Chapter 6

Threats to the reserve system – feral animals and weeds

6.1 This chapter looks at 'ferals' – invasive animals and weeds – one of the threats to the objectives and management of the reserve system that was most frequently identified in submissions to the inquiry.

Invasive species

Background

6.2 Invasive species, including feral animals and weeds, were identified in many submissions as one of the greatest threats to biodiversity within Australia, and as a major threat to both national parks and agricultural production. Many submissions pointed out that responsibility for management of invasive species did not rest solely with public or private land managers, but required co-ordinated action across all land tenures. The NSW Government wrote:

> When examining the management and resourcing of public conservation reserves, it is important to remember that these lands cannot be examined in isolation from the whole landscape. Many of the threats to parks, such as fire, weeds and pests, occur nationally across all landscapes, both within and outside national parks. All land managers require adequate resources to effectively manage such threats, irrespective of whether the lands are part of a public reserve system. [1]

6.3 On 8 December 2004, the Senate Environment, Communications, Information Technology and the Arts References committee tabled the report: *Turning back the tide – the invasive species challenge.* That report recommended 27 measures to combat invasive plant and animal species. So far, no Government response has been released and only a handful of the recommendations have been implemented. The current committee supports the comment made in the 2004 report, that:

> While greater expenditure is certainly well and truly justified at a governmental level, what is equally needed is for a national strategic approach to be developed which will guide and coordinate the efforts of all parties in seeking to achieve a common goal.[2]

6.4 As a starting point for the development of a national strategic approach to the control of invasive animals and plants in national parks, the committee endorses all recommendations made in the 2004 report.

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1 *Submission 155,* p. 21.

2 Senate References Committee on Environment, Communications Information Technology and the Arts (2004), *Turning back the tide – the invasive species challenge*, p. 211.

Recommendation 4

6.5 The committee recommends the implementation of all recommendations made in the 2004 Environment, Communications, Information Technology and the Arts References committee report *Turning back the tide – the invasive species challenge* that have not yet been addressed.

Recommendation 5

6.6 The committee recommends that the Government response to the 2004 Environment, Communications, Information Technology and the Arts References committee report *Turning back the tide – the invasive species challenge* be finalised.

Feral Animals

6.7 There are at least 30 species of non-native pest vertebrates in Australia (see table 6.1 below) and all areas of Australia have at least one pest animal.[3] Some small to medium feral animals, such as dogs, cats and rats are endemic throughout mainland Australia, including urban areas. Rabbits and foxes are prolific on the mainland south of the Tropic of Capricorn. Some larger species are only found in certain ecosystems, for example camels in arid central Australia and buffalo in the wet tropics. Other species, such as horses, donkeys, cattle, deer, pigs and goats create problems in particular regions or under certain conditions.

Table 6.1 Species of concern in Australia

Main species of concern	***Species of moderate concern***
European wild rabbit (Oryctolagus cuniculus)	Feral buffalo (Bubalus bubalis)
Feral horse (Equus caballus)	Feral cattle (Bos taurus)
Feral donkey (Equus asinus)	European brown hare (Lepus capensis)
Feral goat (Capra hircus)	Black rat (Rattus rattus)
Feral pig (Sus scrofa)	Deer family (Cervidae)
European red fox (Vulpes vulpes)	Indian myna (Acridotheres tristis)
Dingo/feral dog (Canis familiaris)	Mallard (Anas platyrhynchos)
Feral cat (Felis catus)	Rock dove (feral pigeon) Columba livia

3 Australian Government, *Extent and impact of selected ecologically significant invasive species*, 2006, Available at: http://www.nrm.gov.au/monitoring/indicators/pubs/vertebrate.pdf

House mouse (Mus domesticus)	Spotted turtledove (Streptopelia chinensis)
European starling (Sturnus vulgaris)	Blackbird (Turdus merula)
Cane toad (Bufo marinus)	House sparrow (Passer domesticus)
Feral Camel (Camelus dromedarius)	European goldfinch (Carduelis carduelis)
	Senegal turtledove (Streptopelia senegalensi)

Source: Natural Resource Management web site[4]

6.8 In addition to the terrestrial species listed above, there are many marine and freshwater aquatic pests that threaten waterways and reserves. Examples include: European Carp (Cyprinus carpio), Pearl Cichlids (Geophagus brasiliensis), Oriental Weatherloach (Misgurnus anguillicaudatus); Crown of Thorns Starfish, Black Striped mussels, Asian Green mussels and the Northern Pacific seastar.

6.9 Inconsistencies arise in relation to the regulation of freshwater aquatic pests because of inadequate reservation of freshwater ecosystems, and demarcation of responsibilities for water. The National Parks Association of NSW pointed out that, in NSW, the Department of Environment and Conservation does not have primary statutory responsibility for fresh water ecosystems, including those within the boundaries of national parks:

> Waterbodies that lie within the NSW reserve system are not afforded any protection by the National Parks and Wildlife Act. The jurisdiction lies with the Water Management Act and the Minister for Water. As a result, the Minister for the Environment cannot control fishing within waterbodies (lakes, creeks etc) within the reserve system, and cannot regulate the stocking with feral fish such as trout. Both these activities can have an impact on aquatic ecosystems.[5]

6.10 In relation to terrestrial invertebrates, the Yellow Crazy Ant (Anoplolepis gracilipes) found on Christmas Island and in Queensland and the Northern Territory was identified as a serious threat by the Department of Environment and Water Resources.[6] The Fire Ant (Solenopsis invicta) has been detected in Queensland. The Queensland Government describes the ants as 'the greatest ecological threat to

4 Australian Government, *Extent and impact of selected ecologically significant invasive species*, 2006. Available at: http://www.nrm.gov.au/monitoring/indicators/pubs/vertebrate.pdf

5 *Submission 130*, p. 5.

6 Department of Environment and Heritage, *Submission 126*, p. 13.

Australia since the introduction of the rabbit and…potentially worse than the cane toad'.[7]

6.11 Control of feral animals is predominantly a state and territory responsibility, and each jurisdiction has separate and sometimes inconsistent legislation in respect of feral, game and agricultural animals. The *National Feral Animal Control Programme* (NFACP) has been established in cooperation with State, Territory and Local Governments to develop and implement a programme to reduce the damage to agriculture caused by pest animals.[8] Extending this program to address the damage done to biodiversity by pest animals, including animals that escape from agricultural production, would assist in the development of a consistent, integrated approach.

6.12 Some problems are too large and too widespread to be dealt with on a state-by-state basis. State agencies have had their pest-control budgets run down over many years. Mr Allan Holmes called for a national strategic approach to feral camels:

> We have this massive camel infestation through arid Australia, with hundreds of thousands of camels doing enormous damage. You cannot deal with that at a state level; it has to be something that is dealt with nationally as the camels move over large areas. This is a massive problem that does need national attention.[9]

Weeds

6.13 Since the arrival of Europeans, over 28 000 exotic plants have been introduced into Australia. More than 2500 species have naturalised, and many of these threaten the integrity and viability of native ecosystems.[10]

6.14 Estimates of the extent of weed coverage vary significantly. WWF-Australia stated that 'just six of Australia's worst invasive weeds have degraded over 20 million hectares of grazing and natural lands'.[11] The Co-operative Research Centre for Australian Weed Management published estimates in 2003 for the extent of selected invasive weeds (Table 6.2).

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7 Queensland Government, web site, *Fire Ants – What are they?*, http://www2.dpi.qld.gov.au/fireants/, accessed January 2007.

8 Bureau of Rural Sciences, web site, *National Feral Animal Control Programme*, 2006, http://www.affa.gov.au/content/output.cfm?ObjectID=D2C48F86-BA1A-11A1-A2200060B0A06278, accessed January 2007.

9 Department for Environment and Heritage, South Australia, *Committee Hansard,* 6 June 2006, p. 50.

10 CRC for Australian Weed Management, *Killing us softly – Australia's green stalkers. A call to action on invasive plants, and a way forward*, 2003, p. 2, http://www.weeds.crc.org.au/documents/kus_part_one.pdf, accessed January 2007.

11 *Submission 161*, p. 28.

Table 6.2 Lands infested by some invasive weeds

Weed	***Area***
Blackberry	8 million ha nationally
Prickly acacia	6.6 million ha in Qld in 2002 (potential 50 m ha nationally)
Lantana	4 million ha nationally
Mesquite	800,000 ha of 'core' infestation
Rubber vine	700,000 ha – now found across 20% of Qld
Para grass	100,000 ha in Qld
Mimosa pigra	80,000 ha in Top End of NT
Boneseed	78,000 ha in Vic in 1981, potential 6.5 million ha in Vic alone
Gorse	30,000 ha in Tasmania

Source: Cooperative Research Centres web site[12]

6.15 Land management is primarily the responsibility of the states and territories. Although federal agencies including the Department of Environment and Water Resources, Australian Customs Service and the Australian Quarantine and Inspection Service have regulatory and enforcement responsibilities in relation to plants and plant material, 'the primary legislative means to regulate for the management, trade and movement of plants considered to be weeds rests with the states and territories'.[13] Over 370 plant species are declared weeds under state legislation, but despite recent reforms, the legislation varies between and within jurisdictions with respect to which species are declared weeds, what control measures are required, and who is legally obliged to comply with the legislation.[14]

6.16 In 1997, following assessment of 74 weed species nominated by state and federal agencies against four major criteria: invasiveness, impacts, potential for spread and socioeconomic and environmental values, a list of 20 *Weeds of National*

12 CRC for Australian Weed Management, *Killing us softly – Australia's green stalkers. A call to action on invasive plants, and a way forward*, 2003, p. 6, http://www.weeds.crc.org.au/documents/kus_part_one.pdf, accessed January 2007.

13 Department of Environment and Heritage, Answers received to questions taken on notice, 31 March 2006, p. 4.

14 CRC for Australian Weed Management, *Killing us softly – Australia's green stalkers. A call to action on invasive plants, and a way forward*, 2003, p. 18, http://www.weeds.crc.org.au/documents/kus_part_one.pdf, accessed January 2007

Significance was declared (It is provided at Appendix 9).[15] These weeds are 'considered to be nationally significant within an agricultural, forestry and environmental context'.[16] The list and associated management arrangements (the National Weed Strategy) 'seek to improve weed management performance by utilising current knowledge and practices more strategically and effectively, co-ordinating and integrating the efforts of all interested parties across states and territories.'[17]

6.17 A further 28 plants are listed on the *National Environmental Alert List*. The purpose of that list is to identify those species that are in the early stages of establishment and have the potential to become a significant threat to biodiversity if they are not managed. As noted in *Turning back the tide,* preparation of this list did not involve thorough consultation or agreement with the States and Territories.[18] The list is also provided in Appendix 9. Other weeds, not represented in the two lists above, were identified as significant threats to the reserve system during the course of the inquiry, including Paterson's curse, Lippia, Buffel grass, Olive and Camphor Laurel.

6.18 Feral animals and weeds are estimated to cost the Australian economy an annual total of $720 million and $4 billion respectively.[19]

6.19 Having concluded that most weed problems in national parks can be traced back to invasive garden plants that have jumped the fence, WWF-Australia notes:

> These naturalised invasive garden plants now make up about 70% of Australia's environmental and agricultural weeds. They cost farmers and government agencies $100m's a year in control costs and lost production – for example the cost of just three escaped invasive garden plants are: Paterson's curse costs $30m/yr, lippia costs $38m/yr and rubbervine costs $27m/yr and occupies 700,000 ha. Just one escaped garden plant, lantana, now degrades over 4 million hectares of Australia's environment.[20]

Current Management

6.20 There was general agreement in submissions that controlling feral animals and weeds is a high to urgent priority that requires ongoing active management.

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15 'Criteria for Weeds of National Significance' in John Thorp & Rod Lynch, *The Determination of Weeds of National Significance.* Commonwealth of Australia & National Weeds Strategy Executive Committee, 2000, http://www.weeds.org.au/docs/WONS/3, accessed January 2007.

16 Department of Environment and Heritage, Answers received to questions taken on notice, 31 March 2006*,* p. 4.

17 Department of Environment and Heritage, Answers received to questions taken on notice, 31 March 2006*,* pp 4–5.

18 Senate References Committee on Environment, Communications Information Technology and the Arts, *Turning back the tide – the invasive species challenge*, 2004, p. 214.

19 World Commission on Protected Areas (Australia and New Zealand), *Submission 137*, p. 36.

20 *Submission 161*, p. 29.

Submissions from government agencies described their current control efforts, and made it clear that they consider controlling invasive pests essential for protecting biodiversity and preserving the values of national parks.

Figure 6.1 Parks Australia staff discussing weed control with the committee in Uluru-Kata Tjuta National Park

6.21 The Department of Environment and Water Resources described the strategic and co-operative approach taken with Commonwealth Marine Protected Areas:

> To manage invasive marine pests the Department cooperates with Australian, state and territory government agencies in the National System for the Prevention and Management of Introduced Marine Pest Incursions. The National System is a way for government agencies to coordinate their efforts to control new pest outbreaks, pest control plans, and administer Australia's international convention responsibilities through a coastal regime for managing ballast water and biofouling.[21]

6.22 This approach contrasts with the management of terrestrial invasive species. As seen above, with the exception of the National Weeds Strategy and the National Feral Animal Control Programme, which predominantly targets the impacts of feral animals on agriculture, there is little evidence of a nationally co-ordinated approach to pest control.

6.23 The NSW Government reported record expenditure on pest and weed control for 2004-2005, and highlighted some of the factors that are making their efforts more expensive:

> Management of pests and weeds is a high priority for the NSW Government and expenditure on their control by NPWS reached a record $18 million in 2004/05. The State of the Parks Report 2004 showed that our pest animal and weed control programs were either effectively holding the line or reducing pest and weed impacts in more than 90% of NSW's parks. Cost drivers for pest and weed management include:
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> • Nature of adjacent land use - higher incidences of weeds and pests generally occur adjacent to urban and rural areas;
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> • Land disturbance and previous land use - higher incidences of weeds generally occur in and adjacent to disturbed areas such as agricultural lands, roadsides and residential areas. Newly acquired lands may have a history of past disturbance associated with previous land uses and require significant rehabilitation;
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> • Animal welfare considerations - frequently, the most cost effective control techniques for pest animals are not used for animal welfare reasons;
>
> • Community expectations;
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> • Control across land tenures - effective pest and weed control relies on complementary efforts across all land tenures requiring considerable planning and coordination; and
>
> • Fragmentation of land – increased boundary effects leading to greater weed and pest incursions.[22]

21 Department of Environment and Heritage, *Submission 126*, p. 13.

22 *Submission 155*, p. 23.

6.24 The WA Department of Conservation and Land Management (CALM) reported that 'this year [the WA Government] has invested an extra $8 million directly into biodiversity protection over and above our pre-existing budget with a large emphasis on ferals, weeds and dieback'.[23]

6.25 In 1999 CALM developed the 'Environmental Weed Strategy for WA' which guides its weed management activities. The strategy identified 1,350 weeds considered to be of environmental concern. CALM is also party to the State Weed Plan which promotes an integrated approach across weeds of environmental and agricultural significance. Activities to control pest animals include baiting approximately 3.5 million hectares to control introduced predators and recover native fauna; research and operational trials to control feral cats; control of goats and other feral herbivores in the rangelands, developing and implementing a program to deal with cane toads in the Kimberley, addressing the feral pig problem in the southwest, and dealing with wild dogs. CALM noted that increased funding is required for the more effective control of pest animals and weeds on CALM managed lands.[24]

6.26 Queensland indicated that a significant part of their budget is allocated to species that have been identified as priorities under Weeds of National Significance or state legislation:

> Funding for pest plant and animal management is provided as part of overall funding for QPWS estate management, and in excess of $4.5 million will be spent in 2005-06 on this function, with $1.5 million tied to specific projects targeted at Weeds of National Significance and Class 1 pests under the *Land Protection (Pest and Stock Route Management) Act 2002*.[25]

6.27 Most states acknowledged the need to develop cross-tenure approaches with nearby landholders and agencies, and provided evidence of joint projects with relevant stakeholders. The Queensland Government noted:

> Many key protected area threats cannot be addressed purely within the boundaries of those areas. The management of fire, weeds, feral animals and water quality are substantial cross-boundary issues and frequently whole-of-catchment issues.[26]

6.28 NSW provided evidence that approximately 70 per cent of the more than 900 pest animal control programs it conducts each year are managed in collaboration with neighbours and other stakeholders, sometimes on land outside the NSW reserve system.

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23 Mr Kieran McNamara, *Committee Hansard*, 10 September 2006, p. 39.

24 *Submission 135,* pp 15–16.

25 Queensland Department of Parks and Wildlife, *Submission 175A*, p. 2.

26 Queensland Department of Premier and Cabinet, *Submission 175*, p. 33.

> As with weed control, the NSW Government is committed to a regional/catchment approach to pest management where the programs are developed and often undertaken in collaboration with neighbours, other government agencies, rural lands protection boards, wild dog control associations, regional pest committees, local government councils, catchment management boards, CSIRO, universities and community groups.
>
> Although the principal responsibility of the NPWS is to manage national parks and reserves, some of its pest management is also conducted on other lands, for example where priority areas have been identified for the conservation of threatened species. However, pests are a problem across the entire landscape, and control of pests outside of parks is generally the responsibility of private landholders and other agencies such as the Rural Lands Protection Boards and the NSW Department of Primary Industries.[27]

6.29 In South Australia, where many of the parks near Adelaide are small, there is a material benefit to creating buffer zones around reserves by co-operating with nearby landholders in pest control, which also provides valuable opportunities for community education and the development of productive neighbourly relations:

> Many conservation programs in South Australia adopt a landscape scale approach to addressing threats to the conservation values of reserves. This recognises that most reserves are not large and pristine enough to be self-sustaining in the face of threats. But there is also an added benefit in adopting an approach that looks beyond park boundaries, for these programs can engage directly with adjoining landholders and local communities and encourage them to participate in on and off park activities.[28]

6.30 Dr Bob Inns provided the example of co-operating with neighbours on integrated weed control programs, incorporating the release of biological agents and physical control methods:

> …there are some aspects of control of blackberries, bridal creeper and boneseed where there is introduction of biological control programs. These are in their early phases. While there is some success, biological control is still going to be a long-term program. On top of that, you also need physical methods of control – and you are working in an environment where you need to conduct your weed control program while limiting any impacts on your native species at the same time. Usually, where you have the interface with agricultural land alongside, it is a matter of working with neighbours to conduct weed control to the benefit of both the agricultural land and the park lands.[29]

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27 NSW Government, *Submission 155*, p. 30.

28 Department for Environment and Heritage, South Australia, *Submission 194*, p. 16.

29 Department for Environment and Heritage, South Australia, *Committee Hansard*, 6 June 2006, pp 49–50.

6.31 Inconsistent state legislation hinders the development of cohesive approaches to weed and feral animal control. Mr Andreas Glanznig told the committee:

> As the Australian biosecurity report highlights, there is still no harmonisation between weed classes so if you want to do that analysis you end up having to create a Rosetta Stone to be able to interpret the different approaches taken by the states and territories. There is still a lot of room for us to create this coherent and seamless national regulatory framework that we are talking about. Key elements of it would be a national noxious weed list and a national post-border plant permitted list. If it were on that list it could be sold; if it were not it would be subject to risk assessment or it would be prohibited. There are some quite soluble solutions out there, and they are what we will be encouraging governments to adopt when they revise the national weeds strategy this year.[30]

6.32 Several submissions noted the difference between the cost to the nation of feral animals and weeds and the level of government funding allocated to address the problem. The Australian National Four Wheel Drive Council wrote:

> The national estate is being overrun by noxious plants and feral animals as acknowledged by various ministers however the funding applied to this major problem is nowhere near enough to make any real difference. The minister [for Agriculture, Fisheries and Forestry] states in the attached media release [DAFF04/360WT 16 December 2004] that feral animals cost Australia over $500 million per year in lost agriculture production, however he and the NHT are only going to contribute $854,000 over 18 projects.[31]

6.33 Two of the three most significant feral predators: dogs and cats, are commonly kept as domestic pets and working animals. State laws and local government administrative initiatives that regulate the keeping of companion animals have been tightened significantly in some states. There is potential to further regulate the mobility and fertility of dogs and cats, to limit the ongoing transfer from domestic pets and working dogs to feral populations.

6.34 Given the history of introduced animals escaping or being released into the wild, Mr Allan Holmes considered the future, noting that the increasing popularity of keeping reptiles created a risk of release:

> I think there are significant existing risks from reptile trade and that fascination with exotic reptiles which is there now…The potential for rattlesnakes or corn snakes to get loose in our environment is horrendous. You only have to see what the brown tree snake has done in Guam to understand the impacts that those sorts of animals can have in sensitive environments.[32]

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30 WWF – Australia*, Committee Hansard*, 31 March 2006, p. 15.

31 *Submission 89*, p. 7.

32 Department for Environment and Heritage, South Australia*, Committee Hansard*, 6 June 2006, p. 50.

Success stories

6.35 Several agencies provided examples of measurable success in controlling feral animals. In NSW, an intensive fox control program to protect yellow-footed rock wallabies in Mutawintji National Park and Mutawintji Nature Reserve has enabled the rock wallaby population – the only population known in NSW– to increase by as much as 600 per cent since 1995.[33]

6.36 In South Australia, *Operation Bounceback* is a jointly-funded, long term landscape restoration program in the Flinders Ranges/Olary regions involving active partnerships with over 60 stakeholders. *Bounceback* has supported recovery of yellow-footed rock wallaby populations and measurable broadscale improvement in the condition of native vegetation communities. The program was designed around the following guidelines:

- sound baseline operations;
- rigorous, relevant and effective monitoring and evaluation;
- multiple, realistic scales of operation;
- effective buffer zones;
- demonstration programs to engage stakeholders;
- develop strong links with the community; and
- promoting biodiversity management as 'core business' – not just for government agencies, but for landholders in general.[34]

6.37 Mr Allan Holmes described some of *Bounceback's* progress so far:

> …we have, on a landscape scale, controlled rabbits with the release of the calicivirus—that was the great help, of course—and foxes, goats and cats. So there is significant control. Then you start to see ecosystems' equilibrium swing back and a whole set of changes occur as a result of that. Again, there is a fair bit of experimentation and a fair bit of learning associated with that, but at scale with significant resources—both state and Commonwealth—you can make a real difference.[35]

6.38 The *Kuka Kanyini at Watarru – Caring for Country* project being undertaken in the Anangu Pitjantjatjara Yankunytjatjara (APY) Lands in South Australia

33 NSW Government, *Submission 155*, p. 3.

34 Department of the Environment and Heritage, 'Bounceback - Flinders Ranges', 2006, http://www.deh.gov.au/biodiversity/invasive/publications/bounceback/index.html, accessed October 2006.

35 Department for Environment and Heritage, South Australia. *Committee Hansard*, 6 June 2006, pp 48–49.

establishes a partnership between the Traditional Owners and the South Australian Department for Environment and Heritage to address matters of joint concern.[36]

6.39 A ten-year biological survey of the APY Lands conducted between 1991 and 2001, using the extensive traditional knowledge and skills of Anangu, found that populations of feral animals are having a significant impact on the biodiversity values of the area and identified that the main management issues were: to maintain the traditional pattern of fire and prevent wildfires, maintain and protect rockholes and soakages, and control camels, rabbits, foxes and cats.

6.40 *Kuka Kanyini* combines scientific information gathered during the biological survey with traditional Indigenous knowledge and skills to enhance biodiversity, revitalise traditional cultural and land management understanding and practice, provide employment and training, and improve health and wellbeing. The project, which builds on relationships developed during the survey, is a vehicle for broadly based community development, including job creation and health and wellbeing benefits, as well as strengthening local relationships and traditional knowledge.

6.41 Since the project commenced in January 2004, there have already been positive and measurable results: exclosures have been built over a number of rockholes to prevent damage and access to water by camels whilst still permitting access for native animals. Fences are being built to protect culturally significant areas from damage. Artificial water sources are being built to ensure water for the survival of preferred species. Over 1200 feral camels have been mustered, with the profits from sales returned to the community.

6.42 Monitoring of threatened species is being undertaken, with follow up control of dogs, cats and foxes, and the use of patch burning where required. Anecdotal evidence suggests that there is already an increase in kangaroo and emu numbers while new Mallee fowl nests and burrows for the Great Desert Skink have been located.

6.43 *Kuka Kanyini* is commendable for its integrated response to environmental and cultural issues. The project is currently funded partly from the SA Department for Environment and Heritage, with additional funding for Aboriginal employment provided by the Commonwealth. As Mr Allan Holmes pointed out, extension of this successful model would be difficult to implement without the provision of additional funding and support:

> You would have to say that the South Australian park management model is fairly lean. We run it on moderate levels of resources. To think that you are going to resolve the aspirations of Aboriginal people through park management with our current resource base is just not possible. It is the sort

36 Department for Environment and Heritage, South Australia, *Submission* 194A, pp 1–3. See also: *Kuka Kanyini Pilot Project at Watarru. Annual Report November 2005,* provided as Attachment to *Submission 194A*.

> of programs like the Kuka Kanyini program, where you have this much greater involvement in lifestyle and living, which contribute to nature conservation as well. It is multifaceted; it is achieving a number of goals. It seems to me that it is not reasonable to expect a park management agency to pay for that. If you were just managing for biodiversity conservation you would do it in a different way, but where you have these other aspirations and other requirements it is a much more complex mix and requires multiple resources.[37]

Criticisms of current management

Harbouring pests

6.44 Submissions arguing that national parks harbour pest species that move off reserves to create problems for other land managers were received in most states, indicating that the perception is widespread, and not specific to the management strategies of a particular jurisdiction. The following comments, made by the Cook Shire Council in relation to the feral horse population in Mungkan Kandju, a remote national park in Cape York, express many of the concerns raised in relation to the current management of invasive species on reserves:

> Feral horses need to be controlled in Mungkan Kandju NP. This park is a disgrace and only serves as a breeding block for horses which then move out onto neighbouring properties. This needs to be made a priority and dealt with immediately, as there is adequate scientific evidence to show that unmanaged horses spread weeds, cause erosion and destroy fencing. Parks need to stop bowing to the animal activists and get on with protecting the national park estate values. Other land managers bordering National Parks are tired of spending valued resources on feral animal control only to see their land reinvaded. Parks need to put meaning into its Good Neighbour Policy…[38]

6.45 However it must also be acknowledged that national parks managers have inherited responsibility, often relatively recently, for species that were deliberately released from captivity, or have become feral due to poor husbandry practices. The National Parks Association of NSW stated that the view that national parks are the primary source of invasive species fail to recognise the complexity of the issues involved:

> It is often claimed by critics of national parks that it is national parks that are the source of invasive species. The issue is much more complex than this, and as a simplistic statement, it is false. Invasive species are growing as a major threat to native biodiversity. The threat posed is second only to habitat destruction caused by land clearing such as for agricultural production or urban development.[39]

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37 *Committee Hansard*, 6 June 2006, p. 46.

38 *Submission 195,* p. 2.

39 *Submission 130*, p. 8.

6.46 Some of the frustration expressed by private landholders can be attributed to the lack of redress available when the perceived source of their problem is a government agency, and therefore exempt from the sanctions that apply to other land managers. The Cook Shire Council proposed the establishment of a compensation fund to cover property damage caused by large feral animals:

> If feral animals such as horses and cattle are not controlled on National Parks, the government should provide funds for neighbouring properties to claim compensation for fencing destroyed by animals coming off park. [40]

6.47 As with fire, the committee received evidence from managers of other forested land who argued that current management of national parks is allowing populations of invasive species to build up within park boundaries, then emerge to threaten other land tenures. The Australian Forest Growers stated:

> …it is our belief that management of forested national parks and conservation areas presently involves gross management negligence that is delivering poor biological conservation outcomes, is exposing rural communities to disastrous wildfires, as well as harbouring unmanaged noxious plant and feral animal populations.[41]

6.48 The National Parks Association of NSW praised the efforts of NSW NPWS to control invasive species, comparing them favourably to other land management agencies in NSW:

> Management of invasive species by park managers is far better than land managers of other public lands. NPWS spend about $18 million on invasive species each year for about 8% of the state. This compares favourably to about $200,000 each year by Department of Lands who directly manage about 3% of the state as vacant Crown land, Crown reserves and Crown roads, and 45% if Crown leases are included. NSW Forests spend about $1 million each year on feral animals to manage between 2% and 3% of the State as State forests.[42]

6.49 This data highlights the possibility that park management of pests is not the problem, but the overall priority given by all landholders generally to the issue may not be great enough. The Head of the NSW National Parks and Wildlife Service, Dr Tony Fleming, cautioned that blaming national parks for having excessive populations of feral animals and weeds when it is a problem shared by all land managers risks distracting attention away from addressing the issue. As NSW has developed a collaborative approach to pest control that relies on co-operation with neighbouring stakeholders, approaches that seek to divide land managers along tenure lines are counterproductive.

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40 *Submission 195,* p. 2.

41 *Submission 98*, p. 1.

42 *Submission 130*, p. 8.

> What I am concerned about, though, is any perception that this is somehow a problem dominated by national parks. It is a problem across the landscape. We have very active programs of control, and I am encouraged by the fact that many of those programs are containing the problem, and in some cases we are starting to see that problem diminish. But we share that problem with all land-holders, and it is actually going to distract the debate to suggest that it is a problem primarily of parks.[43]

6.50 The source of invasive species must be looked at if the problem is to be solved strategically. Weeds that eventually make their way into national parks are usually escapees from urban gardens or farmland, yet many species identified as ecological or agricultural threats continue to be sold in commercial nurseries or traded by gardeners. WWF-Australia stated their concern at the failure of governments to implement coherent and strategic measures to deal with invasive garden plants, noting that they 'account for 7 in 10 of Australia's environmental weeds…[and] more than half of the emerging weeds are escaped garden plants, of which a third are still available for sale'.[44]

> Until very recently, even plant species classified as Weeds of National Significance (WoNS) have remained available for sale in some states and territories. The Department of Environment and Heritage advised the committee that, consistent with Recommendation 3 of *Turning back the tide,* 'it is expected that all WoNS will be prohibited from sale in all states and territories by the end of 2006'.[45]

6.51 More co-ordinated effort needs to be directed towards preventing fertile non-native animals from leaving private property. Community education, more effective use of existing sanctions, and a consistent approach to regulating companion, agricultural and game animals are all required to limit the continual re-introduction of domesticated animals into feral populations.

Funding

6.52 Most submissions that raised concerns about the management of invasive species recommended that more funding be provided for feral animal and weed control. There was general agreement that 'effective management is often more expensive in the short-term, but is likely to prove more efficient in the long-term'[46] and that failing to spend money now would only make the problems more difficult and expensive to address in the future:

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43 Dr Tony Fleming, Head, NSW National Parks and Wildlife Service; Deputy Director-General, Parks and Wildlife Division, NSW Department of Environment and Conservation. *Committee Hansard*, 12 May 2006, p. 12.

44 WWF - Australia, *Submission 161*, p. 4.

45 Department of Environment and Heritage, Answers received to questions taken on notice, 31 March 2006, p. 5.

46 World Commission on Protected Areas (Australia and New Zealand), *Submission 137*, p. 29.

> …they are getting further and further behind in feral animal and noxious weed control. It might be fine for them to say that there is underfunding in that area, but while the underfunding continues they are getting further and further behind because the weeds and animals are not stopping.[47]

6.53 The National Parks Association of NSW provided an extract from a submission on behalf of a number of environment groups to the NSW Government for the 2006-07 budget, recommending that the funding allocated to invasive species control across NSW Government agencies be doubled to $40m per year:

> Responding to the growing threat of invasive species requires a cross-tenure approach, with Government agencies working closely with private landholders to implement species-specific programs. This would be best implemented through the development of a new State-wide Invasive Species strategy.
>
> An invasive species strike-force also needs to be established to quickly deal with new outbreaks before their control becomes too difficult. Some species have been identified as a major threat to Australian biodiversity and agriculture if established in Australia, such as stoats and fire ants.[48]

6.54 Many submissions criticised the short timespans allocated to weed and animal control programs, noting that these programs were often a product of short or intermittent funding cycles. Mrs Maureen Baker OAM stated:

> Through management of numerous landcare projects I am aware that after initial rehabilitation of an area a group cannot just walk away because the land usually requires ongoing weed control management. In the long term it is much easier to maintain weed control (so that weeds do not get a chance to take over an area) rather than having large sums of money being spent at infrequent intervals.
>
> Maintenance Budgets for Pest and Weed Control should be provided on a continuing basis to be effective. The regular audit of park management should be carried out to ensure that the funds are being spent wisely.[49]

6.55 The World Commission on Protected Areas pointed out that it is not only easier, but cheaper, to eradicate pest populations before they grow and disperse, and that planning for eradication of a target species should include provision for follow-up maintenance work:

> …the management of landscape-scale pressures often requires a long-term commitment to management. An inability to commit funds for the required eradication period can result in a program being unsuccessful and thus wasting the initial funds committed.

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47 Mr Paul Warner, President, Australian National Four Wheel Drive Council*, Committee Hansard*, 12 May 2006, p. 64.

48 *Submission 130*, pp 8–9.

49 *Submission 42*, p. 2.

> While effective management requires adequate funding, it should not be forgotten that there is a cost to inadequate funding. For example, it will always cost more to eradicate an invasive species once it has become established, than it does when the species first emerges.[50]

6.56 Funding conditions, including alignment of funding with financial years or electoral cycles, can restrict the flexibility of managers to respond to factors such as seasonal conditions, availability of control measures and critical incidents. The Foundation for a Rabbit-Free Australia (RFA) wrote:

> RFA believes that inadequate funding for effectively-targeted park management continues to compromise proper stewardship of protected areas. This problem is not only about the quantum of funding governments may provide. It also can be created by the methods of funding and the inherent inflexibility of systems providing recurrent funding on an annual basis, with the strictures that annual funding can bring…There are numerous examples across Australia of investment in rabbit management programs that run for up to three years (around the term of government) and then are stopped or wound back, so that the value of the initial investment is lost within a decade…More flexible fund allocation systems that give recognition to this problem and that can span financial years would be most helpful.[51]

6.57 Some witnesses accepted that it was unlikely that the amount of funding required to fully address the damage caused by invasive pests would ever be available. Instead they called for available funding to be used strategically. Dr Tony Fleming told the committee that although park management plans were currently written on the basis of available funding, pest management needed to be understood and addressed on a cross-tenure basis:

> …governments have difficult decisions to make about how to allocate money between departments with a finite budget. They do that. We do the work we can with the budget we have…we try to write our plans according to the resources that we can put on the ground. If the nub of the issue is whether enough resources are being applied to solve the issue of feral animals and weeds in national parks or in any other land tenure in New South Wales, then, no, more resources are needed. That has been clear through the work of various CRCs on feral animal and weed control. But I do emphasise the point that it is not an issue which is specific to parks. It is really important that it is managed as a cross-tenure issue, because you do not get to the heart of the problem by looking at just one tenure.[52]

6.58 The eradication (or significant depletion) of key threatening processes was proposed as a potentially cheaper option than continuing to deal with the effects of the

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50 World Commission on Protected Areas (Australia and New Zealand), *Submission 137*, p. 30.

51 *Submission 30*, p. 2.

52 NSW Department of Environment and Conservation. *Committee Hansard*, 12 May 2006, pp 14–15.

threat. Mr Bruce Thomson recommended additional funding for research into the biological control of foxes:

> The strategic targeting of key threatening processes may be an effective way to assist protected area management and to greatly reduce the future costs of conservation. For example, the biological control of foxes would positively impact every protected area in Australia, apart from a few tropical areas…The overall costs of maintaining separate recovery plan actions for all of these species [threatened by fox predation and fox-borne diseases] will amount to hundreds of millions of dollars over the coming years; costs that may be mitigated through support for a single project to develop a biological (genetic) control to remove foxes…The strategic direction of funds into these types of research areas will greatly reduce the future costs of maintaining protected areas - almost incalculable cost savings.[53]

6.59 Mr Allan Holmes cited the example of the depletion of the rabbit population in arid regions following the release of calicivirus. However, he warned that even after significant crashes in pest populations, control efforts need to be continue:

> Have a look at the rabbit calicivirus. There was national cooperative management, and we were able to fund the analysis of what was going on with calicivirus for three or four years, and then we stopped funding it, which was an absurdity. We lost interest once we thought that we had dealt with the problem. What we will see in time is that rabbits will develop a resistance and rabbits will become a major problem for us again…
>
> The release of the virus in the mid-nineties caused this just incredibly extraordinary event where you saw one of the most significant pests effectively taken out of arid Australia. There are some lessons to be learnt there.[54]

Staffing

6.60 A concern reported by neighbouring landholders, particularly in remote areas, is the lack of park staff who are available to conduct weeding and culling operations, to monitor the progress and evaluate the effectiveness of control programs, or to respond to critical incidents. In WA and Queensland, destaffing policies have resulted in some large, remote parks having no permanent staff presence. Mrs Diana Morrison, representing pastoralists in the Gascoyne-Murchison region of WA, described the effect of destaffing on pest management:

> …there has to be management, there have to be people on the ground doing these sorts of things. The control of feral animals—cats, foxes, goats et cetera—takes time, money, people and consistency. Control of plants and weeds is the same thing: if there is nobody there to see it when it comes up

53 *Submission 1*, p. 3.

54 Department for Environment and Heritage, South Australia*, Committee Hansard,* 6 June 2006, p. 50.

> or when the problem happens and there is not the staff there to get on it, spray it, pick it or do whatever, it will not happen.[55]

6.61 Lack of ranger presence also troubles park staff, who told the committee that regular observation and small-scale maintenance activities allow emerging weed or animal problems to be addressed before they escalate:

> It is critical that we have people permanently out there on the ground every week driving around and doing things, spraying patches, picking up new weeds and continually keeping on top of the feral animals. We believe that we have clear evidence of how staff have improved it when they have been maintained on park.[56]

6.62 The value of close, regular monitoring of familiar territory was borne out by Mr Jim Inglis, who attributes the loss of native species on and around his property to the transfer of an onsite ranger who was committed to feral animal control:

> As an owner of 60ha situated between two of these national parks and adjoining both I have for the past 16 years witnessed the decline in numbers of these ground dwellers and the increase in predators, dogs, foxes and cats…I carry out daily monitoring of both wildlife and feral predators by maintaining several bare pads of damp raked earth over a distance of some 3 kilometres of fire trails which with daily inspection give me a good idea of abundance and activity of these animals. As a result of this and general daily observations I am aware that ground dwelling wildlife has seriously declined...[57]

6.63 Maintaining a permanent presence of on-ground staff was supported by the Australian Workers Union, representing park rangers:

> …our members are very strongly of the view that in most cases being based on-park is the best way to manage the estate, to protect it from vandalism and to manage pests and the myriad other issues. The best way to have a proper handle on looking after the place is to base rangers there, and sometimes it costs more money to do that. We do not want an agenda that locates staff on the basis of purely budgetary constraints—which again comes back to needing more money.[58]

6.64 Another strand of criticism about staffing concerned the technical expertise of staff. This is particularly pertinent when staff with responsibility for animal and weed control are expected to take on a community education function when engaging with neighbours and other stakeholders:

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55 Pastoralists and Graziers Association of Western Australia. *Committee Hansard*, 31 August 2006, p. 36.

56 Dr Paul Williams, *Committee Hansard*, 30 June 2006, p. 24.

57 *Submission 37*, p. 1.

58 Mr Christopher Simpson, *Committee Hansard*, 21 April 2006, p. 115.

> QPWS have no specialist weed or feral animal officers. Lack of skill means less direction and a reduced result in pest management programs. There is also a lack of pest management plans for National Parks in Cook Shire resulting in ad hoc measures for pest control work. It is unrealistic for a ranger to be as multi-skilled as they are expected to be, especially in some of the larger remote Parks in Queensland, where staff numbers are ridiculously low.[59]

Volunteer labour

6.65 A number of submissions, particularly those from four-wheel drive organisations, advocated the use of volunteer labour to perform maintenance including weed and feral animal control. The following comments by the Australian National Four Wheel Drive Council represent this position:

> We propose that our national estate is best served by participative management between land management authorities and those that use and care for parks and other conservation areas…
>
> In this regard, our members have demonstrated on numerous occasions that we practise what we preach by voluntarily performing rubbish clean-ups, track clearing, weed removal and minor track maintenance. Our members have gladly volunteered to assist with feral animal and weed eradication programs however these programs have faltered through liability and unionist concerns raised by those not interested in being part of the solution. We have undertaken these projects because we want to enjoy the national estate in its best condition now and into the future.[60]

6.66 The committee supports the use of volunteer labour where appropriate, and notes that partnerships between national parks and local organisations offer excellent opportunities to share knowledge and build community support. In expressing this in-principle support, the committee takes the view that local park managers are in the best position to make operational decisions about the deployment of voluntary labour and the suitability of individual volunteers, subject to policy guidelines developed by the agency responsible for park management.

Management of game species

6.67 The committee received evidence in relation to the management of deer populations in Victorian national parks. Mr Philip Maguire, who has previously been licensed to run cattle in the Alpine National Park, wrote:

> On Parks Victoria's own estimates there are up to 200,000 feral deer running in the Victorian high country, in contrast to 8000 well managed cattle with a limited annual presence of 16 weeks. Yet Parks Victoria has concluded a concordat with the Australian Deer Association which speaks

59 Cook Shire Council, *Submission 195,* p. 2.

60 *Submission 89*, p. 11.

> of improving habitat for feral deer. I find this alarming. The ADA is an organisation which, in its own words, seeks to see deer take their 'rightful place amongst Australia's wildlife'. It sounds like a joke but it is not.[61]

6.68 The National Parks Association of NSW expressed the view that shooting in national parks should only be carried out by professional hunters:

> NPA does not support the use of recreational hunters playing a role in the management of feral animals. Professional hunters should be used as part of a broader approach that includes baiting, trapping and biological control. Recreational hunters are not motivated to significantly reduce or eradicate feral animals, but by hunting for fun.[62]

6.69 Arrangements between national parks and shooting organisations that follow approved animal welfare and safety protocols, and are carefully monitored, have contributed to successful culling programs in some ecosystems, for example in *Operation Bounceback*. There are currently few options available to control feral deer, other than shooting,[63] which, as Associate Professor Geoffrey Wescott points out, is an expensive and labour intensive method:

> The deer are a pest in the high country…It is certainly a problem, and the agencies would love to have no deer in those parks. I think complete eradication is probably unlikely given the nature of the countryside. Those public-private partnerships seem to be the best bet at the moment…they are exploring partnerships as a way of addressing it given that they do not have the money to do it all off their own back. The alpine country is extraordinarily rugged and it is very difficult—particularly for deer, which can move so easily. Goats pose a similar problem in desert parks.[64]

6.70 The purpose of agreements between national parks and shooting organisations should be strictly limited to progress towards the safe and humane eradication of feral species. While the committee does not accept at face value Mr Maguire's assertion that feral deer 'are welcome to wallow in the environmentally critical and delicate moss beds of the Alps and browse freely in alpine environments'[65] as a result of the *Memorandum of Co-operation between Australian Deer Association (Victoria) and Parks Victoria*, it expresses concern at the emphasis of the wording below. Specifically, the *Memorandum* should reflect more explicitly that its ultimate aim is the removal of deer populations (and consequently deer hunting) from Victorian national parks.

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61 *Submission 5*, p. 2.

62 *Submission 130*, p. 11.

63 NSW National Parks and Wildlife Service, *Deer management plan 2005-2008 for Royal National Park and NPWS Parks and Reserves in the Sydney South Region*, http://www.nationalparks.nsw.gov.au/PDFs/RoyalNP_Deer_Management_Plan_2005_Approved.pdf, accessed October 2006.

64 *Committee Hansard* 5 June 2006, p. 18.

65 Mr Philip Maguire, *Committee Hansard*, 5 June 2006, p. 53.

> This document establishes a frame-work to develop and maintain protocols for a positive and constructive working relationship between the Australian Deer Association (Victoria) and Parks Victoria that for areas managed by Parks Victoria where deer hunting is allowed, will preserve and enhance recreational deer hunting (stalking) opportunities and apply science for improved management of wild deer populations in Victoria's National and State Parks and Reserves.[66]

Conclusion

6.71 The committee believes that, despite some recent improvements in relation to weeds, the management, funding, community understanding and political will to address issues related to invasive species across all tenures in Australia remains fragmented and insufficient.

6.72 The committee acknowledges that while the Commonwealth has the ability to control what species are imported into Australia, it has little direct control over the management of established pest species. The committee believes that greater state and territory partnerships are required due to the scale and urgency of the problem in all tenures. An agreed national framework that can support a co-ordinated response to the control of feral animals is required as a matter of urgency.

6.73 The committee is persuaded that the value of national parks will be significantly degraded by the presence of invasive species unless current control programs are better supported by governments and the community. Increased funding is required to support existing pest control measures within national parks in all jurisdictions. Alongside existing invasive species control programs in parks, it is essential that longer-term, integrated pest management programs that operate across tenures and cultivate broad stakeholder involvement are supported:

> It would seem that there will never be enough resources to commit to conserving large parts of Australia, but it is clear that government must commit to long term (decades if not hundreds of years) programs that support integrated management. These programs should combine short and long term goals, but should address the joint issues of feral animal and weed control, revegetation with local species and the management of indigenous species at sustainable levels.[67]

66 Australian Deer Association*, Memorandum of Co-operation between Australian Deer Association (Victoria) and Parks Victoria,* Attachment to *Submission 69*, p. 3.

67 Bakers Vertebrate Pest Control*, Submission 18*, p. 3.