

# Deer Management Plan for Royal National Park

## 2006 Annual Report

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2006

### 1. OVERVIEW

The Plan of Management for Royal National Park (February 1999) required the preparation of a *Deer Management Plan* for the reserve. Following a series of public meetings and the considerations of public comments, the *Royal National Park Deer Management Plan* was approved in February 2002. The plan covered the 3 year period 2002-2005. In 2005 a second Deer Management Plan was approved (2005-2008).

The *Deer Management Plan* was prepared by the Royal National Park Deer Working Group. This group was made up of representatives of: *Sutherland Shire and Wollongong City Councils, 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 the Department of Environment and Conservation* which includes the *National Parks and Wildlife Service (NPWS)*.

A number of research programs over the last 10 years have indicated that large numbers of deer are damaging vegetation within Royal National Park (RNP). The damage is most pronounced in the coastal rainforests, heathlands and some of the threatened vegetation communities such as the Littoral Rainforest. This is supported by more recent research by the University of Wollongong and the Department of Environment and Conservation<sup>1</sup>. This study found that, in the Jibbon-Bundeena area of RNP, deer adversely affected 69 plant species, including saplings of *Syzygium paniculatum*, a threatened rainforest tree. Deer also increased soil erosion. Seed production and seedling recruitment are the growth stages most vulnerable to browsing by deer.

The working party meets regularly to provide advice to the NPWS and monitor the implementation of the Deer Management Plan. During the last 12 months, the *Deer Working Group* has met on three (3) occasions.

The *Deer Management Plan* requires that an annual report be prepared each year. Implementation of the second Deer Management Plan commenced during 2005 and this report covers the progress of works between July 2005 and July 2006.

The *Deer Management Plan* identifies five (5) key objectives:

- 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;
- monitoring and evaluating the program.

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<sup>1</sup> Keith, D. and Pellow, B. (2004). Effects of Javan rusa deer (*Cervus timorensis*) on native plant species in the Jibbon-Bundeena area, Royal National Park, New South Wales. Proceedings of the Linnean Society of New South Wales.

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## 2. 2005 –2006 ACHIEVEMENTS

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

### ***Objective 1 – Review the operation of the deer management program over the last three years (2002-2005) and identify options for improving future efficiency of the program***

In 2005 a revised program was endorsed which recognised that the natural increase in deer is currently exceeding the culling rate of the existing shooting program. The revised program makes a commitment to a number of initiatives to increase the rate at which deer are removed, notably:

- To support applied scientific research with potential to improve operational performance;
- To develop additional cull sites within Royal National Park;
- To investigate the feasibility of other alternative control techniques; and
- To expand the program southwards into the Illawarra.

The DEC has made significant inroads on all these initiatives. See objectives 3 to 6 below. In terms of an expansion of operations into the Illawarra, a number of potential control sites within the Illawarra Escarpment State Conservation Area have been identified. Field trials at these sites will take place in Spring 2006.

### ***Objective 2. - 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.***

Shooting of deer commenced in February 2002 in accordance with an approved shooting plan and protocols as outlined in Appendix 2 of the *Deer Management Plan*. Between February 2002 and July 2006, 680 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 method of deer management has been through ground based shooting. The shooting protocol has been reviewed by the NSW Firearms Safety and Training Council and formally endorsed by the Sutherland Local Area Command of the NSW Police. The review by the NSW Firearms Safety and Training Council included a field inspection of operational procedures.

Officers of the Moss Vale Rural Lands Protection Board, under direction of NPWS officers and in accordance with the NPWS policy on firearms, have undertaken all of the shooting to date.

Over the four years of the operation there has been a deliberate emphasis on removing deer from the most sensitive ecological communities, notably the Littoral Rainforest.

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**Disposal of carcasses** – The *Deer Management Plan* requires that, wherever possible deer carcasses are gutted and frozen prior to being transported to a private zoo where they 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 NPWS on the deer program especially with regard to animal welfare issues.

*RSPCA* inspectors have audited twenty three (23)-shooting operations to date and will continue to undertake random audits of the program. The *RSPCA*, has attended five (5) operations this year.

***Objective 3. - Foster cooperative approaches for the management of deer on and adjacent to the reserves managed by the NPWS Sydney South Region.***

Sutherland Shire Council adopted a Feral Animal Policy during 2004-05. The development of this document was in response to community concern. The NPWS assisted in the development of the policy in accordance with the objective of fostering cooperative management regimes.

In a practical term, Sutherland Council and NPWS have collaborated to address community concerns in the Grays Point area with the development of a joint deer control program for the sporting fields leased by Council from NPWS. Sutherland Council officers were provided with details of all of the relevant operational procedures and were mentored in the field for a 6-month period prior to the commencement of independent operations by Council.

To date, there have been ten (10) joint operational events with a total of 12 deer removed. This program will continue and is expected to produce results for the life of the plan.

A Memorandum of Understanding between the DEC and Sutherland Council is currently being finalised to allow even closer integration of the two programs, including the use of DEC equipment and staff during Council operations. This MOU is expected to be finalised by the end of July 2006.

***Objective 4. - 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.***

Rusa Deer populations are not confined to Royal National Park. Research conducted by the University of Western Sydney between 1999-2001 found that deer extended from the Hacking River in the north to Ulladulla in the South. In fact, approximately 70% of the population were outside the park.

The introduction of the revised 2005-2008 Deer Management Plan also included a period of public exhibition prior to adoption. During this period the plan was available

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to the public for comment. The plan received minimal comment and this was viewed as having wide public support.

While some portions of the community struggle to accept that deer are culled, a generalised response is that deer are recognised as causing wide spread environmental and social damage, and culling is required.

### ***Objective 5. - Foster research on deer including studies on effective, humane and safe methods of population control.***

The CSIRO and the University of Sydney have received funding from the Invasive Animals Cooperative Research Centre to undertake a PhD research project focussing on the population dynamics. The project commenced in early 2006, but due personal reasons the student has recent with drawn from the project and a new student is expected to commence early in 2007.

A separate project is current being developed with the University of Sydney to trial a new population senses technique known as distance sampling. This method doesn't offer a total population estimate but instead focus on the change in numbers of deer over time. It is hope this method will allow a faster means of calculating if deer numbers are increase or decreasing over time.

### ***Objective 6. - Establish mechanisms for monitoring and evaluating the plan.***

The establishment of long-term monitoring of vegetation as an indicator of the success of the Deer Management Plan is a priority for the NPWS. The two project outlines in objective 4 above will go a long way to delivering this outcome.

## **3. BUDGET**

Operational expenditure on deer management for the 2005-06 year was \$45,000. Of this amount, \$40,000 was spent on the ground shooting program and \$5,000 on research and monitoring. This figure excludes the salary cost of NPWS staff and Deer Working Group members involved in planning and review of the program.

The most significant cost has been in labour associated with the night time-shooting program. While salary costs of the program are high, ensuring public safety is of utmost importance. Adequate staff and time need to be allocated to each shooting activity to ensure that public safety is not compromised. Shooting is conducted at night, when deer are active and public safety can be appropriately 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.

While the cost per animal removed is still high, there has been significant improvement in cost per animal removed. In 2003 it cost \$490 per animal. In 2006 this was reduced to \$255 per animal. This further improvement is a result of refining techniques and the instigation of the foot-based remote areas program, which relies upon helicopters to remove carcasses.



### 4. CONCLUSION

The program is focussed on three (3) key areas: public safety, an effective culling program and ensuring animal welfare issues are managed appropriately. The current focus is directed towards improving the efficiency of the operation.

Over the past four (4) years, there has been a marked improvement in the operational aspects of the deer management program. These include a better understanding of deer movements under particular environmental conditions, significant improvement in the effectiveness of the shooting program and more effective teamwork.

Working relationships with the various agencies involved with the program have been very positive. The NPWS acknowledges the expertise and advice provided by the members of the *Deer Working Group* and in particular the Moss Vale Rural Lands Protection Board, the *NSW Animal Welfare League* and the *RSPCA*. The advice and support of the *NSW Police* is also appreciated.

NPWS will continue direct substantial effort over the next twelve months to cooperative programs with *Sutherland Shire Council* and *Wollongong City Council*, and to the establishment of a substantial research project funded by the newly establish Invasive Animals Co-operative Research Centre.

In late 2005, a revised Deer Management Plan was released setting out the direction of deer management for the next 3 years. This plan will build on the previous plan but, once again, will review all available technologies and social implications of control techniques.

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