appropriate.

Because animals are forced to seek out food particularly in dry times, they are often found in suburban backyards where they may become aggressive. There have been a number of such incidents in other parts of South-east Queensland where urban development has encroached on kangaroo habitat.

4 Management strategies and objectives

Information compiled from past and present studies has guided the development of draft strategies to manage kangaroos in the Wacol Government Precinct. This information is summarised in the supporting document attached to this management strategy.

These centre on:

- traffic management;
- management of habitat and non-natural food and water resources;
- monitoring the effectiveness of management; and
- if required after monitoring, direct management of the population.

Although public education is not identified as a strategy in its own right, efforts to increase public awareness of the issues involved in managing the Wacol kangaroo population form important elements of several actions.

The short-term objective of this draft kangaroo management strategy is to reduce the risks posed to vehicles by kangaroos along regularly used public roads in the Wacol Government Precinct. This objective seeks to minimise risks to both animals and motorists.

The overall objectives of this draft kangaroo management strategy are to:

- conserve a sustainable wild kangaroo population at Wacol;
- reduce the risks along regularly used public roads in the Wacol Government Precinct;
- reduce the potential for other negative impacts by kangaroos on residents, users and environmental values of the Wacol Government Precinct to the greatest extent practicable;

A number of alternative management actions within the overall strategy were considered but rejected on the basis that they are unacceptable, not viable or unsustainable or at odds with existing legislation and management responsibilities. These rejected proposals include:

- establishing feeding stations to supplement the diet of kangaroos that are perceived by some people to be unnaturally malnourished;
- relocating animals to other sites (national parks, state forests or similar); and
- eradicating kangaroos from the area.

4.1 Traffic management

A combination of factors including the current size of the Wacol kangaroo population, the behavioural characteristics and ecological requirements of kangaroos, and the volume and speed of traffic on roads in and adjacent to the Wacol Government Precinct has led to a higher number of vehicle-kangaroo collisions. This problem is particularly evident on Wacol Station Road and Grindle Road. Action is required to reduce the number of such collisions for the sake of the animals and motorists alike. While potential strategies to reduce the potential for kangaroos to come into contact with vehicles will only take effect over the medium to long term, various short-term approaches are available.

Strategy 1

Traffic management actions and awareness programs to reduce vehicle strikes on kangaroos in the area.

Actions

Signage and lighting

- Increase public awareness of the potential dangers by installing kangaroo road signs along the key thoroughfares (Wacol Station Road, Grindle Road).
- Erection of specially designed signage indicating those areas that are 'hot spots' for collisions with kangaroo.
- Enhanced lighting along key sections of Wacol Station Road to enable motorists to spot kangaroos on road verges from much greater distances at night, providing drivers with more time to brake and avoid potential collisions.

Management actions involving the erection of fencing or modification of habitat adjacent to roads within the precinct that may contribute to reduced kangaroo related vehicular accidents have been included under the section detailing management of habitat and non-natural food and water resources.

4.2 Management of habitat and non-natural food and water resources

The current abundance of kangaroos in the Wacol Government Precinct is probably almost entirely due to the past provision of improved and irrigated pastures, and to the ongoing provision of food and watering points for the small number of cattle remaining on site. Under the present drought conditions in which grazing opportunities are virtually non-existent over much of the area and previous natural watering points such as Wolston Creek are no longer available because of the increased effects of salinity, a large percentage of the kangaroo population appears to have become dependent on these artificial sources of food and water.

Strategy 2

Actions to reduce/limit the availability of non-natural food and water sources for kangaroos in order to bring the existing kangaroo population into balance with the seasonal availability of natural foods.

Actions

- Implement a program to reduce the number of artificial food and watering points available to kangaroos in a staged fashion in conjunction with the imminent change in land use within the Wacol Government Precinct.
- Reduce and/or eliminate all irrigation of pastures and lawns in the area so that grazing resources are not artificially enhanced.
- Limit access to the triangular patch of cleared land immediately adjacent to Wacol Station Road through either fencing or revegetation of this area or a combination to these approaches.
- Provide exclusion fencing for open grassed areas adjacent to key thoroughfares.

4.3 Monitoring the effectiveness of management

Determining whether the various actions outlined in this draft strategy have been successful in managing the kangaroo population at Wacol and reducing the adverse impacts of this population on humans utilising the site will require data derived from an ongoing monitoring program.

Strategy 3

A program of further monitoring and review will be conducted to determine the effectiveness of kangaroo management strategies in achieving the objectives of the strategy.

Actions

- Reporting on implementation of the various kangaroo management actions annually for the first three years of this Strategy's implementation.
- A repeat survey of the kangaroo population should be conducted within 3 years of the commencement of implementation of this management strategy to derive an accurate estimate of the kangaroo population over the entire extent of the Wacol Government Precinct

4.4 Direct management of kangaroo population

Direct management of the Wacol kangaroo population offers a potential means by which to actively reduce the currently overabundant population to a size that is sustainable and in balance with the available natural resources. These options, which would variously operate over the short or long term, include surgical sterilisation, contraception, translocation and culling. A previous report on recommended approaches to manage the kangaroos at Wacol argued strongly against implementing the first three of these options (Finch 2000, 2003). Under the current circumstances, seven years later, the justification for not adopting sterilisation, contraception or translocation as techniques for population control remains.

Strategy 4

Consideration will be given, including community consultation, to further management options, including direct management of the population, if monitoring shows the population is not in balance with the seasonal availability of natural foods and if negative interactions, including vehicle strikes, cannot be reduced effectively using other means.

Actions

- None at this stage. Reconsideration if results of monitoring programs conducted after the implementation of all other management actions reveal that the kangaroo population is not declining at a rate that is considered ecologically sustainable in the long term, if the number of kangaroo-related vehicle collisions on public roads within the site has not diminished.

The objective of any cull would only be to produce a sustainable kangaroo population. The total elimination of kangaroos from the Wacol Government Precinct would not be considered.

5 Future land use and development at Wacol

The information provided in this Strategy and the array of management actions that are recommended relates primarily to the current circumstances prevailing at the Wacol Government Precinct. Some acknowledgement is given to certain change in land use that may occur once DPI&F vacates the site and Corrective Services resumes management. However, a number of planned or proposed infrastructure projects with varying timelines will or could occur within the Wacol Government Precinct over the coming years and these have the potential to impact directly on the kangaroo population, on the habitat and resources available to the kangaroos and on the human use of the site. The planned and potential changes associated with development proposals including the:

- Western Corridor Recycled Water Project,
- Goodna Bypass Development, and
- Westgate Strategic Plan

will need to be considered as the situations arise.

6 Implementation

Whilst the Queensland Parks and Wildlife Service has taken the lead role in developing this draft strategy, implementation will be effected through affected and interested parties such as state government agencies, local government, community groups and private sector organisations with interests in the Wacol Precinct.

7 References

- Finch, N. 2000. *Survey of a population of the Eastern Grey Kangaroo at the Tick Fever Research Centre, and a proposed management plan for the population*. University of Queensland, School of Animal Studies, Gatton.
- Moritz, C. (1994). Defining 'Evolutionary Significant Units' for Conservation. *Trends in Ecology & Evolution* **9**, 373–375.
- Paruelo, JM, Epstein, HE, Lauenroth, WK, and Burke, IC (1997). ANPP estimates from NDVI for the Central Grassland Region of the United States. *Ecology* **78**: 953-958.