

BLUE MOUNTAINS NATIONAL PARK

PLAN OF MANAGEMENT

NSW National Parks and Wildlife Service

May 2001

This plan of management was adopted by the Minister of the Environment on 1st May 2001.

Acknowledgments: This plan of management is based on a draft prepared by staff of the Blue Mountains Region of the National Parks and Wildlife Service.

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FOREWORD

Blue Mountains National Park covers an area of more than 247,000 hectares of the rugged Blue Mountains Plateau. It is situated only 50km from the centre of Sydney and extends from Glenbrook west to Mt Victoria and from Mount Wilson south to Wombeyan Caves.

Blue Mountains National Park, together with Kanangra-Boyd, Wollemi, Gardens of Stone, Nattai, Thirlmere Lakes and Yengo National Parks and Jenolan Karst Conservation Reserve, has been recently inscribed on the World Heritage List as the Greater Blue Mountains World Heritage Area.

The park is of particular importance because of its spectacular scenery, the diversity of natural features and environments and its role in contributing to a comprehensive, adequate and representative conservation reserve system within the Sydney Basin bioregion and its importance in contributing to the corridor of natural lands along the Great Escarpment (Ollier, 1982). The park protects an unusually wide range of plant and animal species and communities, as well as a large number of threatened, rare and restricted species. Other conservation values of the park include the range of Aboriginal sites and historic places protected in a natural environment. Blue Mountains National Park is also of importance as a major water catchment area for Sydney.

The park is a major focus for domestic and international tourism as well as for many types of recreation in a natural environment. These range from the passive enjoyment of the park's scenery from easily accessible cliff-top lookouts, to more active wilderness experiences in the park's many canyons and gorges. The large remote areas of the park are of special significance in offering opportunities for both the maintenance of natural processes and self-reliant recreation.

This plan of management establishes the scheme of operations for Blue Mountains National Park. In accordance with section 75 of the *National Parks and Wildlife Act 1974*, this plan of management is hereby adopted.

Bob Debus
Minister for the Environment

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1. INTRODUCTION

The *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 the area will be managed in the years ahead.

The procedures for the preparation of a plan of management are specified in the Act and involve five stages:

- * The Director-General gives notice that a plan of management has been prepared;
- * The plan is placed on public exhibition for at least one month and any person may comment on it;
- * The plan and copies of all representations are referred to the National Parks and Wildlife Advisory Council for consideration;
- * The Director-General submits the plan, together with the recommendations of the Advisory Council, to the Minister;
- * The Minister may adopt the plan after considering the recommendations of the Advisory Council or may refer the plan back to the Director-General and Council for further consideration.

Once a plan has been adopted by the Minister, no operations may be undertaken within the national park except in accordance with the plan.

This plan of management applies to lands reserved as Blue Mountains National Park, comprising an area of 247,156 hectares. Other Crown and Council lands have been proposed for additions to the park, as have certain Sydney Catchment Authority freehold lands in the Kedumba and Coxs River Valleys and adjoining Lake Burragorang. In the event of these areas being added to the park, they will be managed in accordance with the management principles outlined in this plan, consistent with the adjacent recreation setting. An amendment to this plan will be placed on public exhibition if significant management changes are proposed, including a change to the recreation setting.

This plan has been prepared in consultation with the Sydney Catchment Authority to ensure its consistency with the jointly sponsored Special Areas Strategic Plan of Management which was released in 1999.

The planning process leading to the development of this plan has involved the collection and use of a large amount of information which, for simplicity, has not been incorporated into this plan. For additional information or inquiries on any aspect of the plan, contact the Blue Mountains Regional office on (02) 4787 8877.

2. MANAGEMENT CONTEXT

2.1 NATIONAL PARKS IN NEW SOUTH WALES

The national park concept was introduced into Australia through the establishment of Royal National Park in 1879, only seven years after the world's first national park was created at Yellowstone in the United States of America.

The *National Parks and Wildlife Act 1974* specifies the matters to be considered in the preparation of a plan of management for a national park. The *Wilderness Act 1987* specifies the objects of the Act in relation to the protection, management and promotion of wilderness and the principles to be observed in the management of wilderness areas.

For the purpose of preparing plans of management, the NSW National Parks and Wildlife Service has adopted the International Union for the Conservation of Nature and Natural Resources Guidelines for Protected Area Management (IUCN, 1994) which defines a national park as:

“a natural area of land/or sea, designated to (a) protect the ecological integrity of one or more ecosystems for present and future generations, (b) exclude exploitation or occupation inimical to the purposes of designation of the area, and (c) provide a foundation for the spiritual, educational, recreational and visitor opportunities, all of which must be environmentally and culturally compatible”.

National parks are part of the regional pattern of land use. The management of a national park aims at minimising disturbance to natural and cultural heritage. Other land uses, for example agriculture, forestry and mining, are distinguished by an acceptance or encouragement of environmental modification. National parks therefore provide for land uses at one end of the spectrum of available land uses in a region.

2.2 WORLD HERITAGE

The International Convention for the Protection of the World Cultural and Natural Heritage was adopted by the United Nations Educational, Scientific and Cultural Organisation (UNESCO) in 1972, and ratified by Australia in 1974. The Convention provides a framework for international cooperation and the collective protection of cultural and natural heritage of outstanding universal value.

The Greater Blue Mountains Area was formally nominated by the Australian Government for inscription on the World Heritage List in June 1998 (NPWS and Environment Australia, 1998). In November 2000 the nominated area of over one million hectares, which includes the whole of Kanangra-Boyd, Blue Mountains, Gardens of Stone, Wollemi, Nattai, Yengo and Thirlmere Lakes National Parks and the Jenolan Caves Karst Conservation Reserve, was inscribed on the World Heritage List.

The Greater Blue Mountains Area was inscribed on the World Heritage List because it

satisfies the following criteria for natural values of outstanding universal significance. It contains:

- * outstanding examples of significant ongoing ecological and biological processes in the evolution and development of ecosystems and communities of plants and animals (*criterion II*), particularly eucalypt-dominated ecosystems; and
- * important and significant natural habitats for in-situ conservation of biological diversity (*criterion IV*), including the eucalypts and eucalypt-dominated communities, primitive species with Gondwanan affinities such as the Wollemi Pine, and a diversity of rare or threatened plants and animals of conservation significance.

This plan has been prepared in accordance with the Convention for the Protection of the World Cultural and Natural Heritage. In accordance with the Convention, this park will be managed to identify, protect, conserve, present and transmit to future generations, the World Heritage Values of the property.

2.2 BLUE MOUNTAINS NATIONAL PARK

2.2.1 Location, History of Dedication and Regional Context

Blue Mountains National Park covers over 247,000 hectares of the Blue Mountains plateau, between the coastal lowlands of the Cumberland Plain and the Great Dividing Range. The outstanding natural and cultural significance of the area has long been recognised. The escarpment scenery of the Grose and Jamison Valleys was given formal recognition in the 1800s, with a number of small “Sights Reserves” being declared in the vicinity of the upper Blue Mountains towns on the initiative of local communities, individuals and government. A number of these reserves were managed by community-based groups until they were added to Blue Mountains National Park. In 1875 the entire Grose River catchment upstream from beneath Mt Hay was reserved from further sale. While the official purpose was to safeguard the water quality in the river, the primary motivation was that the area constituted “a national spectacle” (Macqueen, 1997). The reservation remained in force until the national park was created.

The seeds of the current park were sown in the 1920s, when bushwalker and conservationist Myles Dunphy started preparing a proposal for a Greater Blue Mountains National Park. The concept was given impetus in 1931-32, when a committee representing the Mountain Trails Club, Sydney Bush Walkers, Boy Scouts Association, Wild Life Preservation Society and others paid a farmer to relinquish his rights to a lease in what became known as the Blue Gum Forest, in the Grose Valley, and persuaded the Lands Department to convert the lease to a recreation reserve. In 1938 preparation for the construction of Warragamba Dam began and resumption of land within the catchment over the following years assisted in the protection of these areas.

It was not until 1959, however, that an area of 62,000 hectares was dedicated as Blue Mountains National Park. Extensive additions were made to the park during the 1970s

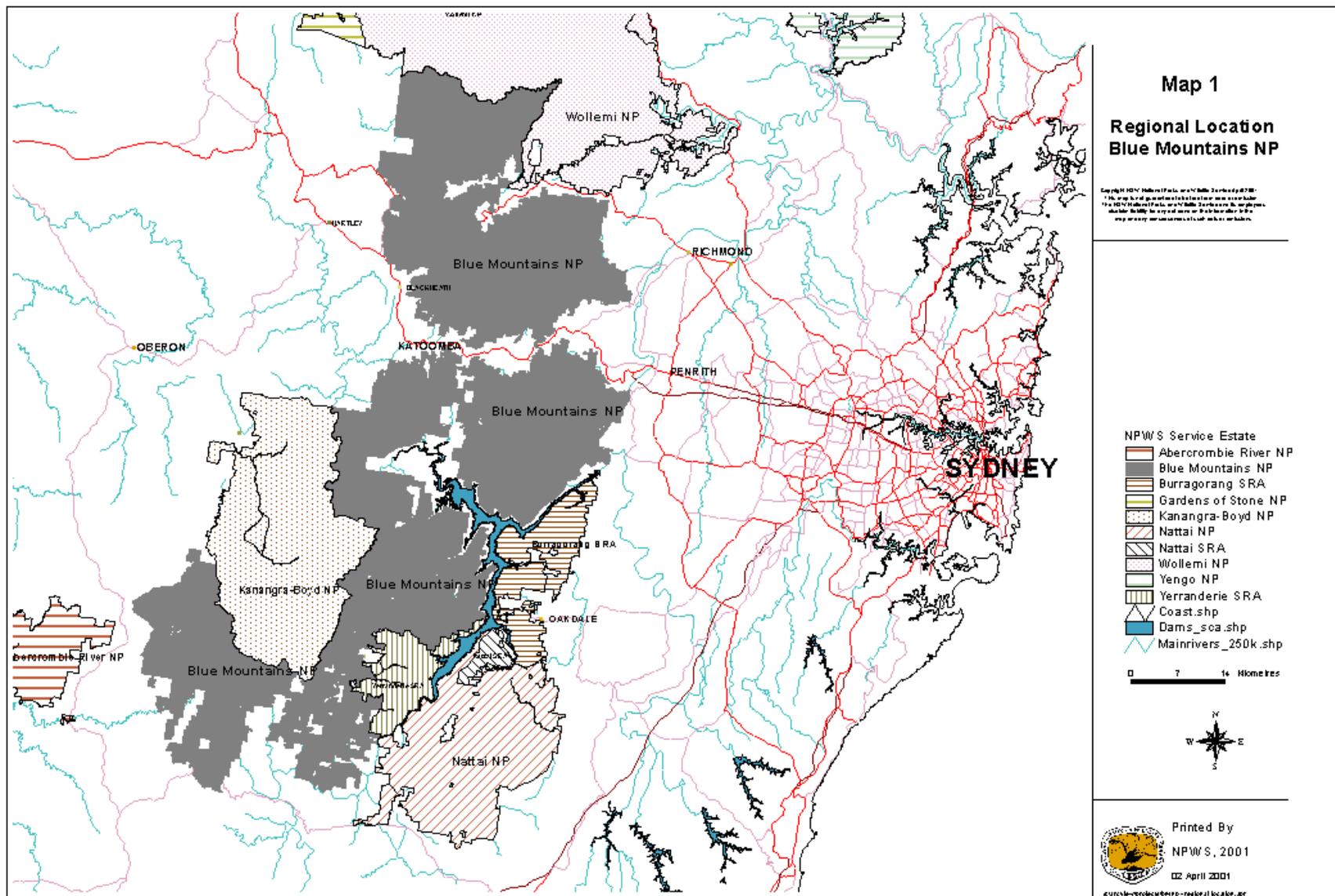
and 1980s, including some areas within the Warragamba catchment which are still jointly managed with the Sydney Catchment Authority. Myles Dunphy's vision of a Greater Blue Mountains National Park was substantially realised, and in 2000 was formally recognised with the listing of the Greater Blue Mountains World Heritage Area .

The park has a complex shape and a boundary which is deeply indented in many areas. The park is dissected by two main transport corridors - the major one being formed by the Great Western Highway and the western railway, together with the associated urban development of the City of Blue Mountains. Bells Line of Road, with its associated rural and village development, forms a secondary corridor through the park, providing access to the Wollangambe and Grose River catchments. The Oberon Stock Route and adjoining rural lands further dissect the park in the south.

The section of the park south of the Great Western Highway extends from Blue Mountains City south to the Wollondilly River and includes a substantial part of the Warragamba catchment. It is generally bordered by Lake Burragorang and the Nepean River in the east, Kanangra-Boyd National Park in the west, Yerranderie State Recreation Area in the south-east and rural lands and state forest in the south and south-west. The park lands which are part of the Warragamba Special Area are managed jointly by the Service and the Sydney Catchment Authority. In the Special Area, the Authority's Act adds to the regulatory framework with respect to access and land use activities that are permitted. A Special Areas Strategic Plan of Management has been developed to provide a framework for the joint management of the Special Area.

The section of the park north of the Great Western Highway includes most of the catchment of the Grose River and the upper catchment of the Wollangambe River. It extends north from Blue Mountains City to Wollemi National Park and is bordered on the east by Burrell Creek and Wollemi National Park. To the west is Newnes Plateau and the mixed forestry, mining and rural lands within the City of Greater Lithgow.

The park is situated in the western part of the large tract of rugged sandstone terrain which surrounds Sydney (see Regional Map). Together with the adjoining national parks, Blue Mountains National Park forms a large natural and recreational area close to the State's major urban and industrial centres, lying only 50 kilometres from the centre of Sydney and adjoining this city's outer suburban fringe.



The rugged terrain of the park was a constraint to exploration, settlement and development from the earliest days of European presence, resulting in large areas of the park and adjoining conservation reserves remaining as wilderness. The southern Blue Mountains were further protected from development by the formation of Lake Burragorang and the surrounding Warragamba catchment area. Now the Blue Mountains are a major tourist attraction and recreation area, with this use concentrated mainly along the Great Western Highway and to a lesser extent along the Bells Line of Road. Lands to the west and south of the park are predominantly rural with a significant industrial and urban area centred on Lithgow. State forests adjoin major parts of the western boundary whilst in the southern section of the park there is a considerable mixture of rural and park lands.

The proximity of Sydney and the urban areas of the Blue Mountains, together with the rapidly growing demand for nature-based tourism and recreation, create complex management requirements for the park. This contrasts with the quite different issues raised as a result of rural, forestry and mining land uses which interface with the park along its southern and western boundaries. The existing park boundary reflects more the history of dedication and the management environment at the time of dedication, rather than any logical management boundaries. The Service is working towards improved management boundaries with adjoining non-park bushland areas, with the Warragamba Catchment Area, and with the adjoining national parks.

The park is affected by a number of planning instruments including the Hawkesbury-Nepean Regional Environmental Plan No. 20, Blue Mountains City Council Local Environmental Plan (LEP), Wollondilly Council LEP, Oberon Council LEP, Hawkesbury City LEP, Penrith City LEP and the City of Greater Lithgow LEP. The park is generally zoned 8(a) National Park under the above LEP's. Management and development activities within the park are affected by these instruments in addition to the *National Parks and Wildlife Act 1974*. State Environmental Planning Policy No. 4 is also particularly relevant in terms of development control within the park. State Environmental Planning Policy No. 58 and the draft Regional Environmental Plan for Sydney's Drinking Water Catchments are particularly relevant in relation to those parts of the park within catchment areas.

The Special Areas Strategic Plan of Management jointly prepared by the Sydney Catchment Authority and the Service overlays the management of the Warragamba Special Area, which covers much of Blue Mountains National Park south of the Great Western Highway. This provides for an additional level of management control over catchment management issues including water quality, licensing, development and recreational use in those parts of the park. The strategic plan also covers the Blue Mountains Special Areas which in part adjoin the park. Nothing in this plan affects the statutory powers of the Sydney Catchment Authority and those powers have been taken into account in the development of this plan.

2.3.2 Importance of Blue Mountains National Park

The importance of the Blue Mountains National Park derives both from its natural and cultural features and from its geographic setting. The park is a large and diverse

conservation reserve in close proximity to the greater Sydney metropolitan region and adjacent to local urban centres. It contains a varied and spectacular natural landscape which is recognised nationally and internationally. It also contains important historic and prehistoric features associated with Aboriginal occupation and past recreation and land use. The park attracts a large number of visitors who enjoy the range of outdoor recreation opportunities it offers.

Natural Heritage and Scenic Landforms

The park forms part of the very large and important conservation area created by the continuity of Goulburn River, Yengo, Wollemi, Gardens of Stone, Blue Mountains and Kanangra-Boyd National Parks and the Nattai Reserves System. These parks together conserve more than a million hectares of almost continuous natural bushland from the upper Hunter Valley to the Wollondilly River. The size of this area is important in ensuring the long term viability of plant and animal communities and is an important element in the establishment of a comprehensive, adequate and representative conservation reserve system within the Sydney Basin bioregion. This system of conservation reserves is now listed under the World Heritage Convention and from a statewide context is an important part of an almost continuous natural corridor along the Great Escarpment (Ollier, 1982).

The park's natural features provide evidence of a long and significant record of landform evolution which contributes to an understanding of deposition and erosion in the Sydney Basin since the early Permian period (up to 290 million years ago). It also provides evidence of a long and significant record of species and plant community evolution in response to plate tectonics, landform evolution and global climatic change since at least the early Cretaceous period (up to 130 million years ago).

Blue Mountains National Park includes outstanding natural features characteristic of much of the region's sandstone landscape. These include the dominating cliff lines of the Jamison and Grose valleys, narrow canyons such as those of the Grand Canyon and Wollangambe River and the maze of forested ridges and gorges in the Glenbrook and Erskine Creek catchments. A number of vegetation communities, such as the rainforests, tall open forests and heathlands, have particular aesthetic appeal. The outstanding landforms and scenery of the park are a major drawcard for international and domestic tourists and provide the focus for a broad range of recreation activities.

The park has a high value for nature conservation, covering as it does an extensive variety of environments and natural communities. The park reserves natural environments over a wide altitudinal range from less than 20m on the Nepean River to 1215m on Mount Werong in the southern Blue Mountains. This altitudinal change and the complex topographic features of the park create a great diversity of environmental conditions affecting the distribution of plants and animals across the park. At least 40 distinct vegetation communities have been recognised in the park, ranging from the windswept heaths on the high sandstone plateau of the upper Blue Mountains (above approximately 600 m), to rainforests in sheltered gullies and on richer soils, to open eucalypt woodlands in the drier areas at lower altitudes.

The park conserves an outstanding diversity of plant communities and species, particularly within the *Eucalyptus* and *Acacia* genera, and an outstanding concentration of threatened, rare and endemic plant species. Over 1000 species of flowering plants alone are estimated to occur in the park, which is indicative of its extraordinary natural diversity. The park protects the habitat of at least 90 rare or threatened plant and animal species, many of which are restricted to the Blue Mountains eg the Dwarf Pine *Microstrobos fitzgeraldii* and the Blue Mountains Water Skink *Eulamprus leuraensis*.

Wilderness and Wild and Scenic Rivers

The relatively pristine condition of much of the park combines with its large size to provide important opportunities for maintaining natural processes and ensuring long-term protection of its features, especially the diversity of its flora and fauna. These natural attributes also provide opportunities for solitude and self-reliant recreation, with much of the park having been declared as wilderness under the Wilderness Act.

The existence of wilderness areas so close to one of the world's great cities is particularly unique and of great significance and value.

A number of rivers within the park have been recognised as potential wild rivers including the Wollangambe and Grose Rivers in the northern Blue Mountains and the Coxs and Kowmung Rivers in the southern Blue Mountains.

Catchment Values

Most of the southern section of the park, together with parts of the adjoining Kanangra-Boyd National Park, is included in the Warragamba Special Area and has an important function in contributing relatively unpolluted water to Lake Burragorang, Sydney's major potable water source. The park is also important for its contribution to the maintenance of water quality and natural flow regimes in the Hawkesbury River from the Wollangambe, Grose, Glenbrook and Erskine catchments.

Cultural Heritage

The park represents a range of significant cultural associations for the community and contains a number of sites and places of cultural heritage importance relating to the range of past and present human activity in the area. Aboriginal sites include the first evidence of human occupation in the region during the Pleistocene glacial period, rock art sites such as Red Hands Cave, engravings, grinding grooves and a concentration of stone arrangements which is believed to be unique in the Sydney sandstone region. Interpretation of Aboriginal sites and culture is becoming an increasingly important part of the region's tourism industry. Aboriginal groups are becoming increasingly involved in protection and management of their cultural heritage which includes their traditional lands.

The park includes numerous historic lookouts, picnic areas and walking tracks which reflect the development of tourism and the outdoor recreation and conservation movements in the latter part of last century and early this century. Some of these are

listed on the State Heritage Register. A number of other historic places occur in the park, associated with phases of settlement and land use dating from as early as the 1860s, and which include the early mines of the Jamison and Grose valleys and of the Yerranderie area.

Many sections of the community hold the park in high regard because of its importance to major cultural themes including Aboriginal occupation, European exploration, conservation history, tourism, art and recreational development. These themes are often expressed on a landscape scale beyond the significance of particular places.

Tourism and Recreation

The upper Blue Mountains section of the park, with its extensive system of scenic lookouts and walking tracks, is one of the major nature-based tourism destinations in Australia. Echo Point at Katoomba, is the main lookout over this area of the park and it attracts around 2.8 million visitors each year. This section of the park has been recognised as a site of national tourism significance by the Commonwealth Government.

The park also provides opportunities for a broad range of outdoor recreation activities which complement those provided in the adjacent urban and rural areas. Popular activities include bushwalking on both formed tracks and in wilderness areas, vehicle-based camping, picnicking, canyoning, abseiling and rock climbing.

Guided tours and commercial recreation form a small but significant and growing proportion of public use of the park. The park makes a major contribution to the local economy through the provision of both tourism and employment opportunities.

Research and Environmental Education

The park's natural and cultural features provide an important resource for environmental education and research in close proximity to major urban centres and educational and research institutions (eg University of Western Sydney). Its combination of large wilderness areas adjoining extensive urban, rural and natural boundaries provides a research setting unique in New South Wales.

3. OBJECTIVES OF MANAGEMENT

3.1 GENERAL OBJECTIVES FOR NATIONAL PARKS

The following general objectives, derived from the *National Parks and Wildlife Act 1974*, apply to the management of national parks in New South Wales:

- * protection and preservation of scenic and natural features;
- * conservation of wildlife and natural biodiversity;
- * maintenance of natural processes as far as is possible;
- * preservation of Aboriginal and historic sites, features and places;
- * provision of appropriate recreation opportunities; and
- * encouragement of scientific and educational inquiry into environmental features and processes, prehistoric and historic features and park use patterns.

3.2 SPECIFIC OBJECTIVES FOR BLUE MOUNTAINS NATIONAL PARK

This plan is directed towards the following long term vision for the park:

a world quality national park in which human-caused environmental changes are excluded or effectively controlled, natural biodiversity is stable or increasing, significant cultural heritage is effectively protected, a range of high quality nature-based recreational experiences are available on an environmentally sustainable basis, and the maintenance of these conditions is strongly supported by the community.

In addition to the general objectives outlined above, the management of Blue Mountains National Park will be subject to the following specific objectives:

- protection of the park as part of the system of protected lands of the Sydney Basin bioregion and the Great Escarpment, with emphasis on maintenance of the ecological relationships between the park and adjoining protected areas;
- protection of catchments and water quality in the park, with priority to protection of Sydney's water supply and protection of wilderness catchments;
- identification, protection, conservation, presentation and transmission to future generations of the values of the Greater Blue Mountains World Heritage Area;
- protection and promotion of the outstanding scenic values of the park including protection of views from within and from outside the park;

- protection of the diverse range of plant and animal communities within the park, with particular attention to threatened species, endangered populations and endangered ecological communities and their habitats;
- provision of a range of high quality visitor facilities and information to encourage awareness and appreciation of the park and maintain the regional significance of the park in providing nature-based recreation and tourism opportunities;
- management of wilderness areas in conjunction with the adjoining national parks and reserves to maintain and enhance opportunities for solitude and self-reliant recreation, while ensuring the maintenance of natural processes;
- management of recreation and tourism within the park to ensure sustainable use, to minimise the impacts on the park's natural and cultural features and to maintain opportunities for a diverse range of recreational experiences;
- encouragement of public awareness and appreciation of the park's outstanding natural and cultural features through a variety of improved information, interpretation and education programs, with particular emphasis on:
 - the park's outstanding biodiversity and wilderness values and its ecological links with the adjoining conservation reserves;
 - the park's Aboriginal heritage;
 - the park's historical features associated with its unique place in the history of settlement of New South Wales and the development of the bushwalking and conservation movement in Australia, as well as its long history of tourism use
 - the importance of water quality protection and catchment management; and
 - appropriate recreational use of the park and minimal impact use.

3.3 OVERALL STRATEGY

Given the regional context of the park, there will be three major management emphases for Blue Mountains National Park during the life of this plan:

- implementation of a coordinated management strategy with adjacent conservation reserves to enhance their ecological integrity as the largest natural area in eastern New South Wales and to protect their World Heritage and wilderness values;
- promotion of appropriate land use planning and management amongst relevant land management authorities to ensure the protection of the park's outstanding natural and cultural values from adverse external impacts; and
- protection and improvement of the catchments within the park.

Emphasis will also be given to the following specific management strategies:

- ongoing monitoring and improved management of public and commercial recreation activities which have the potential for adverse impacts on the park's natural and cultural features, particularly its wilderness areas;
- achievement of a more prominent and effective role for the Service in the local tourism industry, in order to improve information and interpretation services to visitors, increase public appreciation of the value and importance of the park and improve revenue opportunities available to the Service;
- survey and monitoring of the park's natural heritage to contribute to better understanding of biodiversity and to assist in development of management programs;
- assessment and improved management of the park's historic recreation and tourism facilities; and
- co-operative programs with the local community, particularly neighbours of the park, to raise awareness of the importance and purpose of management programs and increase the effectiveness of programs for control of fire, weeds and introduced animals.

The remainder of this plan outlines the policies and actions required to achieve the above objectives and strategies.

4. POLICIES AND FRAMEWORK FOR MANAGEMENT

This section contains the policies and framework for management of Blue Mountains National Park together with relevant background information. Policies and actions are summarised under the following headings:

- Conservation of Natural Heritage;
- Conservation of Cultural Heritage; and
- Use of the Park.

The policies established in this plan of management will provide the framework for management consistent with anticipated resources available to the Service and anticipated community trends for the next five to ten years. Management will also be in accordance with the Service's Field Management Policies (NPWS, 1988) which are not reproduced within this plan.

The actions identified in the plan are those immediate proposals which are to be undertaken in the next five to ten years. Other management actions may be developed over the life of this plan consistent with the policies stated below.

4.1 CONSERVATION OF NATURAL HERITAGE

4.1.1 Geology, Landforms and Soils

The geology, landforms and associated soils are the basic resources of the park and, together with climatological influences, are the major determinants of the pattern and distribution of plants and animals. In addition, the rugged landscape of the dissected Blue Mountains plateau has acted historically to both discourage development over large parts of the area and to attract people seeking recreation in a natural setting. The plateau rises abruptly from the Cumberland Basin in the east to an altitude of approximately 200m at Glenbrook and then gradually rises to approximately 1100m in the west at Mt Victoria, with a steep drop off along the western escarpment.

The major rock outcrops in the park are the sedimentary sandstones laid down in the Sydney Basin during the Permian and Triassic periods up to 250 million years ago. Subsequent uplift and at least 90 million years of erosional processes has led to the characteristic deep valleys, cliffs and canyons of the central Blue Mountains. The spectacular cliffs of the Grose and Jamison Valleys are composed of Triassic sandstones of the Narrabeen Group. Differential erosion of the softer claystones is responsible for the benched cliffs of the upper Blue Mountains valleys, enabling the construction of unique multi-level walking tracks, such as those on the Jamison Valley cliffs at Wentworth Falls and Katoomba. Erosion of the Grose sub-group sandstones has formed narrow slot canyons and a variety of pagoda rock formations in the Grose, Wollangambe and Bungleboori catchments, similar to the adjoining Wollemi and Gardens of Stone National Parks. The Jamison Valley has been identified as a site of geological significance in New South Wales (Percival, 1979).

The eastern part of the park is dominated by the younger Hawkesbury Sandstone sequence. The rivers in the east are still incising the deeper layers of this harder sandstone and the valleys are narrower and more 'v' shaped than in the western part of the plateau.

Remnants of overlying Wianamatta Shale and Tertiary volcanics occur in scattered locations and contribute to the distinctive landforms of the park. The basalt caps of Mt Banks, Mt Hay and Mt Bell rise prominently above the surrounding plateau, forming an important part of the scenic backdrop to Sydney's Cumberland Plain.

Underlying the Narrabeen Group are the Illawarra Coal Measures of the Permian period. These are exposed as steep talus slopes below the cliffs in the Grose and Jamison valleys. They have weathered to form deep, clay loams and are often covered by rocks from previous cliff retreat.

In the southern section of the park the Permian sandstones and shales outcrop on plateau remnants and upper slopes such as the Scotts Main Range and in the Yerranderie area. Here they overlay the folded Devonian basement rocks of the Bindook Porphyry Complex. The prominent sandstone cliffs of the Blue Breaks area, north-east of Yerranderie, are comprised of the same Narrabeen sequence which dominates the central Blue Mountains plateau.

The volcanic rocks of the Yerranderie area are mostly associated with a major relic crater (ie a Devonian volcanic caldera) of some 40 square kilometres. Eruptions filled the crater with volcanic breccia and ashfall tuffs. The Yerranderie area has been identified in Schon (1984) as a site of geological significance. Ashfall tuffs also occur at nearby Bindook. The geological diversity of the southern Blue Mountains is further enhanced by the outcropping of Silurian limestone in several creek systems, including Murruin Creek, where karst processes have produced small cave systems.

Other restricted geological features in the park include the volcanic necks or diatremes dating from the middle Triassic to early Jurassic (200 to 160 million years ago). The erosion of volcanic material has formed saucer shaped depressions with more fertile soils, which often provide a significant attraction for recreation activities, for example at Euroka and Murphys Glen. Other diatremes occur in the Blue Labyrinth and in the Bimlow Tablelands.

The youngest geological layers are the Quaternary alluvial deposits associated with major rivers and structural features such as the Kurrajong fault along the eastern edge of the park (e.g Burrellow swamp area).

A number of palaeontological (ie fossil) sites have been recorded in the park, including at Mount Hay, Narrow Neck and Broken Rock Range. The former two sites include elements of the Gondwanan flora which was widespread across this supercontinent from about 285-225 million years ago (Percival in James ed. 1994).

Soil landscapes for the Wallerawang, Katoomba and Penrith 1:100 000 map sheets have been mapped as part of the Department of Land and Water Conservation Soil Landscape Series. These maps describe topography, soil types and land use

limitations for each soil landscape. The pattern of rock types and resultant soils varies greatly across the park, but the sandstone soils are predominantly of very low fertility, highly permeable and erodible. Combined with steep slopes and irregular but often intense rainfall events, the soils have special implications for catchment management and management of recreation impacts.

Soil eroded from disturbed areas can alter landforms, smother vegetation, increase sedimentation in creek beds and water impoundments and alter aquatic habitat. Increased runoff from disturbed areas can also increase the pollutant load into the park and assist the incursion of weeds. Eroded areas often require substantial works to stabilise and revegetate. Erosion following intense or widespread bushfires is also of special concern as it can produce extremely heavy sediment loads and reduces the regenerative capacity of the ecosystem by removal of nutrients in bushfire smoke and topsoil.

The potential for soil loss and associated impacts imposes significant constraints on both recreation and management use of the park. Roads, walking tracks and other facilities must be carefully sited and managed in sandstone landscapes to minimise impacts.

The illegal removal of bushrock from the park is another important management issue. Removal of bushrock contributes to erosion and may damage the habitat of a variety of animal species. Although the incidence of this activity has been reduced over recent years as a result of education and law enforcement programs, it remains a problem in some easily accessible areas which are more remote from management supervision. Ongoing vigilance is required to ensure that no further habitat damage is caused as a result of bushrock removal.

Policies

- * The Service will minimise the impacts of visitor use, management activities and adjacent land uses on geological, geomorphological and hydrological processes within the park by imposing conditions of use on activities within the park and through liaison with determining authorities and neighbours outside the park.
- * Important scenic features and significant geological, geomorphic and/or pedological features will receive priority protection from adverse impacts of use, activities and developments, including the following features:
 - the Jamison Valley cliffs, including the Three Sisters (see section 4.3.8 Adventure Recreation for specific provisions);
 - Grose Valley cliffs, particularly Mount Banks (see section 4.3.8 Adventure Recreation for specific provisions);
 - Canyons and pagodas of the Grose, Wollangambe and Bungleboori catchments;
 - igneous features of the Yerranderie area;
 - colluvial deposits associated with the Kurrajong fault including Portal Waterhole, Blue Gum Swamp and Buralow Creek;
 - karst areas;

- diatremes;
 - basalt caps;
 - Wianamatta Shale areas;
 - hanging swamps and valley swamps;
 - talus lakes of the Grose Valley and elsewhere;
 - palaeontological sites, including at Mount Hay, Narrow Neck and Broken Rock Range.
- * Soil erosion and sedimentation control standards will be developed co-operatively with the Department of Land and Water Conservation and the Sydney Catchment Authority. All relevant management activities in the park will be consistent with these standards and, for areas within the Warragamba Special Area, the Sydney Catchment Authority Soil Conservation Manual.
 - * Soil erosion and sedimentation control measures will be implemented in areas subject to accelerated erosion and instability arising from visitor use, management activities and adjacent land uses.
 - * The extraction of sand, clay, rock, gravel or any like substance will be prohibited, except for an essential management work where no practical/prudent alternative is available and where environmental impact is considered acceptable.
 - * The Service will include objectives and actions for minimising erosion arising from prescribed and wildfires in its fire planning and management programs (see also section 4.1.5 Fire Management).

Actions

- * The Service will liaise with local councils and other relevant management agencies to minimise the impacts of adjacent urban and rural developments on the scenic values of the park, with particular emphasis on the tourist precincts of the upper Blue Mountains.
- * The Service will liaise with the Roads and Traffic Authority to enhance viewing opportunities along Bells Line of Road and minimise the impact of road maintenance and upgrading on the scenic values of the park (see also sections 4.3.1 Promotion & Interpretation and 4.3.12 Alien Uses, Lease & Licences).
- * The Service will develop maintenance standards and maintenance priorities for public access roads, management trails and walking tracks which minimise erosion and its impacts on the park (see also section 4.3.3 Vehicle Access, 4.3.5 Walking Tracks/Bushwalking and 4.3.11 Management Facilities and Operations).
- * Disturbed sites not required for public or management use or to be protected for their historic value will be progressively rehabilitated. Restoration works will only use geologically compatible soil and gravel.
- * Bushrock removal is prohibited and will be controlled through programs of surveillance, law enforcement and publicity/education.

4.1.2 Catchment Management

Blue Mountains National Park incorporates and protects a number of relatively undisturbed catchments. These catchments make significant contributions to maintaining water quality in the Hawkesbury-Nepean River and Lake Burragorang, which is Sydney's main water supply. Most of the park's waterways are classified as Specially Protected (Class S) or Protected (Class P), which limits the type and level of pollutants that can legally be discharged into these waterways. No wastes are permitted to be discharged into Class S waters.

However, several of the park's major watercourses, including the Kowmung, Coxs and Wollangambe Rivers, have their headwaters outside the park. The location of urban areas on the major east-west ridge line bisecting the park has resulted in widespread disturbance to the water quality and hydrology of many of the park's catchments. Only 45% of the park area is assessed as comprising pristine catchments with potable water. Two of the largest pristine catchments in the park are Yarramun Creek in the northern Blue Mountains and Green Wattle Creek in the southern Blue Mountains. There are numerous other smaller pristine sub-catchments.

Catchment disturbance and pollution arising outside the park can have serious impacts downstream on the rivers' hydrology, their habitats and recreational amenity. Impacts on the park's catchments arise from urban development, mining, quarrying, forestry and rural activities as well as disturbances associated with recreation and park management facilities. Threats to park catchments will intensify and extend to new areas as urban and rural activities expand, park visitation increases and features of major hydrological significance such as swamps are altered.

Total catchment management provides a framework to manage catchments to ensure cleaner water and minimise environmental degradation, by balancing conservation needs and development pressures. The active involvement of the National Parks and Wildlife Service and other local organisations on the Hawkesbury-Nepean Catchment Management Trust is an important means of achieving these aims. Funding for various catchment management programs in the park has been provided from time to time via the Hawkesbury-Nepean Trust. In addition, the Sydney Catchment Authority can assist in catchment management through implementation of its regulations.

The Healthy Rivers Commission has investigated a number of issues related to river flows and ecology throughout the state. This process may result in restoration of environmental flows to managed rivers that enter the park from existing upstream storages and will provide further input on the management requirements for major park streams.

Blue Mountains National Park includes an area of land which is jointly managed with the Sydney Catchment Authority as part of the Warragamba Special Area. Management of this area is governed under *the Sydney Water Catchment Management Act 1998*, as well as the *National Parks and Wildlife Act 1974*. In accordance with the former legislation, a Special Area Strategic Plan of Management has been prepared jointly by

the Sydney Catchment Authority and the Service for the Special Areas, including the Warragamba Special Area.

The Warragamba Special Area is divided into two zones which include part of the park (see park map):

- the Schedule One water quality protection zone includes all lands generally within 3 km of the full supply level of Lake Burragorang; the Authority is actively involved in management of this zone and public access within park in this zone is restricted to foot access via the Mount Mouin-Mount Cookem corridor and vehicle access to McMahons Lookout; and
- the Schedule Two lands, which include much of the remainder of the southern part of Blue Mountains National Park; some public access restrictions apply including restrictions on cycling, horse and vehicle access except on public roads.

The management responsibilities of the two organisations within part of the Warragamba Special Area were outlined in joint management guidelines agreed between the Service and the then Metropolitan Water Sewerage and Drainage Board in 1977, when part of the Warragamba catchment was dedicated as national park. These guidelines require review and updating to reflect recent changes in the management environment.

The Service is currently liaising with Sydney Water Corporation regarding the decommissioning of the South Katoomba and Wentworth Falls sewage treatment plants which adjoin the park. Issues being discussed include restoration of environmental disturbance and weed incursion, removal of infrastructure and future use of the Sydney Water Corporation freehold land associated with the South Katoomba site.

Policies

- * The Service will seek to achieve effective catchment protection, through liaison with appropriate authorities and individuals, with the following specific aims:
 - to achieve co-ordinated water quality monitoring programs;
 - to identify, control, reduce and where possible eliminate sources of water pollution;
 - to reduce the impact of upstream land uses on water quality and quantity entering the park;
 - to achieve classification of all waters in the park under the *Protection of the Environment (Operations) Act 1998*;
 - to determine and achieve minimum water flow requirements from impoundments in the headwaters of park streams to maintain downstream riparian ecosystems, particularly in the Coxs River catchment.

[See section 4.1.4 for catchment protection policies and actions relating to introduced species.]

- * The Service will consider further actions in response to any adopted outcomes from the Healthy Rivers Commission that relate to the park.
- * Priority in catchment protection programs will be given to the control and elimination where possible of disturbances affecting: declared or potential wild and scenic rivers; pristine catchments; streams only minimally affected by introduced species; wilderness areas; recreational values; important water supplies; natural features of hydrological importance (e.g. karst, swamps) and significant species, populations and communities (see also section 4.1.3 Native Plants and Animals).
- * That part of the Warragamba Special Area within Blue Mountains National Park will be managed in accordance with the strategic plan of management jointly sponsored by NPWS and Sydney Catchment Authority for the Special Areas, this plan of management, and detailed joint management guidelines agreed between the Service and the Authority.
- * The Service will work co-operatively with the Sydney Catchment Authority to minimise the impacts of recreation on water quality within the Warragamba Special Area, particularly in the Schedule One water quality protection zone

Actions

- * The Service will work closely with the Hawkesbury-Nepean Catchment Management Trust, catchment management committees and catchment boards to achieve protection and improvement of the park's catchments and raise public awareness of impacts on catchments within the park.
- * The Service will work closely with local councils to limit the impacts of new and existing activities and developments on the park.
- * The Service will negotiate a formal management arrangement with the Sydney Catchment Authority to implement the general principles outlined in this plan and the Authority's strategic plan of management. The management arrangement will be reviewed and updated at least every five years.
- * The Service will continue to liaise with the Environmental Protection Authority, mining companies and local councils to minimise the impacts on the park of extractive activities in the park's catchments.
- * The Service will continue to liaise with the local Bushcare Network, Wildplant Care and Rescue Service, other community groups and local councils to assist the rehabilitation of disturbed sites in priority catchments.
- * The Service will work directly with park neighbours to eliminate or control disturbances emanating from neighbouring properties.
- * The Service will liaise with Sydney Water Corporation on the decommissioning of South Katoomba and Wentworth Falls sewage treatment plants to ensure the elimination of water pollution, rehabilitation of other existing impacts and effective

long term conservation management of the sites (see also 4.1.4 Introduced Plants and Animals).

- * The Service will liaise with local councils and other relevant authorities to rationalise the boundaries of the park with the aim of protecting the park's catchments as well as improving park management.
- * The Service will participate on the Urban Runoff Taskforce which has been established to oversee the implementation of a works program to ameliorate the impacts of urban runoff and improve water quality within the City of Blue Mountains.

4.1.3 Native Plants and Animals

An unusually diverse mosaic of vegetation communities is found across the park in response to a complex variation of environmental factors including climate, topography, slope, elevation, aspect, drainage, geology, soils and fire history. Much of the park's vegetation has been mapped at the 1:100 000 scale (Keith & Benson, 1988; Benson & Keith, 1990; and Benson, 1992) and other mapping has been completed by the Service.

The park's vegetation is comprised of about 40 distinct communities, many of which are restricted in occurrence or unique to the Blue Mountains area. Most are dry forests (45% of the park) and woodlands (38%) dominated by eucalypts, with the remainder being 'rocky complex' heaths (10%), 'plateau complex' heaths and low woodlands (3%) and moist forests and rainforests (2%). The park is part of a larger area including adjoining conservation reserves which is nationally significant for its outstanding floral diversity, at family, genus and species levels. This area is believed to be of international significance for its outstanding diversity of *Eucalyptus* and *Acacia* species and its high number of rare or threatened plant species (James, 1994). Within this larger area, Blue Mountains National Park is particularly significant for its outstanding number of threatened, rare and endemic plant species.

It is estimated that over 1000 species of flowering plants have been recorded in or near the park. Of these, fifty plant species were listed under *the Threatened Species Conservation Act 1995 (TSC Act)* at March 2001, including twenty-one endangered species (Schedule 1 Part 1 of the Act) and twenty-nine vulnerable species (Schedule 2 of the Act). These species are listed in Table 1. Sixty-five species recorded from the park are recognised as rare or threatened in Briggs and Leigh (1995) and many others are at the geographic limits of their range or of other special conservation significance (James, 1994).

Four endangered ecological communities identified under the *TSC Act* occur in or near the park: Shale/Sandstone Transition Forest; Sydney Coastal River Flat Forest; Sydney Turpentine-Ironbark Forest; and Blue Mountains Shale Cap Forest.

There is a particularly high concentration of rare or threatened plants in the upper Blue Mountains area in association with features that are also of high recreation interest such as swamps, cliff edges, heaths, rainforests and waterfalls. Some species and

vegetation communities are of special significance because they are at their geographic limit in the park. For example, the warm temperate rainforest *Ceratopetalum-Doryphora* sub-alliance is at its southern limit in the park, occurring on the shales and coal measures below sandstone cliffs or on poorer sandstone soils that often have basaltic or shale enrichment such as in the Grose and Jamison valleys. This community is being adversely affected by repeated fire, particularly in the Grose Valley.

Other vegetation communities are of special significance because they are poorly conserved or restricted in occurrence, e.g. the *Doryphora-Quintinia sieberi* warm temperate rainforest sub-alliance at Mt Wilson. This vegetation community is of particular significance as a remnant of a previously more widespread and dominant Gondwanan rainforest. Several rare or uncommon plant species, often with disjunct populations are associated with these remnants (James, 1994).

The long term protection of the park's vegetation in general and some species in particular may be at risk due to the effects of human disturbance arising within and outside the park. Disturbances include increasing tourism and recreation pressure, introduced plants and animals, fire suppression and hazard reduction works, water pollution from urban and industrial runoff and management operations associated with electricity transmission lines and other alien uses of the park (see relevant sections for more detail).

The complexity of landforms, vegetation and microclimate across the park has produced a patchy native animal distribution which is characterised to some extent by species with restricted distributions and disjunct populations. Although the park has not been systematically surveyed, it is known to include a high diversity of animal species, especially birds, reptiles and amphibians. Forty six mammals including 27 marsupials and 2 monotremes, over 200 birds, 58 reptiles and 32 amphibians have been recorded for the Blue Mountains dissected plateau area including Blue Mountains National Park and adjacent reserves. Invertebrate distribution is very poorly known, but the exceptional diversity of open forest and woodland communities in the park is likely to support a high diversity of invertebrates.

Areas such as heaths, swamps, riparian communities and tall open forests are of particular importance due to the high animal species diversity they often support. Rainforests, riparian communities and areas with complex rocky topography provide important refuges for animals during bushfires. Rocky sandstone complexes provide habitat for some specialised and rare native animal species (eg broad-headed snake). The protection of native fish species which occur within park streams is the responsibility of NSW Fisheries.

Forty one animal species recorded in or near the park were listed under the Threatened Species Conservation Act, 1995 at March 2001 (see Table 2), including ten endangered species (Schedule 1 of the Act) and thirty vulnerable species (Schedule 2 of the Act). Endangered species recorded in the park include the broad-headed snake (*Hoplocephalus bungaroides*), the regent honeyeater (*Xanthomyza phrygia*), the southern brown bandicoot (*Isodon obesulus*), the bush thick-knee (*Burhinus magnirostris*). The Blue Mountains water skink (*Eulamprus leuraensis*), the only

vertebrate species endemic to the Blue Mountains, is also listed as endangered. Protection and management of the upper Blue Mountains swamps is critical to the survival of this species. Suitable habitat for a number of other threatened species is known to occur in the park, although these species have not yet been recorded by the Service. A number of species now believed extinct may once have occurred in the park. There are currently no critical habitats or endangered populations listed within the park under the TSC Act.

The large size of the park and its continuity with adjacent conservation reserves suggest that many species will be able to sustain genetically viable populations in the long term. However, this potential is reduced by the patchy distribution of many species, the east-west development corridors through the park, which limit fauna movement, and the increasing impacts of people on habitat conditions in some areas. Other potential threats to conservation include changing fire regimes, fire suppression operations, water and air pollution, introduced plants and animals and illegal collection of bushrock and native animal species. Three key threatening processes that affect the Park have been identified under the TSC Act: bush rock removal; fox predation; and high frequency fire. Further surveys are required to gain a better understanding of the distribution and abundance of animals within the park and the impacts of potentially threatening processes.

Under the TSC Act, a recovery plan must be prepared for endangered and vulnerable plants and animals or endangered ecological communities. A threat abatement plan must be prepared for listed key threatening processes. The purpose of a recovery plan is to promote the recovery of a threatened species, endangered populations or ecological communities with the aim of returning or maintaining the natural viability of species, populations or ecological communities. A threat abatement plan outlines the management of key threatening processes with a view to their abatement, amelioration or elimination.

Policies

- * The Service will seek to maintain plant and animal diversity and distribution through the maintenance of natural processes, the mitigation of human impacts and through specific conservation programs where necessary.
- * The Service will develop specific conservation programs where required (Table 3) for native plant species, populations and communities that are:
 - threatened with extinction, destruction or loss of diversity and productivity in the park (but not necessarily listed under the TSC Act);
 - endemic to the park;
 - at the limits of their geographic distribution;
 - restricted in their distribution;
 - of particular scientific interest;
 - of other specific conservation value; and
 - subject to specific impacts or disturbances.

- * Specific conservation programs will be developed and applied to native animal species and populations where their conservation status and potentially threatening processes indicate active management is required to ensure their long term conservation within the park. Particular attention will be given to the following habitats or components of habitat (Table 3):
 - seasonal food sources;
 - sheltered topographical aspects;
 - the habitats of rare or threatened species, endangered populations and endangered ecological communities;
 - critical habitats;
 - riparian communities;
 - swamps, heaths, tall open forests and rainforests;
 - sites of particular scientific interest; and
 - bioindicator study reference catchments.
- * Priority for development and implementation of conservation programs will be given to threatened species, endangered populations and endangered ecological communities and their habitats as identified under the TSC Act.
- * The Service will ensure during rehabilitation of disturbed areas that material which is foreign to the site or area and introduced species with potential to survive or spread are not introduced (see also section 4.1.4 Introduced Plants and Animals).
- * Research programs will be encouraged into the distribution, habitat requirements and threats to native plants and animals, with priority to threatened species, endangered populations and endangered ecological communities (see also section 4.3.8 Research).

Actions

- * The Service will progressively assess the conservation status of plant and animal species, populations and communities in the park, identify any threatening processes and make recommendations to the Scientific Committee to update listings under the *TSC Act* as required.
- * Recovery plans will be prepared and implemented within the time frames specified in the *TSC Act* for species listed as Endangered or Vulnerable and which occur within the park (see Table 2 for current listings) in accordance with state-wide priorities.
- * The Service will liaise with local councils and other authorities to minimise the impact of potentially threatening processes on native species and communities (see also 4.1.2 Catchment Management, 4.1.5 Fire Management). Where relevant, threatened species recovery plans and threat abatement plans will be implemented in co-operation with other authorities within the park.
- * The Service will progressively undertake biodiversity surveys of specific habitats of concern on a priority basis, to improve knowledge of plant and animal distribution in

the park and assist in the development of ecologically-based fire management and visitor management programs.

- * The Service will undertake a “bioindicator research” program aimed at identifying and addressing threats to native species, communities and ecosystems with a focus on the urban/bushland interface area of the park. This program will:
 - determine a set of biological indicators to allow identification of potential environmental problems before major restoration becomes necessary;
 - describe the location, status and distribution of vegetation communities which may be of particular botanical conservation importance;
 - identify, research and document occurrences of threatened or rare plants and animals and important ecosystems;
 - identify processes which are potentially threatening to ecosystems and particular species and populations; and
 - develop management guidelines for conserving biodiversity for use by local government, bush fire brigades, various state government agencies and community groups.

TABLE 1: THREATENED PLANT TAXA RECORDED IN THE BLUE MOUNTAINS NATIONAL PARK AREA (AT MARCH 2001)

Key: Threatened Species Conservation Act 1995

E1 Schedule 1 Part 1 - Endangered

V Schedule 2 – Vulnerable

Scientific Name	Common Name	Status (TSC Act)
<i>Acacia bakeri</i>		V
<i>Acacia baueri</i> ssp <i>aspera</i>		V
<i>Acacia bynoeana</i>		E1
<i>Acacia clunies-rossiae</i>		V
<i>Acacia flocktoniae</i>		V
<i>Acacia gordonii</i>		E1
<i>Acacia pubescens</i>		V
<i>Acrophyllum australe</i>		V
<i>Allocasuarina glareicola</i>		E1
<i>Baloskion longipes</i>		V
<i>Boronia deanei</i>		V
<i>Bossiaea oligosperma</i>		V
<i>Carex klaphakei</i>		E1
<i>Cynanchum elegans</i>		E1
<i>Darwinia biflora</i>		V
<i>Darwinia peduncularis</i>		V
<i>Derwentia blakelyi</i>		V
<i>Dillwynia tenuifolia</i>		V
<i>Diuris aequalis</i>	Buttercup Doubletail	V
<i>Epacris hamiltonii</i>		E1
<i>Epacris sparsa</i>		V
<i>Eucalyptus benthamii</i>	Nepean River Gum	V
<i>Eucalyptus copulans</i>		E1
<i>Euphrasia bowdeniae</i>		V
<i>Hakea dohertyi</i>		E1
<i>Haloragodendron lucasii</i>		E1
<i>Isopogon fletcheri</i>		V
<i>Isopogon fletcheri</i>		V
<i>Kunzea cambagei</i>		V
<i>Leionema lachnaeoides</i>		E1
<i>Lepidosperma evansianum</i>		V
<i>Leucopogon fletcheri</i> ssp <i>fletcheri</i>		E1
<i>Melaleuca deanei</i>		V
<i>Micromyrtus minutiflora</i>		V
<i>Microstrobos fitzgeraldii</i>		E1
<i>Persoonia acerosa</i>		V
<i>Persoonia hindii</i>		E1
<i>Persoonia hirsuta</i>		E1
<i>Persoonia nutans</i>		E1
<i>Pimelea spicata</i>		E1
<i>Pomaderris cotoneaster</i>		E1
<i>Pterostylis saxicola</i>		E1
<i>Pultenaea glabra</i>		V
<i>Pultenaea parviflora</i>		E1
<i>Tetratheca glandulosa</i>		V
<i>Trachymene saniculifolia</i>		E1
<i>Velleia perfoliata</i>		V
<i>Zieria covenyi</i>		E1

<i>Zieria involucrata</i>		V
<i>Zieria murphyi</i>		V

TABLE 2: THREATENED ANIMAL SPECIES RECORDED IN THE BLUE MOUNTAINS NATIONAL PARK AREA (AT MARCH 2001)

Key: Threatened Species Conservation Act 1995

- E1 Schedule 1 Part 1 - Endangered
 E4 Schedule 1 Part 4 - Extinct
 V Schedule 2 – Vulnerable

Scientific Name	Common name	Status (TSC Act)
<i>Bettongia gaimardi</i>	Tasmanian Bettong	E4
<i>Burhinus grallarius</i>	Bush Stone-curlew	E1
<i>Calyptorhynchus lathami</i>	Glossy Black-Cockatoo	V
<i>Chalinobius dwyeri</i>	Large-eared Pied Bat	V
<i>Dasyurus maculatus</i>	Spotted-tailed Quoll	V
<i>Eulamprus leuraensis</i>		E1
<i>Falsistrellus tasmaniensis</i>	Eastern False Pipistrelle	V
<i>Grantiella picta</i>	Painted Honeyeater	V
<i>Heleioporus australiacus</i>	Giant Burrowing Frog	V
<i>Hoplocephalus bungaroides</i>	Broad-headed Snake	E1
<i>Isoodon obesulus</i>	Southern Brown Bandicoot	E1
<i>Ixobrychus flavicollis</i>	Black Bittern	V
<i>Lathamus discolor</i>	Swift Parrot	E1
<i>Limosa limosa</i>	Black-tailed Godwit	V
<i>Litoria booroolongensis</i>	Booroolong Frog	E1
<i>Litoria littlejohni</i>	Heath Frog	V
<i>Lophoictinia isura</i>	Square-tailed Kite	V
<i>Meridolum corneovirens</i>		E1
<i>Miniopterus schreibersii</i>	Common Bent-wing Bat	V
<i>Mormopterus norfolkensis</i>	East Coast Freetail Bat	V
<i>Myotis adversus</i>	Large-footed Myotis	V
<i>Neophema pulchella</i>	Turquoise Parrot	V
<i>Ninox connivens</i>	Barking Owl	V
<i>Ninox strenua</i>	Powerful Owl	V
<i>Paralucia spinifera</i>	Bathurst Copper Butterfly	E1
<i>Petalura gigantea</i>		E1
<i>Petaurus australis</i>	Yellow-bellied Glider	V
<i>Petaurus norfolcensis</i>	Squirrel Glider	V
<i>Petrogale penicillata</i>	Brush-tailed Rock-wallaby	V
<i>Petroica rodinogaster</i>	Pink Robin	V
<i>Phascolarctos cinereus</i>	Koala	V
<i>Polytelis swainsonii</i>	Superb Parrot	V
<i>Pseudophryne australis</i>	Red-crowned Toadlet	V
<i>Saccolaimus flaviventris</i>	Yellow-bellied Sheath-tail Bat	V
<i>Scoteanax rueppellii</i>	Greater Broad-nosed Bat	V
<i>Sterna fuscata</i>	Sooty Tern	V
<i>Stictonetta naevosa</i>	Freckled Duck	V
<i>Tyto novaehollandiae</i>	Masked Owl	V
<i>Tyto tenebricosa</i>	Sooty Owl	V
<i>Varanus rosenbergi</i>	Heath Monitor	V
<i>Xanthomyza phrygia</i>	Regent Honeyeater	E1

**TABLE 3: SITES AND COMMUNITIES WITHIN BLUE MOUNTAINS NATIONAL PARK
IN NEED OF SPECIAL MANAGEMENT**

	Selection Criteria					Management Requirements						
	1	2	3	4	5	A	B	C	D	E	F	G
Sites:												
Basalt caps	•		•	•			•	•	•	•	•	
Bindook Swamps	•		•			•	•	•	•			
Blue Gum Forest			•	•	•	•	•	•	•	•		•
Blue Gum Swamp Creek	•				•	•	•	•	•	•		
Burralow Creek	•				•	•	•	•	•	•		
Byrnes Gap		•			•		•	•		•	•	
Diatremes	•		•	•		•	•	•	•	•	•	•
Glenbrook (Euroka, Ironbarks)			•		•	•	•	•	•	•		
Greaves Creek		•			•	•	•	•	•	•	•	•
Grose Valley escarpments & cliffs	•	•	•		•	•	•	•	•	•	•	•
Jamison & Kedumba Valley escarpments & cliffs	•	•	•		•	•	•	•	•	•	•	
Katoomba Creek		•			•	•	•	•	•	•	•	•
Loombah Plateau	•	•			•	•	•	•	•	•		
Mootik Plateau	•						•	•	•			
Narrow Neck Plateau	•	•	•		•		•	•	•	•	•	•
Portal Waterhole	•		•				•	•	•		•	
Tonalli Tableland			•				•	•	•		•	
Biondiator Study Reference Catchments		•		•		•	•	•	•	•		
Vegetation Communities:												
Heaths	•	•	•	•	•	•	•	•	•	•	•	•
Swamps	•	•	•	•		•	•	•	•		•	•
Limestone vegetation	•			•		•	•	•	•			
Montane Woodland/Forest			•	•	•	•	•	•	•	•		•
Rainforest ecotones	•	•	•	•		•	•	•	•		•	•
Shale/Sandstone Transition Forest	•				•		•			•	•	

Selection Criteria

- 1 Restricted plant communities
- 2 Rare, threatened or restricted plant species
- 3 Special research value or need for research
- 4 Other conservation values
- 5 Subject to impact/disturbance

Special Management Requirements

- A Water quality protection
- B Fire management
- C Introduced species control
- D Establishment of permanent wildlife & fuel monitoring sites
- E Control or removal of disturbance
- F Detailed survey & research on rare, threatened or restricted plants
- G Erosion control

4.1.4 Introduced Plants and Animals

Introduced plants and animals are those species which are not indigenous to the park environment. They represent one of the most significant potential threats to the natural values of the park and are a major focus for management programs. Some of these species damage natural values by being invasive, directly competing with or preying upon native species. They may also affect soil and water systems and the recreational, cultural, aesthetic and scientific values of the park. Some introduced species in the park may have economic impacts on neighbouring lands.

As a result of the complex geography, broad altitudinal range and the matrix of land uses within the Blue Mountains region, a wide range of introduced plants and animals are present, with each species exploiting a particular environmental niche. Introduced species vary considerably in their potential to invade natural or disturbed ecosystems. Because of the occurrence of introduced species across tenures and the major sources that lie beyond the park boundary, control programs must be carried out in a co-ordinated and co-operative manner with other agencies, park neighbours and the community to achieve maximum success.

Introduced plants

The majority of the park is free from high density weed occurrence. Localised occurrences of concern are associated with disturbed sites, polluted watercourses, zones adjacent to urban and rural development, altered fire regimes and areas where activity by introduced animals has contributed to the establishment and spread of introduced plants. Flooding, vehicle use, horse riding and other human activities may also contribute to the spread of weeds into or within the park. At least 39 introduced plants currently classified under the *Noxious Weeds Act 1993* as noxious or environmental weeds are known to occur within the park (see Table 4). The *Noxious Weeds Act 1993* places an obligation on the Service to prevent the spread of listed plants.

Detailed information on the distribution and abundance of introduced plants within the park is limited, but a number of known occurrences are of major concern. Runoff originating from the developed zones along the Great Western Highway and Bells Line of Road is an important cause of weed invasion into the park. Major occurrences have been attributed to stormwater runoff in the following areas:

- Gorse *Ulex europaeus*, upper Blue Mountains & Grose Valley, Popes Glen and Braeside Creek;
- Lantana *Lantana camara*, lower Blue Mountains, Nepean River & Erskine Creek;
- Privet *Ligustrum lucidum*, upper and lower Blue Mountains areas particularly south of the Great Western Highway;
- Scotch broom *Cytisus scoparius*, upper Blue Mountains, Katoomba Creek; and
- Montbretia *Crocasmia crocosmiiflora*, upper Blue Mountains, creeklines and roadside verges.

Extensive high density weed occurrences are associated with sewage treatment plants at South Katoomba, North Katoomba and Wentworth Falls. These weed plumes either extend directly into the park or threaten the park. The Service will work co-operatively with Sydney Water Corporation on the rehabilitation requirements of these sites as part of the planned decommissioning of the treatment plants.

Boundary zones in the south of the park which have been adversely affected by past land use practices and feral animal activity have widespread occurrences of serrated tussock (*Nassella trichotoma*), blackberry (*Rubus fruticosus* group), prickly pear (*Opuntia stricta*) and tiger pear (*Opuntia aurantiaca*). The Mt Werong-Banshea and Newnes Plateau areas of the park are affected by Monterey pines (*Pinus radiata*) which have spread from adjacent plantations.

Ongoing park management programs have been directed at the control of specific occurrences of introduced plants. Considerable success has been achieved with the control of gorse and lantana through the use of bush regeneration programs. Volunteer groups have been active in controlling remote occurrences in areas such as the Grose valley and Katoomba Creek and have achieved major gains in regenerating urban bushland, mainly outside the park boundary. There is considerable potential to utilise volunteer groups to a much greater extent within the park to address the major problem of urban weeds. Biological control agents are used where feasible and three such agents have been released outside the park for the control of scotch broom in the Blue Mountains region.

The abundance of blackberry, broom and gorse has been dramatically reduced in the upper Blue Mountains through a coordinated effort by the Blue Mountains Noxious Weeds Advisory Committee and its constituent organisations, including the Service. This Committee is currently investigating the development of a program to map weed distribution, density and factors favouring introduced plant establishment within the Blue Mountains. The Service is playing a leading role in the development of this program.

Introduced animals

There is a better understanding of the distribution and abundance of introduced animals in the park than for introduced plants. Thirteen introduced animals of concern are known to occur in the park, including rabbits, feral pigs, goats, cattle, horses, cats, wild dogs, European carp, mosquito fish, foxes and European bees. These species can cause significant damage to native wildlife and the natural environment and may adversely affect recreational values.

Introduced grazing animals impair the growth and regeneration of native vegetation, accelerate soil erosion, create environments favourable for colonisation by introduced plants and assist their spread. Predatory vertebrates such as the fox *Vulpes vulpes* and feral cat *Felis catus* are believed to have had the greatest impact on native animals through direct predation and competition with native predators. Fox predation is identified as a key threatening process under the TSC Act. European bees compete with and displace many native pollinators and have been found to interfere with the reproductive process of native plants. There are no current beekeeping licences in the

park. The impacts of introduced fish in the park, including brown trout *Salmo trutta* and rainbow trout *Salmo gairdneri* are poorly researched. The Service does not have legislative control over aquatic animals but can liaise with NSW Fisheries to regulate the release of trout into park streams. Control programs for introduced animals have been based on the impact of species on the park and adjoining landholders, as well as on the practicality of available methods.

A number of occurrences of pest animals in the park are of major concern. Remnant populations of wild cattle and horses from past grazing practices occur in the Grose Valley and in the south of the park, where they frequently roam from adjoining lands. Feral pig populations have become well established in the south of the park following their spread from adjoining lands. Small and isolated feral pig populations on the Newnes Plateau adjacent to the park and in the Bilpin area threaten high value conservation areas in the Grose Valley and Wolgan Valley (Wollemi National Park). Wild dogs occur in the south of the park and to a lesser extent in the north.

A number of major programs are undertaken in the park for the control of introduced animals, generally in conjunction with neighbouring landholders to maximise effectiveness. Eradication of all wild cattle and horses from the park is achievable and ongoing programs of mustering, eradication and liaison with owners of straying stock have greatly reduced populations in the park in recent years. There are effective co-operative control programs in place for both pigs and dogs for the southern section of the park, involving the Service, Sydney Catchment Authority, State Forests of NSW, NSW Department of Agriculture, Oberon Wild Dog Committee, Rural Lands Protection Board and park neighbours. (For management purposes, the Service does not differentiate between the feral dog (*Canis familiaris familiaris*) and the dingo (*Canis familiaris dingo*) and both sub-species are referred to as “wild dogs”).

Other species of concern include goats, foxes, cats, rabbits and introduced fish. Small scale control programs have been undertaken to target some of these animals in recent years, mainly aimed at problematic outbreaks rather than systematic control. Greater emphasis needs to be placed on recording the distribution and abundance of these species and their impacts on the park’s natural values so that systematic control programs can be implemented.

Policies

- * Introduced species will be eradicated from the park wherever possible, with emphasis on those with a high invasive potential.
- * Where eradication is not possible or practical, introduced species will be contained or controlled to minimise their impacts on the park and neighbouring land uses.
- * Introduced species control programs will be developed based on the following priorities:

Introduced Plants

1. Species classified as Category W1 noxious weeds under the *Noxious Weeds Act 1993* which have the potential to spread to neighbouring properties, e.g. water hyacinth.
2. Occurrences which pose a significant threat to a population of a threatened or rare native species, e.g. broom and english ivy at Katoomba Falls Creek; or for which a threat abatement plan under the *TSC Act* has been prepared.
3. Species which threaten the conservation or recreational value of an area, e.g. gorse, broom, montbretia, lantana and privet.
4. Species which must be controlled/contained to allow another high priority management program to be effective.
5. Species of limited distribution, but known to be an important problem in other parks.
6. Species that the community has identified as a high priority, e.g. some environmental weed species in the Grose Valley.
7. Species for which continued management is necessary to maintain benefits gained from previous control programs.
8. Occurrences for which a window of opportunity occurs, e.g. an effective biocontrol agent becomes available.

Vertebrate pests

1. Species for which a national emergency control has been declared.
 2. Species which pose a significant threat to a population of a threatened or rare native species, e.g. feral goats in rock wallaby habitat, and for which a threat abatement plan under the *TSC Act* has been prepared.
 3. Species which threaten the conservation value of an area, e.g. pigs throughout the park.
 4. Species which must be contained to allow another high priority management program to be effective.
 5. Species declared noxious under the *Rural Lands Protection Act* or for which a local order has been proclaimed, and identified by neighbours as requiring high priority for control action, e.g. pigs, rabbits and wild dogs.
 6. Species that the community has identified as a high priority for action, e.g. feral cats.
 7. Species for which continued management is necessary to maintain benefits gained from previous control programs.
- * The Service will continue to monitor and assess existing programs and to research and develop new control methods for introduced species in order to maximise efficiency and effectiveness and minimise non-target impacts.

- * The Service will seek to implement all programs on a co-operative basis with other management agencies, landholders and relevant community groups so that the benefits of control programs to both the park and park neighbours are maximised.
- * No European honey bee hives will be permitted within the park.
- * Because of their impacts on the park's natural and recreation values, stock will be excluded from the park except:
 - during transport on declared Public Roads;
 - during transport by vehicle to and from inholdings; and
 - for horses and other pack animals only, in association with authorised activities (see section 4.3.6 Horse Riding).
- * Removal of any introduced plants with potential historic significance will only be undertaken after preparation of a conservation policy for the site (see section 4.2.2 Historic Heritage).

Actions

- * An introduced species management plan will be prepared to include the priorities and control programs for Blue Mountains National Park.
- * Pending preparation of the introduced species management plan, the following control programs will be undertaken as a priority:

Introduced Plants

- Gorse, particularly in the Grose catchment;
- Scotch Broom, particularly in the Grose and Kedumba catchments;
- Bush regeneration in association with multiply-occurring introduced plant species or areas posing a significant threat, or areas of joint or co-operative management, particularly in the City of Blue Mountains area;
- Serrated Tussock, particularly in the south west of the park;
- Prickly Pear and Tiger Pear, particularly in the south of the park;
- Willow, particularly on the Kowmung and Coxs Rivers;
- Blackberry, in a number of areas;
- Lantana in the east of the park; and
- New outbreaks or occurrences.

Introduced animals

- Wild dogs, particularly in the south west boundary areas of the park;
 - Feral pigs, particularly in the southern part of the park, Newnes Plateau and Bilpin areas;
 - Feral cattle and horses, particularly in the Grose, Kowmung and Butchers Creek valleys
 - Feral goats, particularly in the south and east of the park and any new occurrence; and
 - Foxes, in specific problem or high conservation areas.
- * An introduced species management data base will be developed in co-operation with other agencies, landholders and relevant community groups. Further survey

work will be carried out as necessary to determine and monitor population distribution, dynamics and abundance of introduced species.

- * The Service will seek to develop through the Blue Mountains Weeds Advisory Council a strategic plan for the control of the major introduced plant occurrences in the City of Blue Mountains area which are within or threaten the park. The plan will be based on a detailed mapping and assessment of locations, threats and practicality of control.
- * An education package to raise public awareness of the impacts of pest species and increase support for pest species programs will be developed and promulgated.
- * The Service will continue the development of control programs which encourage community involvement and, in conjunction with other land management agencies, will establish a co-ordinated bush regeneration programme.
- * The Service will liaise with other authorities to minimise the spread of introduced plants from easements or adjacent lands into the park, including NSW State Forests, the Roads and Traffic Authority, TransGrid and Integral Energy (see also section 4.3.12 Alien Uses, Leases and Licences).
- * The Service will liaise with NSW Fisheries to research, control the spread and minimise the impacts of introduced fish species within waterways within the park.

4.1.5 Fire Management

Fire has always been a major factor in the Australian environment, with fires originating from both natural and human sources. Fire regimes, comprising frequency, intensity, season of occurrence and variability, have been influenced by humans since long before European settlement. Fire was used by Aboriginal people to clear the undergrowth and make travelling easier, for hunting and to increase the abundance of certain types of plant food. Mosaic patterns of vegetation of different ages were created over some areas as a consequence of this regular and systematic burning (Kohen 1996).

When traditional Aboriginal burning ceased, those environments which had been modified by their activities changed again but there is no scientific consensus on the type and extent of those changes. There is very little quantitative information on the pre-European and historic fire patterns of the Blue Mountains, and the dynamics of fire in the Australian environment are still under scientific debate.

In recent times in the Blue Mountains the majority of fires have been of human origin, with most starting adjacent to roads and tracks. The predominant natural cause of wildfires is lightning strikes. Historically, most fires affecting the park have commenced within the park and remained within the park. Some fires have originated outside the park and burnt into the park, and even fewer have originated in the park and spread out to adjoining lands.

Frequent fire is identified as a key threatening process in the *TSC Act*.

Fire has a considerable effect on the cultural, natural and recreational values of the park. Fire regimes are a major determinant of the distribution and abundance of plants and

animals in the park. They also affect nutrient cycles, erosion patterns, hydrological regimes and aquatic environments. Fire regimes are the result of the dynamic interaction of human, physical, biological, spatial and temporal factors. These interactions are complex and as yet not fully understood.

The effective management of fire is of particular importance for Blue Mountains National Park. The Blue Mountains is a region of high fire risk and there has been an historic occurrence of periodic severe fires resulting in loss of property and life. The juxtaposition of built-up suburban areas immediately adjacent to and often downwind of large tracts of flammable bushland requires an emphasis on well planned fire mitigation in these zones. The community costs of both damaging fires and the regional fire management effort are high.

The park's important values for nature conservation, as a drinking water supply catchment, as a stronghold of threatened species and as a major recreational precinct also demand protection through effective fire management. Particular fire regimes, including very frequent fire or very long intervals between fire, can be detrimental to the long term protection of particular components of the park's natural biodiversity. Other threatening processes such as weed incursion, deteriorating water quality and accelerated erosion can be compounded by the application of inappropriate fire regimes. The Grose Valley is one area where natural values are under threat from regular high intensity fires of human origin. Another important consideration is that many natural communities and species require specific fire regimes if they are to be conserved. Fire management is one of the major programs for the park which consumes significant financial and human resources.

Methods used for fire suppression and the maintenance of fire advantages such as management trails and control lines can also impact on the park's natural and cultural values. There is a need to minimise the environmental effects of these types of strategies. Both within and adjacent to the park, fire needs to be managed in terms of its potential impact on life and property in addition to its use in the management of natural heritage. The overall challenge for fire management in the park is to reach a situation where the needs of life and property protection and protection of the environment are well understood and clearly identified throughout the community, so that wildfire mitigation and suppression can be co-operatively targeted for maximum effectiveness under all objectives.

Management trails can be useful in certain circumstances for the management of both prescribed fire and wildfire, if well located, constructed and maintained. Some existing trails are not of significant benefit. All management trails have high maintenance costs and cause significant ongoing impacts on the park environment. The scale of the impact and the cost of maintenance varies according to location, substrate, steepness, construction standard and levels of use and maintenance. The management benefit of each trail needs to be well demonstrated to justify the continuing impacts and the significant financial costs of maintenance. Ongoing assessment of the management trail system is required to ensure only essential trails are retained, their impacts are minimised and maximum benefit is obtained from resources applied.

Under the *Rural Fires Act 1997*, the Service is a fire authority and is legally responsible for the control of fires within Service areas, the prevention of the escape of fires from Service areas, the prevention of fire damage to other land and property from any escaped Service fires and the implementation of bush fire risk management programs within Service areas.

The Service fulfils these responsibilities by undertaking fire mitigation, prevention and suppression strategies within the park. The Service is assisted by other local fire authorities, especially the volunteer bush fire brigade organisation. Under joint management arrangements with the Sydney Catchment Authority, the Service co-operatively manages fire within the Warragamba Special Area (see section 4.1.2 Catchment Management). The Service also assists with the control and suppression of fires adjacent to the park where necessary. The Service regards co-operative fire management combined with community involvement as critical to the achievement of both life and property protection as well as the natural heritage management objectives in the area. The Service plays a major role in local bush fire management committees as the key mechanism for local co-ordination of fire management activities.

The Service undertakes a range of co-operative and consultative fire planning processes as a key aspect of meeting its objectives. The preparation of fire operational and bush fire risk management plans are required under Section 52(1) of the *Rural Fires Act 1997*, and the Service contributes to these processes through local bush fire management committees.

The Service is also playing a major role in the development of community fire plans in conjunction with communities adjacent to the park and other fire authorities, and is committed to completing reserve fire management plans for all Service areas. The Blue Mountains National Park Draft Fire Management Plan is in preparation and will be released for public comment before being finalised.

The Service also has a fire management operational plan which is updated annually and contains information on Service policies and procedures for fire management within the park. These policies and procedures are also integrated into the operational plans prepared for local government areas under Section 52(1) of the *Rural Fires Act 1997*.

The proximity of the park to developed and residential land, particularly in the Greater Lithgow, Blue Mountains and Hawkesbury and Penrith City Council areas requires that higher priority in these areas be assigned to the protection of life and property.

The Service's fire management is aimed at mitigating the impacts of major fire events as well as protecting and conserving the natural, cultural, scenic and recreational values of the park. The Service has played a leading role in the development of sophisticated fire management strategies, tools and techniques for the region which effectively balance these requirements. Fire regimes have been developed where fire frequency, fire intensity, season of burning and the spatial arrangement of fire within the landscape are manipulated in order to achieve nature conservation and property protection objectives. Fire regimes are prescribed using a fuel management zoning approach, which takes into account the identified priority management objectives for specific

areas. The ability to rapidly suppress wildfires in the region has also improved significantly in recent decades with the increasing sophistication and co-ordination of local firefighting resources and the continuing development of aerial techniques for managing fires in remote locations.

The Service attempts to minimise any adverse impact from fire management activities within the park by applying a zoning approach to fire management activities, by undertaking environmental assessment of its planning and by public consultation processes.

Policies

- * Fire in the park will be managed in accordance with the following objectives:
 - to reduce the risk of bushfire damage to life and property both within and adjacent to the park;
 - to effectively manage fire for the protection and conservation of the natural, cultural, scenic and recreational features of the park;
 - to protect water quality, particularly the quality of stored water within Lake Burragorang;
 - to promote effective and efficient utilisation of local bushfire fighting and risk management resources through co-operative planning and operational arrangements; and
 - to achieve community understanding and support for fire management requirements and programs through consultation and education.

- * Fire management will be in accordance with the Blue Mountains National Park Reserve Fire Management Plan and will be fully integrated with other park management programs. The Reserve Fire Management Plan will detail the intended fire regimes for each area of the park and the criteria used to develop those prescriptions. A bushfire management zoning approach will be developed consistent with the Service wide standard.

- * The Reserve Fire Management will incorporate the following provisions, which will also apply to fire management in the park until the Plan is adopted:
 - Whenever possible all wildfires will be contained within park boundaries;
 - Fire management practices will utilise effective fire suppression methods which have the least adverse environmental impact;
 - Unless otherwise specified within an adopted species recovery plan, conservation plan, NPWS reserve fire management plan or Section 52(1) bush fire risk management plan (*Rural Fires Act 1997*), the frequency of fire will be minimised within the following (consistent with section 4.1.3 Native Plants and Animals, especially Table 3):
 - the habitat of threatened, rare or endemic species known or believed to be fire sensitive;
 - areas of low fire threat;
 - areas of naturally low fuel loads;
 - rainforests and swamps;
 - vegetation on alluvial deposits, limestone, basalt, diatremes and shale;

- cliff edge and escarpment vegetation; and
 - areas with high erosion potential;
 - Fire management in and adjacent to the park will incorporate water quality and catchment protection objectives, especially in areas adjacent to Lake Burragorang;
 - As far as possible, prescribed burning will be implemented in late summer / early autumn and will focus on asset protection and strategic wildfire control zones;
 - Prescribed fires will be utilised in heritage management zones, including wilderness areas, where essential for wildfire suppression or to achieve specific heritage conservation objectives;
 - An effective management trail system will be identified, maintained and kept under review within the park to facilitate essential fire management programs“ (refer section 4.3.11 for the identified management trail system). Non-essential trails will be rehabilitated;
 - No new permanent trails will be constructed except for minor re-routings of existing trails; and
 - Temporary tracks and firebreaks associated with fire management within the park will be rehabilitated after use.
- * The Service’s involvement in bush fire management committees will be maintained and the Service will continue to develop co-operative fire management arrangements with other authorities and landholders.
 - * The Service will actively contribute to the preparation of Section 52(1) plans such as fire operational plans, bush fire risk management plans and community fire plans.
 - * The Service will continue to plan and implement annual fuel reduction programs in the park aimed at protecting life and property and natural and cultural heritage, in accordance with the provisions of Section 52(1) plans.
 - * Research into fire behaviour in the local area and into the effects of fire on individual plant and animal species, vegetation communities and biodiversity will be encouraged (see also section 4.3.10 Research) and, where appropriate, the results of such research will be incorporated into the park’s fire management programs.
 - * Information concerning fire management within the park, including strategies to reduce unplanned ignitions, will be incorporated where appropriate in park information and interpretation material.
 - * The existing fire danger/park closure public warning system developed and implemented in conjunction with bush fire management committees and the Blue Mountains Tourism Authority will be retained. During periods of extreme fire danger all or parts of the park will be closed.
 - * During periods of greater than high fire danger, or when bushfires are burning within the park:
 - appropriate risk management strategies such as Park Fire Bans will be implemented; and

- recreational use of the park will be regulated to minimise further risk of wildfires and associated threats to visitor safety; and
 - co-operative arrangements with neighbours and other fire authorities for bushfire detection and monitoring will be implemented.
- * The Service will continue to upgrade its firefighting capability and advance its firefighting techniques and technologies.

Actions

- * A draft Fire Management Plan for Blue Mountains National Park will be prepared. It will be made available for public comment prior to adoption and implementation.
- * The Service will continue to maintain and update fire history data for the park and adjacent areas and incorporate this information into fire management planning.
- * The Service, in co-operation with the Sydney Catchment Authority and in consultation with the Rural Fire Service through Blue Mountains Bushfire Management Committee, will keep under review the need for and effectiveness of the existing Narrow Neck Fire Tower, with the objective of removal of the tower or its relocation and rehabilitation of the site.
- * The use of camp and cooking fires within the park will be reviewed in consultation with visitor groups with the objective of reducing the risk of wildfire ignitions from this source.
- * The value and necessity of the existing South Katoomba Sewage Treatment Plant access road will be assessed in consultation with the Rural Fire Service and Sydney Catchment Authority through the Blue Mountains Bushfire Management Committee and in relation to the decommissioning of the plant (see section 4.1.2 Catchment Management).
- * A regular review of all existing management trails within the park will be established as part of the section 52(1) bush fire management planning process, and in consultation with the Sydney Catchment Authority for lands within the Warragamba Special Area. Unnecessary trails will be closed and rehabilitated (see also section 4.3.11 Management Facilities and Operations).

4.1.6 Wilderness and Wild Rivers

Wilderness is a large natural area where plants and animals and their communities are relatively undisturbed and where there are opportunities for solitude and self-reliant recreation. The retention of wilderness areas is becoming increasingly important to conservation in New South Wales as the area containing native plant and animals communities diminishes and as the number of people wanting to use natural areas for recreation increases.

Blue Mountains National Park includes three areas which have been identified or declared under the *Wilderness Act 1987* (Map 2). The Kanangra-Boyd Wilderness covers 125,000 hectares of which 52,500 hectares is within Blue Mountains National Park. This includes Sydney Catchment Authority freehold lands on the western side of Lake Burragorang. Because of its outstanding scenery and landforms and its proximity to large population centres, it is one of the most visited wilderness areas in the state.

A very large area of about 361,000 hectares, including parts of Wollemi and Blue Mountains National Parks, has been declared as the Wollemi Wilderness, making this the largest wilderness area in NSW. The Wollangambe section of the Wollemi Wilderness is within Blue Mountains National Park.

A wilderness of approximately 38,000 hectares, centred on the Grose River has recently been declared. The Grose Wilderness includes most of the Grose River and its tributaries, but excludes the formal camping area at Acacia Flat and that part of Govetts Gorge bounded by Perrys Lookdown track and Greaves Creek.

The Service considers that those sections of the Grose River, Coxs River, Erskine Creek, Wollangambe River and Bungleboori Creek and their tributaries within the park are worthy of assessment as “wild” rivers. Following an assessment, these watercourse may be recommended for declaration as “wild” rivers.

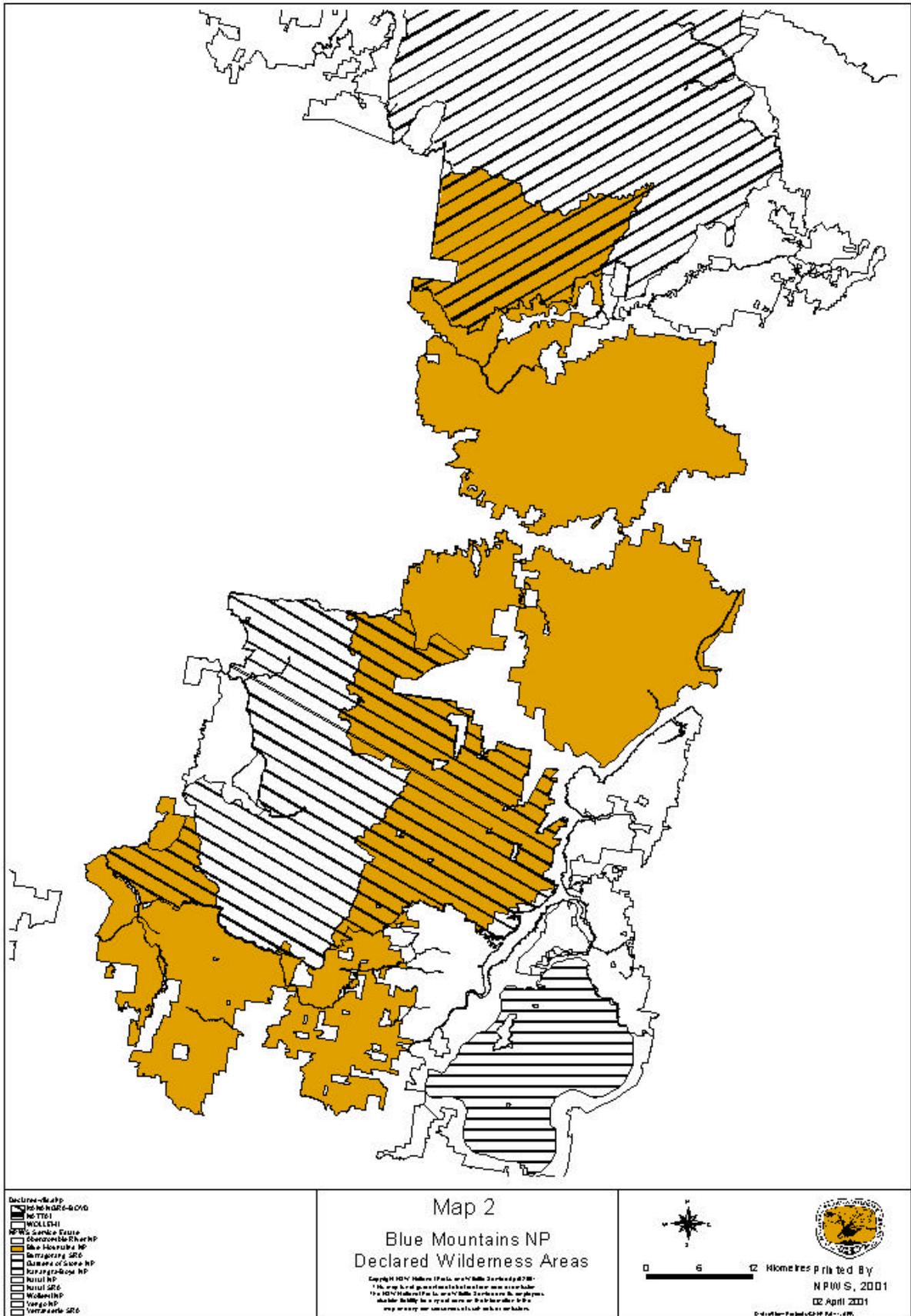
In some of these wilderness areas, access routes exist to freehold inholdings within the park. The Service will authorise continued access along these access routes, subject to appropriate conditions which recognise the adjacent land use. The Service proposes to dedicate all access routes within identified wilderness when the opportunity arises (ie when no longer required for access to inholdings).

The following policies and actions relate specifically to wilderness declaration and assessment. Provisions relevant to the protection of wilderness nature conservation values are given in sections 4.1.1 to 4.1.5 (Natural Heritage), 4.2.2 (Historic Heritage) and 4.3.1 to 4.3.12 (Use of the Park). These provisions may also act to protect wilderness recreation values. Provisions aimed specifically at protecting the recreation values of wilderness are given in sections 4.3.2 to 4.3.9 (see Table 4 for general management principles).

The issue of aircraft flying over the park and wilderness in particular, has been a matter for discussion and negotiation over recent years, resulting in the formalisation of a “Fly Neighbourly” agreement to minimise the impacts of aircraft on the park and its visitors. The agreement takes into account the Kanangra-Boyd Wilderness and needs to be reviewed following the recent declaration of Wollemi and Grose Wilderness areas.

Policies

- * Any declared wilderness will be managed in accordance with section 9 of the *Wilderness Act 1987*, to:



- restore (where applicable) and protect the unmodified state of the area and its plant and animal communities;
 - preserve the capacity of the area to evolve in the absence of significant human interference; and
 - permit opportunities for solitude and appropriate self-reliant recreation.
- * Priority for assessment as wild rivers will be given to those sections of the:
- Grose River;
 - Coxs River;
 - Erskine Creek;
 - Wollangambe River;
 - Bungleboori Creek
- and their tributaries which are within the park. Any declared wild rivers will be managed so as to protect their water catchment values and their wild river values (see also section 4.1.2 Catchment Management).
- * Roads within the Grose wilderness area which are currently open to the public will be closed to the public. These will be maintained as management trails where they are essential for wilderness management purposes.
- * Access corridors to inholdings through wilderness are excluded from the wilderness. These corridors will be managed as wilderness in all respects other than permitting authorised vehicle or horse access for owners of the inholdings in accordance with a formal agreement with the Service
- * Temporary tracks and trails created for management purposes (eg wildfire suppression) within wilderness will be immediately rehabilitated in accordance with sections 4.1.1 and 4.1.5 of this plan.
- * Recreational use of wilderness will be restricted to those activities which are essentially self-reliant and of minimal impact. Recreation use of that section of wilderness within the Schedule 1 area of the Warragamba Special Area is not permitted except for walking along a single corridor between Medlow Bath and Beloon Pass and McMahons Lookout.
- * Where permitted under the *National Parks and Wildlife Act*, commercial recreational activities within wilderness will only be approved where they are essentially self-reliant, of minimal impact, consistent with existing recreational use patterns and do not otherwise compromise wilderness qualities (see also section 4.3.9 Commercial Recreation)..
- * Structures will not be permitted within the wilderness unless for essential wilderness management or water quality management purposes and will be removed provided they are not of cultural significance.
- * Within wilderness, management priority will be given to park protection and species conservation programs.

- * Public awareness of the values and of appropriate use of wilderness and wild rivers within the park, including minimal impact practices, will be promoted.
- * The Service will continue to acquire freehold properties within wilderness based on acquisition priorities, the Service reaching agreement with the landowner and as funds become available.
- * The Service will condition any approvals issued for activities within wilderness to minimise impact and user conflicts.
- * Vehicular trails in or through wilderness will be closed and rehabilitated except where required for essential management purposes or where required for access to private property, subject to the policies below.
- * The co-operation of authors of track notes and other publications referring to the wilderness will be sought to ensure impacts on the wilderness are minimised and relevant restrictions are noted.
- * The use of seeing-eye dogs and hearing dogs for disabled persons within wilderness will be permitted only under special circumstances with the prior approval of the NPWS Regional Manager (and of the Sydney Catchment Authority within the Special Area).
- * Vehicular and horse access along defined access routes within the wilderness will only be provided under the following circumstances and will be subject to the prior consent of the NPWS Regional Manager (and of the Sydney Catchment Authority within the Special Area):
 - Access to cultural sites (eg. Aboriginal grave sites) may be permitted under special circumstances and particularly where the activity can be linked to essential management requirements;
 - Access may be permitted for emergency management purposes such as wildfire suppression and search and rescue operations;
 - Access may be provided for the undertaking of essential management programs aimed at protecting the wilderness condition (eg. wildlife management or pest species control programs, infrastructure maintenance, prescribed burning programs) or for protecting and conserving important cultural sites; and
 - Access will be permitted to private property within the wilderness where no reasonable alternative exists, where the environmental impact of use is acceptable, where the proposed use is consistent with past use patterns and where the access route is also required for essential park management purposes.
- * After consultation with relevant interest groups, access to the whole or part of any declared wilderness area may be temporarily restricted if visitor use is causing environmental impact in conflict with the preservation of ecological integrity of the wilderness area.

- * The Service will seek the continued co-operation of the flight industry, the Civil Aviation Authority and the Department of Defence to minimise the impacts of aircraft use over declared wilderness areas.

Actions

- * As part of the negotiation of a joint management arrangement for the Warragamba Special Area, the Service will liaise with Sydney Catchment Authority to minimise the impact of its catchment management facilities and operations on wilderness qualities. Particular attention will be given to options for minimising the impact of using and maintaining the Scotts Main Range Trail access route and the operation of the Kowmung River gauging station and other gauging stations in the Kanangra-Boyd Wilderness.
- * The Service will recommend the declaration of any wild river within the park.
- * A brochure will be prepared which identifies declared wilderness and which contains a minimal impact code of conduct for recreational activities within wilderness. The information will seek to encourage visitors to use fuel stoves and to remove all waste.
- * Interpretive signposting will be installed at appropriate access points to wilderness areas to provide information on wilderness values and minimal impact camping.
- * Access consents will be negotiated and finalised for all inholdings within wilderness areas.

4.2 CONSERVATION OF CULTURAL HERITAGE

Under the *National Parks and Wildlife Act 1974* and the *Heritage Act 1977*, the Service is required to have regard to the preservation of historic places and Aboriginal sites within national parks. The Service is guided by the provisions of the Australian ICOMOS Charter for the conservation of places of cultural significance (the Burra Charter, ICOMOS 1988) and the views of local communities who have an ongoing and active interest in management of cultural heritage within the park.

Culturally important places, sites and objects of both Aboriginal and non-Aboriginal origin occur throughout the park and provide a record of human activities related to the natural features of the park. These features may be affected by the impacts of recreational activities, fire regimes, research, introduced species and management operations, as well as by natural deterioration resulting from erosion and regeneration. Cultural sites are often deteriorating and non-renewable and require effective management to ensure their conservation. In some cases the protection of cultural heritage may be inconsistent with the protection of natural heritage.

4.2.1 Aboriginal Heritage

Archaeological research indicates that Aboriginal people occupied parts of the Blue Mountains for at least 14,000 years, including during the last glacial period. The Blue Mountains area was occupied mainly by three language groups: the Darruk in the northern and central mountains, the Gundangarra in the southern area and the Wiradjuri of the south western slopes. Their use of the area has left rich and varied evidence, including archaeological deposits in both open sites and rock shelters, engravings, rock paintings and stencils, grinding grooves, stone arrangements and other features. Many natural features throughout the park are likely to be sites of mythological or historical significance to Aboriginal people. Ethnographic records of traditional living in the area are very poor. This increases the importance of the remaining material evidence.

Although Aboriginal people no longer reside in the park, traditional connections and strong affiliations exist which are reflected in the importance of the remaining sites and places to Aboriginal people. A number of Aboriginal groups and individuals maintain an active interest in use and management of sites and places in the park.

Although only a small proportion of the park has been surveyed for Aboriginal sites, more than 700 sites have been recorded in the Service's Aboriginal Sites Register. Many more sites are likely to be found after systematic surveys are undertaken. Undisturbed sites are of particular scientific importance in contributing to an understanding of Aboriginal use of the area.

The central/lower Blue Mountains area is significant for its complexes of rock engravings, stone arrangements and rock shelters with art. Significant concentrations of sites have also been recorded in the upper Blue Mountains, where swamps may have been of particular importance in providing food resources. Together with sites recorded elsewhere on the Sydney sandstone plateaux, these sites are important in building a more detailed picture of all aspects of the regional Aboriginal culture prior to European settlement.

Only a very small number of Aboriginal sites in the park are available and signposted for public use and understanding, but many other sites may also receive regular visitors. Sites currently interpreted to the public via signposting and/or guided tours include Red Hands Cave, Campfire Creek, Kings Tableland, Lyre Bird Dell and Asgard Swamp. Part of the Kings Tableland site is outside the park and site planning and works to date have been undertaken in consultation with Blue Mountains City Council as well as the Aboriginal community.

There is increasing demand for access to and interpretation of Aboriginal sites and places for tourism and educational use. The proximity of the park to expanding urban development places additional pressures on readily accessible sites. These sites require active management to ensure their conservation and to protect them from adverse effects of use. It is essential that all sites are managed in co-operation with Aboriginal communities.

Policies

- * Aboriginal sites will be preserved through the mitigation of impacts, the modification of management programs with potential to adversely affect sites and, where necessary, the implementation of site specific conservation programs.
- * The Service will seek to involve the Aboriginal community in the management and interpretation of the park's Aboriginal heritage, including significance assessment, conservation planning, protection, interpretation and promotion.
- * The park will be progressively surveyed to locate and record Aboriginal sites as resources permit, with priority to areas most threatened with human impact or natural deterioration.
- * Aboriginal sites and places will be assessed on a priority basis to determine their significance, condition, threats to their conservation and assess management options, including suitability for interpretation.
- * Conservation policies will be prepared and implemented for significant sites and places under threat with priority to those at greatest risk and of greatest Aboriginal, cultural or scientific importance.
- * Following assessment and Aboriginal community consultation, a limited selection of readily accessible sites will be interpreted to the public in a culturally sensitive manner consistent with their conservation.
- * Consideration will be given to aesthetics and the suitability of materials in designing any site protection works.
- * Management activities with the potential to damage Aboriginal sites and places will be preceded by site survey, Aboriginal community consultation and heritage impact assessment. Works will be modified or relocated to protect sites and places of cultural significance.
- * Research activities which are supported by the Aboriginal community and which are compatible with conservation objectives for specific sites and culturally important places will be encouraged. Priority will be given to research which will provide the basis for an ability to predict site occurrence throughout the park.
- * Sites and places open to public access will be monitored and appropriate protection works implemented where necessary.

Actions

- * An Aboriginal Heritage Management Group will be established to facilitate Aboriginal participation in Aboriginal site and place management. Priority tasks will include:
 - identifying priorities for site surveys and research;

- identifying priorities for site conservation and protection works; and
 - preparing guidelines for the promotion and interpretation of Aboriginal sites and places.
- * Conservation policies will be prepared or updated and implemented for Burralow, Red Hands Cave, Kings Tableland, Lyre Bird Dell and Asgard Swamp Aboriginal sites.
 - * The Service will continue to liaise with adjoining landholders in the vicinity of Kings Tableland Aboriginal site, as well as the Aboriginal community, to assist in conservation and interpretation of this important cultural precinct.
 - * Information on the importance of Aboriginal sites and places will be made available to the public through visitor information programs, including guided tours, brochures, on-site displays and/or teachers guides.
 - * The park's Aboriginal sites register will be updated and data incorporated into geographic information systems for park planning in collaboration with the local Aboriginal community.

4.2.2 Historic Heritage

An historic place is a location, usually older than about 25 years which has association with or features resulting from significant post-1788 occupation or use. The park contains much physical evidence of past land use over a period of more than 150 years, with varying degrees of historic significance.

The Blue Mountains has a unique place in the history of settlement of Australia, with Europeans first attempting to enter the Blue Mountains soon after the establishment of a penal colony at Sydney Cove in 1788. The rugged terrain was a significant barrier to expansion of the colony until a crossing of the mountains was achieved in 1813. Environmental modification began soon afterwards and the known range of historic places in what is now Blue Mountains National Park represents various historic categories or themes including exploration, settlement, pastoralism and agriculture, mining, transport, water supply, conservation and recreation.

The park has not been systematically surveyed for historic places, but a number of places of considerable historic significance are known and others mentioned in the literature are yet to be found. There are currently 62 historic complexes recorded on the Service's Historic Sites Register including buildings, mines, quarries, locations, structures, roads and tracks.

The Grose Valley and Blue Gum Forest, in particular, is historically important for its association with development of the early conservation movement in Australia (see section 2.2.1). The Jamison and Grose Valleys are significant for their long association with tourism and recreation. Many of the lookouts and walking tracks in the upper Blue Mountains were constructed in the late 1800s and early this century as part of a strategy to cater for the growing tourism industry.

Govetts Leap and Wentworth Falls became popular scenic lookouts after the opening of the railway stations at Blackheath and Weatherboard (Wentworth Falls) in 1867, long before Echo Point at Katoomba became the focal point and symbol of the Blue Mountains. Lookouts and tracks were established in the Govetts Leap area during the 1880s and by 1899 a track had been completed to the base of the cliff at Govetts Leap. Construction of some of the earliest walking tracks into the Jamison Valley began in the 1890s, e.g. Fern Bower Track to Leura Forest and Federal Pass below the cliff between Leura and Katoomba. Track maintenance provided a significant source of employment during the Depression of the 1930s as well as during more recent times. Retention of the historic values of these extensive track systems and associated facilities, while providing for visitor safety, is an important management consideration. To this end a heritage assessment and development of conservation guidelines for the walking tracks in the park were undertaken in 1998 which identified several items of state heritage significance (Smith 1998; Musecape & Beaver 1998).

Concentrations of historic features are also found in the Jamison and Grose valleys associated with coal and shale mining from as early as the 1860s, for example at Narrow Neck and Ruined Castle, Asgard Swamp and Blair Athol. Relics associated with mining for precious metals and stones occur in the southern Blue Mountains at Ruby Creek and Yerranderie.

The Yerranderie area is important for its concentration of historic features associated with silver and gold mining from the 1890s through to the 1920s. Much of the historic village and associated evidence of mining activities are located outside the park on private property and Sydney Catchment Authority freehold lands, however there are sites recorded within the park and the adjoining Yerranderie State Recreation Area. The Service works co-operatively with other stakeholders on management of this historic precinct through the Yerranderie Management Committee.

Agriculture was well established in suitable fertile locations of the Blue Mountains by the middle of last century. The area now known as Euroka clearing was purchased by Chief Justice Forbes in 1835 and prize-winning wheat was being grown there by the 1870s. Burralow Creek was settled in the middle of last century and is believed to be the first site in Australia where rice was grown. A number of historic features are associated with this site, including a convict pit which was reputedly used to house prisoners overnight. These relatively fertile areas were also associated with Aboriginal use and a number of Aboriginal sites have been recorded in their vicinity.

Historic places have value for research, education and site interpretation and some are significant visitor attractions. Some are potentially unsafe for visitors and all have impacts on other park values to a greater or lesser extent. Prior uses and management have left a legacy of a number of structures, features and disturbed areas which are now of no management value and of little cultural or recreational significance.

Policies

- * Historic heritage within the park will be managed in accordance with the provisions of the Burra Charter (ICOMOS 1988).
- * Historic places, including historic park infrastructure and cultural landscape elements, will be protected from natural threatening processes, where possible, and from impacts arising from management and use of the park until their significance has been established and long term conservation policies have been developed to guide management.
- * Research into the history of the park and surveys to locate and record historic places will be undertaken as resources permit, with priority to areas threatened with human impact, development or natural deterioration.
- * Historic places will be assessed on a priority basis as resources permit to determine their significance, condition, impact on other park values, threats to their conservation and suitability for interpretation or other use.
- * Conservation policies will be developed and implemented for significant places under threat based on the above assessment. Management options will include passive management and periodic monitoring, stabilisation, adaptation, restoration, interpretation or other use, or recording and removal.
- * Natural decay will generally be preferred to removal, except where there is no effective alternative for reasons of public safety or environmental impact.
- * Management activities with the potential to damage historic places will be preceded by site survey and heritage impact assessment. Works will be modified or relocated to protect sites of cultural significance.
- * A limited number of representative and readily accessible historic places will be interpreted to the public, in a manner consistent with their long term conservation.
- * For sites within the Warragamba Special Area, protection of water quality will take precedence over historic heritage protection where necessary, and preparation and implementation of conservation plans will be undertaken in consultation with the Sydney Catchment Authority.

Actions

- * A heritage study of the major visitor facility complexes in the park will be undertaken. The study will identify and document historic values and develop conservation policies to guide maintenance and interpretation of historic visitor facilities.
- * A monitoring program will be developed and implemented for significant historic places and cultural landscapes.

- * The Service will continue its involvement in the Yerranderie Management Committee to encourage protection and appropriate use and interpretation of the Yerranderie precinct.
- * Conservation plans will be developed and implemented for the Asgard Swamp, Blair Athol, Narrow Neck, Ruined Castle, Ruby Creek and Silver Peak historic mines and the Burrell Creek precinct.
- * Information on the historic cultural values of the park will be included, where relevant, in interpretive signposting, park brochures and literature and in visitor information programs.
- * The Blue Mountains National Park places register will be progressively updated and data incorporated into park planning geographic information systems.

4.3 USE OF THE PARK

The major categories of use that are appropriate in national parks are:

- education, interpretation and promotion of the area, the Service and the conservation of natural and cultural heritage;
- recreation in a natural setting;
- scientific research; and
- management operations by the Service and other authorities with statutory responsibilities in the area.

The extent to which these categories of use will be provided for in Blue Mountains National Park is indicated in the following sections of the plan.

4.3.1 Education, Interpretation and Promotion of the Park

Blue Mountains National Park plays a key role in the provision of nature-based tourism and recreation opportunities at local, regional, national and international levels (see section 4.3.2 Recreation Opportunities). The park also provides unique opportunities for environmental education, based on its regional setting as part of the largest natural area in eastern New South Wales, its proximity to urban areas and educational institutions and its extensive visitor facilities. Adoption of the “City within a World Heritage National Park” theme for the City of Blue Mountains highlights the importance of working with tourism organisations, local educational institutions and the broader community. The Service needs to raise the awareness of park management issues, promote park management programs and effectively manage the increasing pressures of local, regional, interstate and international tourism and recreation use. There is a need for the Service to maintain and improve its involvement and influence in the Blue Mountains tourism industry. It is also important that the tourism industry is aware of the Service’s primary objective which is to protect and preserve natural and cultural features.

Under the World Heritage Convention the Commonwealth is committed to ensure the identification, protection, conservation and presentation of World Heritage properties.

The provision of high quality visitor information is essential to enhance visitor experiences and public safety while ensuring protection of the park's outstanding natural and cultural heritage. The Service liaises closely with local and state tourism organisations to achieve these ends. Provision of information for park visitors is focussed largely on the high visitation areas along the Great Western Highway. Information brochures, guidebooks and signposting are being systematically upgraded in co-operation with Blue Mountains Tourism Authority and other organisations.

There are visitor information centres within the park at Blackheath and at Glenbrook. Currently the Glenbrook centre is closed due to a low level of use and resource limitations. This situation will be kept under review. Visitor information is also disseminated at Service offices at Richmond, Hartley and Oberon, at the Conservation Hut at Valley of the Waters, Wentworth Falls and at various other tourist information centres and tourist facilities outside the park, particularly the information centres managed by the Blue Mountains Tourism Authority at Glenbrook and Echo Point, Katoomba. The existing Heritage Centre at Govetts Leap, Blackheath is inadequate to fulfil its multiple uses as a visitor information centre and NPWS office. A number of options are being investigated to provide better facilities for both visitors and Service staff.

Tourism master plans and strategies have identified a need for a tourism driving loop for the Blue Mountains area. The "Grand Circular Tourist Drive" has been developed, together with better infrastructure and signage along the route. Hawkesbury Council and Service staff have also identified a need for a shared visitor information centre on Bells Line of Road near Bilpin to complement the visitor centres on the Great Western Highway section of the Grand Circular Tourist Drive. A potential site within Wollemi National Park has been identified but construction will be subject to cost-benefit and environmental impact analyses.

It has been suggested that this centre would not only be an important component of the Grand Circular Tourist Drive, but would provide a base for eco-tourism and environmental education activities in the northern Blue Mountains area and form a base for park operations in the northern Blue Mountains, Gardens of Stone and southern Wollemi National Park areas.

Policies

- Park information services and interpretive programs and facilities will be maintained or improved with the following specific objectives:
 - to work with the Commonwealth to identify, protect, conserve and present World Heritage values
 - to improve the range and accessibility of information and interpretive services available to park visitors;
 - to raise the Service's profile in the provision of information to park visitors, particularly tourists;

- to improve revenue-generating opportunities in order to provide improved park management programs; and
 - to protect the scenic qualities of the park, its natural features and its settings, and to minimise impacts on these values.
- * The Service will promote the following major themes within the park:
- the Blue Mountains World Heritage values
 - the importance of the Blue Mountains dissected sandstone system of parks and reserves for biodiversity conservation;
 - catchment management issues and the impact of off-park activities on the park;
 - the “City within a World Heritage National Park” theme, in co-operation with Blue Mountains City Council;
 - wilderness values and a wilderness code of conduct;
 - appropriate use of the park, particularly bushwalking and touring opportunities, and minimal impact codes or practices for potentially high impact activities including cycling, horse riding, adventure activities and vehicle touring;
 - the history of early settlement and use of the park area, particularly historic features associated with the long history of tourism, recreation and conservation in the Blue Mountains; and
 - the prehistory of the Blue Mountains, the importance of Aboriginal sites and their value to contemporary Aboriginal communities and the wider community.
- * Interpretive material and visitor services at Glenbrook will be kept under constant review so as to respond to changing visitor demand and management needs of the area. Co-operative ventures with the Blue Mountains Tourism Authority in the area will also be continued.
- * No new visitor centres or similar tourist developments will be permitted in the park other than the upgrading, if necessary, of existing visitor information centres servicing the Govetts Leap, Valley of the Waters and Glenbrook precincts. Any major changes will require an amendment to this plan.
- * The information and interpretation functions of the Conservation Hut will be enhanced in conjunction with the lessee.
- * Park interpretive programs will particularly target park neighbours, local communities, high impact recreationists and visitors to vulnerable or sensitive sites. A more comprehensive range of information brochures will be investigated, including brochures on driving opportunities, cycling tracks and horse riding.
- * The Service will actively participate in local and regional tourism organisations, economic development organisations and the Department of Tourism in the development and implementation of regional tourism strategies, to ensure that natural and cultural values are not compromised by tourism within the park.
- * The Service will liaise with other organisations which provide information to park visitors to ensure all information is consistent, up-to-date and promotes appropriate visitor expectations and behaviour.

- * Information signs at trackheads and other visitor focal points will continue to be used as an important means of presenting park and safety information to visitors.

Actions

- * Work with other government agencies to plan and implement the presentation of World Heritage values
- * In conjunction with regional tourism and development organisations, other government agencies and local councils, the Service will investigate a range of options for provision of an improved national park visitor centre, either on or off park, in the upper Blue Mountains area. Details of these options will be made available for public comment prior to implementation.
- * The Service will co-operate with the Roads and Traffic Authority, relevant local councils, tourism and other organisations to maintain a scenic circuit drive along the Great Western Highway, Darling Causeway and Bells Line of Road, with appropriate signposting, roadside viewing points over the park and an associated interpretive brochure/booklet. The needs of tourist coaches will be considered in the planning and design of roadside viewing points.
- * The Service will contribute to the development of the Blue Mountains Tourism Strategy in conjunction with other relevant organisations.
- * The Service will continue to develop its *Discovery* interpretive program, including investigation of options for improving the quality, quantity and geographic spread of activities offered. The emphasis will continue to be on environmental interpretation and education and away from hard adventure.
- * The Service will encourage relevant authors and publishers to liaise with NPWS staff regarding information on the park and will encourage the promotion of minimal impact recreational use in publications.
- * The Service will progressively incorporate or update information on minimal impact recreational use of the park in all relevant Service park publications, at visitor centres and on park interpretive/information displays.
- * A Neighbour Relations Strategy will be developed to raise awareness about the park's significant natural and cultural values, inform park neighbours about park management programs and encourage appropriate behaviour to minimise impacts on the park. Within the City of Blue Mountains, "neighbours" will include the whole community.
- * The Service will investigate options for the construction of a visitor centre on Bells Line of Road at Bilpin in conjunction with local councils, local economic development boards and tourism organisations (NPWS, 1997b also refers).
- * The preparation of a Blue Mountains tourist information pack as a saleable item will

be investigated. This would include walking track leaflets, driving opportunities, camping and other park information, and be marketed to regional guest houses and hotels as well as private homes, with expansion to a Sydney market if successful.

- * The NPWS walking track design standards and the Blue Mountains Walking Track Strategy will provide the basis for a standardised park information sign system, which will be progressively implemented as signs need replacing or as the need for signs arises. Multi-lingual signs will be included consistent with projected increases in international visitors.

4.3.2 Recreation Opportunities

Blue Mountains National Park is a popular destination for tourism and outdoor recreation because of its proximity to Sydney and the townships of the Blue Mountains as well as its outstanding natural features. Although there is no systematic monitoring of visitor numbers for the park as a whole, records from the Bureau of Tourism Research, national park visitor centres and camping permits indicate that about three million visitors a year use the park, making it one of the most popular national parks in Australia. The park is particularly well known for its scenic lookouts, walking tracks and opportunities for wilderness recreation and adventure activities.

Use by domestic and international tourists is largely day use concentrated on the scenic escarpment areas of the Jamison and Grose valleys, from Wentworth Falls to Katoomba and at Blackheath, although other relatively easily accessible areas are popular for adventure ecotourism (see section 4.3.8 Guided Tours and Commercial Recreation). The Glenbrook precinct is also popular with commercial ecotourism operators and overseas visitors because of its ease of access and highly visible wildlife populations. Facilities for tourism in the park are focussed on the park's natural environment, e.g. scenic lookouts and associated walking tracks, complementing the more developed tourism opportunities and facilities in the adjoining Blue Mountains City area. Resorts, caravan parks and other forms of built accommodation are available in Blue Mountains City and are therefore not appropriate in the park.

Major park management considerations for tourism include provision of high quality information on the park's natural and cultural features and visitor facilities, as well as maintenance of quality visitor facilities which are accessible to tourist vehicles and provide appropriate levels of public safety. With tourism in the Blue Mountains region projected to increase strongly over the next five years, the need to minimise the impacts of tourism on the natural environment is a growing concern. There is a need to liaise closely with local councils and tourism organisations to achieve conservation objectives whilst providing for visitor use (see section 4.3.1 Promotion and Interpretation of the Park).

Recreation use of the park includes a wide range of activities and is distributed throughout the park, with visitor numbers varying considerably depending on the proximity to major public access roads and public transport and the distance from major population centres, as well as the location of natural attractions such as canyons. Use is distributed throughout the year, with peaks during school holiday periods and long weekends. The Glenbrook section of the park, closest to Sydney, attracts at least 250,000 visitors per annum. Approximately 450,000 people visit the major lookouts over the Grose Valley at Blackheath and more than two million people visit the major lookouts along the Jamison Valley escarpment.

The park is under increasing pressure from the growing number of park visitors, with some popular bushwalking and camping areas such as the Grose Valley, Wollangambe area, the Wild Dog Mountains, Burralow Creek, Erskine Creek, Glenbrook Creek, Ingar and Murphys Glen showing signs of unacceptable environmental impacts. Adventure activities such as canyoning, abseiling and rockclimbing have increased dramatically in

popularity, with visitation to one popular canyon having doubled over a two year period. These activities are associated with a proliferation of informal foot tracks which are eroding with increasing use. Vegetation is being denuded at popular abseiling and/or rockclimbing access points and public safety is an issue at some sites, particularly where there is conflict with other users (see section 4.3.8 Adventure Recreation). Cycling is also an increasingly popular activity within the park (see section 4.3.7 Cycling).

Major management considerations include the need to raise awareness of visitor impacts, to monitor visitor use and, where necessary, to regulate visitor numbers to protect the park environment, ensure visitor safety and maintain recreation experiences appropriate to a natural or wilderness setting. Fees for recreational use of the park will be structured to be consistent with Service's state-wide park-use fees.

Regulation of large groups, commercial activities and adventure activities needs to be considered in relation to both environmental impacts and public safety. Use of the park by larger groups has the greatest potential to impact on the park. User conflicts, risks of accidents and injuries and impacts on natural and cultural heritage values all rise in proportion to the size of the group.

The existing facilities have been developed over a period of more than a hundred years and are not necessarily compatible with existing design, safety and maintenance standards, may be having an unacceptable environmental impact and/or are inadequate to satisfy existing or projected recreation and tourism demand and patterns of use. A major review of existing facilities is required and clearer priorities for maintenance and upgrading of facilities or removal need to be developed to ensure that conservation and recreation objectives can both be met in a management environment of limited resources. Some facilities may need to be temporarily or permanently closed or maintained to a reduced standard.

To assist in the development of management guidelines which will ensure conservation of the park's natural and cultural heritage while providing for appropriate recreation, four recreation settings have been defined for the park.

A general description of the recreation use and management emphasis for each setting is outlined in Table 4. More detailed management policies and actions are outlined in the sections below relating to specific recreation precincts and activities.

Developed Areas: This setting includes the clifftop and escarpment areas of the Jamison Valley from Wentworth Falls to the vicinity of Echo Point, Katoomba, the Govetts Leap and Evans Lookout precincts at Blackheath and the Glenbrook/Euroka area (see park map). There is a large number of recreation facilities in these areas including an extensive system of roadside lookouts and signposted walking tracks, as well as a limited number of vehicle-based picnic and camping facilities. These facilities generally have a very high maintenance requirement because of the large number of visitors, the nature of the sandstone terrain and/or the age of many of the facilities, particularly the walking tracks.

Natural areas: This setting includes all areas of the park which are not defined as developed areas, wilderness areas or restricted areas. Recreation tends to be more dispersed and any facilities provided are relatively low-key compared to the developed areas, catering for a lower level of use. Public vehicle access is provided to a number of sites.

Wilderness areas: This setting includes all areas declared as wilderness within Blue Mountains National Park (see park map). This setting provides opportunities for solitude and self-reliant recreation. Public vehicle access is provided to a number of sites at the boundary of this setting, but not within it.

Restricted area: This setting includes the land within three kilometres of the full storage level of Lake Burragorang which is defined as the Schedule One Water Quality Protection Zone in the *Sydney Water Catchment Management Act 1998*. Special conditions apply to this area. Public access to the area within Blue Mountains National Park is limited to foot access via the Mount Cookem corridor and vehicle access to McMahons Lookout (see park map). These access restrictions are currently being reviewed by the Sydney Catchment Authority and the Service will be liaising with the Authority regarding future recreation access restrictions. (see section 4.3.5 Walking Tracks and Bushwalking).

TABLE 4 GENERAL PRINCIPLES FOR MANAGEMENT OF RECREATION SETTINGS IN BLUE MOUNTAINS NATIONAL PARK

	RESTRICTED	WILDERNESS	NATURAL	DEVELOPED
Location of Area (see park map)	SCA Schedule One water quality protection zone, i.e. land within 3km of full supply level of Lake Burragorang.	Areas declared as Wilderness which are not Restricted.	Remainder of the park which is not Restricted, Wilderness or Developed.	Glenbrook precinct, Jamison Valley escarpment between Wentworth Falls & Katoomba and upper Grose Valley escarpment near Blackheath.
Visitor Density	Generally nil; low density on authorised access corridors.	Small number of brief contacts between predominantly small groups.	Larger number of contacts with a greater variety of groups than in wilderness, predominantly at facility locations. A sense of remoteness still predominates in bulk of the area.	Generally a large number of groups and more prolonged contact with other park visitors; large groups more common than in other settings.
Type of Recreation (see sections 4.3.4 to 4.3.8)	Limited bushwalking via defined corridors. No camping, horseriding, cycling or motorised recreation.	Self-reliant activities. No motorised recreation, horse riding or cycling in accordance with Service policy and Sydney Catchment Authority Regulations.	A range of activities, mostly self-reliant. Some facility orientated activities at single, widely dispersed locations, e.g. camping, horse riding on designated trails, picnicking, bushwalking on tracks, cycling on roads & management trails.	Tourism and recreation activities mainly oriented towards facilities with vehicular access; less emphasis on natural qualities although still important, e.g. vehicle-based camping & picnicking, scenic viewing, walking on constructed tracks.

Public Vehicle Access (see s. 4.3.3)	Restricted to McMahons Lookout Road	Public vehicle access to some points on the boundary of these areas only. No motorised boat access.	Vehicle access of varying standards; generally unsealed 2WD and some good 4WD. Public access roads to some facilities.	Generally sealed roads or good 2WD unsealed roads leading to a variety of facilities. Maintained at a higher standard for high levels of use.
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TABLE 4: Continued.

	RESTRICTED	WILDERNESS	NATURAL	DEVELOPED
Visitor Facilities (see sections 4.3.4 & 4.3.5)	Day use facilities at McMahons Lookout only. No other facilities permitted.	No visitor facilities. Primitive camping only. Walking routes may be signposted outside the area. In accordance with Service policy, facilities permitted only where essential for protection of natural or cultural resources and no alternative management options are feasible.	Walk-in camping areas and low-key vehicle-based camping areas, some lookouts and picnic areas, walking tracks. Facilities may be suitable for disabled use at some locations. Existing facilities and uses maintained in proposed wilderness areas until decision made re declaration (see section 4.1.6).	Vehicle-based camping areas, picnic areas, visitor centres, lookouts, walking tracks; in a more concentrated pattern than in the Natural area. Designed to a more sophisticated standard for a higher level of use than in the Natural area, including disabled use. Greater emphasis on high quality interpretation and signposting.
Location of Area (see park map)	SCA Schedule One water quality protection zone, i.e. land within 3km of full supply level of Lake Burragorang.	Areas declared as Wilderness which are not Restricted.	Remainder of the park which is not Restricted, Wilderness or Developed.	Glenbrook precinct, Jamison Valley escarpment between Wentworth Falls & Katoomba and upper Grose Valley escarpment near Blackheath.
Visitor Regulation (see sections 4.3.2 to 4.3.9)	Information off-site, supplemented by signs, barriers, etc. where required; on-site enforcement of Sydney Catchment Authority regulations.	Information and signposting outside the area. Promotion of code of ethics for wilderness use. Limits on numbers where required to maintain wilderness qualities and no alternative options feasible. Limited on-site enforcement of regulations.	Signs, barriers, etc. where required. Periodic management presence associated with facilities. Elsewhere minimal on-site regulation. Permit systems and/or activity restrictions only where required to minimise impacts and no alternative options feasible.	Obvious on-site regulation including signs, barriers, etc. Greater emphasis on infrastructure to protect public safety. Camping permits to manage high use levels. Restrictions on certain activities where required to minimise visitor conflicts & impacts & protect public safety. Regular management presence in peak periods.
Mgt Access (see s. 4.3.11)	Minimised; some management trails for catchment Management purposes. Aerial access.	Access by non-motorised means wherever practicable. Minimised aerial access for essential management operations. Limited management trails within Kanangra- Boyd wilderness for catchment management. Non-essential tracks rehabilitated.	Management access via public access roads and management trails. Minimised aerial access for essential management operations. Limited management trails to edge of proposed Wollemi wilderness; numerous tracks for essential management operations within proposed Grose	Management access mainly via public access roads. Some management trails. Minimised aerial access for essential management operations.

			wilderness.	
Other Mgt Facilities (see s. 4.3.11)	Sydney Catchment Authority catchment management facilities only.	Minimal facilities for catchment management. Non-essential facilities to be removed.	Some facilities for essential management purposes, e.g. Waratah residence and workshop, signs, gates and barriers.	Necessary facilities, predominantly associated with visitor facilities, e.g. Blackheath office and workshop, Glenbrook office and workshop.

Policies

- * Each recreation setting will be managed in accordance with the general principles outlined in Table 4 by providing the appropriate level of access and facilities for both recreation and management operations.
- * The Service will liaise with other organisations and individuals involved in the provision of tourism and recreation opportunities outside the park in order to promote complementary and compatible tourism and recreational development in the region and minimise impacts on the park.
- * Existing public facilities will be maintained or improved within the limits of available resources except where they are assessed as having an unacceptable impact on park resources, are poorly located, unsafe, unnecessary or inappropriate to the recreation setting.
- * Recreation facilities causing unacceptable environmental damage or unacceptable risk to public safety, may be temporarily closed for repairs or, following consultation with relevant interest groups where appropriate, permanently closed and rehabilitated.
- * Access for disabled persons will be provided where possible and appropriate to the site and recreation setting.
- * The Service will promote the use of public transport in reaching facilities, and assist such access through liaison, appropriate works, signposting, promotional literature and other programs.
- * Public safety will be promoted through the provision of targeted visitor information, on-site signposting, off-site promotional programs and/or appropriate structures, consistent with the recreation setting.
- * The Service will seek to minimise conflicts between visitor activities and impacts on the natural and cultural heritage of the park by regulating certain recreation activities where necessary, including restrictions on group size (see sections 4.3.3 Vehicle Access, 4.3.6 Horse Riding, 4.3.7 Cycling and 4.3.8 Adventure Recreation for specific provisions).
- * Recreation activities will be restricted within Sydney Catchment Authority Special Areas consistent with joint management arrangements (see sections 4.3.4 Day Use and Camping, 4.3.5 Walking Tracks and Bushwalking, 4.3.6 Horse Riding and 4.3.7 Cycling for specific provisions).
- * All visitors will be encouraged to minimise their impact on the park, particularly by removing their own garbage and using alternatives to wood fires, in conjunction with other minimal impact techniques. Garbage receptacles, recycling facilities and fireplaces may be provided at some very high use locations within the Developed setting.

- * Prior approval will be required from the Regional Manager for the following activities:
 - school and other educational group activities;
 - military training exercises;
 - organised instructional activities and all commercial recreational activities;
 - all competitive activities, including orienteering and rogaining; and
 - group activities in which more than 20 people camp overnight or venture more than 300m from a public access road.

Approval will be dependent upon the activity being consistent with existing recreational use patterns and of minimal impact. (See also s. 4.3.4 re prior approvals required in specific locations and sections 4.3.3 Vehicle Access, 4.3.6 Horse Riding, 4.3.7 Cycling and 4.3.8 Adventure Recreation re prior approvals for specific group activities).

- * Competitive activities including rogaining and orienteering will not be permitted in wilderness areas. Campsites and the start and finish of events will only be permitted on park where the impact on the environment and other visitors is minimal. Organisers will be required to monitor, assess and report on impacts. (See also section 4.3.9 Guided Tours and Commercial Recreation).
- * Group size will be limited to 8 people within the wilderness setting to ensure that environmental impacts are minimised and opportunities for solitude are not compromised. Approval may be given by the Regional Manager for larger parties in exceptional circumstances. This limit for wilderness areas may be revised if ongoing monitoring indicates that larger or smaller party sizes are acceptable or necessary to achieve wilderness management objectives.
- * Group size limits will be implemented initially via educational and promotional programs in consultation with relevant interest groups. A permit system may be developed in consultation with relevant interest groups if these programs are not effective.
- * Group size and group number limits for recreational activities will be kept under review and may be altered for certain areas or certain times following consultation with peak user groups and local clubs.

Actions

- * The Service will undertake a systematic review of all visitor facilities in the park to determine their environmental impact, maintenance requirements and costs, any hazards to public safety and the current and projected demand for those facilities. This review will be used to develop priorities for maintenance or upgrading and as the basis for allocation of resources.
- * After undertaking the above review, assessing the availability of alternative facilities and consulting with relevant interested parties, a limited number of facilities may be downgraded or closed (see section 4.3.4 for specific proposals).

- * A visitor use monitoring program will be established and maintained, in co-operation with relevant interest groups, with the following objectives:
 - to determine the pattern of recreation use in the park including locations, types of use, number of visitors and seasonal distribution of use;
 - to identify visitor needs; and
 - to identify and, where possible, quantify visitor impacts on the park's natural and cultural heritage and on other park visitors, to provide a more objective basis for future management of recreation in the park (see also section 4.3.5 Walking Tracks and Bushwalking).

- * The Service will consult with recreational user groups with a view to developing programs to minimise potential impacts of recreation activities on the park and on other visitors. Programs may include education, regulation, establishment of volunteer groups and/or consultative committees to assist in park management.

- * The Service will progressively implement a program for promotion of visitor safety through:
 - regular inspection and assessment of visitor facilities;
 - identification and adoption of appropriate visitor facility standards, particularly for walking tracks;
 - incident analysis and assessment of groups at risk; and
 - targeting of visitor safety information programs to groups at risk.

4.3.3 Vehicle Access

Roads within the park are generally maintained to allow access to facilities such as picnic and camping areas and walking tracks. They may also be used for vehicle touring and other specific recreation activities such as cycling or horseriding. Public vehicle access routes within the park include approximately 175 km of roads which are gazetted as part of the park and maintained by the Service, as well as a number of other roads excluded from the gazetted park which are maintained by other authorities, for example Bells Line of Road and most of the roads in the vicinity of the major lookouts on the Jamison Valley escarpment and the Oberon-Colong Stock Route. There are also approximately 275 km of vehicle trails maintained by the Service and/or other organisations for management operations, which are not available for public vehicle access (policies and actions in relation to management trails are outlined in section 4.3.11).

Because of the erodible nature of the park's sandstone environment and the associated high maintenance costs for the park's extensive public vehicle access routes, it is not possible to maintain all public access routes at a similar high standard. Roads in the Developed setting at Glenbrook, Wentworth Falls and Blackheath have a high priority for regular maintenance because of their high levels of use and their importance for tourism. Other roads in the Natural setting are maintained on a more infrequent basis, consistent with their levels of use and the nature of recreation use in this setting (see Table 4).

Policies

- * The following roads will be maintained as public access routes within the Developed setting of the park (see park map):
 - Glenbrook to The Oaks Picnic Area road;
 - Jellybean Pool access road;
 - Mount Portal road;
 - Euroka road;
 - Nepean Lookout road to the Erskine Creek trackhead and carpark;
 - Red Hands Cave road;
 - Sir Henry Burrell Drive (to Wentworth Falls picnic area);
 - Valley of the Waters picnic area access road;
 - Evans Lookout road;
 - Govetts Leap road.

- * Roads within the Developed setting will be maintained at a standard consistent with their relatively high level of use and their relative importance in providing access to park features of significance for tourism and recreation. Minimum design standards will generally aim at all weather two wheel drive, two lane, minimum width, low speed roads. If funds permit, roads may be sealed where required to minimise maintenance costs and environmental impacts and/or enhance public safety.

- * The following roads will be maintained for public access within the Natural setting (see park map):
 - eastern end of Murphys Trail (to Murphys Glen);
 - western end of Murphys Trail to the vicinity of Ingar access road;
 - Ingar road from Murphys Trail to the vicinity of Ingar picnic/camping area;
 - McMahons Lookout road (partly maintained by council);
 - Narrow Neck road (as far as the locked gate);
 - Grand Canyon road to Point Pilcher;
 - Braeside road (to the Braeside trackhead);
 - Hat Hill road;
 - Victoria Falls road;
 - Valley Ridges Road (to Waratah picnic area);
 - Oberon-Yerranderie road (maintained by local council);
 - Bats Camp access road;
 - Mount Werong Trail;
 - Limeburners road;
 - The Range Trail (Management Trail 13/Fatigue Trail).
 - Mount Hay Road;
 - Anvil Rock access road;
 - Pierces Pass Road;
 - Mount Banks Road from Bells Line of Road to the existing vehicle barrier at the picnic area;
 - Paterson Range Trail (includes the eastern and western access to Burrellow Creek).

- * The continued use of some of the above roads for public or management access will be reviewed.
- * Roads within the Natural setting will be classified and maintained at an identified standard consistent with their levels of use and their importance in providing access to park features of recreation or tourism significance. Minimum standards will aim at dry weather two wheel drive, two lane, minimum width, low speed road standard. Roads will generally be unsealed, except where sealing is required to minimise environmental impacts and there is no practical alternative.
- * No new public access roads will be provided or constructed during the life of this plan, except where relocation of an existing road is required for environmental or public safety reasons.
- * Part or all of the public vehicle access system may be closed by the Regional Manager during high fire danger periods, adverse weather conditions, roadworks or local emergencies. Public notice and liaison with user groups will occur wherever possible prior to such closure.
- * The maximum group size for vehicle touring within the park will be limited to 8 vehicles in total unless otherwise approved by the NPWS Regional Manager.

Actions

- * A regular review of public access roads will be established to ensure that their use is necessary for access to features of recreation or tourism significance and that they are managed within acceptable environmental and financial limits, user conflicts are minimised and appropriate levels of public safety are provided.
- * Public access roads which are no longer required or which cannot be maintained within acceptable environmental, financial and safety limits will be closed, following consultation with relevant interest groups, and incorporated into the management access system and promoted for non-vehicular use or will be allowed to revegetate.
- * In consultation with local councils, tourism organisations and the Roads and Traffic Authority, the Service will establish and maintain a formal mechanism to ensure that up-to-date and appropriate information on public access roads is made available to park visitors by other organisations and that warning signs are erected where necessary to promote visitor safety and minimise environmental impacts.

4.3.4 Day Use and Camping

The Service maintains numerous day use and camping areas in the Developed and Natural settings. A number of trackhead facilities are also recognised, where car parking is provided for access to other facilities such as walking tracks or lookouts. Low-key picnic/camping facilities may be provided in association with trackhead parking, but they are not intended to provide major recreation destinations in themselves.

An inventory of lookouts, picnic areas, camping areas and trackheads is shown in Table 5 in relation to its defined recreation setting.

Vehicle-based camping opportunities are limited within the park because of the rugged nature of the terrain, the highly erodible sandstone environment and the sensitive nature of many of the park's vegetation communities. The only major camping area is located in the Developed setting at Euroka in the lower Blue Mountains.

Vehicle-based day/camping areas in the Natural setting are currently provided at Burralow Creek in the lower Blue Mountains, Ingar and Murphys Glen in the mid-mountains, Perrys Lookdown in the upper Blue Mountains and Bats Camp in the southern Blue Mountains. Campsites at some of these locations are located a short distance from the car parking areas. Walk-in camping areas are provided at Acacia Flat and Burra Korain in the Grose Valley. Informal vehicle-based camping areas are in use in the southern Blue Mountains at Mount Werong and Limeburners Flat. The latter camping area is partly on freehold land on an inholding within the park. Informal pack camping occurs throughout the park in association with remote bushwalking, with some popular locations along major walking routes showing obvious signs of overuse.

The major day use areas in the Developed setting are located in the Glenbrook precinct, along the Jamison Valley escarpment from Wentworth Falls to Katoomba and the Grose Valley escarpment at Blackheath. Many of the tourist facilities along the Jamison Valley escarpment, such as lookouts, car parks and walking tracks, are located partly inside the park and partly outside the park and, where appropriate, the Service works co-operatively with the City of Blue Mountains in providing and maintaining facilities to cater for the high level of tourist visitation to this area.

Many of the day use and camping areas in the park are showing signs of environmental deterioration as a result of their low resilience, unregulated vehicle access, increasing levels of use and/or lack of adequate maintenance. Impacts include soil loss and compaction, loss of vegetative cover, lack of regeneration, proliferation of unsightly fire rings, damage to trees and denudation of firewood.

Some lookouts with vehicle access are also deteriorating as a result of unregulated use associated with particular recreation activities such as rock climbing and abseiling (see section 4.3.8 Adventure Recreation below). Improved management strategies are needed to minimise these impacts and options for cost recovery need to be investigated to provide additional funding for maintenance and improvements to facilities.

Fees for day-use and camping of the park are kept under constant review and are subject to government policy.

Policies

- * Facilities listed in Table 5 will be maintained at the standard appropriate for their defined recreation setting. Facilities at some sites may be removed or downgraded as a result of the asset review referred to in General Actions (above).

- * Existing facilities will be redeveloped or upgraded, consistent with their defined recreation setting, where this is necessary to limit their environmental impact, enhance their amenity or protect public safety. Facilities will be designed to provide for use by the disabled and aged where feasible. Site plans for any major redevelopments will be made available for public comment prior to implementation.
- * No new day use or camping areas will be provided during the life of this plan unless:
 - relocation of, or addition to, an existing facility is necessary to avoid or minimise environmental impact or improve visitor safety;
 - formalisation of areas in use at Mount Werong and Limeburners Flat is considered necessary (see Actions below).
- * More sophisticated, high impact accommodation facilities such as lodges, cabins and caravan parks will not be permitted in the park.
- * Unless otherwise approved by the Regional Manager, camping will be limited to a maximum period of one week at any site, both to protect the park's natural and cultural heritage and to provide more people with the opportunity to camp in the park. Similarly, camping will be limited to one night only at Perrys Lookdown.
- * Minimum impact camping techniques will be promoted in association with relevant interest groups.
- * "Fuel stove only" areas may be declared where wood fires are having an unacceptable environmental impact and/or pose a high fire risk. Areas currently declared include Glenbrook Creek, Kanuka Brook and Perrys Lookdown. A trial is proposed for Acacia Flat (see below).
- * To reduce conflict between different visitor groups, disperse recreation activity in the park and minimise visitor impacts, camping will be excluded from the following locations, except in designated camping areas:
 - at picnic areas and lookouts;
 - within 200m of any public access road, constructed walking track or other visitor facility;
 - within the area of the Grose Valley upstream of Rocky Points Creek and below the cliff line;
 - within 300 m of any limestone outcrops; and
 - on any site where damage to existing vegetation or other natural features could be caused.

Camping may be temporarily or permanently excluded from other locations where necessary to protect significant natural or cultural features, reduce visitor conflicts or protect public safety.

TABLE 5. VISITOR FACILITIES IN BLUE MOUNTAINS NATIONAL PARK (EXCLUDES FACILITIES MANAGED BY BLUE MOUNTAINS CITY COUNCIL)										
PRECINCT	LOCALITY	DEVELOPED SETTING				NATURAL SETTING				
		L.O.	PICNIC	CAMP	TRACK-HEAD	L.O.	PICNIC	CAMP	TRACK-HEAD	
Mulgoa area	The Rock					●V				
	Rileys Mountain					●W				
Glenbrook area	Jellybean Pool				●					
	Blue Pool				●					
	The Ironbarks		●V							
	Euroka		●V	●V						
	Tunnel View	●V								
	Mount Portal	●V								
	The Oaks		●V							
	Red Hands Cave				●					
	Pisgah Rock					●W				
	Machins Crater						●W		●	
	Erskine Creek					●W			●	
Mid Mountains (south of highway)	Nepean Lookout	●V								
	Tobys Glen						●W			
	Ingar						●V	●V		
	Murphys Glen						●V	●V		
Jamison Valley	McMahons Lookout					●V	●V			
	Wentworth Falls	●V/W	●V							
escarpment	Valley of the Waters	●V/W	●V		●					
Grose Valley (southern side)	Blue Gum Swamp						●W		●	
	Faulconbridge Point*					●W			●	
	The Pinnacles								●	
	Point Pilcher					●V	●V			
	Neates Glen				●					
	Evans LO Picnic Area		●V							
	Evans Lookout	●V	●V							
	Braeside						●W		●	
	Govetts Leap	●V/W	●V							
	Pulpit Rock	●W								
	Perrys Lookdown					●V	●V	●V		
	Anvil Rock					●V				
	Baltzers/Burramoko					●V				
	Victoria Falls					●V			●	
	Grose Valley (valley floor)	Acacia Flat							●W	
		Pierces Pass rd entry						●V		
	Grose Valley (Bells Line of Road access)	Walls Lookout					●W			
Pierces Pass 2							●V			
Rigby Hill						●W				
Banks Monument							●V			
Mt Banks Summit							●W			
Banks Wall						●W	●W			

Actions

- * The Service will review its system for the collection of park-use fees within the park, in line with government policy and in consultation where necessary with industry and peak user groups.
- * In consultation with peak user groups and the community, the Service will undertake a review of camping in the park and investigate options for reducing the associated

environmental impacts and for minimising uncontrolled increases in use levels. Particular attention will be given to reviewing opportunities for and impacts of vehicle-based camping in the mid and upper Blue Mountains. Management options currently under consideration include limits on the number of sites provided, rotation of sites, introduction of camping permits and self-registration points and collection of fees by contractors. A number of options may be trialed and evaluated at various locations.

- * Facilities will be provided as follows:

Mulgoa area

The Rock Lookout will be maintained as a low-key lookout with nearby vehicle access. A walking track to the nearby Rileys Mountain lookout will be maintained. Interpretive signposting will be provided consistent with the Natural setting.

Glenbrook area

Euroka: Day use and camping opportunities will continue to be maintained and improved at a standard consistent with the area's high level of use and its focus for ecotourism. Improvements to vehicle access to the site will be investigated and implemented to enhance visitor safety, minimise environmental impacts and reduce maintenance costs. Other improvements may include formalisation of car parking, provision of a picnic shelter and gas barbecues, fencing and revegetation of creek banks, provision of a pedestrian bridge across Euroka Creek and provision of improved toilet facilities. Shower and laundry facilities will not be provided. Rotation of campsites will be utilised where necessary to minimise impacts.

Tunnel View, Mount Portal and Nepean Lookouts: To be maintained as lookouts with nearby vehicle access. Improved and appropriate car parking will be made at all lookouts. Safety fencing and other works will be installed at Mount Portal to minimise visitor conflicts, enhance visitor safety and minimise environmental impacts. Interpretive and safety signposting will be provided consistent with the Developed setting. The road to Tunnel View will be closed at the Mount Portal junction. (See Section 4.3.8 Adventure Recreation for information regarding restrictions on certain recreation activities.)

The Oaks and Red Hands Cave: The existing day use facilities with vehicle access will be maintained.

The Ironbarks: The Oaks picnic area was developed as a replacement for this low-key picnic area. Toilet facilities at the Ironbarks will be removed because of their poor location, low level of use and the availability of similar facilities at nearby locations (ie The Oaks and Euroka). A car parking area will be maintained to cater for viewing of this uncommon ironbark vegetation community.

Jellybean Pool and Blue Pool: The existing trackhead facilities will be maintained and upgraded as funds permit, consistent with the Developed setting, including

provision of improved toilets and car parking facilities above Jellybean Pool. The Service will investigate the provision of alcohol and glass free zones for these areas.

Portal Waterhole, Campfire/Red Hands creeks, Pisgah Rock, Machins Crater and Erskine Creek: The existing trackhead facilities will be maintained consistent with the Natural setting.

Mid Mountains

Tobys Glen: The existing low-key walk-in picnic facilities will be maintained.

Ingar: Current levels of use, vandalism and unregulated vehicle access through this site have resulted in significant environmental deterioration, including erosion and compaction of soil, dieback of mature trees, lack of regeneration and unacceptable impacts on the environmentally sensitive swamp environment and adjacent creek. Past attempts at controlling access have not been effective due to vandalism. This site will be maintained for day use and a limited amount of low-key vehicle-based camping, but the following actions will be implemented to reduce environmental impacts:

- improved barriers will be installed and maintained to keep vehicles and tents out of the most sensitive environments and away from the edge of the dam;
- group size will be limited to 20 people for both day and overnight visitors unless prior approval is obtained from the Regional Manager;
- a low-key interpretive sign will be installed to raise awareness of management issues and encourage minimal impact use of the site; and
- permits will be introduced for camping during peak periods if this proves necessary in order to limit further environmental deterioration.

Murphys Glen: Unregulated vehicle access through the existing day use and camping area is having an unacceptable impact on the significant and restricted *Eucalyptus deanei/Syncarpia glomulifera* vegetation community at this site. Vehicle access to and within the site is difficult during wet weather and temporary closures to reduce damage to the road and site have been ineffective in the past. This site will be maintained for day use and a limited amount of low-key vehicle-based camping, but the following actions will be implemented to reduce environmental impacts:

- vehicle access barriers will be installed and maintained to keep vehicles away from the large, mature trees at the main camping area;
- a small car parking area will be constructed adjacent to the main camping area;
- group size will be limited to 20 people for both day and overnight visitors unless prior approval is obtained from the Regional Manager;
- a low-key interpretive sign will be installed to raise awareness of management issues and encourage minimal impact use of the site;
- the access road to the site will be closed during periods of wet weather near the junction of Murphys Trail and the Bedford Creek Trail; and
- limited upgrading of the steepest sections of the access road will be undertaken to minimise the periods of temporary road closure.

If ongoing monitoring at Ingar and Murphys Glen indicates that further environmental deterioration is still occurring after implementation of these actions, options for further controlling use levels and access within the sites will be investigated in consultation with relevant interest groups. Consultation will be integrated with the overall review of camping proposed in the Actions section (above).

McMahons Lookout: The level of development at this site is restricted due to its location within Sydney Catchment Authority's Schedule One Water Quality Protection Zone. However, it has an important role as one of the few vantage points with vehicle access relatively close to major population centres with views of Kanangra-Boyd Wilderness and Lake Burragorang. Improvements to the site will be investigated and implemented in consultation with the Sydney Catchment Authority. Improvements may include interpretive signposting re the Kanangra Boyd Wilderness and relocation and improvements to the picnic facilities and car parking, consistent with the Natural setting.

Jamison Valley escarpment

The extensive system of lookouts and walking tracks in the park from Wentworth Falls to Katoomba will be maintained in accordance with funding priorities to a standard consistent with the Developed setting. Emphasis will be on the provision of a range of picnicking, viewing and walking opportunities along and below the escarpment to cater for high levels of use, while protecting historic values (see section 4.2.2 Historic Heritage). Under an existing agreement with Blue Mountains City Council, the Service has primary responsibility for walking tracks, while Council has primary responsibility for vehicle-based picnic facilities, where facilities extend across both national park and council land. The Service will continue to work closely with Blue Mountains City Council in maintaining high quality visitor facilities and improving the park/city boundary. The Grand Cliff Top Track along the Jamison Valley escarpment will be progressively completed, subject to environmental assessment and as funds become available.

[See also section 4.3.5 Walking Tracks and Bushwalking re maintenance and improvements to walking tracks.]

Wentworth Falls: The existing picnic area and associated car park and other facilities will be maintained and improved as required, consistent with the Developed setting. Improvements will include landscaping to stabilise the environment and enhance the amenity of the site and redevelopment of the entry precinct adjacent to the roundabout.

Valley of the Waters: The Conservation Hut and associated picnic area, car park and other facilities will be maintained in co-operation with the Blue Mountains Conservation Society and the Hut lessee. Options for increasing the availability of car parking and of reducing impacts on neighbouring residents will be investigated. The information and interpretation functions of the Conservation Hut will be enhanced in conjunction with the lessee.

Narrow Neck: The existing trackhead facilities will be maintained, consistent with the Natural setting.

Grose Valley (southern side and valley floor)

Blue Gum Swamp: This site will be managed consistent with the Service's wilderness management policies ie visitor facilities may be removed.

Faulconbridge Point: The trackhead facility will be maintained as an entry point to the Grose wilderness (see section 4.1.6 Wilderness).

The Pinnacles: The existing trackhead facility at the start of the Lockleys Pylon track will be maintained as an entry point to the Grose Wilderness (see section 4.1.6 Wilderness).

Point Pilcher: This site is located on the boundary of the proposed Grose wilderness. It will be maintained as a low-key lookout with vehicle access. Existing picnic facilities will be reviewed.

Evans Lookout: The Evans Lookout precinct will be maintained and improved as required to provide day use opportunities consistent with the Developed setting. Vehicle parking along Evans Lookout Road near the Grand Canyon trackhead is currently a problem. Sealing of the road and options for improved parking arrangements will be investigated in conjunction with Blue Mountains City Council, which has maintenance responsibility for the road.

Braeside: The existing trackhead will be maintained and improved as required, consistent with the Natural setting. The existing walk-in picnic sites adjacent to the creek will be reviewed in terms of their environmental impact and levels of use and may be removed.

Govetts Leap: The Heritage Centre near the end of Govetts Leap Road, and the lookout and associated facilities at Govetts Leap, are a major focal point for recreation and tourism in the upper Grose Valley area. Day use facilities will be maintained at a standard consistent with their high level of use and key location within the Developed setting. Options for redevelopment of the lookout area will be investigated, and any proposals will be exhibited as an amendment to this plan.

Pulpit Rock: The existing road access, car park and part of the walking track to the lookout is the responsibility of Blue Mountains City Council. Arrangements for maintenance will be made in conjunction with Council.

Perrys Lookdown: This area will be managed as a lookout and trackhead facility, at a standard consistent with the Natural setting. Revegetation and vehicle access control works have recently been undertaken to reduce impacts of overnight use. A limited number of campsites with nearby vehicle access have been provided. The need for camping permits and site rotation will be assessed and, if necessary, implemented, in conjunction with the overall review of camping impacts in the park

(see Actions above). No wood fires are permitted and camping is restricted to one night only.

Anvil Rock/Wind Eroded Cave: The existing lookout, trackhead facility and short walking tracks are located on the margin of the Grose wilderness (see section 4.1.6 Wilderness). This area will be maintained as a low-key lookout with nearby vehicle parking. Erosion control works will be undertaken to reduce existing impacts of unregulated vehicle access. The existing low-key picnic facilities will be reviewed, with a view to reducing impacts on the site. Alternative facilities are available at Govetts Leap and the Evans Lookout picnic area.

Baltzers Lookout, Burramoko: The existing undeveloped lookout is located within the Grose wilderness and will be managed in accordance with section 4.1.6 Wilderness.

Victoria Falls Lookout: The existing lookout and trackhead facility will be maintained. The existing picnic facilities will be reviewed as part of the overall review of visitor facilities referred to above (see General Actions).

Burra Korain: The existing walk-in camping area is located within the Grose wilderness and will be managed in accordance with section 4.1.6 Wilderness.

Acacia Flat: The existing walk-in camping area is showing signs of deterioration as a result of unregulated use, the proliferation of fire rings and denudation of firewood. Facilities for walk-in camping will continue to be maintained at a standard consistent with the Natural setting. Options for regulating visitation to the site will be investigated in conjunction with the overall review of camping impacts in the park and camping permits may be introduced (see General Actions above). The use of fuel stoves only, as an alternative to wood fires, will be implemented on a trial basis and reviewed after 3 years. The co-operation of relevant interest groups, including Friends of Blue Gum and the Confederation of Bushwalking Clubs (NSW), will be sought in implementing this trial via an education/promotion program. The provision of additional walk-in campsites in the Grose Valley outside the wilderness area may be investigated to cater for overflow from Acacia Flat.

Grose Valley (Bells Line of Road access)

Pierces Pass and Mount Banks: The existing day use facilities at the end of Pierces Pass road and below Mount Banks will be managed as entry points to the Grose wilderness (see section 4.1.6 Wilderness) and they will be maintained consistent with the Natural setting. The existing day use area beside Bells Line of Road at the start of the Pierces Pass road is outside the proposed wilderness and will be maintained to provide a rest stop along the Blue Mountains Grand Circular Tourist Drive (see section 4.3.1 Promotion and Interpretation of the Park). Facilities will be consistent with the Natural setting.

Berambing: The existing roadside picnic area is unattractive and little used. It will be reviewed as part of the visitor facility review referred to in General Actions above. Its

possible function as a rest stop on the proposed Blue Mountains circuit drive will be considered as part of this review.

Waratah Picnic Area: The existing picnic area and facilities will be maintained at a standard consistent with the Natural setting. Improvements to picnic facilities may be undertaken if funds permit.

Burralow: The existing vehicle-based day use and camping area and associated road access is located close to the Grose wilderness (see section 4.1.6 Wilderness). The site has been degraded by lack of adequate vehicle controls and lack of appropriate facilities. To reduce further damage to the site, improved vehicle barriers have recently been installed to regulate access within the site. Other proposed works include improved signposting, erosion control works and installation of picnic and toilet facilities.

Southern Blue Mountains

Bats Camp: The existing low-key camping area and nearby trackhead facility will be maintained at a standard consistent with its location at the edge of the wilderness setting. Interpretive signposting may be improved to include information on wilderness values, karst environments and minimal impact camping.

Mount Werong and Limeburners Flat: The existing informal vehicle-based camping areas may be formalised by providing basic facilities and defined car parking, if use levels and associated environmental impacts indicate this is necessary. Any works at Limeburners Flat will only be undertaken after consultation with the adjoining landholder and assessment of the most appropriate sites for camping.

4.3.5 Walking Tracks and Bushwalking

Blue Mountains National Park provides a wide range of bushwalking opportunities in a diverse and scenic environment. The park has a number of walking tracks assessed as being of National or State heritage significance (see Section 4.2.2).

The park caters for bushwalking opportunities ranging from short walks on formally constructed walking tracks in the Developed setting to extended walks on unmarked footpads and through untracked bush in wilderness areas. There is very little reliable visitor data available on use of walking tracks, however use is estimated to range from several thousand on a typical informal track providing access to a significant feature such as a canyon, to 300,000 walkers per annum on a typical cliff top track on the Jamison Valley escarpment.

Bushwalking is a traditional use of the park. There are some tracks which are known to be Aboriginal routes, many thousands of years old. When Europeans began to recreate in the mountains, more than 100 years ago, many additional tracks were created, both formal and informal. Walking tracks and surrounding areas show impacts as a result of the increasing popularity of bushwalking.

At least 140 km of constructed and unformed walking tracks occur within the park, many of which are in a poor state of repair due to the highly erodible soils and lack of proper planning in their construction. Some of the constructed tracks have deteriorated beyond the level where maintenance is feasible and will require either major reconstruction or closure and rehabilitation. There are also numerous historic walking tracks which are overgrown or no longer in use which require assessment to determine their future use (see section 4.2.2 Historic Heritage for relevant management policies and actions). Numerous unconstructed walking routes within wilderness areas are showing signs of unacceptable deterioration as a result of concentrated use over many decades (e.g. parts of Kanangra-Boyd Wilderness) or more recent increases in levels of use (e.g. Wollangambe area). Formal construction techniques can only be applied to a limited extent within wilderness areas if the recreation setting is to be maintained.

Within the Warragamba Special Area, walking is restricted to defined corridors and no camping is permitted. The Service is liaising with the Sydney Catchment Authority in its on-going review of recreation in the Warragamba Special Area.

The Service is developing a Walking Track Management Strategy for the park. The draft will be publicly exhibited for comment. This will provide a methodology for future management of walking tracks. Two major projects have been completed and will provide input to the strategy: a project to develop a limits of acceptable change methodology has provided initial data on track usage, visitor expectations and environmental impacts, and provides the basis for ongoing monitoring; and a heritage study has assessed the heritage values of the track system.

Policies

- * A network of constructed walking tracks will be provided and maintained in the Developed and Natural settings to cater for a range of levels of ability, including disabled access where appropriate to the setting.
- * Existing walking tracks will be classified according to a range of construction standards and managed in accordance with their classification and the Service's walking track manual.
- * New walking tracks will only be constructed if:
 - relocation of an existing track is necessary to avoid or minimise environmental impact or improve visitor safety;
 - they will assist in the protection of natural or cultural features;
 - they are required as part of a design of another visitor facility and they are consistent with the recreation setting; and
 - internal or external funds are made available for a specific purpose and the long-term maintenance commitments are reasonable (e.g. Grand Cliff Top Track).
- * The following factors will be considered in developing priorities for maintenance of existing walking tracks:
 - any hazard to public safety;
 - the range of walking track standards;

- existing and potential future use levels (within the context of the recreation setting);
 - existing condition and environmental impact of the track;
 - importance of the track in providing access to natural or cultural features of recreation or tourism significance;
 - importance of the track in providing a link to other recreation facilities;
 - any cultural significance of the track;
 - ongoing maintenance costs of the track; and
 - estimated future reconstruction costs if the track deteriorates beyond the level where maintenance is feasible.
- * If temporary or long term closure of any walking track becomes necessary for any reason, public notification will be provided in the local and Sydney media.
 - * Priorities for walking track construction and maintenance will be developed and reviewed in consultation with relevant interest groups.
 - * Any further deterioration or proliferation of unconstructed walking routes will be minimised through regulation and/or public awareness/education programs.
 - * The use of minimal impact bushwalking techniques will be promoted in co-operation with relevant interest groups.
 - * Interpretive material and/or signs associated with constructed walking tracks will continue to be improved, consistent with their recreation setting.
 - * Information provided by the Service on unconstructed wilderness walking routes will be limited to general advice on conditions, minimal impact techniques and safety.
 - * In accordance with Section 4.3.2 Recreation Opportunities, group size for bushwalking will be limited to a maximum of 8 people in the wilderness setting, and groups larger than 20 people who venture more than 300m from a public access road will require the prior approval of the Regional Manager (see 4.3.2 for details).

Actions

- * A walking track management strategy will be developed in consultation with relevant interest groups. The strategy will include:
 - a classification system;
 - an inventory of all walking tracks including information on their location, management objectives, recreation setting, environmental impact, level of use, classification and construction standard, cultural value, current condition, safety factors, maintenance requirements and costs and interpretive potential;
 - priorities for maintenance and reconstruction; and
 - provision for establishment of a walking track monitoring program to provide baseline information on levels and patterns of use and associated visitor impacts. Ongoing walking track monitoring will be undertaken in accordance with recommendations arising from the pilot project which commenced in 1996.

- * The Service will conduct a public forum on the management of remote bushwalking within the park, with a view to developing appropriate guidelines for management of unconstructed walking routes, particularly within declared or proposed wilderness areas, and minimising associated impacts. Strategies for regulation of use as well as maintenance standards appropriate to wilderness areas will be considered, consistent with the Service's Wilderness Management Policy.
- * The Service will liaise closely with the Sydney Catchment Authority in its review of recreation in the Warragamba Special Area and on the walking track management strategy.
- * The use of volunteers and community groups to undertake walking track maintenance will be investigated and encouraged. The Service's volunteer policy provides the framework within which volunteers may work in the park.
- * External grants and other funding opportunities will be actively pursued to enable the reconstruction of those tracks requiring extensive work.

4.3.6 Horse Riding

Horse riding is a recreation which may be appropriate in limited parts of the park, subject to monitoring of its impacts. Horses can have unacceptable impacts in certain circumstances including erosion of soils and tracks; the introduction of weeds and plant species not native to the area; and conflict with other recreational uses.

Horse riding is prohibited by the *Sydney Water Catchment Management Act 1998* in those parts of the park which are within Schedule 1 and 2 of the Warragamba Special Area. Service policy prohibits horse riding in wilderness.

A section of the Bicentennial National Trail traverses the Park from Mt Werong towards Wombeyan Caves via the Mt Werong Trail, which is a public access road. This section of the National Trail currently receives a low level of horse riding use.

Policies

- * Horse riding within the park will only be permitted on public access roads and Rileys Mountain management trail in the Mulgoa section of the park.
- * Horse riding access to inholdings within the park or other nearby parks may be approved by the Regional Manager under certain conditions which are consistent with the policies in this plan (see sections 4.3.12 Alien Uses, Leases and Licences; section 4.3.9 Guided Tours and Commercial Recreation and section 4.1.6 Wilderness).
- * The Bicentennial National Trail traverses part of the southern section of the park. The Service will continue to manage this recreational opportunity, in liaison with horse

riding groups and relevant authorities, consistent with protection of the park environment and the other provisions of this plan.

- * Unauthorised bridle paths will be encouraged to overgrow, or will be actively rehabilitated if necessary, in co-operation with horse riding groups.
- * Horse riding within the park on public access roads and management trails may be temporarily or permanently closed at any time to riders depending on track conditions or other management requirements.
- * Horse riding support facilities (eg water and yards) will not be provided in the park.
- * Over night horse camps will not be permitted within the park unless for essential management purposes with the prior approval of the NPWS Regional Manager.

Actions

- * The Horse Riding Minimal Impact Code (Australian Alps) will be promoted to horse riders, clubs and other relevant organisations.
- * The impact of horse riding within the park will be monitored by the Service.

4.3.7 Cycling

Cycling is an increasingly popular recreation activity within the park, especially with the expanding use of mountain bikes. The Woodford-Oaks Trail and then along the edge of the Oaks to Glenbrook road is becoming increasingly popular as it provides a relatively long day ride which is accessible by public transport. This route is currently the focus of an annual fund-raising cycling/running event.

Cycling, like other activities, can potentially have unacceptable impacts on the environment. Walking tracks are generally unsuitable for cycling due to the park's rough steep terrain and erodible soils and the potential for conflict with other visitors. Cycling is permitted on all management trails within the park. Cycling is prohibited by the *Sydney Water Catchment Management Act 1998* within the Warragamba Special Area.

Policies

- * Cycling will be permitted on all public access roads, on the Oaks to Glenbrook cycle track and on all management trails except those in the Warragamba Special Area unless otherwise approved by the Regional Manager and the Sydney Catchment Authority.
- * Cycling will not be permitted on walking tracks.
- * Use of specific access routes for cycling will be regulated by off-site means to minimise conflict with other park users and to avoid significant environmental impacts or risk of injury.

- * Maximum group size for cycling within the park is 12 unless otherwise approved by the NPWS Regional Manager for specific events.
- * The Service will promote minimal impact cycling within the park.

Actions

- * Those vehicle access routes within the park which are most suitable for cycling will be signposted.
- * An existing track adjacent to the Glenbrook to Oaks public access road will be formalised as a cycling route to minimise conflict with vehicles and enhance rider safety.
- * A minimal impact code of conduct for cycling activities will be developed and promoted in conjunction with bicycle peak user groups to address safety and environmental issues.
- * The environmental effects and safety of cycling will be monitored and where necessary restrictions on access to certain trails or other management responses may be applied.

4.3.8 Adventure Recreation

The broken terrain of the park provides extensive opportunities for adventurous recreational activities which are based on particular topographic features. The vertical, rope-using activities of canyoning, abseiling and rock climbing are particularly popular because of the concentration and variety of canyons and cliff lines in the park. The region is of national significance for these activities. All but a few of the several hundred Blue Mountains canyons are protected in one of the national parks of the region. Some of the most popular cliff lines for rock climbing lie outside the park but the use of cliffs within the park is increasing. Abseiling as an activity, and independent of canyoning and rock climbing, occurs in a few park sites. The small karst areas in Blue Mountains National Park are of scientific significance and limited recreational appeal. Opportunities for recreational caving are provided at other nearby areas including Kanangra-Boyd National Park, Jenolan Caves and Wombeyan Caves. River activities of rafting and kayaking are very limited by flow levels and access but liloing is undertaken in conjunction with canyoning and bushwalking. The park is not an appropriate venue for aerial adventure activities such as bungee jumping, hang-gliding and parachuting.

Canyoning, abseiling and rock climbing tend to be focussed on small areas of vertical and associated environments which are often of high conservation and aesthetic value with significant and restricted plant and animal species. The growth of these activities is leading to increased impacts on established sites and the opening up of new sites. Impacts include vegetation disturbance, erosion, tracking, water pollution, damage to rock features and installation of rock bolts. There is a need for effective management of

the impacts of canyoning, abseiling and rock climbing so that opportunities to undertake appropriate cliff and canyon recreation in the park are retained whilst ensuring an adequate level of protection for the special environments involved. Effective management can be achieved to some extent through communication and education programs, but there is an increasing likelihood that more formal regulation of activities may be required.

The degradation caused by abseiling and climbing on the Three Sisters is considered by the Service and other stakeholders to be inconsistent with environmental sustainability and the feature's status as an internationally recognised natural icon and tourist attraction of the Blue Mountains. Rockclimbing has been a long-established activity on the Three Sisters, dating back to the 1930s, but recently the growth in commercial activities, particularly abseiling, has added significantly to use levels with resulting vegetation damage and erosion. The eastern side of the Three Sisters is within the park while the western side, where most activity occurs is freehold land owned by Blue Mountains City Council. This land is in the process of being added to the park. There is a need for co-operative recreation management in the precinct to continue to achieve environmental protection. As a result of this process, the Three Sisters has been temporarily closed to allow for stabilisation and vegetation regrowth.

It is recognised that the installation of rock bolts is necessary for the maintenance of a range of climbing and canyoning opportunities in the park. Because it is not practical for the Service to carry out installation or certification of bolts, there is a need for participants in these activities to ensure the safety of fixed anchor points prior to use. There is a need to control the proliferation of recreational bolts in the park and to remove those that have an unacceptable impact or which are no longer required.

Adventure activities often involve the exposure of participants to risks inherent in natural environments, such as falling and floods. The Natural and Wilderness settings of national parks are suitable venues for this type of challenging, nature-based activity and it is appropriate that opportunities for responsible but sometimes hazardous participation are maintained. It is necessary for participants in adventure recreation activities to accept responsibility for their own safety. In some locations, conflicts between vertical recreation and the safety of other park visitors and activities needs to be controlled. Crowding in some canyons is leading to safety as well as environmental concerns.

The National Parks and Wildlife (Land Management) Regulation 1995 prohibits persons from undertaking adventure activities in the park without the consent of the Service. Consent can be provided in a number of formats and it is neither desirable nor appropriate for specific consent to be required for every instance of persons undertaking these activities in the park. The Regulation can be applied to exclude activities which are inappropriate in the park or at particular locations.

Policies

- * The management of adventure activities will be directed towards:
 - the control of environmental impacts;

- the protection of appropriate nature-based adventure opportunities;
 - the minimisation of visitor conflicts;
 - promotion of safety;
 - the protection of other park visitors; and
 - the protection of scenic and wilderness qualities.
- * The safety of participants in adventure activities where facilities are not provided will continue to be the responsibility of participants and their companions. Safe practices will be promoted by the Service through visitor education in preference to direct regulation.
- * The management of environmental impacts, visitor conflicts and non-participant safety issues will be achieved by a combination of promotion/education of appropriate practices and direct regulation, according to the most effective means for each activity or location.
- * All management actions will be developed and implemented in consultation with relevant visitor groups and other stakeholders.
- * Abseiling, rock climbing, canyoning and river activities are approved in the park provided that activities are undertaken in accordance with:
- the provisions of this plan, including approved sites, closures and group size;
 - any code of conduct promoted by the Service;
 - any other restrictions, exclusions or closures which may from time to time be introduced by the Service.
- * Persons who wish to undertake any other activities in the park which may involve risking the safety of the person or the safety of other persons will require prior approval from the Regional Manager under the National Parks and Wildlife (Land Management) Regulation 1995.
- * Bungy jumping, base jumping and hang-gliding will not be permitted. Parachuting may only be permitted subject to strict conditions for the protection of public safety, the park environment and scenic values.
- * Karst areas in the park will be managed primarily for their conservation and scientific values. Entry to caves will be subject to a permit system and approval will be granted for scientific purposes only.
- * The Service will seek liaison with writers and publishers of books and other material on adventure activities in the park to encourage appropriate emphasis on environmental protection and safety.
- * Group sizes will be limited in order to reduce impacts and site crowding as follows:
- 4 persons per roped party on individual rock climbs;
 - 8 persons for abseiling and canyons involving abseiling; and
 - 12 persons (8 in wilderness) for canyons not involving abseiling.

- * Abseiling and rock climbing will be excluded from locations where they are in conflict with environmental protection, visitor facilities or other established recreational activities. Abseiling only closures will not apply to abseiling undertaken as access to or as part of a rock climb. Closed locations include the following and other sites will be closed as required:

Closed to Abseiling Only:

- ◇ Glenbrook Gorge
- ◇ Jamison Valley cliff line from Giant Stairway to Furber Steps
- ◇ Mount Banks, main cliff line
- ◇ All other formal lookouts

Closed to Abseiling & Climbing:

- ◇ All Aboriginal sites
- ◇ Jamison Valley cliff line from Rocket Point to the Valley of the Waters
- ◇ Grose Valley cliff line from Horseshoe Falls to 50m south of Govetts Leap Waterfall
- ◇ Any cliff line directly above a constructed walking track where on-cliff activities may pose a hazard to walkers, and that is not in a designated climbing area

Specific canyons or climbing and abseiling sites not included on this list may be temporarily or permanently closed for environmental or safety reasons. The classification of the Three Sisters is subject to further co-operative planning (see below).

- * Approved climbing sites in the park are recognised at Glenbrook Gorge, Sublime Point, Three Sisters (subject to further planning) to Katoomba Falls, Narrow Neck, and parts of the Grose Valley (sites known to climbers as Victorialand, Ikara, Victoria Falls, Pierces Pass and Hanging Rock). The establishment of new rock climbs at sites which are not approved climbing sites will require prior consultation with the Service.

Actions

- * A detailed strategy for the management of adventure activities in the Blue Mountains, based on the provisions of this and other plans of management, will be developed in consultation with user groups, implemented and kept under review. The management strategy will incorporate codes of conduct for abseiling, rock climbing and canyoning in the park, to include:
 - minimal impact techniques;
 - limits to group size and number;
 - recommended safe practices;
 - recognition of approved rock climbing sites and canyons;
 - the exclusion of new bolts from wilderness areas, canyons and established rock climbs, except where the NPWS Regional Manager approves the replacement of existing bolts;
 - control of bolting in other locations;
 - acceptable bolting techniques, including the exclusion of power drills; and
 - exclusion of damage to vegetation and rock features, route marking, track development and other environmental modifications.
- * The need for a canyoning or rock climbing permit systems to regulate group size and group numbers at particular sites will be assessed, and implemented as necessary and kept under review.

- * The usefulness and practicality of a canyon weather alert advisory system will be investigated and implemented if appropriate and practical.
- * Detailed precinct recreation plans will be prepared and implemented to manage the special issues at the Three Sisters (in conjunction with Blue Mountains City Council) and the Glenbrook precinct. Other precinct plans will be developed for adventure activity locations as required.
- * Rockclimbing routes which are established outside approved climbing sites without prior consultation with the Service may be closed.
- * Bolts which are placed in contravention of the provisions of this plan or the codes of conduct, which are no longer required or which are leading to unacceptable environmental or safety impacts may be removed following assessment of safety and environmental issues.

4.3.9 Commercial Recreation

Guided tours and commercial recreation form a small but significant and growing component of public use of the park, and are an important sector of the tourism industry based in the Blue Mountains and Sydney. Activities include guided walks, tours by conventional and four wheel drive vehicle, wildlife viewing, Aboriginal site visits, photographic instruction, abseiling, canyoning, rockclimbing, bicycling and horseriding, and they range in duration in the park from less than an hour to several days.

These tours and guided activities increase the opportunity for public participation in nature-based activities and provide opportunities for professional instruction in the safety and minimal impact aspects of various recreational pursuits. Guided activities also have potential to interpret and promote the natural and cultural values of the park.

The positive role of guided tours and commercial activities needs to be balanced against the impacts on the park's natural and cultural resources and the overall high demand for recreational use of the park. Commercial recreation can contribute to an unacceptable level of impact at certain sites and has in the past been a direct cause of specific impacts including damage to rock faces. Commercial recreation may conflict with other recreational uses of the park and increase crowding at some sites. Commercial recreation needs to be managed as a component of all recreation in the park to ensure that it is carried out in a sustainable manner and that all impacts are within acceptable limits. Commercial activities in the park are required by legislation to be licensed. Licensing provides the mechanism for ensuring that activities, levels of use and behaviour are appropriate for the park and specific locations and compatible with general recreational use. The levels of some commercial activities, such as canyoning, are approaching the limits identified by the Service and there may be a need for limiting the number or scale of commercial licences provided by the Service.

Any commercial activities within the Warragamba Special Area must be approved by the Sydney Catchment Authority.

It is appropriate that industries and operators who utilise the park's public resources for commercial purposes make a financial contribution to park management and display the highest standards of behaviour towards the park and its protection.

Policies

- * Guided activities, commercial recreational and environmental education activities will only be considered within the park where:
 - the operator and guides demonstrate skills, knowledge and experience which are appropriate to the activity, the recreation setting and the needs of clients (eg. has appropriate industry accreditation);
 - the activity is financially viable and is able to cover all Service costs related to managing the activity within the park and preferably has flow-on benefits to local economies;
 - the activity is ecologically sustainable, has a minimal impact on the environment and is consistent with park management objectives;
 - the operator has consulted with neighbours, local Aboriginal community groups and other operators as required by the Service;
 - if previously licensed, the operator has a good record and has complied with licence conditions;
 - the activity promotes natural and/or cultural heritage conservation and minimal impact use; and
 - if within the Warragamba Special Area, the activity has been referred to the Sydney Catchment Authority for endorsement regarding likely impacts of the activity on water quality.
- * Management of guided activities and commercial recreation will be directed towards:
 - protection of the special recreational experiences available in the park;
 - protection of non-commercial recreation opportunities;
 - control of environmental impacts;
 - promotion of safety and accountability;
 - encouragement of professionalism in the industry;
 - provision of quality recreational experiences;
 - maximisation of educational benefits; and
 - recovery of appropriate commercial returns to the Service.
- * All management policies and actions will be developed and implemented in consultation with the commercial recreation industry and other stakeholders, including Sydney Catchment Authority for activities within the Warragamba Special Area.
- * All commercial recreation activities in the park require a licence or consent approval. Licences and consents will prescribe the approved activities, location and frequency of activities, maximum group sizes and minimum guide ratios for each activity, guide standards, appropriate behaviour, fees and other special provisions to ensure the long term protection of the park, park visitors and recreation opportunities. Licence and consent conditions will be kept under review and amended as necessary.

- * Fees will be applied to all commercial use of the park. Fees will be set at or above the minimum level of recovering the costs of managing the activities and the licensing system. Fees for individual operators will be commensurate with their level of use of the park. Both the structure and quantum of fees will be kept under review on the basis of the consumer price index, management costs and impacts of the activities.
- * Commercial operators whose activities may encroach on or utilise any Aboriginal site or place, must consult with local Aboriginal community groups.
- * Maximum levels of total commercial recreational use in the park will be set for particular activities and particular locations according to precautionary principles. The effectiveness of limits will be kept under review.
- * Where there are competing commercial demands or conflicts between general recreational use of the park and commercial activities, commercial activities will not be permitted to exceed a small proportion of the total use of any setting or location.
- * Where the level of demand for particular commercial activities or locations exceeds the limits applied by the Service, the commercial opportunities will be distributed in a manner consistent with the principles of equity and the objectives for commercial recreation management.
- * Some commercial activities which might normally be regarded as appropriate in a national park setting but which have a high impact may be excluded from the park.
- * Commercial operators will not be permitted to carry out any environmental modifications in the park without approval. Subject to the provisions of this plan, low-key minor facilities to support commercial as well as general recreational activities may be considered provided they are financially assisted by the commercial recreation industry independent of licensing fees, do not restrict other recreation opportunities, are of minimal impact and serve to protect the environment or enhance safety.
- * Commercial recreation activities will be required to conform to any group size limits imposed for various activities within the park, including those specified in this plan (see sections 4.3.2 to 4.3.8).
- * The requirement for commercial activity guides to hold formal qualifications or industry accreditation as a condition of licensing will be kept under review and progressively implemented when appropriate.
- * The Service will seek to expand its liaison with commercial operators through improved communication and involvement in conservation training for tour guides.
- * Commercial recreation activities will not be granted any rights of access which are exclusive of the public or which exceed normal public rights within the terms of this plan.

- * Commercial recreational vehicle use of the Woodford-Oaks Trail will not be permitted.

Actions

- * Unlicensed commercial operators will be excluded wherever possible from the park through monitoring and enforcement.
- * The Blue Mountains Region commercial recreation strategy currently in force will be subject to ongoing review and improvement.
- * All licensed commercial operators and activities will be monitored with respect to impacts, safety requirements and compliance with licence conditions.
- * Means will be investigated for the inclusion of commercial operators who do not currently come within the licensing system, such as short-stay bus tour operators.

4.3.10 Research

The primary function of research in the park is to assist in the understanding of its natural and cultural resources and its use and to provide information which will contribute to effective management. A considerable amount of survey and research work has been undertaken in the park and adjacent bushland areas by various tertiary institutions, the Service and individuals, particularly during the past decade. However, much more research is required to provide an adequate basis for improved park management and it needs to be focussed more specifically on issues impacting on biodiversity conservation. Research also needs to be managed to avoid potential adverse impacts on the park's resources.

The park and its regional setting within a larger natural area offers an outstanding range of research opportunities in relatively close proximity to the highest concentration of research institutions in Australia. Its combination of wilderness areas adjoining extensive urban, rural and natural boundaries provides a research setting unique in New South Wales. A number of pristine catchments within the park could provide important reference areas for scientific study, particularly when so many of the park's other major catchments are affected by external impacts associated with urban and rural development. The park provides extensive opportunities for researching the interaction of recreation with the natural environment.

The Service is currently undertaking a number of research projects in the park aimed at understanding the impacts of fire and urban development on natural areas and monitoring the use and impacts of walking tracks. Survey and research on rare and threatened species is also being carried out for high priority species. Some survey and research on the distribution and condition of Aboriginal sites is being undertaken in co-operation with the Aboriginal community. The results of research projects are used to develop improved management guidelines for the park.

Policies

- * Research will be encouraged where it is consistent with the objectives of management for the park and there is likely to be a net benefit to park management.
- * Research which involves interference with the park's natural or cultural heritage will be licensed in accordance with Service policy and procedures.
- * Research activities within the park will be restricted to those which are non-destructive and cannot be undertaken elsewhere, unless there is an overriding management need.
- * Destructive research may only be undertaken where there is no feasible alternative and the benefits to conservation outweigh any adverse impacts.
- * Priority will be given to research into:
 - visitor use patterns, the impacts of park visitors on the park's natural heritage and the development of sustainable recreation management strategies;
 - threatened species distribution and ecology, particularly in relation to fire;
 - invertebrate species distribution and ecology;
 - introduced species distribution, ecology and control;
 - cultural heritage surveys and assessments of significance;
 - vegetation, habitat and fuel dynamics in relation to fire frequency & intensity;
 - fire behaviour and fire management;
 - impacts of urban and rural developments, park use and fire on hydrology and water quality in the park;
 - ecology of karst systems, including comparative studies with karst areas open for public use in the adjacent Kanangra-Boyd National Park; and
 - the vegetation sites and communities highlighted for research in Table 3 (section 4.1.3).
- * Any research undertaken within the Warragamba Special Area must be approved by the Sydney Catchment Authority.

Actions

- * A prospectus of research projects will be prepared and promoted to relevant tertiary institutions. It will be updated annually.
- * The Service will establish a Blue Mountains National Park Research Fund for which proposals from post graduate research students will be sought. Proposals will be assessed according to the policies above and offers of financial and/or in-kind support will be made to successful applicants.

4.3.11 Management Facilities and Operations

Blue Mountains National Park is managed by the Service's Blue Mountains Region. A range of management facilities are required both on and off-park to implement the Service's management programs. Offices, visitor centres and workshops are located on-park at Blackheath and Glenbrook and off-park at Richmond and Oberon. Other management facilities include:

- on-park staff residences at Bilpin and Glenbrook;
- on-park helipads at Blackheath, at Acacia Flat in the Grose Valley and near Glenbrook Creek;
- radio communications towers off-park at Mt Tomah and on-park at Narrow Neck;
- signs, gates and/or barriers associated with management trails and rehabilitation areas.

In addition there is an extensive management trail system comprising approximately 275 km of trails maintained at various standards from good two wheel drive through to dry weather four wheel drive only. Because of the park's rugged terrain and the highly erodible nature of its sandstone soils, most of these trails are expensive to maintain at a standard suitable for management vehicle access only. It is not financially feasible or environmentally desirable to make these trails available for public vehicle access. Many are located within declared or potential wilderness areas.

The Service is reviewing its visitor centre/office/workshop facilities with a view to improving both management operations and visitor services at Blackheath, at Glenbrook and in the Bilpin area (see section 4.3.1 Promotion and Interpretation of the Park for details).

Community volunteers have been utilised to enhance the scope and effectiveness of a number of park management programs, including weed removal, flora and fauna surveys and bush regeneration. Potential exists to expand the involvement of volunteers to generate greater benefits to park management and community education and understanding. There is a need to ensure that volunteer programs are effectively managed with adequate support and training, and that works are directed towards agreed priorities.

Sydney Catchment Authority maintains a number of catchment management facilities within the park, including management trails and gauging stations.

Policies

- * Any new park management infrastructure will be located off-park or on disturbed areas on-park wherever possible and will be subject to environmental and financial impact assessment.
- * No new NPWS offices or workshops will be established on park within the life of this plan.

- * Existing NPWS offices and workshops may be extended, renovated or removed where necessary to improve management operations, subject to environmental and financial impact assessment. Additional toilet facilities may be provided as part of such a renovation.
- * In the event that any existing built structures are incorporated into the park as the result of an addition to the park, the structures will be considered for Service use, disposal, lease, demolition or other options following a detailed assessment of cultural heritage values, environmental impact, construction and rental standards, maintenance costs, operational requirements and other site-specific management issues.
- * Park management access routes will be managed and maintained for the following management purposes:
 - fire management including prescribed burning and wildfire control and associated purposes;
 - introduced species management;
 - maintenance of cultural heritage sites;
 - park survey;
 - search and rescue and regulatory activities;
 - access for water quality management and monitoring;
 - essential vehicular access for other organisations undertaking their statutory responsibilities;
 - other purposes associated with the implementation of this plan; and
 - rehabilitation purposes.
- * No additional park management access routes will be constructed except in the following situations:
 - re-alignment of an existing route to a more environmentally acceptable location, combined with rehabilitation of the old route;
 - protection of specific natural and cultural heritage values, property or life where such protection is more important than the impact of the trail;
 - temporary trails in emergency situations (eg wildfire control) where there is no prudent alternative and the trail is rehabilitated as soon as practical after the incident.
- * Park management access routes will be signposted and mapped and managed for essential park management access, authorised property access and authorised non-vehicle based recreation.
- * The NPWS Regional Manager may give consent to landholder access along park management access routes where permissible under the Act and where:
 - no reasonable alternative access exists;
 - where the environmental and financial impact of use is acceptable;
 - where the proposed use is consistent with use patterns at the time of park gazettal;
 - where the access route is also required for essential park management purposes; and

- there is an appropriate contribution from the landholder towards management costs of the route.
- * The following major access routes (shown on the park map) will be managed for essential park management purposes only and maintained to a minimum dry weather 4WD standard:
- Bennetts Ridge Trail;
 - Reillys Mountain Trail;
 - Woodford-Oaks Trail;
 - Grose Road to Faulconbridge Point Trail;
 - Linden Ridge Trail;
 - Linden Creek Trail;
 - Springwood Ridge Trail;
 - Shaws Ridge Trail;
 - Mountain Avenue Trail;
 - Hill Crest Avenue Trail;
 - Browns Ridge Trail;
 - Murphys Trail;
 - Andersons Trail;
 - Narrow Neck Trail;
 - Medlow Gap - Kedumba Trail;
 - Ridgewell road to Baltzers Lookout/Burramoko;
 - Millnigang Trail;
 - Mount Egan Trail;
 - Bullnigang Trail;
 - Colong Swamp Trail;
 - Little Wombeyan Trail (Maneveland Trail);
 - Little River Trail;
 - Upper, Lower and Middle Werong Trails;
 - Parliament Hill Trail;
 - Ruby Creek Trail;
 - Langs Road; and
 - Jocks Creek Trail.
- * The following management access routes within the Warragamba Special Area will be maintained by Sydney Catchment Authority for catchment management purposes:
- Scotts Main Range Trail;
 - Kowmung gauging station access trail;
 - Ripple Creek (Warragamba Watershed) Trail;
 - Kelpie Point Trail.
- * All management facilities will be kept under review. Park management access routes and other management facilities no longer required by the Service or other authorised users will be allowed to overgrow or will be rehabilitated using indigenous plant and soil material and methods recommended by the Department of Land and Water Conservation.

- * Horse riding for essential management purposes within wilderness may be approved by the NPWS Regional Manager where there is clear management benefit and no practical and environmentally acceptable alternative. Any horse riding within the Schedule 1 and 2 areas must also be approved by the Sydney Catchment Authority.
- * Aircraft will not be permitted to land within the park unless part of an authorised management operation or for emergency purposes.
- * Further opportunities for the use of volunteers and community organisations to assist priority park management programs, such as bush regeneration, weed control, flora/fauna survey and walking track maintenance, may be developed in accordance with Service policy.

Actions

- * A review of all management facilities will be undertaken to determine their environmental impact, maintenance requirements and costs, any safety hazards and their necessity based on current and projected future management needs. This review will be used to develop maintenance standards and priorities and provide a basis for annual allocation of resources.

4.3.12 Alien Uses, Leases and Licences

There are currently a number of organisations and individuals occupying or using lands reserved as Blue Mountains National Park for public or private purposes. These works, facilities and operations can affect to varying degrees the natural, cultural and recreation values of the park.

Roadside drainage works and stockpile sites, particularly along Bells Line of Road, can have undesirable impacts, including alterations to water drainage and water quality in the park. Some stockpile sites encroach on the park. There are a number of power lines and associated developments through the park, which impact on scenic values, significant vegetation communities and rare or threatened plant species and contribute to erosion, weed dispersal and problems of illegal use. Formal agreements are required to address issues of concern to park management including use and maintenance of vehicle access routes, clearing of vegetation under lines, use of herbicides and the visual impact of the lines.

Many of the works, facilities and operations are not presently covered by a lease, licence or easement under the Act, or by any other form of agreement. All should be the subject of such an agreement with the Service. The Service has already commenced negotiations with a number of authorities including TransGrid, Integral Energy, the Roads and Traffic Authority and the State Rail Authority to minimise the impacts of their infrastructure and activities on the park.

Policies

- * The Service will liaise with organisations and individuals occupying or using lands reserved as Blue Mountains National Park to assess the nature, authority, impact and necessity for their presence.
- * The Service will formalise and update agreements for all essential works, facilities and operations by other organisations (eg transmission lines, water pipelines and radio towers) and authorised access to inholdings (other than via public access roads) within the park in accordance with the Act and Service policy, with the specific aim of minimising adverse impacts on the park.
- * Other alien uses which are not essential and/or not covered by formal agreements within four years will be terminated and/or removed.
- * New works, facilities or operations proposed by any organisation or individual will not be permitted within the park unless they are consistent with the purpose of reservation of the park and the provisions of this plan and, for lands included in Warragamba Special Area, the provisions of the jointly sponsored Special Areas Strategic Plan of Management.

Actions

- * The Service will establish and maintain a register of all alien uses, leases and licences in the park.
- * The Service will continue to liaise with the Roads and Traffic Authority to minimise the impact of stockpile sites along Bells Line of Road on the park and rehabilitate those stockpile sites which are no longer required (see also sections 4.1.1 Geology, Geomorphology and Soils and 4.1.2 Catchment Management).
- * The Service will negotiate with TransGrid and Integral Energy for maintenance agreements, rationalisation and removal and rehabilitation where possible of powerline easements and associated infrastructure.
- * The Service will seek to formalise or renegotiate all alien tenure licences within the park over the next four years.

5. PLAN IMPLEMENTATION

This plan of management is part of a system of management developed by the National Parks and Wildlife Service. The system includes *the National Parks and Wildlife Act*, management policies, established conservation and recreation philosophies, and strategic planning at Corporate, Directorate and Regional levels.

The implementation of this plan will be undertaken within the annual programs of the Service's Blue Mountains Region. Priorities, determined in the context of district and regional strategic planning, will be subject to the availability of necessary staff and funds and to any special requirements of the Director-General or Minister. Additional funding may be sought from time to time through external grant applications for priority projects which meet the relevant funding program criteria.

Regional programs are subject to ongoing review, within which, works and other activities carried out at Blue Mountains National Park are evaluated in relation to the objectives laid out in this plan.

The environmental impact of all development proposals will continue to be assessed at all stages of the development and any necessary investigations undertaken in accordance with established environmental assessment procedures.

Implementation of the plan within the Warragamba Special Area will be undertaken in conjunction with the Sydney Catchment Authority.

Section 81 of the Act requires that this plan shall be carried out and given effect to, and that no operations shall be undertaken in relation to the national park unless they are in accordance with the plan. However, if after adequate investigation, operations not included in the plan are found to be justified, this plan may be amended in accordance with section 76(6) of the Act.

As a guide to the implementation of this plan, relative priorities for identified activities are summarised in the following table (Table 6).

TABLE 6: PLAN IMPLEMENTATION**Key to Priorities:**

- High** = urgent and/or very important actions already underway or planned for immediate implementation
- Medium** = actions which are important but not urgent
- Low** = actions which may be deferred in preference to other priorities
- Ongoing** = recurrent actions, generally already underway

Actions have been abbreviated for inclusion in this table. For full details refer to the main text of the plan.

PLAN REF.	ACTIVITY	PRIORITY
4.1	CONSERVATION OF NATURAL HERITAGE	
4.1.1	<u>Geology, Geomorphology and Soils</u>	
	<ul style="list-style-type: none"> • Liaise with other agencies to minimise impacts of adjacent developments on scenic values 	High (ongoing)
	<ul style="list-style-type: none"> • Develop maintenance standards & priorities for public access roads, management trails, walking tracks 	High
	<ul style="list-style-type: none"> • Liaise with community groups & local councils to rehabilitate disturbed sites on the park 	Medium (ongoing)
	<ul style="list-style-type: none"> • Control bushrock removal 	Medium (ongoing)
	<ul style="list-style-type: none"> • Liaise with RTA re Bells Line of Road to enhance viewing and minimise road impacts on park 	Medium
4.1.2	<u>Catchment Management</u>	
	<ul style="list-style-type: none"> • Work with Catchment Management Committees & Trusts to protect/improve park catchments and raise public awareness 	High (ongoing)
	<ul style="list-style-type: none"> • Work with local councils to limit impacts of activities and developments on the park 	High (ongoing)
	<ul style="list-style-type: none"> • Continue to liaise with EPA, mining companies & local councils to minimise mining impacts on the park 	High (ongoing)
	<ul style="list-style-type: none"> • Negotiate formal agreement with SCA for management of Warragamba Special Area 	High
	<ul style="list-style-type: none"> • Liaise with Sydney Water on decommissioning South Katoomba & Wentworth Falls sewage treatment plants 	High
	<ul style="list-style-type: none"> • Liaise with local councils & other authorities to rationalise park boundaries 	High
	<ul style="list-style-type: none"> • Participate on Urban Runoff Taskforce 	High

- Work with park neighbours to eliminate or control catchment disturbances off park Medium (ongoing)

4.1.3 Native Plants and Animals

- Develop and implement a “bioindicator research” program focussed on urban/bushland interface High
- Liaise with local councils & other authorities to minimise impact of threatening processes & implement recovery/threat abatement plans Medium (ongoing)
- Progressively assess conservation status of plant & animal species, populations & communities in park Medium
- Prepare and implement recovery plans for endangered or vulnerable species as specified in TSC Act Medium
- Progressively undertake biodiversity surveys of habitats of concern Medium

4.1.4 Introduced Plants & Animals

- Liaise with other authorities to minimise spread of introduced plants from adjacent lands into park High (ongoing)
- Continue development of co-operative pest control programs High (ongoing)
- Prepare introduced species management plan High
- Undertake priority control programs High
- Develop introduced species management database Medium
- Establish volunteer bush regeneration program Medium
- Plan and implement the control of major introduced plant sites in Blue Mountains City within or threatening the park Medium
- The Service will liaise with NSW Fisheries to research, control the spread and minimise the impacts of introduced fish species within waterways within the park. Medium
- Develop & promulgate public education package on pest species Low

4.1.5 Fire Management

- Prepare draft fire plan for BMNP & place on public exhibition before review & adoption High
- Establish regular review of existing management trails as part of district fire planning High (ongoing)
- Continue to maintain & update fire history data for the park & adjacent areas & incorporate into fire planning High (ongoing)
- Review use of camp & cooking fires in park Medium
- Assess need for South Katoomba sewage treatment plant Medium

access road

- Review need for Narrow Neck fire tower Low (ongoing)

4.1.6 **Wilderness**

- Improve signposting re: wilderness values & minimal impact recreation at trackhead High
- Prepare brochure on wilderness and minimum impact code of conduct High
- Liaise with SCA to minimise impact of catchment management facilities on wilderness qualities Medium
- Recommend declaration of wild rivers in park Low
- Access consents will be negotiated and finalised for all inholdings within wilderness areas. High

4.2 **CONSERVATION OF CULTURAL HERITAGE**

4.2.1 **Aboriginal Heritage**

- Continue to liaise with neighbours & Aboriginal groups to conserve/interpret Kings Tableland site High (ongoing)
- Make information available to the public on importance of Aboriginal sites in liaison with the Aboriginal community Medium (ongoing)
- Progressively update Blue Mountains Aboriginal sites register & incorporate into park planning Medium (ongoing)
- Establish Aboriginal Heritage Management Group & implement priority tasks Medium
- Prepare/update & implement conservation plans for Buralow, Red Hands Cave, Kings Tableland, Lyre Bird Dell & Asgard Swamp Aboriginal sites Medium

4.2.2 **Historic Heritage**

- Undertake heritage study of major walking track/facility complexes, firstly Jamison Valley then Grose Valley High
- Include information on historic cultural values of park in visitor information programs Medium (ongoing)
- Progressively update Blue Mountains historic places register & incorporate into park planning Medium (ongoing)
- Continue involvement in Yerranderie Management Committee Medium (ongoing)
- Develop & implement monitoring program for significant historic places & cultural landscapes Medium
- Develop & implement conservation policies for Asgard Swamp, Blair Athol, Narrow Neck, Ruined Castle, Ruby Creek & Silver Peak mines & Buralow Creek precinct Ongoing

4.3	USE OF THE PARK	
4.3.1	<u>Promotion and Interpretation of the Park</u>	
	• Continue development/improvement of interpretive programs	High (ongoing)
	• Plan and implement the presentation of World Heritage values	High
	• Encourage authors & publishers to liaise with Service re park information	Medium (ongoing)
	• Ensure minimal impact recreational use is included in all visitor information programs	Medium (ongoing)
	• Progressively implement a standardised park information sign system	Medium
	• Investigate preparation of Blue Mountains tourist information pack	Medium
	• Investigate options for provision of an improved park visitor centre & seek public comment	Medium
	• Co-operate with other organisations to provide a scenic circuit drive via Great Western Highway, Darling Causeway & Bells Line of Road with associated facilities	Medium
	• Contribute to development of Blue Mountains Tourism Strategy	Medium
	• Develop a neighbour relations strategy	Medium
	• Investigate options for a visitors centre on Bells Line of Road	Low
4.3.2	<u>Recreation Opportunities</u>	
	• Review all visitor facilities & develop maintenance/upgrading priorities	High
	• Establish & maintain visitor use monitoring program	High
	• Develop programs with user groups to minimise recreational impacts	High
	• Rationalise facilities if identified in planned review	Medium
	• Progressively implement visitor safety program	High
4.3.3	<u>Vehicle Access</u>	
	• Establish regular review of all public access roads	Medium (ongoing)
	• Close public access roads which are inappropriate or no longer required	Medium
	• Establish & maintain formal mechanism to ensure up-to-date/appropriate information on roads is provided to public by other organisations	Low (ongoing)

4.3.4 **Day Use and Camping**

- Review systems for collection of park-use fees in accordance with government policy. Medium
- Review camping in park & investigate/trial options for reducing impacts, particularly vehicle-based camping in upper Blue Mountains Medium
- Maintain existing visitor facilities unless downgrading, removal or improvements are specified below or as a result of the review of all visitor facilities High (ongoing)

Mulgoa area

- Provide interpretive signposting Low

Glenbrook area

- Mt Portal - investigate & implement improved car parking, safety fencing and other works. Close road to Tunnel View at Mt Portal junction. High
- Jellybean Pool car park - improve toilet and parking facilities, investigate alcohol and glass free zones Medium
- Euroka - investigate & implement improvements to vehicle access and other facilities Medium
- The Ironbarks - remove toilet facilities Low

Mid Mountains

- Ingar - implement environmental protection measures & permit system if necessary High
- Murphys Glen - implement environmental protection & access control measures Medium
- McMahons Lookout - investigate & implement site improvements in consultation with SCA Low

Jamison Valley escarpment

- Wentworth Falls Picnic Area - complete landscaping and entry precinct improvements High
- Valley of the Waters Picnic Area - investigate options for reducing car parking impacts on park neighbours Medium
- Conservation Hut - enhance information & interpretation functions Medium

Grose Valley (southern side and valley floor)

- Govetts Leap - investigate options for redevelopment High
- Pulpit Rock - work with BMCC to reconstruct lookout, walking track, car park & picnic facilities High
- Acacia Flat - investigate options for regulating camping & High

trial/promote fuel stove only strategy

- Blue Gum Swamp – manage consistent with NPWS wilderness management policies. Medium
- Evans Lookout - investigate sealing of road & improved car parking at Grand Canyon trackhead with BMCC Medium
- Perrys Lookdown - investigate need for camping permits & site rotation & implement if necessary Medium
- Anvil Rock/Wind Eroded Cave - undertake erosion control works & review low-key picnic facilities Medium
- Victoria Falls Lookout - review existing picnic facilities Medium
- Braeside - review existing picnic sites Low
- Point Pilcher - review existing picnic facilities Low

Grose Valley (Bells Line of Road access)

- Berambing - review roadside picnic area Medium
- Burralow - improve signposting, install picnic/toilet facilities & implement erosion control works Medium

Southern Blue Mountains

- Mt Werong & Limeburners Flat - consider provision of basic camping facilities Low

4.3.5 Walking Tracks and Bushwalking

- Develop walking track management strategy High
- Hold a public forum on management of remote bushwalking High
- Liaise with SCA on review of recreation within Schedule One Water Quality Protection Zone Medium
- Investigate volunteer assistance with walking track maintenance Low
- Pursue external grant funding High

4.3.6 Horse Riding

- Promote horse riding code High
- Monitor impact of horse riding within park Medium

4.3.7 Cycling

- Formalise as a cycling route an existing track adjacent to Glenbrook/Oaks road High
- Identify, map, promote & signpost suitable cycling routes Medium
- Develop/promote minimal impact code for cycling Low
- Monitor impacts and safety High

4.3.8 Adventure Recreation

- Develop/implement/review adventure activity management strategy High
- Prepare/implement recreation plans for Glenbrook & Three Sisters (in conjunction with BMCC) precincts High
- Assess/implement/review permit systems for canyoning & rock climbing Medium
- Investigate/implement canyon weather alert advisory system Medium
- Remove unauthorised rock climbing routes Medium
- Remove unauthorised bolts following safety assessment Medium

4.3.9 Guided Tours and Commercial Recreation

- Exclude unlicensed commercial operators from park High (ongoing)
- Review/improve Blue Mountains Commercial Recreation Strategy High (ongoing)
- Monitor licensed operators/activities on impacts, safety & licence compliance High (ongoing)
- Investigate regulation of commercial operators not currently covered by licensing system Medium

4.3.10 Research

- Prepare/promote prospectus of research projects Medium
- Establish BMNP research fund and seek proposals Low

4.3.11 Management Facilities and Operations

- Review all management facilities & develop maintenance priorities High

4.3.12 Alien Uses, Leases and Licences

- Continue to liaise with RTA on rationalisation and rehabilitation of gravel stockpiles on Bells Line of Road High
- Establish/maintain register of all alien uses, leases & licences Medium
- Negotiate with electricity authorities re maintenance agreements & removal/rehabilitation of powerline easements & infrastructure Medium
- Formalise or renegotiate all alien tenure licences Medium

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7. DEFINITIONS AND ABBREVIATIONS

In this plan of management:

- * "the Service" and "NPWS" refer to the National Parks and Wildlife Service of New South Wales.
- * "the Act" refers to the National Parks and Wildlife Act, 1974
- * "the Director-General" refers to the Director-General of the National Parks and Wildlife Service
- * "the Minister" refers to the Minister responsible for the Service
- * "wildlife" means native animals and plants
- * "IUCN" stands for the International Union for the Conservation of Nature and Natural Resources
- * "ICOMOS" stands for the International Council on Monuments and Sites