



August 2003

1. OVERVIEW

The Plan of Management for Royal National Park (Feb 1999) required the establishment of a Deer Working Group to prepare a Deer Control Plan. Following a series of public meetings and considerations of public comments, the Minister for Environment approved a 3-year Deer Management Plan in February 2002.

The Deer Working Group is made up of representatives of: *Sutherland Shire Council, RSPCA, Nature Conservation Council of NSW, Australian Deer Association, NSW National Parks Association, NSW Animal Welfare League, University of Sydney, Rural Lands Protection Board (Moss Vale)* and NPWS officers.

Preliminary results from research work undertaken on deer within the Park by the *University of Western Sydney* in 2000-2001, suggest that large numbers of deer are damaging vegetation within the Park. The damage is most pronounced in the coastal rainforests, heathlands and some of the threatened vegetation communities such as the Sutherland Shire Littoral Rainforest.

At the time of the research, the number of deer in the Park was estimated to be 2,500. A program to commence reducing deer numbers was approved following the bush fire in December 2001. The fire burned 60% of the Royal National Park and there were concerns that the large numbers of deer would exacerbate environmental impacts. The decision was based on a need to restore the balance by reducing the impacts of introduced fauna species in favour of native species (eg. Swamp Wallaby).

The working party meets regularly to provide advice to the NPWS and monitor the implementation of the Deer Management Plan. Since February 2002, the *Deer Working Group* has met on six (6) occasions.

The *Deer Management Plan* requires that an annual report be prepared in August each year. Implementation of the Deer Management Plan commenced in late February 2002 and this report covers the progress of works between February 2002 and July 2003.

The *Deer Management Plan* identifies five (5) key objectives which include reducing deer numbers, improve community and stakeholder appreciation of the impacts of large numbers of deer, fostering cooperative approaches for the management of deer, fostering research into deer, and monitoring and evaluating the program.

2. 2002 –2003 ACHIEVEMENTS

This report addresses each of the five key objectives for management of deer as outlined in the *Deer Management Plan*.

Objective 1. - Reduce the number of deer in populations which impact negatively on the natural environment of Royal National Park and other reserves managed by the NPWS Sydney South Region.



Ground shooting of deer commenced in February 2002 in accordance with an approved shooting plan and shooting protocols outlined in appendix 2 of the *Deer Management Plan*. Between February 2002 and July 2003, 227 deer have been removed from the park under this program. Both the RSPCA and the NSW Animal Welfare League have undertaken audits of the shooting activity and continue to be invited to every operation.

As specified in the *Deer Management Plan*, the primary method of management has been through ground shooting. The NPWS has operated under an approved shooting protocol as required by Appendix 2 of the *Deer Management Plan*. Professional officers of the Rural Lands Protection Board (Moss Vale) under direction of NPWS officers and in accordance with the NPWS policy on firearms have undertaken all shooting. Following community concerns in June 2003, this protocol has been reviewed and submitted to NSW Police for endorsement.

Table 1 – Deer Cull Program Summary

	Between Feb 2002 & July 2002	Between July 2002 & July 2003
Total number of deer taken	114	113
Total number of nights	26	41
Percentage of culled animals from coastal heath/rainforest	36%	22%
Percentage of culled animals from Sutherland Shire Littoral rainforest	28%	30%
Percentage of culled animals from open woodlands	36%	48%
No. nights where RSPCA officers were present during culling activities	9	5

Priority areas have included the Endangered Sutherland Shire Littoral Rainforest, coastal heathland and rainforest areas and where large numbers of deer congregate at night. While locations have included specific sites around the townships of Bundeena and Maianbar, this has been limited in the early stages of the program while refinements are being made to shooting procedure.

To date no culling operations have been conducted in other reserves within the Region. It was considered that shooting operations should be refined prior to expanding to other NPWS areas.

While the use of enclosures to trap and remove live deer from the park has been included as an approved method of deer management in the Plan, there have been no attempts made at this stage to reactivate the enclosures. This is to ensure each technique is perfected prior to implementing additional methods.

During the first few weeks of the program, shooting operations were disrupted on two occasions by people opposed to the program. Police assistance was sought in one such incident, however no action was taken on those involved.



Disposal of carcasses – The *Deer Management Plan* required that the carcasses of the culled deer were not wasted. All culled animals are gutted and frozen prior to being transported to a private zoo where the carcasses are fed to the zoo's endangered tigers. Internal organs are taken to the Menai Waste Management Centre.

Animal Welfare Audits – Both the *RSPCA* and the *NSW Animal Welfare League* are represented on the *Deer Working Group*. These organisations continue to provide advice to the program on implementation and monitoring especially in respect to animal welfare issues.

RSPCA inspectors audited the first six (6) shooting operations and continue to undertake random audits of the program. The timing and nature of these audits is determined by the *RSPCA*.

NSW Animal Welfare League inspectors have undertaken post shoot audits on approximately 85% of all carcasses until July 2002. These audits usually occurred the day after the shooting operation.

In May 2002, the Chief Executive Officer of the *NSW Animal Welfare League* wrote to the NPWS stating that “*Inspectors of our organisation found the deer available for inspection had been killed in a humane manner*”.

On the 26th August the then Deputy CEO of *RSPCA*, wrote to the NPWS stating “*The Society has formed the view that on each occasion the culling process has been carried out professionally, efficiently and without any suggestion that the animals are being shot incorrectly or inhumanely*”.

Objective 2. - Foster cooperative approaches for the management of deer on and adjacent to the reserves managed by the NPWS Sydney South Region.

The Deer Working Party includes representation from the *Sutherland Shire Council* and *Rural Lands Protection Board (Moss Vale)*. NPWS officers have briefed Sutherland Shire Councillors and officers of *Wollongong City Council* on the implementation of the Deer culling program and have had a number of meetings with Council staff on “off-park” deer management issues.

Members of the local community regularly report incidents of injured deer within the general area. Most of these injuries have been sustained through collisions with motor vehicles. NPWS has now commenced keeping records of these reports. The NPWS has prepared an *Injured Deer Protocol*, to ensure there is an appropriate response to deer injured, both within and outside the Reserve.

The *Injured Deer Protocol* includes the development of a training course by the *University of Sydney* on the assessment and appropriate management of injured animals. To date one course has been conducted which 12 NPWS staff and 2 *RSPCA* staff attended. A second course is planned for late 2003.



Objective 3. - Improve community and stakeholder appreciation of the issues related to the management of introduced animals and the urgent need to manage deer populations in conservation areas.

In addition to the two community workshops conducted by NPWS in February 2002, the NPWS has produced 4 information sheets on deer management issues in the Park

NPWS has established a log of incidents reported by the local community after encounters with deer. These records will help identify problem locations and emerging issues related to deer management. The aim is to increase community awareness of the challenges facing land managers.

There have been five 5 articles on the deer management issues since January 2002 in local and metropolitan newspapers - two metropolitan and three in local.

NPWS staff has recently commenced door-knocking residents adjacent to the Park in Bundeena, to discuss the deer management program and identify and address any concerns residents may have with the program.

Objective 4. - Foster research on deer including studies on effective, humane and safe methods of population control.

During 2002 NPWS continued to provide some financial assistance to research being undertaken by *Macquarie University*. This research is investigating one particular fertility control drug. While there is no direct application to the existing deer management program, it will provide important information on deer and assist with the feasibility of future research.

NPWS will continue to support and sponsor research into the distribution and behaviour of deer to build on our knowledge of this species. Where appropriate research findings will be incorporated into the existing deer management plan. Currently there is no ongoing research into this aspect, but dialog continues with institutions on possible future projects.

Objective 5. - Establish mechanisms for monitoring and evaluating the plan.

The *Deer Working Group* has a key role in continuing to monitor and evaluate the program. The Group meets regularly and provides advice on monitoring, animal welfare and operational aspects of the program.

Environmental monitoring is important to ensure that the expected environmental benefits of the culling program will be realised. The NPWS have sought expressions of interest from universities to establish an environmental monitoring program. Negotiations are at an early stage with a local Universities.

A program to evaluate and monitor local community attitudes to deer and the deer management program is to be developed over the next twelve months. This monitoring program will be required to meet the primary objective of reducing the impact of deer on park neighbours.



3. BUDGET

Total expenditure on deer management to the end of July 2003, has been \$103,863. The total includes such activities as establishment costs for equipment and infrastructure, shooting and direct financial assistance to ongoing research.

Table 2 Deer Program Costs

Year	2002	2003	Comments
Establishment costs	\$7,900	\$3,208	Chiller/equipment
Research Contributions	\$5,000	\$3,505	Macquarie University
Salary costs	\$25,146	\$33,654	
Contract fees	\$4,102	\$11,665	RLPB assistance
Operations	\$6,312	\$3,371	Helicopter/ tip fees
Totals	\$48,460	\$55,403	

The most significant cost has been in labour associated with the night time-shooting program. While salary costs of the program are high, public safety is paramount. Adequate staff and time need to be allocated to each shooting activity to ensure that the high safety standard is maintained. Most deer management work is conducted at night, when deer are active and public safety issues can be better managed

Operational costs include helicopter lifts (to remove carcasses) from remote locations, vehicle running costs and tip fees for the disposal of offal removed from carcasses prior to freezing. Establishment costs included a carcass chiller unit and 3 phase power connection costs.

While the cost per animal appears high, it should be noted that the costs are comparable with other shooting control programs such as pig control and include establishment costs that will not need to be met in coming years. It should also be noted that over the past eighteen months there have been significant operational improvements, which are expected to reduce the costs for each animal culled as the program continues.

4. CONCLUSION

This is the first such ground shooting program to be implemented by the NPWS in a park with such high public visitation and urban interface. As a result, in the initial stages of this program, NPWS have focussed on two key areas; public safety and ensuring animal welfare issues are managed appropriately.

Over the past eighteen months, there has been a steady improvement in the operational aspects of the deer management program. These include, a better understanding of deer movements under particular environmental conditions, significant improvement shooting accuracy (see table 1) and efficiencies in shooting team work. These improvements are reflected in recent post shoot reports where



over the period of July and August 2003, 100 animals have been culled over nine (9) nights.

Working relationships with the various agencies involved with the program have been very constructive. The NPWS acknowledge the expertise and advice provided by the members of the *Deer Working Group* and in particular the RLPB (Moss Vale), the *NSW Animal Welfare League* and the *RSPCA*. While the *NSW Police Service* has not been directly involved, their advice and support in the program is appreciated.

NPWS will direct even more effort over the next twelve months to, local community information, cooperative programs with *Sutherland Shire Council* and *Wollongong City Council*, and to the implementation of an environmental monitoring program.

In addition NPWS will continue to focus on improvements to the operational aspects of the program. In August 2003, the Deer Working Group reviewed the Deer Management Plan's shooting protocols. The revised and approved protocols will then be included in community information programs and placed on the NPWS web site.

Next annual report on the implementation of the deer management plan is due in August 2004.