



NSW National Parks
and Wildlife Service

Kosciuszko National Park Plan of Management (2006)

2008-2009 Implementation Report



Department of
Environment, Climate Change and Water NSW



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Executive Summary

The Kosciuszko National Park Plan of Management (the Plan) is available on line at:
<http://www.environment.nsw.gov.au/parkmanagement/knpgmtplan.htm>

This Implementation Report, a requirement under the Plan (Chapter 16) charts the trends in condition of the Parks values and the progress of the Plans implementation. This report covers the period from July 2008 to June 2009, three years since the plan was adopted and is intended for presentation to the Advisory Committees and key stakeholders.

The Plan identifies 15 key milestones (Section 4.4). Their implementation will set in place structures and processes to govern many of the efforts directed at protecting, maintaining or improving the significant values of the Park (Section 2.2). They will assist with the achievement of the Key Desired Outcomes (Section 4.3) for the Park. They will also provide a framework for the implementation of management objectives, policies and actions over the life of the Plan.

These key milestones are being delivered through a series of strategic projects. Their timely achievement does not negate the need to undertake ongoing park management tasks. The ordering of these projects relates to the priority for establishing the systems that will underpin the implementation of the Plan.

Some key milestones will be delivered through projects specific to the Park whilst others will be delivered via state-wide programs whose implementation will see the achievement of key milestones within the program.

Update on development of key milestones

The following four key milestones are completed awaiting final endorsement as required within 2 years:

- Integrated Monitoring and Evaluation Program (which incorporates the Key Performance Indicators, Integrated Monitoring Program and Integrated Evaluation System key milestone projects as detailed in Chapter 16). The Integrated Monitoring and Evaluation Program has been developed and is being trialled during 2009-2010;

The initial draft Kosciuszko Database has been developed. This Database will be used to assist with monitoring and evaluating the Plan, tracking the implementation of individual actions detailed in Schedule 11 and assist with meeting the reporting requirements detailed within Chapter 16 of the Plan;

- Park Restoration Plan (Section 11.1). A Draft Park Restoration Plan has been completed and following endorsement will be implemented from 2009-2010 in line with available resources and funding;
- Environmental Management Systems (Section 12.1) Environmental Management Systems have been developed for the Alpine Resorts including the Perisher Range. DECCW host a page on their website dedicated to the PRREMS. Reports, background information and the Lodge Environment Manual are all accessible through the site, available on line at <http://www.environment.nsw.gov.au/PRREMS/>.

A training course, "Implementing and Maintaining an Environmental Management System" was completed by staff from NPWS. Components of the Environmental Management System for the park will be developed during 2009-2010 in line with State wide strategies. There are also a series of Environmental Management Plans controlling the activities of Snowy Hydro Limited in the Park;

- Park Communication Plan (Section 13.1). A Draft Communication Plan has been completed and following endorsement will be implemented from 2009-2010 in line with available resources and funding;

A further eleven key milestones (Section 4.4) have been identified in the plan to be completed or underway within five years of the plan's approval. Projects have commenced which will contribute to meeting some objectives of the eleven key milestones;

- Visitor Data System (VDS) (Section 8.1). The development of Visitor Data System has commenced and components have been implemented across the Park;
- Main Range Recreation Management Strategies (Section 9.1). The Waste Management Strategy is completed and is being implemented. The Walking Track Management Plan has been prepared for consultation;
- Huts Conservation Strategy (Chapter 7). The completed strategy is being implemented in line with available resources and funding. It can be viewed on line at: <http://www.environment.nsw.gov.au/NationalParks/parkHome.aspx?id=N0018>;
- Visitor Facility Strategies (Section 8.2). A state wide Park Facilities Manual has been completed and is being implemented within the Park. The state wide Signage Manual is also being developed and will be completed during 2009-2010;
- Management Partnerships (Chapter 7). The Southern Kosciuszko Aboriginal Working Group is currently negotiating a Memorandum of Understanding (MoU). An MoU has been finalised with the Northern Aboriginal Working Group and is ready for signing. All planning, maintenance and construction work on huts is completed in cooperation with the Kosciuszko Huts Association as detailed in the MoU.; and
- Visual Management System (Section 11.6). There are currently visual management strategies being implemented. For example, the first edition of the NPWS Rehabilitation Guidelines for the Resorts of the Park was published and can be viewed on line at http://www.environment.nsw.gov.au/aprkmanagement/knp_resortrehab.htm.

The 2008-2009 assessment of the Condition of Values and Trends appears in Section 2. This is based upon information collated through the generic Key Performance Indicators template. For this first report, the comments associated with any recent change are assessed against the values information that is contained within the Kosciuszko National Park Plan of Management (2006). Future reports will be based on changes since the last annual Key Performance Indicators Report.

Schedule 11 Plan Implementation Priorities

The management actions identified throughout the Plan are summarised in Schedule 11. These actions are given an implementation priority in the Plan. Of the 481 actions, 101 have a High priority, 191 have a Medium priority, 17 Low priority and 171 have been identified as actions that are ongoing park management tasks often associated with agency-wide policy and procedures. The initial draft Kosciuszko Database allows the implementation of these actions to be tracked. Overall progress and a detailed list showing the status of each action against the Key Desired Outcomes (Section 4.3) will appear in the 2009-2010 Implementation Report.

Current Research

During this reporting period there were a variety of research projects underway in Kosciuszko National Park. The Implementation Report provides a summary of the results of some of these research projects which include:

- Spotted Tree Frog recovery project;
- Southern Corroboree Frog project;
- Alpine ash (*Eucalyptus delegatensis*) monitoring;
- “Dogs in Space”: Australian Satellite Tracking Program;
- Monitoring Spotted-tailed Quolls against Canid Control Operations;
- Mountain Pygmy-possum populations monitoring; and
- Ongoing Alpine programs.

1. Kosciuszko National Park Plan of Management

The New South Wales *National Parks and Wildlife Act 1974* requires that a plan of management be prepared for each national park. A plan of management is a legal document that outlines how an area will be managed in the years ahead. The Kosciuszko National Park Plan of Management 2006 (the Plan) establishes the scheme of operations for Kosciuszko National Park (the Park) in accordance with Section 73B of the *National Parks and Wildlife Act 1974*.

The Plan is available on line at:

<http://www.environment.nsw.gov.au/parkmanagement/knpgmtplan.htm>

The Plan details a statement of significance, overarching principles, key desired outcomes, key milestones, management objectives, policies and actions to guide the long-term management of the broad range of natural, cultural and recreational values the park protects. The actions identified in the plan are being undertaken by the National Parks and Wildlife Service (NPWS) and other organisations building upon the legacy of the past six decades of conservation management.

The Plan requires the preparation of a report produced on an annual basis that charts the trends in condition of the park's values and the progress of the plan's implementation (see Chapter 16 "Monitoring, Evaluation and Reporting"). This is the third of those reports covering the period from July 2008 to June 2009. The report can be viewed on line at <http://www.environment.nsw.gov.au/NationalParks/parkHome.aspx?id=N0018>.

The information contained in this report is intended for presentation to the Advisory Committees and key stakeholders. For more detailed information please contact the Park Managers.

1. South West Slopes Regional Office
7a Adelong Road Tumut NSW 2720
P.O Box 472 Tumut NSW 2720
Phone: 69477000

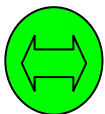



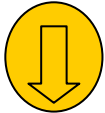
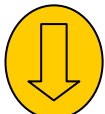
2. Snowy Mountains Regional and Resorts Section Office
Kosciuszko Road Jindabyne NSW 2627
P.O Box 2228 Jindabyne NSW 2627
Phone: 64505555

3. Additional information is also available through the Australian Alps National Parks Cooperative Management Program by viewing <http://www.australialps.environment.gov.au/>











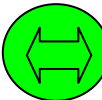
2. Park Values

The 2008-2009 assessment of the Condition of Values and Trends appears in the Table below. This is based upon information collated through the generic Key Performance Indicators template. For this first report, the comments associated with any recent change are assessed against the values information that is contained within the Kosciuszko National Park Plan of Management (2006). Future reports will be based on changes since the last annual Key Performance Indicators Report.

2008-2009 Assessed Condition of Values and Trends

Value	Indicator /Trend	Change since last report
Rocks and landforms		No significant change.
Karst		Some management improvements to some areas of karst were undertaken but increasing threats from feral horses and climate change require further management and monitoring.
Soils		Improvement to soil condition expected since ground cover improved post 2003 fires.
Rivers and Lakes		Some improvement expected as ground cover improved across their catchments since 2003 fires. Willow control underway. Continued regeneration of catchments expected but further monitoring required. Environmental flows still to be implemented. AALC catchment project will improve future assessment of this value.
Native Plants		Regeneration proceeding since 2003 fires. Alpine Sphagnum Bogs and associated fens are now listed as EEC under EPBC Act. Bog rehabilitation worked commenced but held over pending review. Threats from grazing by increasing numbers of feral horses and deer and spread of hawkweed identified. Climate change impacts and increased fire frequency are threats to some communities. Further work to understand changes, conserve species and EECs and minimise threats required.
Native Animals		Species such as Corroboree Frog and Burramys are still under threat especially from Climate Change and introduced species. Continued work to understand changes, conserve species and minimise threats is required.

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Wilderness		No significant change.
Ecosystem processes		Climate change impacts identified. Further work to minimise threats from pests, weeds and inappropriate fire regimes as well as further monitoring required.
Aesthetic		No significant change across Main Range post fire and expected to improve as regeneration proceeds. Visitor facilities to protect aesthetic values have been built.
Aboriginal		No significant change. Further involvement of Aboriginal groups and heritage surveys would be beneficial.
Pastoralism		No significant change.
Huts		Reconstruction of huts after 2003 fires underway with implementation of Huts Conservation Strategy.
Mining		No significant change. Rehabilitation of some sites underway.
Water Harvesting		Snow melt and soil moisture has reduced due to drier climatic conditions over the last decade reducing water inflows to the Snow Hydro Scheme and for downstream users. Inflows likely to remain lower under predicted hotter, drier climate change scenarios. AALC Catchment project will better define this for future reports.
Scientific Research		Research effort is difficult to quantify and needs further work to identify research priorities and projects. AALC strategic plan focussed on priority issues. Extra NPWS resources and projects are already focussed on priority issues of values and impacts of fire regimes, climate change and pest control.
Tourism and Recreation		Significant improvements to facilities and entry stations have been made. Alps recognised as an Australian National Landscape and National Heritage Listing.
Utilitarian Functions		No significant change. Rehabilitation of former SMH sites underway. Resorts/infrastructure environmental improvements underway. Environmental Management Systems for Resorts and SMH completed.

3. Key Milestones

The Plan identifies 15 key milestones, these are detailed in Section 4.4 of the plan. Their implementation will set in place structures and processes to govern many of the efforts directed at protecting, maintaining or improving the significant values (Section 2.2) of the Park. Some of the functions and characteristics of the key milestones include:

- They will assist with the achievement of the Key Desired Outcomes for the park detailed in Section 4.3. ;
- They will also provide a framework for the implementation of management objectives, policies and actions over the life of the Plan;
- These key milestones will be delivered through a series of strategic projects.
- the ordering of these strategic projects is not an indication of priority;
- Their timely achievement does not negate the need to undertake ongoing park management tasks; and
- The ordering of these projects relates to establishing the systems that will underpin the implementation of the plan.

Some key milestones will be delivered through projects specific to the Park whilst others will be delivered via state-wide programs whose implementation will see achievement of key milestones within the Park. A key responsibility of the Project and Planning Officer managing these projects is to coordinate their development and implementation across NPWS for managing the Park.



The Thredbo River at Dead Horse Gap. Photo: DECCW



Snow gums near Charlotte Pass. Photo: DECCW

The following four key milestones are completed and awaiting final endorsement or are substantially underway:

- **Integrated Monitoring and Evaluation Program** (which incorporates the Key Performance Indicators, Integrated Monitoring Program and Integrated Evaluation System key milestone projects as detailed in Chapter 16). Endorsement and trailing of the Integrated Monitoring and Evaluation Program will occur during 2009-2010 following the review process of the initial draft;
- **Park Restoration Plan (Section 11.1)**. A Draft Park Restoration Plan has been completed and following endorsement and will be implemented during 2009-2010 in line with availability of resources and available funding;
- **Environmental Management Systems (Section 12.1)**. Environmental Management Systems have been developed for the Alpine Resorts including the Perisher Range. DECCW host a page on the website dedicated to the Perisher Range Resorts environmental Management Systems (PRREMS). Reports, background information and the Lodge Environment Manual are all accessible through the site, <http://www.environment.nsw.gov.au/PRREMS/>. A training course, "Implementing and Maintaining an Environmental Management System" was completed by staff from NPWS. Components of the Environmental Management System for the park will be developed during 2009-2010 in line with State wide strategies. There are also a series of Environmental Management Plans controlling the activities of Snowy Hydro Limited in the Park;
- **Park Communication Plan (Section 13.1)**. A Draft Communication Plan has been completed and following endorsement will be implemented during 2009-2010 in line with availability of resources and available funding.

A further eleven key milestones (Section 4.4) have been identified in the Draft Communication Plan to be completed or underway within five years of the plan's approval. Projects have commenced which will contribute to meeting some of the eleven key milestones objectives;

- **Visitor Data System (VDS) (Section 8.1)**. The development of Visitor Data System has commenced and components have been implemented across the park;
- **Main Range Recreation Management Strategies (Section 9.1)**. The Waste Management Strategy is completed and is being implemented. The Walking Track Management Plan is currently in draft;
- **Huts Conservation Strategy (Chapter 7)**. The completed strategy is being implemented in line with availability of resources and available funding. It can be viewed on line at: <http://www.environment.nsw.gov.au/NationalParks/parkHome.aspx?id=N0018;>
- **Visitor Facility Strategies (Section 8.2)**. A state wide Park Facilities Manual has been completed and being implemented. State wide Signage Manual is also being developed and will be completed during 2009-2010;
- **Management Partnerships (Chapter 7)**. Southern Kosciuszko Aboriginal Working Group is currently negotiating a Memorandum of Understanding (MoU). An MoU has been finalised with the Northern Aboriginal Working Group and is ready for signing. All planning, maintenance and construction work on huts is completed in cooperation with the Kosciuszko Huts Association as detailed in the MoU; and

• **Visual Management System (Section 11.6).** There are currently visual management strategies being implemented. For example, the first edition of the NPWS Rehabilitation Guidelines for the Resorts of the Park was published and can be viewed on line at the following link http://www.environment.nsw.gov.au/aprkmanagement/knp_resortrehab.htm.

Further details on the milestones and 2009-2010 can be found in **Attachment 1**.

4. Progress on Schedule 11 Plan Implementation Actions

The Kosciuszko Database (a requirement of the Kosciuszko National Park Plan of Management (2006)) will track the implementation of individual actions detailed in Schedule 11 of the Kosciuszko National Park Plan of Management (2006). The Database is the location where all historical information relating to the key performance indicators is stored. The reports produced by the Database will inform progress on the implementation of the Plan.

Schedule 11 of the Plan lists 481 actions, 101 have a High priority, 191 Medium priority, 17 Low priority and 172 which have been identified as actions that are ongoing park management tasks or are associated with agency-wide policy and procedures.

Of the 309 High, Medium and Low Priority Actions, 60 of these actions have also been identified by staff as ongoing, in addition to the 172 Ongoing Actions. Therefore, of the 481 Actions, 232 have been identified as Ongoing in nature for implementation and reporting purposes.

The Tables below detail the implementation status (as of 30th June 2009) of each of the 309 Schedule 11 High, Medium and Low Priority Actions.

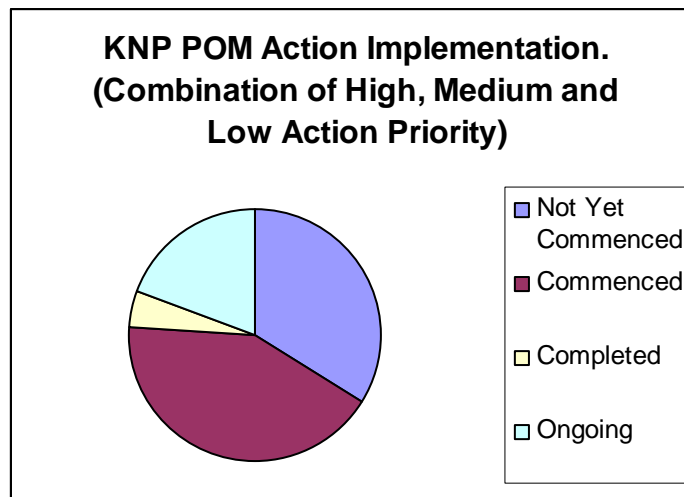
2008-2009 Actions Implementation Status (%).

Implementation Status	Percentage of HIGH priority actions implemented	Percentage of MEDIUM priority actions implemented	Percentage of LOW priority actions implemented
Not Commenced	29.7%	36.6%	29.4%
Commenced	47.5%	37.2%	64.7%
Completed	8.9%	2.6%	0%
Ongoing	13.9%	23.6%	5.9%

2008-2009 Actions Implementation Status (number).

Implementation Status	Number of HIGH priority actions implemented	Number of MEDIUM priority actions implemented	Number of LOW priority actions implemented
Not Commenced	30	70	5
Commenced	48	71	11
Completed	9	5	0
Ongoing	14	45	1
TOTAL	101	191	17

The 2008-2009 implementation status on the combined number of High, Medium and Low Priority Actions listed in Schedule 11 of the Plan is shown in the Graph below.



2008-2009 Combined Actions Implementation Status.

The following sections highlight some of the projects that contribute to meeting the Key Desired Outcomes identified in Section 4.3 of the Plan and includes projects funded by the Towards Centenary Fund undertaken in 2008-2009. This does not represent a full list of all actions completed during 2008-2009.

Repairing the Roof of Australia

The landscaping of Rawson Pass continued over the summer of 2008-09. New interpretive signage, including indigenous stories of this very significant area, will be installed prior to the 2009 Summer. The construction of the toilet building is complete. An official ceremony for the precinct is planned at the completion of the landscaping. Rehabilitation work will commence on several borrow pits along the Summit Road.



Rawsons Pass March 2009 interpretations area. Photos: DECCW

Heritage Tourism

Heritage tourism is an emerging market and is being explored in the form of commercial tour operators providing tours around former Snowy Scheme sites in the Park. Whilst there is still a great deal of work to be done, this proposal is now in the early planning stages following the recent Snowy Scheme 60th anniversary event which has ignited interest in this proposal.

Yarrangobilly Caves and in particular Caves House, continue to be a popular destination for tourists. Development of Caves House continues with a new kitchenette installed to allow greater use by bus groups and conferences. Consultants were engaged for the architectural design of the second storey of the House, scope of work and costs for the reconstruction of the building for adaptive reuse (including overall design and landscape design, renewable energy technologies).

The handrail project and the lighting installation plan for South Glory Cave at Yarrangobilly Caves has been completed.

For information on accommodation at Yarrangobilly Caves House and cave tour bookings please phone Tumut Visitor Centre on (02)69477025 or email tumutv@environment.nsw.gov.au.



Caves House opening and NPWS 40th Birthday Celebrations Photo: DECCW

The Plan identifies that the Kiandra Courthouse will be restored and developed as a heritage interpretation site and focal point for the Kiandra Heritage precinct. Highlights for 2008-09 are:

- Project Officer employed to coordinate planning tasks for Kiandra Courthouse works and Kiandra precinct;
- NPWS let a contract for architectural design works for the reconstruction of the building that is consistent with the Conservation Strategy for the site;
- A preliminary contract to remove cement render from the external western (front) and northern walls of the courthouse was completed; and
- The removal of the cement render from these two walls has revealed the basalt stonework. A conservator examined the layers of wall treatment in the courtroom and the Kiandra mural in the old chalet dining room in order to provide the NPWS with advice on the long term conservation and presentation of these significant elements.

Two consultancies were undertaken within the Kiandra precinct:

- The first was with Australian National University to document and map the elements in the Kiandra mining landscape and provide some advice on the interpretation of aspects of Kiandra's mining history, including New Chum Hill; and
- The second was commissioned to a landscape architect to devise a route for an interpretive walk across New Chum and a Development Control Plan for the precinct surrounding the two huts – Wolgal's and Pattinson's - at Pollock's Gully.



Kiandra courthouse – removal of cement render on exterior walls. Photos: Jennifer Hewitson DECCW

Huts Reconstruction

All planning, maintenance and construction work on huts is conducted in cooperation with the Kosciuszko Huts Association. Volunteers associated with the Kosciuszko Huts Association assisted with the rebuilding reconstruction and maintenance of these huts. This includes Sawyers Rest House, Brooks Hut, OKeefe's Hut and stage two of the Opera House Hut were rebuilt and opened in 2008-09 with the assistance of the Kosciuszko Huts Association and other interest groups.



Brooks Hut rebuild. Photos: Megan Bowden DECCW



OKeefe's Hut rebuild. Photos: Megan Bowden DECCW



Sawyers Hut rebuild. Photos: Megan Bowden DECCW

The following heritage projects have been undertaken:

- Heritage Action Statements (HAS's) completed for six historic huts (Circuits, Cotterills, Hainsworth, Happy, Ravine and Gavels);
- Coolamine Homestead - priority actions from the Conservation Management Plan were implemented, including, external and internal works;
- Huts HAS's - implemented for Pockets, Lovenest in-the-Salles, Townsends;

- Currango Homestead - report on conservation of interior completed, drainage and conservation works for ruins completed. HAMP funding sought for 2009-10; and
- Wolgals Hut - chimney re-pointed, exterior weatherboards replaced and building repainted.

The following reconstruction works and repairs have been carried out on huts in the Park:

- Reconstruction of O'Keefe's and Boobee huts in Jagungal Wilderness area;
- Reconstruction of Patons Hut;
- Major repairs to Cascades Hut in the Pilot Wilderness area;
- Completion of a further 7 HAS for Schlink, Disappointment Spur, Mackays, Daveys, CSIRO, Botherum Plain and Cesjacks huts;
- Engagement of a consultant to complete HAS's for the remaining huts in the Park with the documents to be finalised in late 2009;
- Prefabrication of Pretty Plain hut with construction to be completed by end of 2009; and
- Finalisation of fire protection installation and painting of Seaman's Hut.

The Kosciuszko National Park Huts Conservation Strategy outlines how the park's huts will be conserved and is available online at

<http://www.environment.nsw.gov.au/NationalParks/parkHome.aspx?id=N0018>.

Walking Tracks and Camping Areas

Works are proceeding on the Thredbo Valley Track, a shared use track for mountain bikers, walkers and sections of disabled access, which will provide an opportunity for visitors to explore from Thredbo Village to Bullock's Flat. The section of track from Bullocks Hut to the Diggings Camping area will be completed in December 2009.

Depending on funding, it is expected that the next section of track from Thredbo Resort to the Thredbo Rangers Station will commence in early 2010. Work has also been completed on the Thredbo Rangers Station to enable this facility to be available for staff accommodation and for use as a works depot.

With the increasing demand for mountain biking facilities in the region this project has considerable community interest and support and will provide increased tourism opportunities for Kosciuszko National Park.



**Thredbo Valley Track March 2009 stone pitched causeway and local granite surface material.
Photos: DECCW**



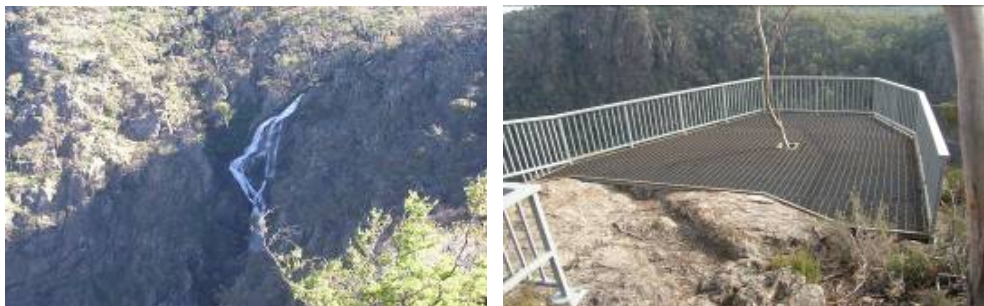
Thredbo Valley Track March 2009 Photo: DECCW

Work has also progressed on improving the safety on the steel mesh walking track from Thredbo Resort to the Summit of Mt Kosciuszko. The track has developed issues with slippery surfaces due to wear on the steel mesh tread. A risk reduction strategy aims to replace the worn surfaces over a period of 10 years to reduce this risk.

In conjunction with Tumbarumba Shire a new lookout, complete with interpretation, has been constructed near Tooma. This lookout provides extensive views into the western side of the Park including the crash site of the 'Southern Cloud' – a passenger aeroplane which disappeared in 1931 and was not located until 1958.

Following consultation with user groups and key stakeholders, a plan was developed to upgrade the Long Plain campground to ensure improved facilities for all users while better protecting the important natural and cultural values of the site. Improvements include, protection works (bollards and fencing), installation of a new toilet, modifications to existing horse yards and an upgrade of the car park and planning commenced with an engineer contracted to prepare detailed plans for car park area and lookout design at Black Perry Lookout. As the lookout is adjacent to the Snowy Mountains Hwy RTA approval is required and this is presently being sought. New interpretation signs were also installed at Goldseekers Track.

The construction of two new lookouts have been completed which provide views over Landers Creek Falls and Gorge and Talbingo Reservoir. Access to the lookouts is via the Cumberland Trail which was upgraded with 300 metres of new track. The Cumberland Trail now provides safer access onto the Snowy Mountains Highway.



Landers Fall Lookout and view. Photos: Simon Allender DECCW

Park Restoration

The Kosciuszko National Park Restoration Plan has been completed and awaiting endorsement and will be implemented from 2009-2010. It has identified priority sites integrated management and future direction for restoration within the Park.

Strong partnerships continue between NSW, ACT and Victoria to manage pest animals across the Australian Alps, Snowy Hydro Limited, the Roads and Traffic Authority and volunteers such as Talbingo and District Bushwalking Group cooperatively working together to reduce weeds. Weed control programs are undertaken in target catchments, along roads, high visitation recreation areas and areas where certain threatened species are vulnerable from weed invasion.

A long term cooperative program with the Southern Rivers CMA Snowy River Restoration Project to remove willows from the Snowy River was completed this year. The Region will now embark upon a long term maintenance program which aims to ensure that the 80 kilometres of Snowy River in the southern most section of the Park remains willow free. NPWS will also aim to reduce the impact of invading blackberry which have become a problem since removing willows from the river banks.

The Plan identifies the preparation of the Kosciuszko National Park Horse Management Plan as a high priority. An advisory group consisting of representatives from the Regional Advisory Committee members, National Park Association representatives, and horse riding groups, RSPCA and the Aboriginal community was established and following extensive consultation over a number of years the plan was adopted in December 2008. The plan outlines the methods of control which will be undertaken in an attempt to exclude feral/wild horses from key areas such as alpine and karst environments. During 2008-2009 98 horses were trapped and removed from the Park. During 2009-2010 NPWS aims to expand its horse removal program across the Park.

The Kosciuszko National Park Horse Management Plan and Regional Pest Management Strategies are available on line at:

<http://www.environment.nsw.gov.au/NationalParks/parkHome.aspx?id=N0018>



Feral horses Tin Mines January 2009 Photo: DECCW

There were 280,000 trees planted in 2008-09 associated with the Blowering rehabilitation projects under an Memorandum of Understanding arrangement with GreenFleet. Plantings involved local Aboriginal community members. Planning is underway for new areas to be planted in 2009-10.



Blowring rehabilitation project. Photo: DECCW

The rehabilitation of former Snowy Mountains Hydro Electric Scheme construction sites continues. Rehabilitation works have commenced at over 50 sites within the Park. A range of site rehabilitation works have been completed including:

- Large numbers of willows and blackberries have been eradicated from over 80 km of waterways such as Happy Jacks, Snowy, Murrumbidgee and Tumut rivers;
- A number of unstable sites impacting on waterways and posing safety risks to staff and visitors have been stabilised and revegetated. Sites rehabilitated include T2 Dogleg spoil dump, Murray 1 Pipeline, Pipers Creek spoil dump, Tantangara Dam spoil dump, Clear Creek construction site and Tumut Ponds spoil dump and quarry;
- Follow-up plantings at the T2 Dogleg, River camp, Sand wash site, Link Rd quarry and set down areas, Kings Cross quarry, Snow Ridge and O'Hare's camping ground sites continue into 2009;
- A very large site, Snowy Adit, situated on the Snowy River is in its second stage of major rehabilitation works. To date 240 tonnes of scrap steel have been removed from the sites and 85,000 tubestock planted; and
- Major reshaping and rehabilitation works will be commencing in the Bourkes Gorge area in the summer of 2009 – 2010. Bogong Creek, which is located in the Bourkes Gorge area is habitat for the only Spotted Tree Frog population in NSW. Rehabilitation works aim to improve the habitat for this threatened species by improving the ecological condition of the surrounding catchment. Over 100,000 native tubestock will be grown for these sites and planted in the next few years.

To date over 300,000 native trees and shrubs, grown from plant material collected within the Park, have been planted on the rehabilitation sites.



**Shotcrete work on the drainage line at Tumut Ponds hairpin site
Photo: DECCW**



Young Eucalypt seedlings at the Murray 1 pipeline rehabilitation site.
Photo: DECCW



Reshaping and planting works at Snowy Adit in 2009.
Photo: DECCW

Both Orange Hawkweed (*Hieracium aurantiacum*) and King Devil Hawkweed (*Hieracium praealtum*) are emerging weeds that pose a serious threat to the ecosystems of the Australian Alps. Hawkweed's are proclaimed as noxious weeds in NSW and as such are required to be controlled. There are currently control programs underway to eradicate known populations. There are two main populations Orange Hawkweed in the Park, these are both located approximately 28 kilometres north-east of the town of Khancoban. Pictures of Orange Hawkweed have been posted at heads of walking tracks to allow visitors to identify the weed.

NPWS has engaged with Charles Sturt University (Thurgoona Campus) to complete methodological search for and recording of all Hawkweed occurring within the known infestation areas of Ogilvies and Round Mountain and adjoining areas. Survey work will be completed by February 2010 by undergraduate students.



Orange Hawkweed (*Hieracium aurantiacum*). Photo: DECCW

The Australian Alps fire ecology vegetation monitoring system is a long running key program in the Alps. Initially established in 1997, the system was designed to monitor the effects of fire on species diversity and composition before and following fire, to assist with the management of fire in the Australian Alps parks. Since the 2003 fires, when the majority of the plots were burnt, all Alps agencies have monitored the plots in their jurisdictions to 2008. The impact of fire on the biodiversity of our Parks is a complex issue and any systematically collected and properly surveyed data will provide more information for managers to base their decisions on.

In 2008-2009 the Australian Alps program funded a project, coordinated by the ACT Parks, Conservation and Lands to systematically check and make consistent the data collected over the last 10 years and to update the existing vegetation database. This work is now complete and a report is in preparation. The report will identify the key outcomes from the significant investment in the data, as well as provide information on the future direction and use of the monitoring plots. The project will be managed by Margaret Kitchin, Senior Forest Ecologist, Research and Planning Unit in ACT Parks Conservation and Lands in consultation with representatives from DECCW. The final results from the project will include the analysed data, completed database, a final written report and the results will be presented to the Australian Alps Natural Resource Management Reference Group, Australian Alps Liaison Committee and other groups as appropriate.



**Merambego Southern section of the Park taken 31st December 1996.
Photo: DECCW**



Merambego Southern Section of the Park taken 14 May 2003.
Photo: DECCW

Public Access Roads and Fire Trail Maintenance

Fire Trails are maintained on a cyclic basis with the trail being cleared, drainage and surface maintenance and vegetation control by either slashing or chemical control of heavy trackside vegetation. Trail slashing comprises slashing or mulching of batters and overhanging vegetation. Drainage maintenance of trails includes culvert installations, minor surface repairs, grading and vegetation control. Significant maintenance works undertaken this year are as follows:

- Removal of hazardous fire killed trees;
- Cumberland Trail - completion of the trail upgrade;
- Long Plain Rd - grading, section realignment, culvert replacement;
- Goobragandra Powerline Road - grading, culvert cleaning;
- Pocket Saddle Road - grading, line of sight works;
- Port Phillip Fire Trail - grading, culvert replacement;
- Tantangara Road - grading, line of sight works, culvert cleaning;
- Blue Water Holes Trail - grading, gravel patching;
- Northern Boundary Road – grading;
- Kings Cross Road – grading;
- Trail slashing—Mcleod's Spur Fire Trail, Coleman Creek Fire Trail, Buckley's Fire Trail, Emu Creek and Stokes Fire Trail;
- Drainage works—Warragong Fire Trail, Michelago Trail, Buckley's Trail, Four Mile Fire Trail, Table Top Fire Trail, Lone Pine Fire Trail, Murray's Gap, Ellerslie Nature Reserve (NR) trails, Black Andrew NR trails;
- Murray's Gap - 5 x sets of culverts installed, gravel hardening;
- Leura Gap - 1 x large box culvert installed over the Goodradigbee River;
- Goandra Crossing - trail upgraded to the east of the Eucumbene River crossing, culverts installed and geogrid and geotextile works;
- TableTop Fire Trail - upgrade of trail to the north of Table Top Mountain - gravel works, culvert installation;
- Spicers Fire Trail - 3 x sets of pipe culverts and 1 x box culvert installed, culvert cleaning, gravel placement;
- Maurice Luton Fire Trail - 4 x sets of culverts installed, gravel hardening; and
- Happy Jacks Road - maintenance grading, gravel re-sheeting, culvert cleaning, bridge improvements.



Port Phillip Trail – grading and gravel sheeting. Photo: DECCW

Aboriginal Heritage Management Partnerships

Cooperative involvement of the Aboriginal community in park management issues continue to be strengthened resulting in a better understanding and protection of the park and all its values. The Northern Aboriginal Working Committee established in 2004-05 continued to function and meet at regular intervals. The development of the Memorandum of Understanding started last year, as required by the Plan, was finalised and will be adopted in 2009-10. NPWS organised and participated in four cultural camps, involving gatherings for women, family and youth. Partnership funding was also secured to document the history of the local Tumut Brungle Aboriginal Community.

The Discovery program staff within the NPWS hosted six staff from Environment ACT - Tidbinbilla Nature Reserve to deliver a familiarisation of our Aboriginal Cultural tours with a vision to setting up their own cultural programs and to develop possible new joint partnerships and tour programs. The Tumut Regional Visitors Centre listed its new Wiradjuri Wonders tour in the Australian National Indigenous Tour Product manual.

NPWS applied for and has received Aboriginal Partnership Funding from the DECCW to work with the local Aboriginal community to train and mentor Aboriginal people in the delivery of Aboriginal cultural tours and interpretation of traditional knowledge. The funding is over four years with the first year's funding allocated to delivering targeted training and work experience. The program started in February 2009 with the selection of 14 participants.

NPWS is working with the Southern Aboriginal Working Group and Local Aboriginal Land Councils to carryout camping area upgrades along the Snowy River corridor. This area contains a high density of archaeological sites and areas with significance to the Aboriginal community. The area is also a popular recreational destination particularly with Commercial Tour Operators, out of area tourists and locals. The works include installation and upgrading of pit toilets, canoe ramps, river access paths, vehicle access tracks and camping areas. Because of the sensitivities involved with working in and around significant archaeological deposits this project has also involved some test pits, archaeological surveys and consultation with interested Aboriginal people. The project is expected to be completed over the next 3 years. Work on the MOU with Monaro traditional owners has continued throughout the year.

Tourism Promotion and Visitor Facilities

The Tumut Region Visitor Centre participated in the Tumut Region Tourist Association meetings, the Snowy Mountains Tourism Committee and the Riverina Highlands Tourism meetings.

A series of information brochures aimed at delivering key information on recreational sites and visitor experiences in the northern section of the Park have been produced. The Tumut Regional Visitors Centre created a new promotion DVD focusing on the Tumut region and northern section of the Park. The DVD is played continuously in the Tumut Regional Visitors Centre to promote and inform people about visitor and tourism experiences available in the Park.

The National Geographic DVD of the Snowy Mountains was featured on national television over the summer 2008-09 as well as being in the summer edition of National Geographic. A DVD titled 'Spirit of the Snowy Mountains' has been produced and will be shown at visitor and education centres across the Park.

The proposed new Khancoban Visitor Centre has progressed through the planning phase during 2008-2009.

Festivals and events that were held in the Park include:

- K'Ozzie Fest 2009 (previously known as The Mound and Mount cultural festival) arranged by the Polish community was featured at the Snowy Region Visitor Centre and the Park during the April 2009;
- NAIDOC week - Gathering of Traditional Owners held in Jindabyne in conjunction with Snowy River Shire. A gathering in the town park was held followed by a large 'feast' (comprising bush tucker) in the town hall. The event was relatively low key but very well received by the indigenous community;
- Seniors Week - March 2009. Spirit of the Snowy Mountains DVD and feature film shown at Snowy Region Visitor Centre, with afternoon tea provided;
- International Year Of Astronomy 2009 Two 'Starry Starry Night' activities in April 2009; and
- The Snowy Region Visitor Centre hosted exhibitions from:
 - Local landscape photographer Ray Killen;
 - Thredbo Historical Society; and,
 - numerous exhibitions by local artists.

Discovery Program

NPWS conducted discovery and NAIDOC events in the Park during the Easter, Christmas periods and NAIDOC week, and conducted numerous discovery events with schools, community groups and local festivals and fairs over the year. Over 1300 adults and 4350 children participated or attended these events. In excess of 130 primary, secondary, and tertiary students participated in Discovery for Schools programs.

A further 156 people participated in aboriginal discovery programs. These activities included guided walks featuring indigenous plant use, traditional skills demonstrations, art and craft.



Adults and students participating in discovery programs in the Park. Photo: DECCW

Protecting our precious wildlife

Research projects focusing on some of the threatened species found within the park including:

- Financial support continues to assist the work of wildlife carer groups, e.g. Looking After our Kosciuszko Orphans (LAOKO);
- Spotted tree frog, southern corroboree frog, spotted - tail quoll and mountain pygmy – possum research and monitoring continue. Information on threatened species can be viewed on line at <http://www.environment.nsw.gov.au/threatenedspecies/>;
- Monitoring and assessing the impacts of Climate Change in the Snowy Mountains continues. The alpine area (the area above the tree line) has been identified as one of the most susceptible ecological communities in Australia to Climate Change; and
- Results from quoll monitoring undertaken annually over a period of 8 years in the Jacobs Creek and Byadbo Wilderness Areas has indicated that their numbers remain healthy despite the continued use of 1080 for wild dog and fox control including aerial baiting. This monitoring will continue to ensure that priority pest programs do not impact on endangered species.

Alpine resort areas

Works associated with the Alpine resort areas for 2008-2009 include:

- The new visitor entry station installation has been completed at Mount Selwyn. Works include, road widening, road seal, extra traffic lanes, new Centreman ticket system, power generation system, heating and waste facilities. The road works and new entry station will greatly improve traffic flow to and from the entry station for cars and buses and facilitate more rapid issue of park entry passes and park information;
- Road sealing works have been completed at both Guthega and Smiggin Holes and rehabilitation works have begun with weed control and native vegetation planting which will continue over the next few years;
- Significant work was completed this summer to replace old and broken sewer pipelines in Perisher and Smiggin Holes;
- The winter of 2008 saw an increased commitment to winter grooming of the Cross Country Ski trails with grooming occurring in more marginal conditions;
- Restoration of the historic and iconic Kosciuszko Chalet Hotel at Charlotte Pass Resort continues;
- A partnership has been established with Charlotte Pass Village for the construction of a viewing platform at the top of the Kosciuszko Triple Chairlift;
- Work is ongoing on the Mount Stillwell Walking Track and the Main Range Track. The focus on the Mount Stillwell Track will be from the top of the Kangaroo Ridge Chairlift to the top of Mount Stillwell; and
- The main focus on the Main Range Track will be between Charlotte Pass and Blue Lake.



New Mt Selwyn Visitor Entry Station and road works.
Photo: DECCW



Stillwell walking track construction. Photo: DECCW

Perisher Range Resorts Infrastructure Upgrade Program

Infrastructure upgrade through the Perisher Range Resorts upgrade program, includes:

- Works have commenced to close the Sawpit Creek landfill. The work involves capping the landfill with layers of soil and a high density polyethylene membrane. The membrane is welded at the edges to an underlying membrane to ensure that all waste is securely enclosed. Leachate will be removed from the cell and treated at the Sawpit Creek sewage treatment plant. Once complete the capping layers will be revegetated. The works are being undertaken in accordance with the Environment Protection Authority requirements;
- Significant sewer pipeline rehabilitation works were completed over 2008-2009 with new lines installed or existing lines upgraded in Smiggin Holes and Perisher. These works are designed to ensure the ongoing integrity of the sewer reticulation network by reducing potential leaks from the sewer system and water infiltration into the system. This will provide savings in energy consumption and sewage treatment costs;
- The construction of concrete roads at West Smiggins (Corroboree Road), Guthega (Mount Tate Road) and Perisher Valley (Pipit Place) has been completed. Over the 2009-2010 period, sealing will be undertaken on sections of Candle Heath Road and Wheatley Road at Perisher and Farm Creek Place at Guthega;
- The construction of a storage shed at Waste Point is nearing completion. This new facility is to store materials and consumables needed for the sewer and water supply networks; and

- Resort wide revegetation projects are continuing with planting planned to compensate for minor losses associated with the roads construction and to rehabilitate previously degraded areas.

CSIRO Lodge Roof Water Harvesting Pilot Project, Perisher Valley

This project is designed to trial the use of rain and snowmelt water from the roof of the CSIRO lodge as a potable water supply. The project involved the following work:

- Installation of proprietary snow gutters and a 40,000 litre underground fibreglass tank to store roof water;
- Mains “top-up” connection to tank and a pump and ultraviolet disinfection system;
- Plumbing and connection of reclaimed roof water line to CSIRO lodge;
- Associated backflow prevention, water meters, valves and automatic switching between mains and tank; and
- Electrical supply and telemetry to advise of faults.

Prior to winter 2008 on-site works were completed. The system was commissioned in September 2008 and will operate as a pilot until the end of winter 2011. Monitoring of the system is now underway. The aim is to assess the feasibility of lodges in a snow environment having a roof water capture & re-use facilities.

Environmental Management System (EMS)

The following Environmental Management Systems are being implemented in the Park:

- The Perisher Range Resorts Environmental Management System (PRREMS) won the Local Government category of the Australian Environmental Management System (EMS) Association annual awards. The award demonstrated the value of the Perisher Range Environmental Management System as a means of focus for all the Perisher Range Resorts operators and visitors on improving environmental performance;
- A Natural & Cultural Heritage Inventory has been completed for Charlotte Pass and Selwyn Snowfields to provide baseline environmental data for the development of the EMS's at these resorts;
- The Thredbo, Perisher and Charlottes Pass Resorts Environmental Management Systems have now all been endorsed by DECCW. Each resort is now working to implement a full range of environmental programs and initiatives. A desk top audit was undertaken by DECCW EMS officers in accordance with Australian/New Zealand Standard ISO 14001: 2004 *Environmental Management Systems* and the requirements outlined in the Plan. The audit focused on reviewing documentation available and providing recommendations for improvements. An implementation audit is scheduled for 2010. Draft annual reports have been received from 2 of the 4 resorts and have been reviewed by DECCW. In addition Perisher Resort has provided input to the PRREMS 06-08 report; and



The Environmental Services Unit, Resort Section, NPWS, DECCW with the EMS Award. Photo: DECCW

- A training course “Implementing and Maintaining an Environmental Management System” was completed by representative staff from NPWS. Components of the Environmental Management System for the Park will be developed during 2009-2010 in line with State wide strategies. Further details on the resorts EMS are in **Attachment 2**.

Consolidated Mountain Lease

On 18 February 2009 the Minister approved of the grant of a consolidated mountain lease to Perisher Blue Proprietary Limited for all of the Perisher Blue on-mountain operations other than the Perisher car park, which will remain a separate lease at this time. The new lease is for 40 years with a 20 year option.

The consolidated mountain lease combines ten of the eleven existing Perisher Blue leases into one consolidated lease agreement. The remaining lease over the perisher car park will be surrendered when a developer for the Perisher village proposal has been secured and Planning approval is been granted.

Perisher Village Expression of Interest

NPWS has called for suitable developers to lodge Expressions of Interest (EOI) to develop an exciting new village centre in Perisher Valley.

The village development site sits at the heart of the Perisher Resort. It provides an unparalleled opportunity to showcase this unique environment through development of a new world class, sustainable tourist development within the Park. The Park currently attracts over 3 million visitors each year, with approximately 800,000 visitors to Perisher Resort. The development opportunity allows for 800 new beds and associated commercial and retail facilities designed to link with the existing Skitube terminal and Perisher Centre day use facilities as well as providing the key interface between arrival at the resort and the ski areas. Such a development should encourage and support year round visitation opportunities.

The purpose of the EOI process is to obtain responses from organisations that possess the necessary skills and capability to develop and operate the Perisher village centre. The EOI closed on the 28 October 2009.

In September 2007, the then Minister approved an EOI process offering 123 existing lessees in the Perisher Range Resorts the opportunity to acquire a share of 520 additional accommodation beds and/or an extension of their existing leases to 30 June 2028 plus an option term for a further 30 years (i.e. a total term of 50 years).

The offer has been accepted by 95 lessees requesting the purchase of 478 beds from the total offer of 520. Leases are currently being completed and have a common commencement date of 1 July 2008. It is anticipated that the majority of the 95 new leases will be completed and registered at the Land and Property Management Authority, by December 2010.

5. Current Research:

During this reporting period there was a variety of research and monitoring projects underway in Kosciuszko National Park including:

Spotted Tree Frog Recovery Project

The initial success in releasing captive bred/reared Spotted Tree Frogs back to the Park has continued. The males in the first cohort of released frogs attained sexual maturity in spring 2007 and have since been calling along the Bogong Creek. Unfortunately for the males, the females take an additional two years to attain sexual maturity and we don't expect the first mating to occur until early summer 2009. This will be very exciting, as there have been very few examples anywhere in the world of successful frog reintroductions. A third release transect was established on Bogong Creek in early 2009, which has increased the extent of the established population to 700 metres of stream.

Southern Corroboree Frog Project

Exciting results were obtained for the Southern Corroboree Frog in January 2009, as more captive reared and released frogs came back to breed three years after their release. These individuals were reared in captivity for five years (one year as a tadpole and four as a frog), and were identified by their unique belly markings (see photo). The fact that they didn't come back immediately after their release is likely to be due to the severe drought conditions experienced during 2006-2007. Another release of captive reared adult frogs is planned for January 2010. The trial release of eggs into artificial pools, that was initiated in 2008, proved successful at increasing survivorship to metamorphosis and also reducing the proportion of juvenile frogs infected with the Amphibian Chytrid Fungus (see photo).

Given the recent captive breeding success for this species at the Amphibian Research Centre, it should only be a matter of time before larger scale releases can be undertaken to re-establish or bolster wild populations of this spectacular frog species.



Southern Corroboree Frog on mesh
Photo: David Hunter, DECCW



Southern Corroboree Frog showing unique belly markings. Photo: David Hunter, DECCW

Mountain Invasion Research Network (MIREN) Global Survey of Exotic Plants

Two papers looking at global patterns of plant invasion into mountains are near completion. DECCW hosted a meeting of MIREN at Charlottes Pass last December 2008 including a workshop on eradication of hawkweeds.

Funding received from the Australian Alps Liaison Committee has allowed the preparation of an eradication plan for hawkweed in the Alps in conjunction with DSE Victoria.

Dendroecology of the Mountain Plum-pine (*Podocarpus lawrencei*)

The fire of 2003 burnt the habitat for the Mountain Pygmy Possum at Mount Blue Cow, killing many plants of *Podocarpus lawrencei*, a long-lived shrub. A project in collaboration with the DECCW and Water and the Australian National University is determining the age of *Podocarpus lawrencei*, using conventional cross-dating techniques. The project will give us an indication of fire frequency over the past 300 or so years (and hopefully an indication of climate, especially snow fall, during that period). Project analysis has been completed with a report expected to be completed early 2010.

Alpine Ash (*Eucalyptus delegatensis*)

Alpine Ash is a tall forest tree that grows on the Southern Tablelands of NSW, in Victoria and also in Tasmania. In monospecific stands, and in association with several other Eucalypts, alpine ash occupies around 105,000 hectares of NSW, with about 80,000 hectares being in the Park. Most stands occur between 900-1400 metres, with rainfall at these altitudes varying from about 1000-1500 mm per annum.

The species is fire sensitive, and is likely to die if the crown is severely scorched or consumed by fire. Lower intensity fires are tolerated as the crown is often unharmed, although survival of regeneration or saplings is dependant on the local fire intensity. About 65,000 hectares of Alpine Ash in the Park were burnt in the fires of January 2003. Fire severity mapping produced after the 2003 fire shows that around 36,000 hectares of the Alpine Ash were killed, and 29,000 hectares survived the 2003 fire.

This monitoring program funded by the DECCW is currently underway. To keep the monitoring program at a manageable level 60 sites were located throughout the Park. In the summer and autumn of 2008-9, all but one of these sites were sampled. Some extra sites will be included in the spring/summer of 2009-10 to provide data in some areas of particular interest that were not included in the randomised site stratification, such as the "Lost World" area, and around Tooma Dam where a fire occurred in 2006.

Over 1000 measurements of tree diameters at the sites provide a good indication of stand structure. Some of the interesting features observed are:

- Areas mapped as being solely alpine ash nearly always include other species of eucalypts, usually snowgum and mountain gum. All other co-occurring species resprout after fire, either epicormically or from the base. This stand structure supports the idea that other eucalypt species will tend to dominate over time, if fires become more frequent than Alpine Ash can tolerate; and
- Most of the large trees (above 100 cm DBH) surveyed have fire scars at the base of the trunk. Nearly all sites show evidence of fire in the last few decades.

The tree size and floristic information has all been entered into a database. An analysis of the new data will be conducted using all the floristic information, so that a description can be developed for Alpine Ash throughout the park, and if there are any obvious floristic or structural differences between stands in the Park. If differences are evident, an analysis will be made of abiotic and disturbance data to determine if any trends can be ascertained. This should be complete towards the end of 2009.



Unburnt Alpine Ash stand in the northern section of the Park
Photo: DECCW

Dogs in Space: Australian Satellite Tracking Program

Since late 2004 DECCW have coordinated a major research project investigating the spatial ecology of a problematic carnivore, the wild dog (feral dogs, (*Canis lupus familiaris*); dingoes, (*Canis lupus dingo*); and hybrids of the two). Wild dog management is highly controversial. On one hand, landholders desire greater control of wild dogs within the boundaries of public lands such as national parks, to lessen or prevent economic losses from dog attacks on their livestock. On the other hand, DECCW has a public responsibility to conserve existing populations of dingoes because they are now regarded as a native species in NSW (or at the least a naturalised species). This also includes prevention or reduction of hybridisation between dingoes and wild dogs. Wild dog management plans attempt to meet these dual objectives.

To assist wild dog management planning it is vital to gain further insight into the ecology of wild dogs. Despite previous research efforts, little is known about the way in which wild dogs utilise habitat within and adjacent to conservation reserves in southern NSW. This makes it very difficult to assign areas for 'conservation' and those for 'control', in any meaningful way. Current neighbourhood perceptions are that reserves harbour problem wild dogs and serve as core areas for breeding. From a DECCW viewpoint it is essential that current perceptions about where problem wild dogs emanate from be verified or refuted by scientifically based knowledge with practical outcomes to assist current management (including control) efforts. Recent advances in satellite-based and Global Positioning (GPS) telemetry systems allow DECCW to gain an as yet unprecedented understanding of wild dog movements within and adjacent to National Park boundaries – hence the current project.

From inception the primary aim of the Dogs in Space project was to describe home range size, habitat preferences, movement patterns and spatial organisation of wild dogs across select reserves in south-eastern mainland Australia; and to use this information to better tailor control and management efforts. Overall, more than 20 wild dogs were collared and tracked as part of the program in five key reserves across south-eastern mainland Australia, including in the northern and southern sections of the Park.

The overwhelming finding of the tracking work so far has been the discovery that wild dogs range over much larger home range areas than previously suspected, around 10,000 ha on average. While ranging so far, these animals mostly remained loyal to public tenure, particularly in the absence of control operations. Since wild dogs range much further than previously suspected, existing control efforts are more likely to impact over a greater

landscape than presumed. In effect, a case for intensive control works at the periphery of public lands is firmly supported. Also, genetic assay of the animals tracked indicates that very few can be considered as 'pure' dingo, instead being mostly dingo with minor infusion of domestic dog genes. Again, managing against further hybridisation by targeting control efforts at the edge of public lands likely offers the best hope of preserving those dingo genes that remain.

Major findings from the first phase of Dogs in Space have been presented at various forums, including Wild Dog Planning Groups, who comprise farmers, members of the NSW Farmers Association and the Rural Lands Protection Board of NSW. In addition to these presentations, papers summarising the tracking work have been published in the scientific journal *Forest Ecology and Management* and a concise statement about the relevance of the work to wild dog management published in a review paper in *Ecological Management and Restoration*. Results from the work also have been promoted in various media-related activities.

In the past six months Dogs in Space has entered a second phase. In collaboration with geneticist Dr Alan Wilton from UNSW, an investigation has commenced into whether aspects of the social structure of wild dogs can be elucidated using DNA obtained from scats. So far wild dog scats of different ages have been collected from northern section of the Park. Dr Wilton is currently attempting to extract DNA from these samples. If successful, we will be able to identify individual animals, their sex and degree of hybridisation – importantly, without the need to handle animals. Longer-term, it may prove possible to enumerate wild dog populations. All of this information will prove further useful in wild dog management forums.

Further Information is available in the Australian Alps Fact sheet "Dogs in Space Tracking Initiative". Please contact www.nationalparks.nsw.gov.au or www.australianalps.deh.gov.au.



**A pure bred dingo fitted with a satellite-tracking collar.
Photo: Dr A. W. Claridge DECCW**



Wild dogs across the Australian Alps are 'mostly dingo' by virtue of their genetic makeup.
Photo: Dr A. W. Claridge DECCW

Monitoring Spotted-tailed Quolls against Canid Control Operations

Wild dog and fox control is a key management activity for DECCW. Wild dogs can cause severe damage to the livestock industry, particularly on sheep farms adjacent to conservation reserves such as the Park. In turn, foxes are a major predator of many native ground-dwelling animals, including threatened species. The most cost-effective method for wild dog and fox control over large areas is baiting using the toxin sodium monofluoroacetate (1080). In inaccessible areas, without trails or tracks, 1080 baits are distributed across forested country aerially, either using a fixed-wing aircraft or more often helicopter. While 1080 is particularly effective in the control of wild dog and foxes, it is also toxic to a broad range of native vertebrates given a sufficient dose. However, the frequency with which non-target animals are killed during aerial baiting programs and whether such deaths have a significant effect on non-target populations, is unclear.

Most literature reviews of the non-target impacts of 1080 conclude that the spotted-tailed quoll (*Dasyurus maculatus*), a threatened marsupial carnivore, is the native species most at risk. Prior to the research project outlined here, common theory was that aerial baiting operations, in particular, represented too high a risk for the spotted-tailed quoll. Consequently, DECCW suspended aerial baiting operations for wild dogs in conservation reserves in southern NSW, including the Park. Since that decision there has been ongoing and increased pressure on DECCW to resume aerial baiting. In 2002 NPWS was charged with undertaking further research on this subject matter. In the first stage of this research non-toxic baits laced with a biomarker were used to measure exposure risk to quolls in a field situation. Following this work, which established that not all quolls within a known population would take baits, a toxic trial (i.e. using baits with 1080) was then undertaken. Of note, while the toxic trial again indicated that quolls ate baits, those that did, survived bait consumption. The mechanism(s) of survival remain unclear but, from a management perspective, there was good enough evidence to allow resumption of aerial baiting operationally across limited reserve areas in southern NSW.

During the past two years this research program has continued in so far as landscape-scale monitoring protocols have been established for quolls in areas of the southern part of the Park now routinely operationally subject to aerial baiting. This was a necessary follow on from the site-specific studies so far undertaken. To do this, quoll activity levels are being measured on the basis of scat evidence at 'latrine sites'. A network of long-term latrine sites are visited annually to examine long-term effects of aerial baiting on quolls. These latrine sites are also complemented by the use of infrared digital cameras at strategic locations in the landscape. The goal within the next three years is to analyse data

from these monitoring events and report on the status of the species in relation to canid control works by way of scientific publications and reports. Thus far, the monitoring has indicated that quolls are widely distributed across the southern half of the Park, and persist in catchments with and without recent histories of aerial baiting.



Spotted Tail Quoll. Photo: Dr D Mills, DECCW

Mountain Pygmy-possum populations

Mountain Pygmy-possum populations have been monitored at the end of November each year on 4 sites since 1987 (2 in ski resorts Blue Cow and Charlotte Pass and 2 outside resorts - Paralyser and Summit Road), and less frequently on Mountain's Kosciuszko, Townsend and other remote area sites. Populations in the resorts began to decline in the late 1990's and reached critically low levels in 2004. A slight recovery occurred in 2005-06 but numbers have declined again over the last 2 years. Only 1 female was trapped at Blue Cow and 11 females at Charlotte Pass in November 2008, compared to pre-decline averages of 29 and 26 respectively. Populations in the 2 sites outside resorts have remained relatively stable, averaging 10 females at Summit Road and 11 females at Paralyser since monitoring began. Six females were trapped at Summit Road and 10 at the Paralyser in 2008. Mount Kosciuszko (last trapped in March 2007) appears to have the only remaining large population of possums in KNP (>30 females). None were trapped on Mt Townsend in 2006 but we trapped Mount Townsend again in January 2009 and were relieved to find a few possums (5 females, 4 males). This is still lower than our previous counts of 22 females and 3 males in 2000. We will be trapping Mount Kosciuszko again this spring, in addition to Muellers Peak and boulder field areas in the Schlink Pass-Gungartan area.

Reasons for the declines in the resorts are not clearly evident but may be due to a combination of decreased snow depth and duration compromising the survival of possums during the hibernation period and increasing the survival of predators, particularly cats. Cats (and in winter and early spring foxes) appear to be concentrated around the resort areas. Synergisms between low snow cover and resort activities (e.g., decreased insulation of snow through compression) could possibly contribute to this anomaly. There is evidence that in some recent years snow has been melting before the arrival of migratory bogong moths. Bogong moths are the main spring food source for possums, particularly for the highest density populations in the resorts and on the peaks of mountain's Townsend and

Kosciuszko. The moths spend the winter in their breeding grounds on the slopes and plains of the Murray-Darling Basin. They migrate to the mountains in their millions around September-October and settle in the cool crevices of the boulder fields, where the possums live, for the summer. If moths are scarce, possums may be suffering from food shortages and additionally from increased risk of predation from cats and foxes as they seek alternative food sources (caterpillars, spiders, beetles, seeds, fruit, nectar) in the shrublands outside the shelter of the boulder fields. Warmer summer temperatures may also be contributing to lowered survival.

Fox control commenced at Charlotte Pass in 1995-96, around Perisher Valley in 1997-98 and extended to the main range from Dead Horse Gap to Schlink Pass in 1999. Cat control has been undertaken in the resorts each winter since 2002 by using cage traps. Around 90 cats were removed from Perisher Blue and 10 from Charlotte Pass up to spring 2009. Plans are under way to increase cat control efforts in the resorts this summer, using some new types of traps.

A project is currently under way to assess the numbers of feral cats across the distribution of the mountain pygmy-possum in Kosciusko National park and develop monitoring techniques using infra-red motion detection cameras (project sponsored by the Foundation for National Parks and Wildlife). Foxes are also being detected with these cameras so hopefully this technique will enable a better assessment to be made of the relative numbers of foxes and cats in areas of mountain pygmy-possum habitat.

We are also making plans to establish a captive breeding program for the Park possums, as an insurance measure against the likelihood of population loss through continuing decreases in snow cover and increasing temperatures due to climate change.



**Mountain Pygmy-possum trapped on Mt Kosciusko, March 2007.
Photo: Robert Thomas, Snowy River Echo.**

6. Conclusion

During 2008-2009 a great deal of progress has been made in implementing the strategic and on ground actions of the Plan. The sheer range of activities and outcomes achieved during the year are evident in this report. Determining a trial method to report on the condition of values across the Park is an important strategic step that will be developed further in coming years. The involvement of stakeholders, park visitors and indigenous communities is an ongoing and important component to support management off the Park.

The challenges for the next year include:

- the completion, final endorsement and distribution of the Integrated Monitoring and Evaluation Program including the trialling of the reporting framework associated with the Key Performance Indicators and the Kosciuszko Database;
- the continuation on the development of the Park wide EMS which will address the Plans key milestone project and the associated actions; and
- completion and final endorsement to distribute the Draft Karst Management Strategy in line with State wide guidelines (assistance from DECCW Karst and Geodiversity Unit).

Attachment 1

Kosciuszko National Park Plan of Management (2006) Development of four Key Milestones to be completed or substantially underway within two years of plan adoption.

Key Milestone	Status	Comments	Time Frame
<p>Integrated Monitoring and Evaluation Program (which incorporating the Key Performance Indicators, Integrated Monitoring Program and Integrated Evaluation System key milestone projects as detailed in Chapter 16). •Key Performance Indicators and Integrated Monitoring Program (Chapter 16) - <i>essential to measuring the condition and trends in condition of key attributes over time and the success or otherwise of park management actions in achieving stated objectives.</i> •Integrated Evaluation System (Chapter 16) - <i>sets in place structures and processes to measure the effectiveness of park management in achieving key desired outcomes.</i></p>	Substantially underway	<ul style="list-style-type: none"> The initial draft Integrated Monitoring and evaluation Program has been completed and distributed for comment to nominated representatives from Resorts Section, South West Slopes and Snowy Mountains Regions. The program will be endorsed following a trialling period during 2009-2010. The Initial Draft Key Performance Indicator Reporting Template and Initial Draft Kosciuszko Database components of the Integrated Monitoring and Evaluation Program have been completed. These will be endorsed following a trial period during 2009-2010. Reports produced from the Integrated Monitoring and Evaluation Program will be presented in the 2009-2010 implementation report. 	Initial draft Report will be trialled during 2009-2010 and results presented in the 2009-2010 reporting period.
<p>Park Restoration Plan (Section 11.1) - <i>provides an overarching framework for the integrated management of site rehabilitation and weed and feral animal control</i></p>	Substantially underway	<ul style="list-style-type: none"> A Draft Park Restoration Plan has been completed and following endorsement will be implemented in line with availability of resources and available funding. 	The final plan will be implemented during 2009-2010
<p>Environmental Management Systems (Section 12.1) - <i>provide frameworks for reducing impacts associated with all operations and infrastructure in the park.</i></p> <p>(Section 12.1) – Alpine resort lessees and licencees</p>	Substantially underway	<ul style="list-style-type: none"> DECCW host a page on their website dedicated to the PRREMS. Reports, background information and the Lodge Environment Manual are all accessible through the site: http://www.environment.nsw.gov.au/PRREMS/ Updated website link as part of the newly developed 'Alpine Resorts Web page' www.environment.nsw.gov.au/alpineresorts Perisher Range Environmental Management System (PRREMS) Completed the 06-08 performance report for PRREMS which is available on line: Perisher Range Resorts Environmental Management System(PRREMS) Performance report 2006 - 2008report 'Lodge Environment Manual': <i>A guide to managing environmental risk and monitoring environmental performance.</i> This was developed as a reference guide for use by the accommodation premises in the PRR to help them understand and fulfil their EMS 	

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		obligations. It is available on-line at: http://www.environment.nsw.gov.au/prrems/20080543lodgemanual.htm	
Environmental Management Systems (Section 12.1) - <i>provide frameworks for reducing impacts associated with all operations and infrastructure in the park</i> (Section 12.1) – Non alpine resort lessees and licencees	Underway	Training course “Implementing and Maintaining an Environmental Management System” was completed by NPWS staff. Components of the Environmental Management System for park will be developed during 2009-2010 in line with State wide strategies.	To be commenced during 2009-2010 reporting period.
Environmental Management Systems (Section 12.1) - <i>provide frameworks for reducing impacts associated with all operations and infrastructure in the park</i> (Section 12.1) – NPWS operations	Not yet underway	Establish a program for EMS development for service operations. The first stage being a gap analysis of NPWS park management policies and procedures against the POM EMS requirements.	To be commenced during 2009-2010 reporting period.

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Development of eleven Key Milestones to be completed or underway within five years of plan approval.

Key Milestone	Status	Comments	Time Frame
Visitor Data System (VDS): (Section 8.1) - <i>provides visitor information that is essential for informed and sustainable management of recreation in the park.</i>	Underway	<ul style="list-style-type: none"> • The VDS is a system utilized state wide to provide visitor information at a site level. VDS provides numbers of visitors as well as surveying qualitative factors of their park visit. This information will allow management practises to meet the expectation of visitors. It will allow key visitation sites in the park to be identified. • The Kosciuszko VDS will be a component of the Southern Branch VDS. • Strategies to identify individual sites and visitor activities at these sites are currently being recorded. • Visitor tour and accommodation numbers are currently being recorded for Yarrangobilly Caves, Caves House and Currango Homestead. Statistics are kept on all Annual, Day and other Park passes sold year round. Manual counting is also carried out in the Rawson’s Pass / Mt Kosciuszko area during peak visitor periods. • The VDS system has now replaced the manual counters on the Alpine Way and Kosciuszko Road visitor entry stations and detailed reports will be available shortly. 	Project to be developed during 2010-2011 financial year depending on availability of resources.

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Key Milestone	Status	Comments	Time Frame
<p>Limits of Disturbance and Recreation Monitoring Program: (Section 8.1) - sets in place limits of acceptable impact for certain recreational activities and sites and the measurement of disturbance. Essential for informed and sustainable management of recreation in the park.</p>	Underway	<ul style="list-style-type: none"> Priority recreational activities identified for monitoring include cycling and activities along Tantangra Dam foreshores. Monitoring of impacts at horse camps continue. Initial scoping of project with SM Regions. Unable to progress project development further this financial year due to other commitments. Information regarding Visitor data will be captured within the Southern Branch strategy. 	Potential for project to be developed further during 2010-2011 financial year depending on availability of resources
<p>Karst Management Strategy: (Section 6.4) – provides an overarching framework for the protection of all karst areas and values.</p> <p>Geodiversity Conservation Strategy: (Section 6.3) – creates a framework for the protection of earth science features and processes that are susceptible to disturbance</p>	Underway	<ul style="list-style-type: none"> Following advice and recommendations gained from Karst and Geodiversity Unit the Karst Management Strategy and the Geodiversity Conservation Strategy will no longer be combined in the one document but will be separate documents in line with State wide strategies developed and planned for development by the Karst Geodiversity Unit. Geodiversity Conservation Strategy will be developed in line with State wide strategies developed by the Karst Geodiversity Unit. Initial scoping of Karst Management Strategy completed with assistance from Karst and Geodiversity Unit. Initial draft Karst Management Strategy to be completed by June 2010. 	Draft Karst Management Strategy completed by June 2010.
<p>Significant Plant and Animal Management Regimes: (Section 6.7 and 6.8) - guide the management of those parts of the park containing significant plant and animal species and communities so as to optimise their protection.</p>	Not yet underway	<ul style="list-style-type: none"> Information on threatened species can be viewed on line at: http://www.environment.nsw.gov.au/threatenedspecies/ Link to strategies and objectives contained within Priorities Action Statement (PAS), Fire Management Strategy, Park Restoration Plan and Regional Pest Management Strategies. 	To be commenced during 2009-2010 reporting period.
<p>Management Partnerships: (Chapter 7) – the Aboriginal Management Partnership provides the basis for Aboriginal involvement in park management. Heritage Management Partnerships formalise local community involvement in heritage management.</p>	Underway	<ul style="list-style-type: none"> The southern Kosciuszko Aboriginal Working Group is currently negotiating a MoU with Park Managers. The purpose of the MoU is to work towards cooperative involvement of the Aboriginal community in Park management issues. Two trainee field officers have been recruited and are substantially through their traineeship. 	To be completed during 2009-2010 reporting period
<p>Management Partnerships: (Chapter 7) Heritage Management Partnerships formalise local community involvement in heritage management.</p>	Underway	<ul style="list-style-type: none"> The Polish community and Park managers have worked together to celebrate the early exploration heritage and to facilitate an annual cultural festival (K'Ozzie Fest) in Jindabyne, Cooma and KNP. All planning, maintenance and construction work on huts is completed in cooperation with the Kosciuszko Huts Association. An MoU with the Kosciuszko Huts 	To be completed during 2009-2010 reporting period

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Key Milestone	Status	Comments	Time Frame
		Association (KHA) was agreed in 2007. This underpins the ongoing relationship which facilitates the maintenance of historic mountain huts.	
Huts Conservation Strategy: (Chapter 7) - <i>guide many facets of ongoing hut management in the park.</i>	Completed	<ul style="list-style-type: none"> The Huts Conservation Strategy is currently being implemented and can be viewed on line at: http://www.environment.nsw.gov.au/NationalParks/parkHome.aspx?id=N0018. Liaison with the Kosciuszko Huts Association (KHA) in regard to hut reconstruction work including hut rebuilding guidelines and ongoing maintenance continues. 	Completed
Visitor Facility Strategies: (Section 8.2) - <i>the Visitor Facilities "Signature" Appearance, Site Design Principles and the Disabled Access and Facilities Strategy provide visitor facility design, construction and setting principles that are necessary prerequisites to the development of new visitor facilities and the redevelopment of existing facilities.</i>	Underway	<ul style="list-style-type: none"> A Park Facilities Manual has been developed which incorporates architectural incorporating structural and civil engineering of facilities. These state wide strategies and objectives are applied to new facilities and redevelopments across The Park, whilst allowing for unique park conditions. The Park will utilise the architectural documentation detailed in the Park Facilities Manual. A shelter design from the manual will be reengineered to a 1500m above sea level standard and this is being incorporated in the review phase of the Park Facilities Manual. Park Signage Manual and signage design proposed by the Australian Alps Liaison Committee is currently being developed. Once approved the guidelines proposed to be completed in May 2009 will apply to new and replacement signage in the Park. 	<p>A Park Facilities Manual has been completed</p> <p>Review phase of the Park Facilities Manual scheduled dependant on funding availability during 2009 / 10.</p> <p>Park Signage Manual completed September 2009.</p>
Main Range Recreation Management Strategies: (Section 9.2.1.19) - <i>completion of the human waste management strategy.</i>	Complete	<ul style="list-style-type: none"> The Human Waste Management Strategy is completed and is being implemented through the following projects: <ul style="list-style-type: none"> - Rawson Pass precinct including construction of toilet and rehabilitation works is well advanced and will continue down the summit road towards Seamans Hut. -Charlotte Pass Toilet upgrade is complete, small amounts of maintenance and refinement to be carried out in 2009/10. -New toilet at Guthega Power Station car park is complete. -Most of the Main Range Tour Operators are implementing a waste removal practice. -Remote toilets to be installed at Tin & Mawson Huts this summer. These huts receive significant visitation summer and winter. -Planning underway for toilet at new trackhead at Guthega Dam. 	Complete
Main Range Recreation Management Strategies: (Section 9.2.1.17) - <i>site plans for Charlotte Pass</i>	Not yet underway	<ul style="list-style-type: none"> Site Plan for Charlotte Pass visitor node is to be prepared in conjunction with the Charlotte Pass Village lessee. It has been included as unfunded action 11 (c) in the 	Subject to funding: Plan to be developed by 2011 and implementation commenced in 2012

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Key Milestone	Status	Comments	Time Frame
		2008 Southern Branch Visitor Management Plan.	
Main Range Recreation Management Strategies: (Section 9.2.1.17) - <i>site plans for Crackenback Chairlift visitor nodes..</i>	Not yet underway	<ul style="list-style-type: none"> Site Plan for Crackenback Chairlift visitor nodes is to be prepared in conjunction with the Thredbo Village lessee. It has been included as unfunded action 11 (c) in the 2008 Southern Branch Visitor Management Plan. 	Subject to funding: Plan to be developed by 2011 and implementation commenced in 2012
Main Range Recreation Management Strategies: (Section 9.1) - <i>Blue Lake climbing and abseiling impact assessment</i>	Underway	<ul style="list-style-type: none"> DECC has published an ecological character description of the Blue Lake Ramsar site. It contains references to recreational impacts and knowledge gaps pertaining to the site. 	To be completed during 2010-2011 reporting period.
Main Range Recreation Management Strategies: (Section 9.1) - <i>the introduction of the visitor registration system provide a framework for sustainable visitor use of the Main Range.</i>	Not yet Underway	<ul style="list-style-type: none"> Counts of visitor numbers are currently undertaken during busy periods (ie Christmas, Easter) at Rawson Pass, and ad hoc counts of numbers at Mt Kosciuszko Summit also occur, to assess the level of use. 	To be completed during 2010-2011.
Visual Management System: (Section 11.6) – <i>creates a framework for reducing visual impacts associated with existing infrastructure and guiding the development of new facilities.</i>	Not yet underway	<ul style="list-style-type: none"> The following visual management strategies are in place: The Department of Planning must consider any visual impact of proposed development within the alpine resorts, particularly when viewed from the Main Range. The Department of Planning ensures that built infrastructure within the alpine resorts complies with the alpine resorts SEPP colour and material palette. The first edition of the NPWS Rehabilitation Guidelines for the Resorts of Kosciuszko National Park was published and can be viewed on line: http://www.environment.nsw.gov.au/aprk/management/knp_resortrehab.htm. These guidelines have been prepared to assist land managers, lessees and contractors in ski resorts to plan and undertake rehabilitation work using indigenous species. Key viewpoints into and from the Perisher Centre Valley were identified in 2000. 	09-10 - Finalise project plan, consultants brief and secure funding. 10-11 - Engage consultant to develop a Visual Management System (VMS) and Scenic Quality Enhancement Strategy (SQES) as described in management objective 11.6.3 of the POM. Implementation of the SQES and review and update of the VMS.
Park Communication Plan: (Section 13.1) - <i>creates an overarching framework for the integrated provision of all communication materials, facilities and programs across the park. A prerequisite to the production of new communication products and the revamping of existing material and services.</i>	Substantially underway	<ul style="list-style-type: none"> Draft Park Communication Plan has been developed and is awaiting endorsement by the Kosciuszko Steering Committee. 	Following endorsement during 2009-2010 the plan will be implemented in line with availability of resources and available funding.

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Key Milestone	Status	Comments	Time Frame
<p>Environmental Management Systems (Section 12.1) - <i>provide frameworks for reducing impacts associated with all operations and infrastructure in the park.</i></p> <p>(Section 12.1) – Alpine resort lessees and licencees</p>	<p>Substantially underway</p>	<ul style="list-style-type: none"> • DECCW host a page on their website dedicated to the PRREMS. Reports, background information and the Lodge Environment Manual are all accessible through the site: http://www.environment.nsw.gov.au/PRREMS/ • Updated website link as part of the newly developed 'Alpine Resorts Web page' www.environment.nsw.gov.au/alpineresorts • Perisher Range Environmental Management System (PRREMS) Completed the 06-08 performance report for PRREMS which is available on line: Perisher Range Resorts Environmental Management System(PRREMS) Performance report 2006 - 2008report • 'Lodge Environment Manual': <i>A guide to managing environmental risk and monitoring environmental performance.</i> This was developed as a reference guide for use by the accommodation premises in the PRR to help them understand and fulfil their EMS obligations. It is available on-line at: http://www.environment.nsw.gov.au/prrems/20080543lodgemanual.htm 	

Attachment 2

- **2009 EMS Association ‘Merit Award’ winner** - The Perisher Range Resorts Environmental Management System (PRREMS) has been recognised at the 2009 National EMS Association Awards with a Merit Award in the Local Government Authority Category for outstanding achievement in developing, maintaining and governing an EMS. The committee noted the challenges faced in involving so many different stakeholders in the development and implementation of an EMS and acknowledge the recent development of the extension materials.
- **Review of PRREMSs common objectives and targets** - The PRREMS Operational committee (PRREMSOC) undertook a review of the issues, associated risks, objectives and targets of the PRREMS during this period. The objectives and targets are now summarised into 6 core value areas: 1) Flora & Fauna; 2) Soil & Water; 3) Air Quality; 4) Natural Resources; 5) Cultural Heritage & Visual Amenity and 6) Sustainable Tourism. There are now 10 common objectives and 18 targets including new targets.
- **‘Lodge Environment Manual’**: *A guide to managing environmental risk and monitoring environmental performance* was developed as a reference guide for use by the accommodation premises in the PRR to help them understand and fulfil their EMS obligations. Two copies of the manual have been provided to each lodge. One will reside with the lodge EMS contact officer and the other will remain in the lodge for visitors and members to use. The manuals have been produced in a folder format to allow for new environmental information to be included as it becomes available. The manual is closely aligned to the ‘Earthcheck’ reporting system.
<http://www.environment.nsw.gov.au/prrems/20080543lodgemanual.htm>
- **‘Earthcheck’ reporting and benchmarking system for PRREMS** - An ‘Earthcheck’ (Green Globe) on-line reporting and benchmarking system was established in January 2007 to facilitate data management. The ‘Earthcheck’ system(developed by EC3 Global - the commercial arm of the Sustainable Tourism Cooperative Research Centre) involved the set up of a data interface allowing PRR lodges to submit EMS ‘target reports’ on-line and the subsequent issuing of two reports each year (summer & winter) to lodges on their environmental performance against the targets. The system was further refined in 2008-09 The 3 reporting requirements have now been combined into one annual submission. It now benchmarks environmental performance against industry standards and can identify operational areas that may need improving. Historical data has also been migrated. **81% of the PRR lodges submitted an on-line report for the 08-09 period.**
- **Lodge EMS contact officers**: To help facilitate all the to the PRREMS EMS contacts have been established within each of the Perisher lodges. This will allow for improved two way communication. A comprehensive email distribution list allows for the rapid distribution of information on current environmental and EMS issues amongst the lodges. These contact officers are responsible for distributing this information to their members either through the club newsletters or other means.

- **PRREMS 'Commitment Awards'** – Awards for recognition of commitment and achievement have been developed for the accommodation stakeholders of the PRREMS. Lodges have been asked to nominate themselves for environmental initiatives and performance improvements. Winners will be decided by the PRREMS committee and announced at the commencement of the 2010 ski season.