



Environment,
Climate Change & Water
National Parks & Wildlife Service



Far South Coast Escarpment Parks

Monga National Park • Deua National Park • Gourock National Park • Wadbilliga National Park • Badja Swamps Nature Reserve

PLAN OF MANAGEMENT





FAR SOUTH COAST ESCARPMENT PARKS

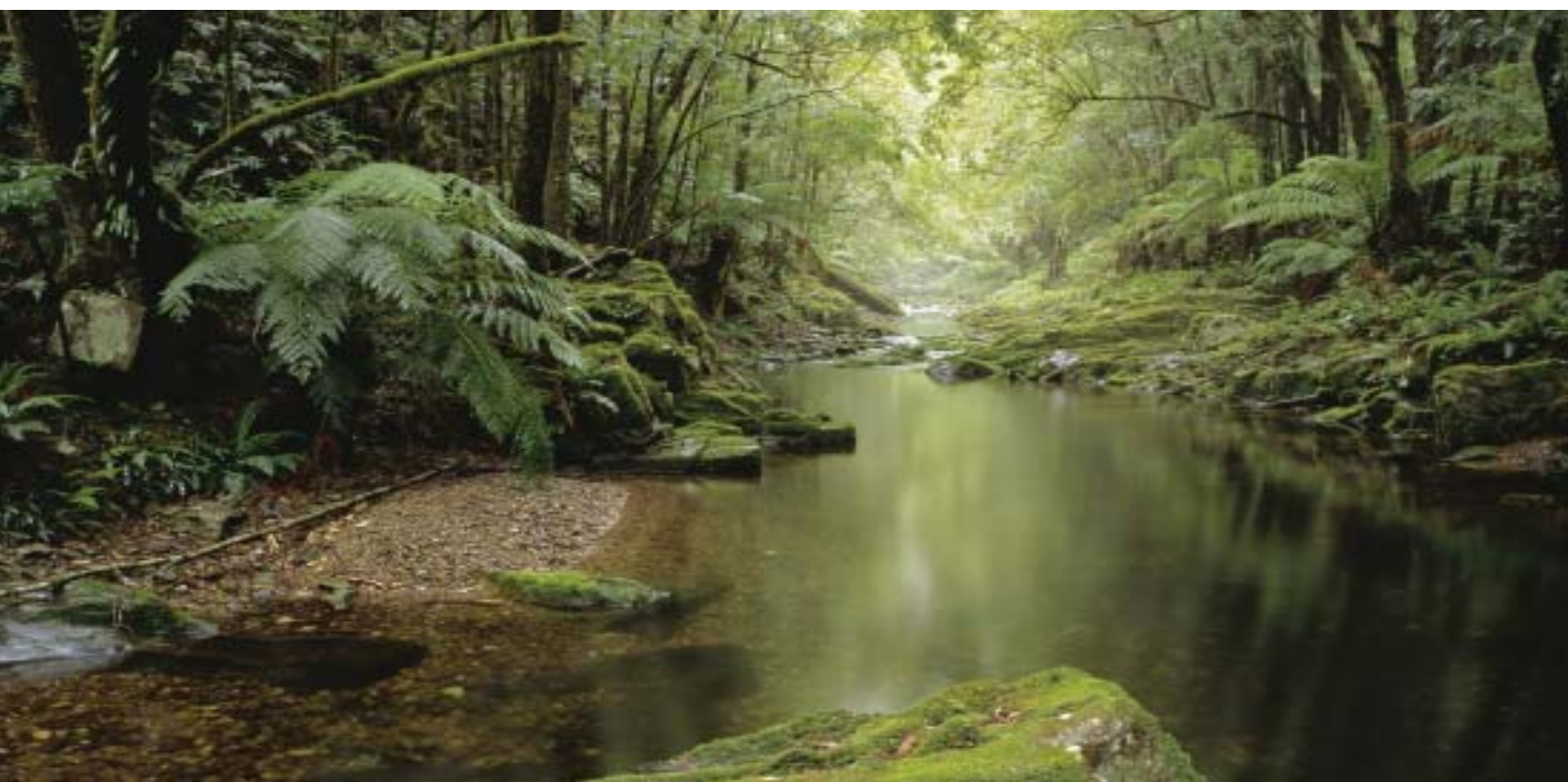
(incorporating Monga National Park, Deua National Park, Gourock National Park, Wadbilliga National Park and Badja Swamps Nature Reserve)

PLAN OF MANAGEMENT

NSW National Parks and Wildlife Service

Part of the Department of Environment, Climate Change and Water (NSW)

January 2011



This plan of management was adopted by the Minister for Climate Change and the Environment on 11th January 2011.

Acknowledgments

This plan of management is based on a draft plan prepared by staff from the Far South Coast Region of the National Parks and Wildlife Service, part of the Department of Environment, Climate Change and Water, with the advice and assistance given by the Regional Advisory Committee for the Far South Coast Region. The plan was also developed with extensive contributions from the community, stakeholders and park visitors.

The Department acknowledges that land covered by this Plan is within the Country of the traditional owners, the Yuin and Walbanga peoples.

All artwork in this plan is by local Aboriginal Artist, Lynne Thomas.

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DECCW 2011/ 0159

ISBN 978 1 74293169 2

For further information about the Far South Coast Escarpment Parks, contact the NPWS Narooma Office at the corner of Graham and Burrawang Streets, Narooma or by telephone on (02) 4476 2888.

Cover photo: M van Ewijk, Morning view over Burra-Oulla Wilderness, Deua National Park

Title page photo: M van Ewijk, Upper Tributary of Deua River, Deua National Park

Foreword

The Far South Coast Escarpment Parks, comprising Monga National Park, Deua National Park, Wadbilliga National Park, Gourock National Park and Badja Swamps Nature Reserve, are located on the coastal ranges of South Eastern New South Wales and cover a combined area of over 240,000 hectares.

The Escarpment Parks protect the habitat and support viable populations of many different species of native plants and animals because of their large size and undisturbed nature. They include caves and other karst environments that provide a significant geomorphological resource in addition to providing habitats for a diversity of cave-living animals.

Monga National Park, Wadbilliga National Park and Deua National Park contain extensive areas of wilderness as well as recreation facilities such as picnic areas, camping areas and walking tracks.

A draft plan of management for the Far South Coast Escarpment Parks was placed on public exhibition from 18th August until 17th November 2006. The submissions received were carefully considered before adopting this plan.

This plan contains a number of actions to achieve the State Plan priority to "Protect our native vegetation, biodiversity, land, rivers and coastal waterways", including control of pest animals and weeds, implementation of priority actions for threatened species and monitoring of potentially vulnerable cave animal communities. It also contains actions to achieve the State Plan priority to "Increase the number of people using parks" such as improved facilities for picnicking, camping and walking and development and implementation of an interpretation strategy.

This plan of management establishes the scheme of operations for Monga National Park, Deua National Park, Wadbilliga National Park, Gourock National Park and Badja Swamps Nature Reserve. In accordance with section 73B of the *National Parks and Wildlife Act 1974*, this plan of management is hereby adopted.

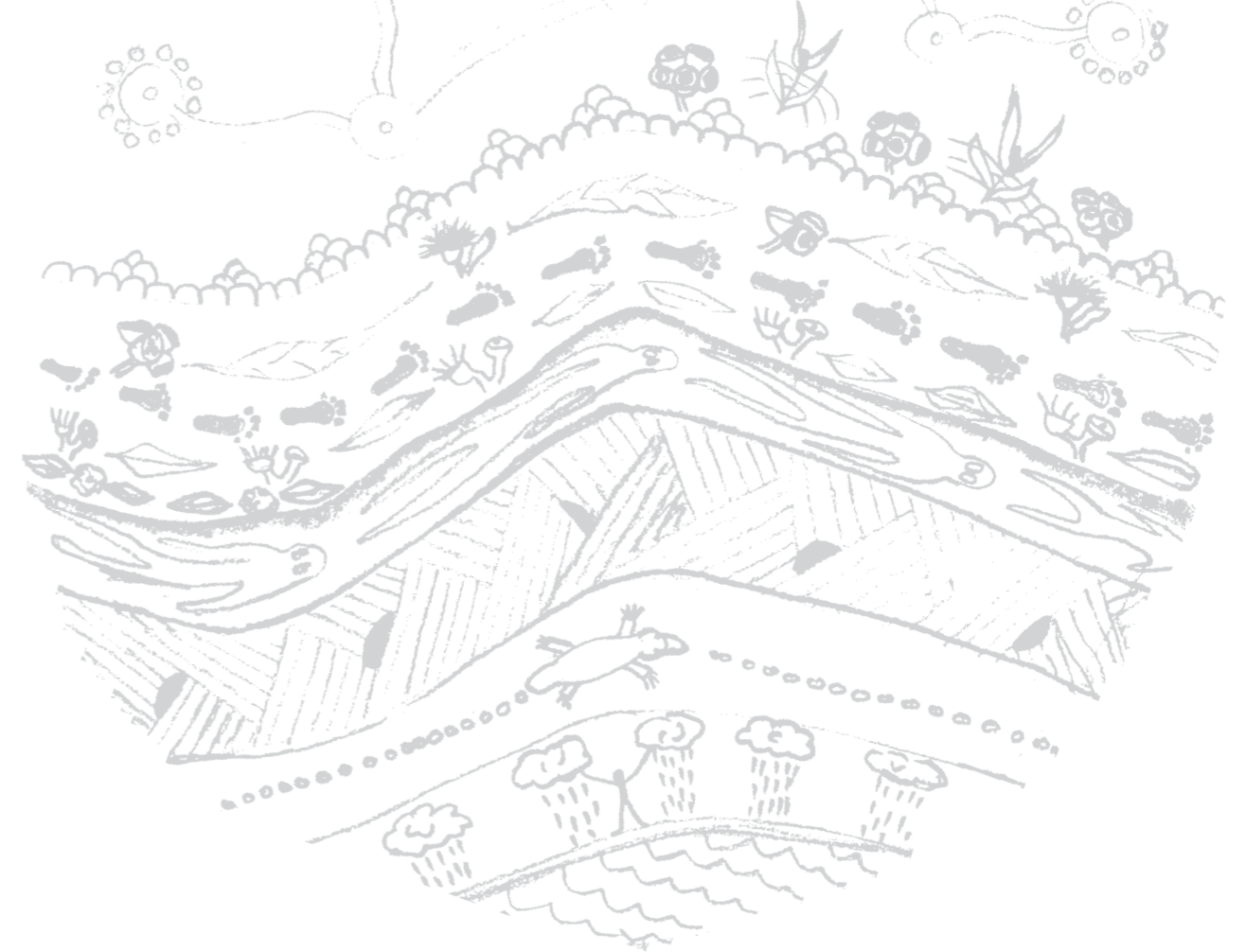


Frank Sartor MP
Minister for Climate Change and the Environment

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Chapter 1

This Plan



Trapnell, The distinctive Pinkwood tree, Eucryphia moorei, Monga National Park

Chapter 1:

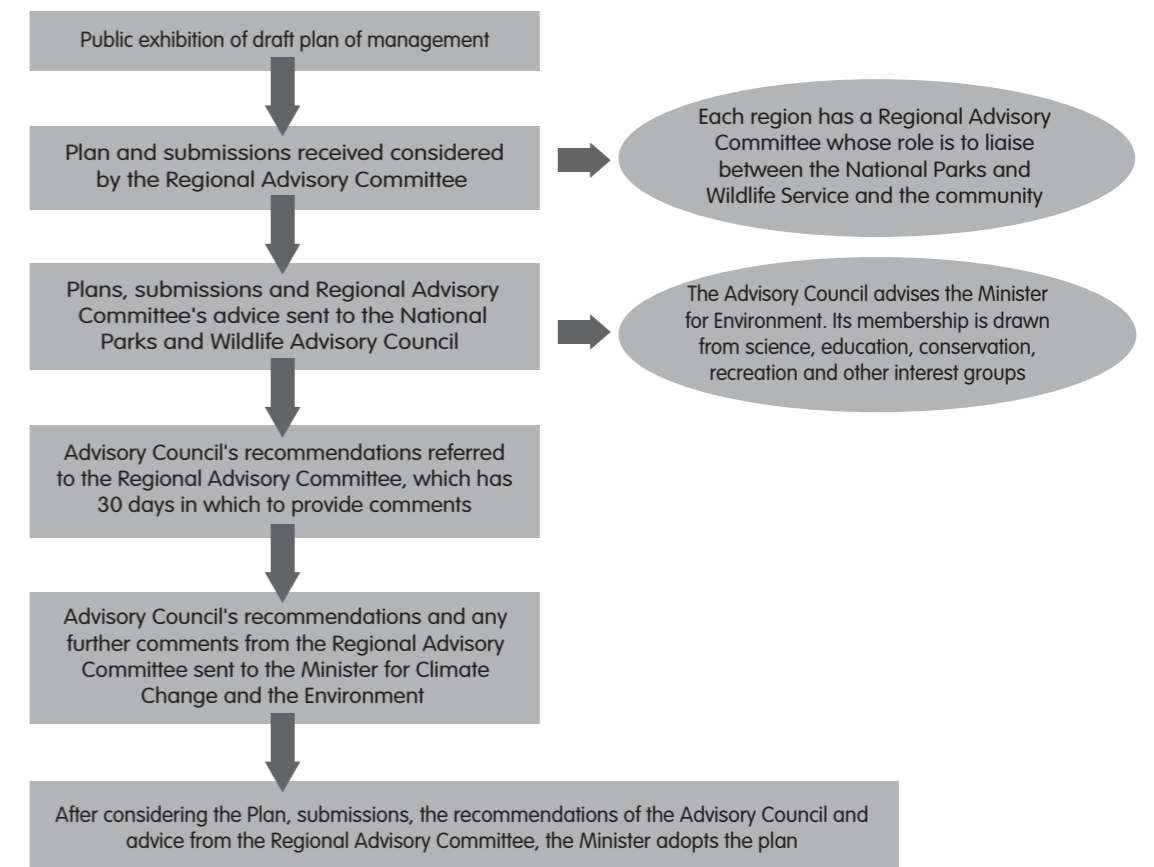
This Plan

1.1 PREPARING THE PLAN

This Plan of Management (Plan) outlines how the NSW National Parks and Wildlife Service (NPWS) proposes to manage the Far South Coast Escarpment Parks in the years ahead. The Plan, which is a legal document, is required by and prepared under the *National Parks and Wildlife Act 1974*.

The Far South Coast Escarpment Parks comprise Monga National Park, Deua National Park, Wadbilliga National Park, Gourcock National Park and Badja Swamps Nature Reserve. In this Plan the Far South Coast Escarpment Parks are referred to interchangeably as 'the Parks' or 'the Escarpment Parks'. The National Parks and Wildlife Service is referred to as the Service or NPWS.

The key steps leading to the adoption of this Plan were as follows:



1.2 TALKING TO PEOPLE

The planning team talked to many people before putting pen to paper to prepare this Plan. Many ideas and different points of view were expressed, all of which helped shape this Plan. This Plan will not please everyone. The team worked hard to develop a management solution that protects the Parks' natural and cultural values while still enabling people to use and relate to the Parks.

We began talking to people in August 2003, during a series of 'open house forums'. The open house forums were held in Moruya, Bega, Numeralla, Braidwood and Queanbeyan and were attended by more than two hundred and fifty people. During this time, the NPWS also attended a number of other community forums and sought written submissions from those who could not attend a forum. Specifically, several groups in Sydney could not make the forums, so we conducted a 'mini-forum', asking the same questions that were asked at the 'open house'. People were also invited to indicate if they wished to be kept informed of the progress of the Plan of Management and over three hundred people did so.

Through the forums and submissions, participants identified what they valued about the Parks and what they felt were key management issues. The consultation program and this Plan were developed to address these issues. This included discussion papers on access and karst management. More than sixty submissions were made on the access paper and a workshop was conducted for the karst paper. A detailed report on the open house forums, the discussion papers and the report on submissions is contained in 'Background Information: Draft Plan for Far South Coast Escarpment Parks' (2005).

The discussion papers and the submissions were used in the preparation of the Draft Plan.

The Draft Plan was placed on public exhibition from 18th August until 17th November 2006. Thirty submissions were received on the draft plan. The points contained in these submissions were considered by the NPWS Far South Coast Region, the Far South Coast Regional Advisory Committee, and the National Parks and Wildlife Advisory Council. The recommendations of the Council were then referred back to the Regional Advisory Committee for further comment, before the plan, the submissions, and the recommendations of the Regional Advisory Committee and the Advisory Council were referred to the Minister for Climate Change and the Environment for consideration and subsequent adoption of the Plan.



Chapter 2

Management and the Parks



Trapnell, Casuarinas on Deua River, Deua National Park

Chapter 2:

Management and the Parks

2.1 LOCATION, RESERVATION AND REGIONAL CONTEXT

This Plan is for the Far South Coast Escarpment Parks comprising Monga National Park, Deua National Park, Wadbilliga National Park, Gourcock National Park and Badja Swamps Nature Reserve. The Parks are located in the rugged coastal ranges of South Eastern New South Wales and cover an area of over 240,000 hectares (see Table 1 and Figure 1). In the main, they are bounded by the Kings Highway to the north, Snowy Mountains Highway to the south, Monaro and Southern Tablelands to the west and are west of the Princes Highway.

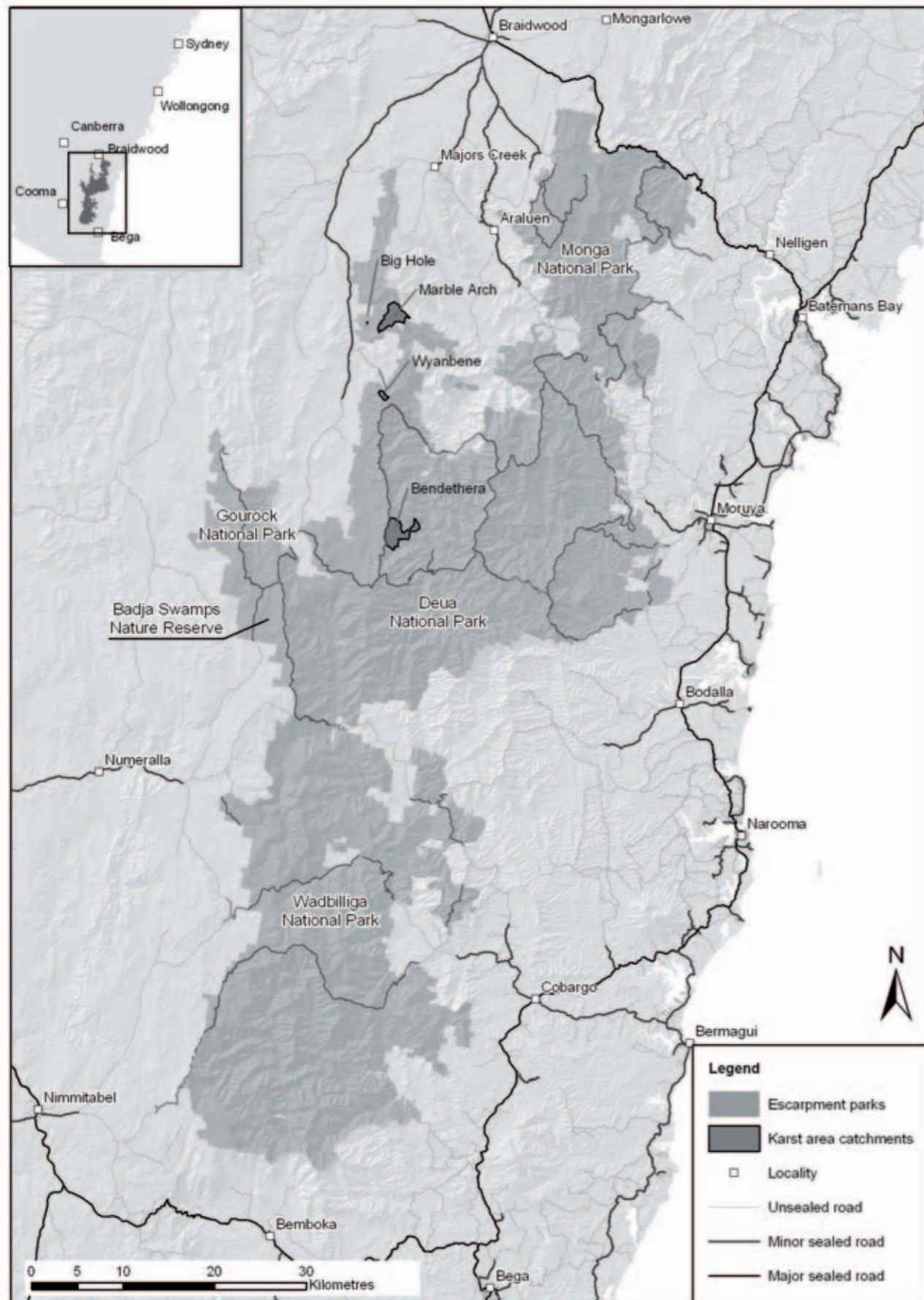
The first reservation in the area occurred 1897 when a small area of land surrounding Bendethera caves was reserved for recreation and the preservation of caves. This reserve (R.26010) Bendethera Caves Reserve was one of the earliest protected areas in NSW. It was followed by a reserve for the preservation of caves at Wyanbene in 1931 (R.62857) and a reserve for recreation and the preservation of caves at the Big Hole in 1936 (R.66027).

In the 1960s, the National Parks Association prepared a comprehensive proposal for a 'Deua-Tuross National Park' (Elfick et al, unpub.). The momentum for a national park grew during the 1970s, culminating in the gazettal of Deua National Park, Wadbilliga National Park and Badja Swamps Nature Reserve in 1979. Since 1979 the area covered by these reserves has increased by 38% from 157,982 hectares to 255,462 hectares. In 2001, as part of the Regional Forestry Agreements, Monga National Park (25,116 hectares) and Gourcock National Park (7,873 hectares) were gazetted and there were significant additions to Deua National Park (34,612 hectares). The Government added another 4,789 hectares to Deua National Park and a further 1,348 hectares to Monga National Park in 2006.

Table 1: Area of land in Escarpment Parks (as at 30.6.09)

Escarpment Parks	Area in hectares	Year established
Deua National Park	122,033	1979
Wadbilliga National Park	98,530	1979
Monga National Park	26,465	2001
Gourcock National Park	7,873	2001
Badja Swamps Nature Reserve	561	1979
Total area	255,462	

Figure 1: Location of the Far South Coast Escarpment Parks



An area of 130,231 hectares (see Table 2, Section 4.4) within the Far South Coast Escarpment Parks was declared wilderness under the *Wilderness Act 1987*. There are six wilderness areas within the Far South Coast Escarpment Parks: Woila-Deua (26,996 hectares), Brogo (39,900 hectares), Tuross (20,592 hectares), Burra Oulla (17,776 hectares), Yowrie (15,787 hectares) and Buckenbowra (9,180 hectares).

The Escarpment Parks are part of a 535 kilometre corridor of protected land between the Illawarra region and the Victorian border. The creation of Monga National Park closed what had been a significant gap in this corridor. Land adjoining the Escarpment Parks is a mixture of state forests, other national parks and reserves, and agricultural land (typically sheep and cattle grazing enterprises).

There are a number of towns in the regions surrounding the Parks that provide bases for park visitors, including Braidwood, Nimmitabel, Araluen, Cooma, Moruya, Batemans Bay, Narooma and Bega. Many regular visitors travel from Canberra, Sydney and further afield.

The Parks are within the Local Government Areas of Bega Valley, Cooma-Monaro, Eurobodalla and Palerang, and the local Aboriginal Land Councils of Batemans Bay, Cobargo, Bega, Bodalla, Cobowra, Merrimans, Mogo and Wagonga.

2.2 LEGISLATION AND POLICY

The main legislation governing the management of the Far South Coast Escarpment Parks are the *National Parks and Wildlife Act 1974* (NPW Act) and Regulation, the *Wilderness Act 1987* and the *Threatened Species Conservation Act 1995* (TSC Act).

Other legislation, international agreements and charters may also affect management of the Parks. In particular, the Environmental Planning and Assessment Act 1979 (EPA Act) may require the assessment and mitigation of the environmental impacts of works proposed in this Plan.

This Plan is a legal document under the NPW Act. This means that NPWS and others can only undertake activities and operations in Monga National Park, Deua National Park, Gourock National Park, Wadbilliga National Park and Badja Swamps Nature Reserve if they are consistent with the Plan. The Plan will also apply to any future additions to Monga National Park, Deua National Park, Gourock National Park, Wadbilliga National Park and Badja Swamps Nature Reserve. If management strategies or works are proposed for the Parks or any additions, that are not consistent with the Plan, an amendment of the Plan will be required.

2.3 MANAGEMENT PRINCIPLES

Through the various laws, management principles are established for national parks, nature reserves and wilderness areas. These are described below:

NATIONAL PARKS

National parks are reserved under the NPW Act to protect and conserve areas containing outstanding or representative ecosystems, natural or cultural features, landscapes or phenomena that provide opportunities for public appreciation and inspiration, and sustainable visitor use.

Under the Act, national parks are managed to:

- ▶ conserve biodiversity, maintain ecosystem functions, protect geological and geomorphological features and natural phenomena, and maintain natural landscapes;
- ▶ conserve places, objects, features and landscapes of cultural value;
- ▶ protect the ecological integrity of one or more ecosystems for present and future generations;
- ▶ promote public appreciation and understanding of the park's natural and cultural values;
- ▶ provide for sustainable visitor use and enjoyment that is compatible with conservation of natural and cultural values;
- ▶ provide for sustainable use (including adaptive reuse) of any buildings or structures or modified natural areas having regard to the conservation of natural and cultural values; and
- ▶ provide for appropriate research and monitoring.

NATURE RESERVES

Nature reserves are reserved under the NPW Act to protect and conserve areas containing outstanding, unique or representative ecosystems, species, communities or natural phenomena.

Under the Act, nature reserves are managed to:

- ▶ conserve biodiversity, maintain ecosystem functions and protect geological and geomorphological features, and natural phenomena;
- ▶ conserve places, objects, features and landscapes of cultural value;
- ▶ promote public appreciation, enjoyment and understanding of the reserve's natural and cultural values; and
- ▶ provide for appropriate research and monitoring.

WILDERNESS AREAS

Wilderness areas are large natural areas of land that, together with their native plant and animal communities, are essentially unchanged by human activity. Wilderness areas provide opportunities for solitude and appropriate self-reliant recreation.

Under Section 9 of the Wilderness Act, wilderness areas will be managed according to the following management principles:

- ▶ to restore (where applicable) and to protect the unmodified state of the area and its plant and animal communities;
- ▶ to preserve the capacity of the area to evolve in the absence of significant human interference; and
- ▶ to provide opportunities for solitude and appropriate self-reliant recreation.

Management of natural and cultural heritage and of introduced species and fire is carried out in wilderness areas as in the balance of the Parks, with special attention paid to minimising impacts on wilderness values.

MANAGEMENT OBJECTIVES FOR THE ESCARPMENT PARKS

In addition to the objectives described above, for each management issue identified in this Plan a specific objective ('desired outcome') was defined. The development of this desired outcome follows consideration of the background/context, natural and cultural values, and issues and opportunities. Guidelines and Actions designed to achieve the Desired Outcomes are detailed throughout the plan.

2.4 KEY VALUES ASSOCIATED WITH THE PARKS

CONSERVATION VALUES

The key values of the Parks are that they:

- ▶ capture living stories and provide places for the expression of the strong connections that people feel with the land that is now within the Escarpment Parks. There are numerous recorded sites within the Parks providing physical reminders of the stories: of the Dreamtime, of our shared histories including the days of first contact and early settlement, pastoralism, mining, timber getting, and leisure.
- ▶ encompass geological structures and rock types that demonstrate the dramatic changes to the Earth's crust during 'ancient life' (the Palaeozoic Era from 540-240 million years ago). The Parks are also the largest conservation area in the Lachlan Fold Belt on the southern coastal hinterland of NSW.
- ▶ contain cavernous and other karst environments which provide valuable and unique habitat supporting rare surface and cave ecosystems including critical bat roosting sites and the only known locations of a number of plant and invertebrate species. As a group these karst environments represent an important element of the state's geoheritage.

- ▶ protect the scenic backdrop of much of the south coast of NSW. They contain large tracts of land that are recognised as having wilderness values and form part of a 535-km corridor of protected lands between the Illawarra Region and the Victorian border.
- ▶ protect the habitat and support viable populations of many different species of native plants and animals because of their large size and undisturbed nature. Some species are now restricted in their distribution and depend on the Parks to protect their full range of feeding and breeding areas.
- ▶ provide refuge for both temperate and dry rainforest communities that evolved between 62 and two million years ago (Tertiary Period) and for subalpine communities that have evolved in the last two million years. These are important for understanding climate change on the Australian continent since it drifted clear of the rest of Gondwana.

Within the Escarpment Parks, specific parks and reserves have additional values and functions:

- ▶ Badja Swamps Nature Reserve is the only example of a subalpine vegetation community on the eastern margins of the Monaro Tablelands.
- ▶ Monga National Park, Wadbilliga National Park and Deua National Park provide extensive recreation opportunities in wild, rugged and remote terrain. These opportunities are important in a regional context.
- ▶ Deua and Wadbilliga National Parks together protect 56% of the catchment of the Deua/Moruya river system, 40% of the Tuross/Wadbilliga system and the Brogo Wilderness contains 100% of the catchment for the Brogo Dam. The Parks protect the headwaters of the Deua River and the entire upper catchment of the Mongarlowe River is within the boundaries of Monga National Park. The upper reaches of the Buckenbowra and some tributaries of the Clyde River catchments are protected in Monga National Park. Deua National Park protects the upper reaches of the Shoalhaven River.

CURRENT COMMUNITY VALUES

The following list of values was developed as a result of talking with members of the community and represents what people said they valued. These values were considered in preparing this Plan. While the plan can take into account current community values, the conservation of natural and cultural values is the primary objective. Also, community values will change with time.

Protecting relationships between people and Country

- ▶ protection of Country of the Yuin people and allowing the continuation of their connection to Country
- ▶ provision of opportunities for cultural use and cultural renewal by the Yuin people facilitating the transfer of cultural knowledge, customs and stories, ceremonies and other cultural practices

- ▶ protection of cultural heritage values including sacred sites, special places and cultural stories, and the ability to re-connect with this heritage
- ▶ providing the freedom to enjoy and travel through the land as ancestors did, particularly on historic bridle tracks
- ▶ ensuring that heritage is being preserved for future generations

Natural Heritage Values

- ▶ biodiversity (flora, fauna, threatened and rare species)
- ▶ relatively undisturbed catchments in the Parks provide high quality water
- ▶ aesthetic e.g. the beauty of mountains, scenery and of the caves (karst) areas
- ▶ accessible opportunities for the appreciation of the natural world
- ▶ distinctive character of the area including its 'naturalness' (e.g. free from air pollution)

Recreational Values

- ▶ the personal benefits derived from this range of activities and experiences e.g. a sense of adventure, excitement, exploration and enjoyment of accessibility (i.e. a wide variety of people can have access to the Parks for a range of recreational activities)
- ▶ horse-riding opportunities within the Parks, specifically access to bridle tracks
- ▶ opportunities for camping, day-use, mountain-bike riding, fishing, photography and caving
- ▶ vehicular access e.g. trails that are suitable for both registered trail bike riding and 4WD'ing activities
- ▶ walking opportunities for both remote, challenging bushwalking and shorter, easier walks

Inspiration

These values do not relate directly to a specific recreational experience, but derive from the existence of the Parks, the feelings they inspire and the meanings people derive from visiting the Parks.

- ▶ the experience of being within the Parks: beauty, solitude, peace, the sounds of nature, relaxation
- ▶ some people ascribe a value to the fact 'that the Parks are there' and do not necessarily need to visit them
- ▶ the opportunity to escape from civilisation and motor vehicles, seeking a sense of remoteness and/or 'wilderness' and knowing that future generations will also be able to enjoy this opportunity
- ▶ spiritual inspiration and connection to land

Social Values

- ▶ preservation of the Parks for future generations
- ▶ proximity of the Parks to major urban centres such as Canberra
- ▶ health benefits derived from undertaking activities within the Parks
- ▶ economic and social contribution of Park visitation to surrounding areas and also to the tourism industry
- ▶ opportunity to socialise and meet with like-minded people

Education and Research

- ▶ opportunities for the education of both children and adults to learn about the value of the Parks and why the Parks were established
- ▶ opportunities for scientific research,



Djimalang / Platypus



Mountain Grey Gum



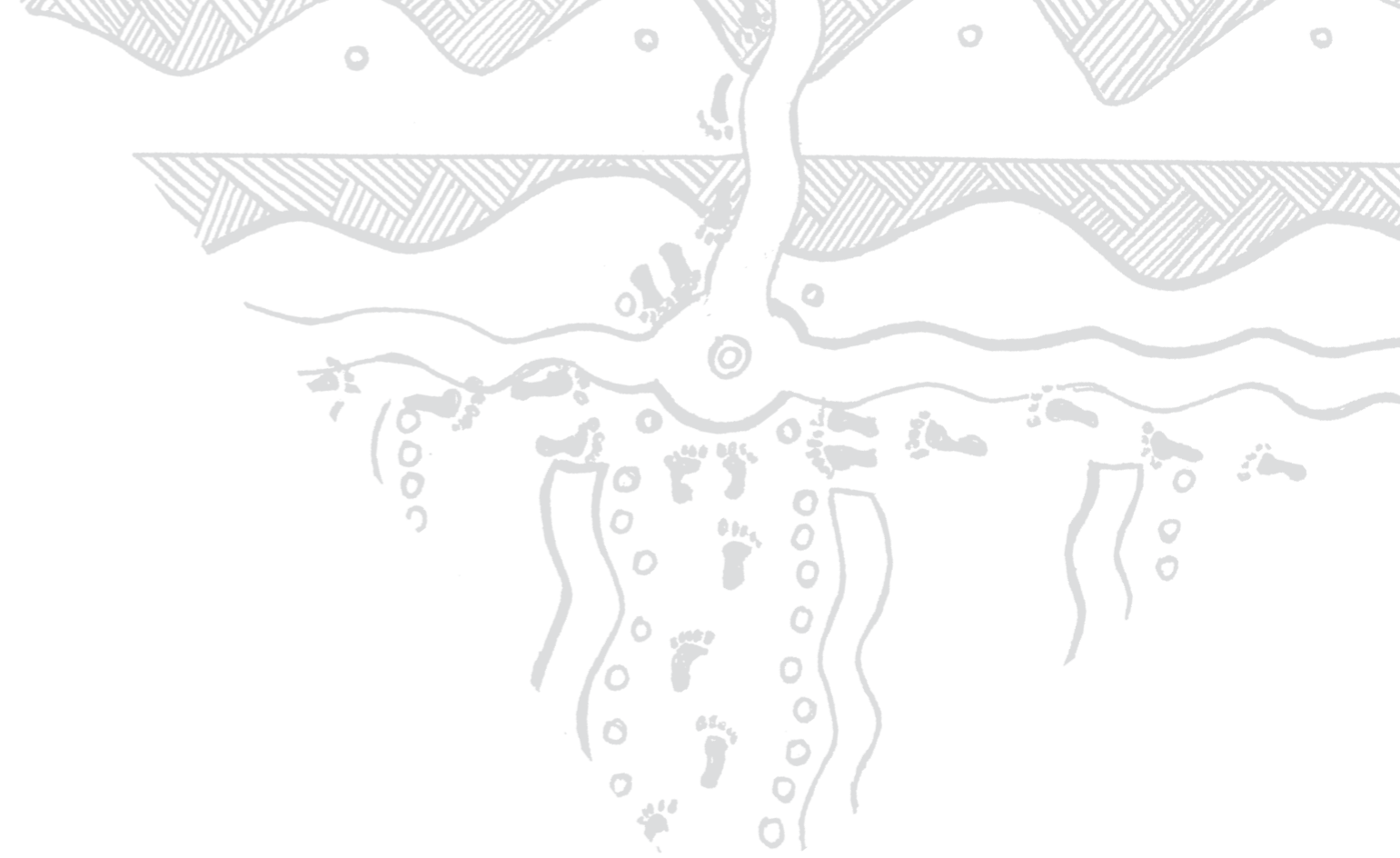
Djillacambra the rain maker



Dwarf Casuarina's



Caves



Chapter 3

Connections between People and the Parks



M van Ewijk, Bendethera wattle, Acacia covenyi, Deua National Park - Bendethera being the only known location where this wattle occurs naturally

Chapter 3:

Connections between People and the Parks

BACKGROUND

In preparing this plan we talked to many people. The strong connections that people feel with the landscape were striking when expressed through their own stories and personal histories. Some of these stories had been passed down through generations and, in the case of Aboriginal history, reached back for hundreds of generations. For others, stories go back over a century and then there are stories relating to more recent histories, such as the formation of the Parks. There are numerous recorded sites within the Parks providing physical reminders of stories: of the Dreamtime, of our shared histories including the days of first contact and early settlement, pastoralism, mining, timber getting, settlement and leisure.

To Aboriginal people, the landscape is made up of many features that are interrelated. These include the lands and waters, plants and animals, special places and stories, historical and current uses, and people and their interactions with each other and place. These features are seen as inseparable and make up what is known as 'Country' to Aboriginal people.

Archaeological evidence confirms that Aboriginal people have had a long and continuous association with the Far South Coast region for thousands of years. This has resulted in rich and varied cultures whose impacts, influence and traditional knowledge extend to every part of the land. The southern part of the Far South Coast Escarpment Parks falls within the Country of the Yuin people and the northern section is within the Country of the Walbanga people, a clan or subtribe of the Yuin. The Parks are also within the areas of the Local Aboriginal Land Councils of Batemans Bay, Bega, Bodalla, Cobowra, Merrimans, Wagonga and Mogo. A large and vibrant population remains in the region today with local Aboriginal communities actively working to maintain traditional knowledge and record and protect cultural heritage.

Among Aboriginal cultures, there is a common belief in a special period of creation (which has elements of the past, present and future) during which time ancestral or 'Dreamtime' beings created the landscape including its plants and animals, as well as the people and their languages, laws and traditions. These events are often represented as significant places in the landscape and linked with other significant places along 'dreaming trails'. Aboriginal kinship systems, which placed people in a relationship with each other, also emerged during this creation period, so that they know proper behaviour, rights and responsibilities, as well as marriage, ceremonial and land tenure relationships. Knowledge about Aboriginal cultures has been passed on from generation to generation in stories and songs.

Within the Escarpment Parks there are specific places that are significant to Aboriginal people. These include:

- ▶ parts of the landscape that have spiritual significance, usually associated with creation stories;

- ▶ ceremonial places as well as special places for gender-specific activities;
- ▶ places such as occupation sites, scarred trees, painting sites, middens or artefact scatters that are significant because they contain information about the past;
- ▶ burial sites;
- ▶ places that relate to post-contact history; and
- ▶ places that are significant for their current, ongoing cultural and resource uses such as teaching and discussing lore, and collecting food.

Along with access to a diversity of food resources, including fish, macropods, possums and a range of plant species, the Yuin possessed an extensive and diverse material culture. Weapons and tools included barbed and unbarbed spears, spear throwers, shields and hatchets. Possum-skin and kangaroo-skin cloaks, woven nets, wooden and bark containers, bark huts and canoes, and a range of ceremonial items were also used.

Aboriginal people travelled up and down the escarpment along well-worn pathways between the coast and the Monaro Tablelands to attend ceremonies, conduct trade and gather seasonal food. The Corn Trail follows what was originally a major Aboriginal pathway, and a number of other travelling routes through the Escarpment Parks have been identified. This periodic movement into each other's Country fostered good relations and provided opportunities for exchanging goods, arranging marriages, resolving disputes and consolidating political ties.

The arrival of pastoralists and timber getters on the Far South Coast of NSW in the period from 1800 to the mid-1840s resulted in the introduction of new diseases and conflict between the settlers and the Yuin people. During this period, there was a marked decline in the Yuin population. Many Aboriginal people succumbed to disease and there is also anecdotal evidence that massacres occurred in the area. The passing of the Robertson Land Act in 1861, which permitted free selection before survey, resulted in changing land use patterns, closer settlement and restricted access by Yuin people to many places in their Country. Despite this depleted population and the impact on their culture, the Yuin have survived and retained their cultural identity.

The transfer of traditional knowledge continues among Aboriginal people and there is considerable interest in retaining links with Country and culture. The NPWS recognises that Aboriginal people have a strong attachment to the whole landscape and to specific locations through their spiritual and cultural practices. Aboriginal people possess knowledge of plants, animals and natural processes that are relevant to and may assist with nature conservation. The landscape, and the plants, animals and physical features within the landscape, are all integral to Aboriginal culture.

There are reminders throughout the Parks of important phases in our shared history from 1770 onwards. These reminders are of Aboriginal employment, original surveying and clearing for grazing, pastoralism, mining for gold, the transport or movement of stock through the area between the coast and the tablelands, timber getting, and leisure and tourism activities. Within the Escarpment Parks there are a hundred and sixty-five recorded sites and landscapes that are related to the use of the region during our shared history. Some of the sites are conspicuous, such as gravesites and old fencelines, while others are places which, while the structures or relics are no longer obvious, are still significant in terms of their past use.

The dissected, rugged escarpment contains a network of bridle tracks, which follow both spurs of high country and river courses. Many of these tracks were originally shown to Europeans by Aboriginal people and can be found in Wadbilliga, Deua and Monga National Parks. The community has expressed considerable interest in the cultural heritage of bridle tracks. These tracks were used for transporting produce and moving stock from one location to another and are the most tangible historical link with the first Europeans in the area. Tracks, such as the one taken by W. D. Tarlinton (around 1828) when he travelled from Braidwood to the coast via Breakfast and Woila Creeks to Belowra, then down the Tuross River to where it meets Wandella Creek and on to Cobargo, remained in use for many years. The Corn Trail is another historic track that was used in the mid-1800s to link the Bolero valley with Nelligen and the Braidwood and Araluen areas. Gold prospectors and farmers moving produce and stock from the coast to the tablelands used the track that had been originally established by Aboriginal people. After many years of disuse, the track was opened up again as part of a Bicentennial Project organised by a working party of the Historic Routes and Tracks Research Group in 1988.

The property Bendethera, settled in the 1860s, had limited access to Moruya via a bridle track that was used to transport produce to and from the markets. Bridle tracks, such as the one along the Deua River to Araluen, were used to supply the goldfields with food grown at Bendethera.

The first grazing lease in the area was issued to John Green in 1828 in what is now Wadbilliga National Park. Grazing continued across much of the area until Wadbilliga National Park was gazetted in 1979. Within this area, open-range grazing was the dominant form of land use, with the result that very little of the area has been cleared of vegetation. Bendethera in Deua National Park is a typical example of a pastoral homestead with cattle yards and gravesites. Bendethera was occupied in 1863 after Joseph George tracked a stolen horse into the valley. Bendethera became a prosperous farm providing produce such as vegetables, bacon and grain to landholders from near and far and for miners working in the gold fields of Araluen and Nerrigundah. The surrounding area has a variety of artefacts, structures and features that relate to gold and silver mining, grazing and tourism activities.

There have been forest industries in the Escarpment Parks, with timber-getting and sleeper-cutting sites in Monga and Wadbilliga National Parks and a portable mill site and eucalyptus still in Deua National Park. Parts of the Parks (Monga, Deua, Wadbilliga and recent additions to Deua) have been subject to commercial forestry harvesting practices for sawlogs and pulpwood mills, before they were gazetted. The timber industry helped to support some surrounding communities for many years. This led to a strong association between the local communities and the forests now included in the Park.

Benchmarks and trig stations remain throughout the rugged escarpment as evidence of the process of settlement and land division. Various mining remains exist in Wadbilliga and Deua National Parks as evidence of arduous searches for gold, feldspar and molybdenite. None of the mines was an extensive or long-term operation. The upper Wyanbene valley has mineshafts thought to date from the 1850s and 1860s. Clarke's Cave, in the Wyanbene limestone, is thought to have been the refuge for the bushrangers known as the Clarke Brothers. They hid in the mountains along the western edge of Deua

National Park and, until their capture in 1867, travelled and robbed as far afield as Yass and Goulburn as well as in the Araluen Valley.

Wyanbene Cave, the Big Hole and Bendethera Cave were important to early tourism and leisure activities in the area. Developed as an early tourist destination, the Bendethera Main Cave and surrounds were reserved for public recreation in 1896. The caves at Bendethera contain significant historical features including the original handrails, steps, cuttings and shoring which were installed by the government caretaker between the 1890s and 1903. Bendethera Main Cave contains signatures dating from the 1890s including many early family names of the district. The first two hundred metres of Wyanbene Cave were used for tours during the early 1930s, presumably in conjunction with visits to the Big Hole.

The gazettal of the Parks and the nomination and gazettal of wilderness areas forms an important part of the Parks' recent history. Appendix Table A7 shows the history of both Park establishment and wilderness declarations. In the early 1960s the National Parks Association submitted a proposal for a Deua-Tuross National Park to the NSW Government. This led to the creation of both Deua and Wadbilliga National Parks in 1979. Since the 1980s a series of proposals for, and assessments of, wilderness areas have been made. Since that time, six wilderness areas have been declared within the Parks covering a total area of over 128,000 hectares.

During the 1990s the Australian and NSW Governments negotiated the Eden and Southern Regional Forestry Agreements. An important aim of the negotiations was a Comprehensive, Adequate and Representative (CAR) reserve system protecting the environmental and heritage values of forests through the creation of national parks and other reserves. People in the community and those with conservation, scientific and recreation interests made wide-ranging contributions to the assessments and decisions made at this time. In 1997, a large area was added to the eastern side of Wadbilliga National Park as a result of the Eden Regional Forestry Agreement. In 2001, following the Southern Regional Forestry Agreement, both Monga National Park and Gourock National Park were gazetted and an extensive addition was made to Deua National Park as well as additions to Wadbilliga National Park (around Peak Alone).

ISSUES/OPPORTUNITIES

- ▶ A large Aboriginal population remains in the region today and local Aboriginal communities are actively working to maintain traditional knowledge and to record and protect cultural heritage.
- ▶ Within the Wandella area there are two low-key Aboriginal culture camps, established with the assistance of Forests NSW before the area became national park. The culture camps are used by members of the Aboriginal community for teaching and the maintenance of cultural activities, and are important resources for the Aboriginal community. There is an agreement between the NPWS and the Aboriginal community about the continued use of these culture camps.
- ▶ The Deua River valley within Deua National Park contains a number of locations that are important to Aboriginal people for 'bush tucker' and medicinal plants.
- ▶ Interpretation in areas which provide evidence of past forestry activities needs to acknowledge past management by Forests NSW and the strong association with local communities as well as the evolution of community perceptions of land management.
- ▶ There is a possibility that NPWS fire suppression activities, hazard reduction burning, and fire trail construction and maintenance will have negative effects on cultural heritage (see Section 4.6).
- ▶ During the preparation of this Plan, the Aboriginal community indicated its desire to use some resources in the Parks for cultural or ceremonial purposes. The Service is currently preparing a policy on wild resource use in parks. Wild resource use of the Parks by Aboriginal people will be consistent with this policy when adopted.
- ▶ There is an opportunity for more involvement of Aboriginal people in park management activities.
- ▶ There is a need to rewrite some interpretative signs within the Escarpment Parks to place greater emphasis on Aboriginal cultural heritage.
- ▶ The NPWS has prepared a regional cultural heritage strategy: Far South Coast Region Cultural Heritage Management Strategy 2003 – 2008 (NSW NPWS, 2003). This strategy identifies priorities, desired conservation management outcomes and strategies for conserving historic heritage places and landscapes within the region. The strategies range from active management to no action and apply to the following areas within the Escarpment Parks:
 - Bendethera homestead & complex (Deua National Park)
 - Wyanbene Caves (Deua National Park)
 - Corn Trail (Monga National Park)
 - bridle tracks (several parks)
 - Monga sawmill (Monga National Park)
 - Deua eucalyptus distillery (Deua National Park)
 - Deua agricultural water race (Deua National Park) and clearings within the Deua River valley like Bendethera (Deua National Park)

- ▶ Management of the current landscape setting of Bendethera which, as a result of past clearing and grazing, is open grassland. Bendethera is important culturally in terms of specific sites and as a cultural landscape of remote, cleared river flats. Some parts of the cleared area are revegetating. The issue is whether to allow this revegetation to continue, thus changing the nature of the cultural landscape, or to actively maintain the cleared areas. A conservation plan that assesses both the natural and cultural values is required.
- ▶ Many people have expressed interest in the cultural heritage of the Parks. There are opportunities for liaison, mutual exchange of information and learning with local interest and historical groups (e.g. when assessing the cultural importance of bridle tracks) and to share this information through the Service's educational programs.
- ▶ An assessment has been undertaken of the Shoebridge bridle track within Deua and Monga National Parks (NSW NPWS, 2004). To assess the significance of bridle tracks within the Parks, an assessment of tracks across the region and all land tenures is required.

DESIRED OUTCOME

The protection and celebration of, and continued connection with, all the history of the Parks including Aboriginal and shared histories.

GUIDELINES AND ACTIONS

- 3.1 Conserve the cultural values of the Parks in accordance with the Australian ICOMOS (International Council on Monuments and Sites) Charter for the Conservation of Places of Cultural Significance (Burra Charter) and its guidelines.
- 3.2 Implement the conservation management recommendations of the Far South Coast Region Cultural Heritage Management Strategy 2003 – 2008 (NSW NPWS, 2003) detailed in the Appendix Tables A11-A13. Ensure cultural heritage management in the Parks considers and, where relevant, is consistent with adopted cultural heritage management strategies and conservation management plans.
- 3.3 Manage bridle tracks in cooperation with community and interest groups and with consideration for the values of all tracks within the region, both within and outside the Parks. Carry out research into the history, location and significance of the various tracks. Based on an assessment of significance and ecological impacts, adopt a management approach that may vary from active management to no action, recreational access to no access.
- 3.4 Manage heritage places with shared histories to ensure that:
 - all aspects of the history of a place are identified, recorded and assessed;
 - cultural values of both Aboriginal and shared history are acknowledged at places where they co-exist; and
 - management of the remaining physical evidence of one historical theme or story is not at the expense of that of another.

- 3.5 Maintain a close liaison with Aboriginal communities regarding all aspects of park management, with an emphasis on promoting opportunities for direct involvement of Aboriginal people in park management, protection and interpretation. Where appropriate and of interest to both parties, provide some direction for how the Service and community can work together towards a joint management approach. Continue to support Aboriginal culture camps within the Parks.
- 3.6 Before the promotion of any Aboriginal heritage site, consult with the local Aboriginal community in regard to whether access to the site is appropriate, undertake in cooperation with the Aboriginal community any management work necessary to protect the site, and the development of appropriate information to interpret the site.
- 3.7 Implement procedures for ensuring that natural and cultural heritage protection is considered in fire management activities likely to result in ground disturbance.
- 3.8 Encourage and seek funding to undertake a traditional knowledge and naming project to capture surviving traditions, place names, knowledge, skills, customs, practices and beliefs associated with the Escarpment Parks. Make the recording of the oral histories and knowledge (where appropriate) a high priority. The naming project should focus on:
 - retrieving and recording Aboriginal names for landscape features, plants and animals in the Parks;
 - retrieving and recording names which are no longer in use; and
 - recording unofficial names currently in use by local people for landscape features.



I Trapnell, Tree fern gully in Penance Grove, Monga National Park

3.9 Encourage and support research initiatives and collaborative projects with research institutions, universities and other organisations that:

- contribute to an understanding of the cultural values of the Parks and adjoining areas;
- provide opportunities for relevant community members to develop research skills; and
- are conducted in partnership with communities.

Share findings from research through the Service's educational programs and activities and incorporate into interpretation where appropriate.

3.10 Foster and support the ongoing participation of community groups in the management of the cultural heritage of the Parks. Invite Aboriginal and non-Aboriginal community members to participate in public education and interpretation of the cultural values of the Parks.

3.11 Develop and implement a management plan for the Bendethera Precinct that protects cultural heritage values, maintains the essential open character of Bendethera, includes assessment and inventory of cultural sites and features within the caves, and ensures that recreational and camping activities have minimal impact on the environment.



Walking to and through



Monga or Braidwood waratah



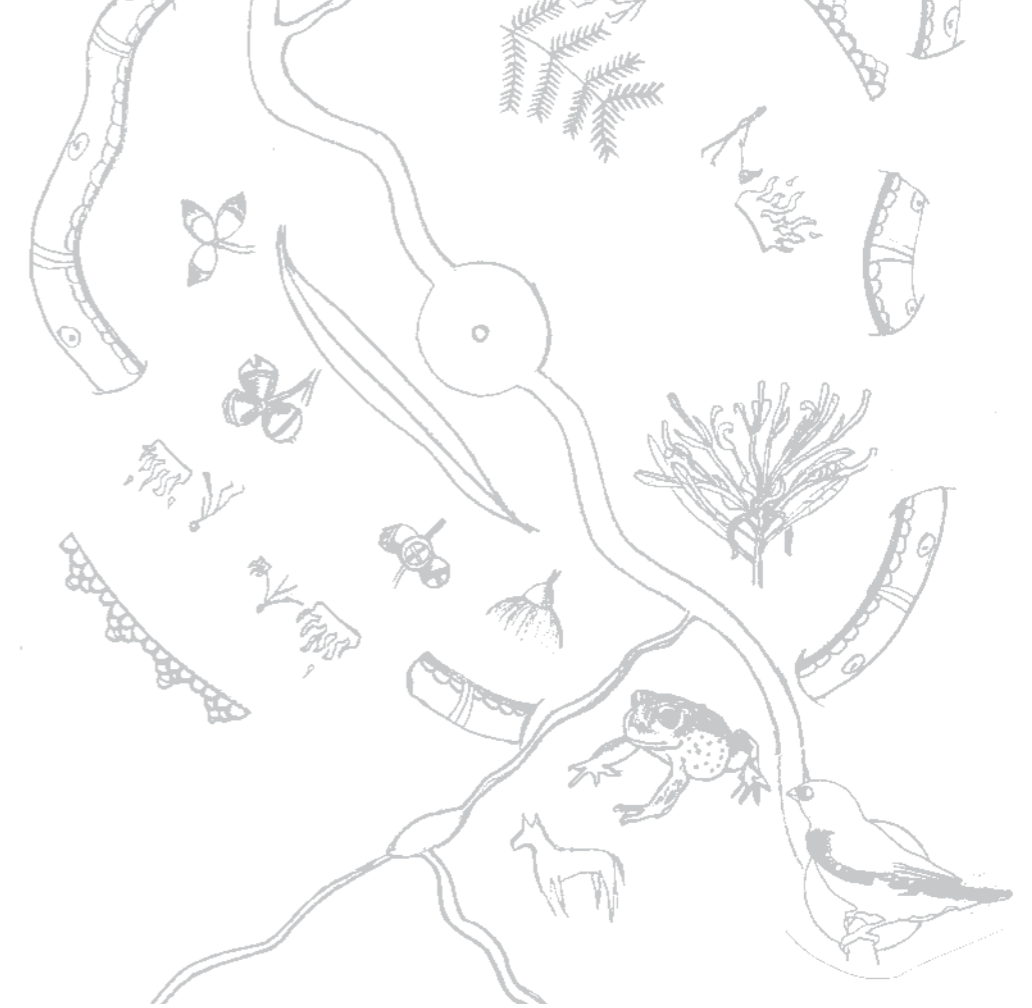
Silver wattle



Silvertop ash



Common reed



Chapter 4

Knowing and Looking after the Parks



M van Ewijk, Tuross Falls with their drop of 35m into the 5km-long Tuross River Gorge, Wadbilliga National Park

Chapter 4:

Knowing and Looking after the Parks

4.1 THE CREATION OF THE LANDSCAPE

BACKGROUND

Valleys dissected by wild rivers, rugged mountains, deep gorges, dry ridges, steep escarpments, limestone karst country and high plateaus are some of the diverse landforms of the Escarpment Parks. The land ascends from the steep coastal hinterland valleys, across steeper escarpment ranges to the gentler tablelands. As it rises the temperature ranges fall, trapping rainfall on the relatively wet eastern slopes. Narrow alluvial flats, steep gullies or rocky drainage channels intersect these hillsides and ranges. Its soils are mostly poor, the result of a combination of steep slopes and low fertility bedrock (of sedimentary, meta-sedimentary and granitic origin). In a few places, fertile basalt, acidic rhyolite or alkaline limestone rock outcrops occur.

In Aboriginal Dreamtime stories and beliefs, the rivers, mountains, valleys, plants, animals and people were made by creation beings at the beginning of time. These paths of creation are known as dreaming tracks or song lines. There are several well-known dreaming tracks that pass through the Escarpment Parks along the Brogo, Tuross and Deua Rivers. A Monaro/Snowy River story for example, tells of Djamalang the Platypus who travelled from the Shoalhaven to the Snowy River creating Wyanbene Caves along his way.

The scientific story about how the Escarpment Parks were formed is as complex and dramatic as the rugged landscapes. It includes periods of sedimentation, mountain building, volcanic activity, slumping, uplift and erosion over millions of years.

The formation of the escarpment started about five hundred million years ago when sediments washed off adjoining landmasses and were deposited in a deep ocean trench. These sediments were then subjected to forces that folded, heated and compressed them to form the area's base rocks. Fringing coral reefs on the edge of the seas became the limestone bands that run through the area. Between four hundred and one hundred million years ago, the supercontinent of Gondwana was subject to mountain building, volcanic activity, landmass slumping and uplift. During a period of volcanic activity and folding, large granite bodies intruded into the sedimentary rocks heaving them upwards. Mother Woila (1,134 metres), with its knife-edged ridges of broken quartzite, is an example of this. These granite bodies also metamorphosed the limestone of the Wyanbene and Marble Arch areas in Deua National Park and recrystallised them into coarse red and white marble. Today, granite protrudes through the valley floors and forms a smooth skin on the top of Wadbilliga Mountain and the surrounding plateau.

Volcanic activity which centred around Mongamula Mountain (720 metres), Mount Donovan (960 metres) and south across the valleys of Burra and Coondella Creeks in Deua National Park, created the spectacular and sharply defined peaks (called Mountains of the Moon) that dominate the western horizon as you look inland from the Moruya area. This also produced an area of rhyolite, which now supports an assemblage

of interesting and rare plant communities. In the past hundred million years, the Great Escarpment was gradually formed by the uplift of blocks of country. Since mountain building activity ended thirty million years ago, erosion has carved out the massive valleys of the rivers and creeks, including the Tuross Falls, which drop 35 metres into a gorge which is 5 kilometres long between cliffs up to 100 metres high.

Within these rugged landscapes, there is an altitudinal range of 1,465 metres, from the Slap Up Trig (1,469 metres) to Wamban Creek (4 metres). Dominant features of the escarpment include the Big Badja (1,352 metres) and Table Top Mountain (1,180 metres), which give outstanding views across both Deua and Wadbilliga National Parks and, on clear days, to both the ocean and Snowy Mountains. Peaks along the Minuma Range in Deua National Park are typically over a thousand metres high, for example Dampier (1,239 metres), Deua (1,048 metres) and Wyanbene (1,058 metres). The eastern Deua is the dominant landscape seen from the Princes Highway at Moruya with landmarks being the Mountains of the Moon, Mt. Donovan, Hanging Mountain and the spectacular symmetrical cone of Wamban Mountain.

The impressive, rugged landscape of the escarpment and mountains to the east contrasts with the sections of the southern tableland plateau, which slope to the west, where the gently flowing streams have allowed the development of swamps, fens and bogs, including extensive peat bogs. Deua, Monga and Wadbilliga National Parks have altitudinal ranges of up to 1,000 metres, contrasting with Gourock National Park on the tableland plateau to the west of the escarpment which has an altitudinal range of 600 metres.

Five karst areas, Marble Arch, Wyanbene, Bendethera, Cleatmore and Deua, have developed on limestone. Karst landscapes are formed by water dissolving the rock material, in this case limestone. The Big Hole, which is a deep pit that sinks abruptly into the hillside, formed when the ceiling of an underlying limestone cave collapsed. The human connections with karst areas have been rich and varied. The caves of the Parks



A Brown, Marble Arch, Deua National Park where wide bands of marble can be seen in the walls of the canyon

have at various times served as places of refuge, for ceremony and artistic expression, scientific inquiry, recreation and tourism. Bendethera and Wyanbene Caves have had recreational uses since the late nineteenth century. Europeans discovered Bendethera Caves in 1875. Within fifteen years a 'Public Caves Reserve' was established because of the interest in the unusual landforms. In 1890 walkways, stairs, ladders and ropes were built in the Main Cave to make it easier to explore. This Reserve was incorporated into Deua National Park in 1979. The first recorded descent into the Big Hole was in the nineteenth century. All the karst areas contain features of high conservation or scientific importance, which are sensitive to any human activity.

ISSUES/OPPORTUNITIES

- ▶ Karst areas, which are exceptionally sensitive due to their dependence on the maintenance of the natural hydrological system and their high scientific values, need special protection.
- ▶ The need to minimise potential visual impact of facilities on the landscape.
- ▶ Both natural and accelerated erosion occur within the Parks. An important aim of management is to minimise accelerated erosion through ongoing track maintenance and regulation of visitor activities.
- ▶ There are two quarries within the Parks as shown on Maps A10 and A11 that are used to extract material for road maintenance.

DESIRED OUTCOME

Management of the Parks to minimise scenic and visual impacts on the landscape and reduce the impact of accelerated erosion caused by human activities. Maintenance of natural hydrological regime for karst areas.

GUIDELINES AND ACTIONS

- 4.1.1 Manage karst environments in accordance with the IUCN Guidelines for Cave and Karst Management (Watson et al 1997).
- 4.1.2 Use the Deua and Cleatmore karst areas as reference areas for scientific research. As they are relatively undisturbed karst systems, do not allow access to them for recreation purposes (see also Section 5.7 for management of recreational caving).
- 4.1.3 Implement best practice guidelines and principles for facility design and siting, ensuring that facilities harmonise with surroundings and are visually unobtrusive.
- 4.1.4 Implement adopted maintenance standards, guidelines and priorities for public access roads, management trails and walking tracks that minimise erosion and its impact on the Parks.
- 4.1.5 Close and rehabilitate disturbed areas and illegal access tracks not required for public use or management.
- 4.1.5 Permit the continued operation of quarries as shown on Maps A10 and A11 subject to the completion of a quarry management and rehabilitation plan.

4.2 NATIVE PLANTS

BACKGROUND

Combinations of landform (elevation, slope and aspect), geology (soil fertility and water-holding capacity), fire history and climate (rainfall, temperature and radiation) have resulted in diverse vegetation in the Escarpment Parks. Vegetation types include eucalypt forests, acacia scrubs, rainforest, riparian forests, swamps, bogs and heath, and rock scrubs. There are six endangered ecological communities occurring in the Parks. Three plant species within the Parks are listed as endangered and eight as vulnerable under the *Threatened Species Conservation Act, 1995* (see Appendix, Table A4). The effects of fire are evident throughout most of the Park and the eucalypt forests and heathlands in particular have adapted to certain fire regimes.

The inaccessibility of much of the Parks means that over a quarter of the Parks' vegetation has been virtually undisturbed giving rise to old growth eucalypt forests. Old growth forest communities typically have much of their canopy made up of old trees with only a few young, regrowth trees reaching the canopy. Generally they have not been logged, grazed or cleared or have had only minor selective logging, grazing or clearing in the last forty years. While fires may have occurred recently, their intensity has not been sufficient to remove all or nearly all of the mature or senescing trees from the canopy.

Between 1995 and 2000, Comprehensive Regional Assessments (CRAs) of the attributes and values of the eastern forests of New South Wales were undertaken. The information that emerged from this analysis forms the basis of a series of Regional Forest Agreements (RFAs). The vegetation protected within the Escarpment Parks makes an important contribution to conservation targets identified through the CRA/RFA process.

During the survey, Aboriginal participants also identified a number of plants as having cultural importance for them, especially as food resources. These included: the leaves of a native raspberry (*Rubus parvifolius*) a low-growing (60 centimetre) groundcover, the rhizomes of bracken (*Pteridium esculentum*), the starchy material near the apex of tree ferns (*Dicksonia antarctica* and *Cyathea australis*) and the seed-heads of cycads or burrawang (*Macrozamia communis*).

Most of the Escarpment Parks fell within the Southern CRA area, although the southern part of Wadbilliga National Park fell within the Eden CRA. This means that different methods were used to classify vegetation types. During the Southern CRA (Commonwealth and NSW Governments, 2001) fifty-three vegetation assemblages were differentiated within these Parks most of which overlap with the twenty-nine vegetation assemblages identified in the Eden CRA. In this Plan, the vegetation classifications described in the Southern CRA are used.

Eucalypt Forests

The eucalypt-dominated forests can be classified into five broad categories: dry shrub eucalypt forest, wet shrub eucalypt forest, dry grass eucalypt forest, wet fern eucalypt forest and wet herb eucalypt forest. Within these broad groupings, thirty-eight different eucalypt-dominated vegetation assemblages were identified during the Southern CRA.

Dry Eucalypt Forest

Dry eucalypt forest is the dominant vegetation group in the Parks and most is found on steeply sloping country of low fertility. On steeper infertile slopes closer to gullies and on sheltered slopes, an increase in soil moisture allows more ferns to grow and vegetation moves towards wet forest types. Where the gullies are wet enough or the slopes rocky enough to provide some fire protection the vegetation may tend towards rainforest or dry rainforest types. Where slopes flatten along drainage lines and in broad gullies, riparian forest tends to dominate. On the relatively few fertile soils contained within the Parks, the steeper slopes support dry grassy forest or, where sheltered or wetter, possibly wet herb forest. Dry heaths are found along the plateaus of the escarpment on very infertile soils while acacia scrubs prefer very steep, rocky and exposed slopes. Bogs, wet heaths and grasslands are rare within the Parks and occur only on the tableland.

Dry Shrub Forest

The Southern CRA identified thirty-two dry shrub forest types occurring from the coastal hinterland to the tablelands. They are mainly on the slopes and ridges and cover an area of 109,027 hectares which represents 44% of the total Park area. These forests are characterised by stringybarks, principally yellow stringybark (*Eucalyptus muellerana*) and blue-leaved stringybark (*E. agglomerata*) as well as rough-barked apple (*Angophora floribunda*) and stands of silvertop ash (*E. sieberi*). While shrubs dominate the understorey, it also contains some herbs, climbers, grasses, sedges and ferns.

Dry shrub forests are common throughout all parts of the Park being found mostly on the steep, dry country of low fertility. Rocky sites tend to support rocky outcrop vegetation. These are often of particular management interest due to the unusual species that can be found there. Most of the taller stands in accessible locations have been logged so tall, old growth stands of dry shrub forest are rare. Shorter or more inaccessible dry forest stands have generally not been logged. Fire is ubiquitous throughout, with ridges and exposed slopes being extremely vulnerable to high intensity burns. Weeds are generally not a problem in this forest type.

Dry Grass Forest

A tall forest of eucalypt species with a dominant grassy understorey characterises the dry grass forest. The Southern CRA identified six dry grass forest types mostly found in the undulating ridges and slopes of the valleys of the coastal hinterland and tablelands. In these places, deeper soils allow for better water retention and higher fertility relative to the surrounding slopes. They cover an area of 11,240 hectares which represents 5% of the total Park area. Characteristic eucalypt species are the coast grey box (*Eucalyptus bosistoana*), white stringybark (*E. globoidea*) and forest red gum (*E. tereticornis*). In some communities black wattle (*Acacia mearnsii*) forms an open tree layer with *Lomandra longifolia* dominating the shrub layer. Native grasses (typically *Themeda triandra*, *Poa spp.*, *Austrodanthonia spp.* and *Microlaena stipoides*) are the dominant groundcover interspersed with herbs and occasionally small ferns. Near riparian areas, river peppermint (*E. elata*) or coast blue box (*E. bauerana*) commonly occur and the diversity and complexity of the understorey and groundcover increase.

Typically, these forest types were targeted for grazing and clearing. Generally only the poorer examples are retained within the Parks, mostly affected by selective logging (resulting in modified age and structure of canopy), grazing (the presence of weeds and the absence of rare palatable native herbs), and inappropriate fire frequencies (modified plant diversity).

Wet Fern Forest

Wet fern forest occurs in moist sheltered gullies and on slopes and represents 10% (25,287 hectares) of the total Parks area. They are characteristically tall with a closed canopy and with broad swards of ferns covering the ground. Typical eucalypt species include brown barrel (*Eucalyptus fastigata*) and mountain grey gum (*E. cypellocarpa*). A typical midstorey species is the musk daisy-bush (*Olearia argophylla*) and, in the understorey, there are tree ferns (*Dicksonia antarctica* and *Cyathea australis*). Ferns such as *Blechnum spp.* and the pouched coral fern (*Gleichenia dicarpa*) typify the ground layer. An example of a wet fern forest is found to the west of the Mongarlowe River in Monga National Park. They are typical of steeper, sheltered slopes and gullies of lower soil fertility and are often associated with rocky soils and outcrops.

Wet Shrub Forest

Wet shrub forests are commonly found on sheltered slopes with a southern and eastern aspect and cover an area of 60,074 hectares representing 25% of the total Park area. Nine types were described for the Parks during the Southern CRA. Characteristic eucalypt species include yellow stringybark (*Eucalyptus muellerana*), mountain grey gum (*E. cypellocarpa*), brown barrel (*E. fastigata*), messmate (*E. obliqua*) and river peppermint (*E. elata*) with occasional occurrences of rough-barked apple (*Angophora floribunda*). Typically they have a continuous shrubby understorey with occasional dense thickets of tall scrubs. A tangle of climbers ties the shrubs together. The groundcover consists of ferns, sedges, grasses and herbs under the shrubs but with few patches free from the covering of shrubs. Examples of wet shrub forest are found on high gentle slopes, such as those around Bendethera and in the Upper Deua River catchment and at higher elevations in Monga. They are typical of steeper but sheltered slopes and gullies of low fertility.

Wet Herb Forest

This community is mostly found in gently undulating country beside the highest parts of the Escarpment. A tall forest, up to thirty-five metres high, in which brown barrel (*Eucalyptus fastigata*), narrow-leaved peppermint (*E. radiata*) and ribbon gum (*E. viminalis*) are the prominent species. Shrubs, sedges and grasses are common though the groundcover is dominated by a high diversity of herbs. Rocky soils are not uncommon. Examples of wet herb forest can be found to the east of the Mongarlowe River in Monga National Park and in Badja Swamps Nature Reserve. They are typical of gently undulating, moist slopes and flats in areas with fertile soils with high clay content.

These forests have been targeted for grazing and clearing though generally not to the same intensity as the dry grassy forests. Most accessible stands have evidence of logging. Weeds can be a problem.

Riparian Forests

Riparian forest occurs beside drainage channels and in gullies or on lower slopes where rainfall frequently results in water flowing over the surface or erosive actions. Two riparian forests are obvious within the Parks and both were identified during the Southern and Eden CRAs. The tall, graceful river she-oaks (*Casuarina cunninghamiana*) that fringe the river flats through the Parks are distinctive. The understorey is open, with only occasional thickets of shrubs; grasses, sedges and herbs dominate the groundcover. The soil is sandy or even gravelly making it one of the most popular environments for camping and picnicking. Floods sporadically affect these areas. The resulting exposed soils are prone to invasion by weeds. Riparian forests were commonly targeted for grazing and were particularly affected by stock gathering at watering points and moving along travelling stock routes beside the Deua River.

The other riparian forest type is more closely related to the wet scrub forests. Dominated by river peppermint (*E. elata*) in association with a high diversity of other eucalypts this forest is typified by a dense midstorey of small trees and often a thick shrub layer. It also has a high diversity of grasses, herbs, sedges, weeds and climbers. This forest type is affected by the same disturbances as dry grass forest with the addition of erosive rainfall events.

Rocky Outcrop Forest

Rocky outcrop forest is found in small patches on the rocky tops, platforms and cliff lines within Deua and Wadbilliga National Parks. The rocky outcrops have complex and rich vegetation and provide the habitat for many rare plant species such as Woila gum (*E. olsenii*) and Jillaga ash (*E. stenostoma*). Examples of rocky outcrop forest are found in high altitude forest in the Mother Woila/Tabletop area in Deua National Park. Woila gum (*E. olsenii*), which has one of the most restricted distributions of all eucalypts, grows to a maximum of twenty metres in height and has smooth white bark that it sheds in ribbons. Woila gum has not been recorded outside the Escarpment Parks. On spurs and ridges in the east of Deua National Park around Mt. Donovan and on spurs of Wadbilliga Mountain, are stands of the rare Jillaga ash (*E. stenostoma*). This medium-sized tree with curved trunks and a distinct downhill lean is known to occur only within the Escarpment Parks. The unusual assemblages and occasionally rare species that are found at these outcrops are of management interest. Rhyolite outcrops around Mt Donovan contain many rare and significant plant species.

Acacia Scrub

The acacia scrubs are a low to medium scrubland characterised by Bodalla silver wattle (*Acacia sylvestris*), along with wallaby bush (*Beyeria lasiocarpa*). Acacia scrub occurs on steep slopes and often on the lower slopes adjoining dry creeks. There is an example of acacia scrub on the limestone soils in Bendethera valley. This is the only known location where Bendethera wattle (*A. covenyi*) occurs naturally. It is known locally as 'blue bush' and can be easily recognised because of its distinctive blue-grey foliage. It is very obvious in spring when it is covered in bright yellow flowers.

Swamp, Bog and Heath Country

A complex system of swamps, bogs and fens is associated with the watersheds of the Deua and Shoalhaven Rivers. These communities represent only 2% (4,314 hectares) of vegetation types within the Parks. Badja Swamps Nature Reserve was gazetted because of the important peat deposits it contains. These swamps are examples of the endangered ecological communities, montane peatlands and swamps. *Carex gaudichaudiana*, *Scirpus polystachyus* and *Phragmites australis* are common species in swamp communities. Snow gum (*E. pauciflora*) and black sallee (*E. stellulata*) also occur at higher elevations.

Heath ecosystems are found mostly on the tablelands on top of, and to the west, of the escarpment and represent 1% (1,265 hectares) of ecosystem types within the Parks. Nana heath (*Allocasuarina nana*) dominates heaths on the western side of Deua and Wadbilliga National Parks, which also contains stands of the rare Wadbilliga ash (*E. paliformis*) and the rare stunted Kybean mallee-ash (*E. kybeanensis*). The heathland appears in stark contrast to the tall open forest, which covers most of the Escarpment Parks.

Rainforest

There are six overlapping rainforest types within the Escarpment Parks, from warm to cool temperate to dry rainforest. The 6,920 hectares of rainforest occurs mostly in small patches in sheltered locations such as moist south- or east-facing slopes, the heads of gullies or on fertile soils, such as along creeks and on the escarpment. Deua and Monga National Parks contain some of the finest stands of warm temperate rainforest in NSW with the largest known stands of pinkwood (*Eucryphia moorei*) rainforest (cool temperate).

Of the rainforest types, dry gully rainforest is common being a low to medium forest up to ten metres high, co-dominated by mock olive (*Notelea venosa*), grey myrtle (*Backhousia myrtifolia*), sweet pittosporum (*Pittosporum undulatum*), and lilly pilly (*Acmena smithii*). Dry gully rainforest occurs in sheltered gullies, along small creeks, on steep, stony slopes or gully bottoms.

Cool/warm temperate rainforest is also well represented in the Escarpment Parks. This rainforest is up to fifteen metres high and is characterised by lilly pilly (*Acmena smithii*), with Australian mulberry (*Hedycarya angustifolia*) and occasionally sassafras (*Doryphora sassafras*). It occurs in sheltered gullies on the footslopes and middle sections of the escarpment.

Cool temperate rainforest dominated by pinkwood (*Eucryphia moorei*) is found in small patches in sheltered gullies between eight hundred and eleven hundred metres elevation in misty environments along the escarpment, with large stands in Monga National Park and at Hanging Mountain in Deua National Park. Attractive fern-leafed foliage and showy, four-petalled, white flowers from February to March identify this species. The pinkwood trees and soft tree ferns (*Dicksonia spp*) are closely related to plants found as pollen fossils in Antarctica. *Eucryphia* is the only genus in the family Eucryphiaceae and it occurs only in the southern hemisphere with two species in Chile and three in Australia. This is important as an example of Gondwanan affinities within the plant kingdom as both countries were once part of the supercontinent, Gondwana.

ISSUES/OPPORTUNITIES

- ▶ For large and remote parts of the Escarpment Parks, vegetation is primarily managed through fire management practices and principles (see Section 4.6). Fire management to ensure that fire is kept within defined biodiversity thresholds is especially important for old growth forests, rocky outcrop forests and riparian communities. Fire should be excluded from rainforest communities.
- ▶ The need to protect previously-logged stands from high intensity fire to allow the forests to mature and achieve a mixed age status that retains or increases the proportion of hollow-bearing habitat trees. This especially applies in wet fern forests, wet shrub forests, wet herb forests, dry grass forests, dry shrub forests and riparian forests.
- ▶ The impact of feral pigs on wetter tableland vegetation communities, especially peat bogs, and the impact of stock from surrounding properties straying into wetland areas.
- ▶ Protection of threatened species and plant species of high conservation value as identified in Appendix, Table A4.
- ▶ There are currently six endangered ecological communities identified within the Parks:
 - Brogo wet vine forest
 - Bega dry grassland
 - Candelo dry grass forest
 - River-flat eucalypt forest
 - Montane peatlands and swamps and
 - White box, yellow box and Blakely's red gum woodland.

There are additional ecological communities with high conservation management value in Escarpment Parks that require priority consideration in fire management activities. They include: old growth eucalypt forest stands (not logged, grazed or cleared or with only minor selective logging grazing or clearing in the last forty years); subtropical rainforest; cool temperate rainforest; warm temperate rainforest; dry rainforest; acacia scrubs; rocky outcrop forests; rocky scrubs and she-oak riparian forests.

- ▶ Due to their considerable size and altitudinal extent, the Parks provide opportunities for evolution and shifts in species' ranges in response to climatic variations.

DESIRED OUTCOME

Management of the Parks' vegetation to maintain floristic and structural diversity; conserve or increase the proportion of old growth forest; maximise habitat values for native animal species; protect all plant species particularly threatened plant species and communities; and to encourage recovery from past forestry disturbances.

GUIDELINES AND ACTIONS

- 4.2.1 Implement the provisions of recovery plans and the priorities action statement for plant species and communities within the Parks listed under the *Threatened Species Conservation Act 1995*.
- 4.2.2 Protect and enhance the conservation status of plant species and communities in the Parks, particularly those identified in Table A4 (plant species of particular management concern) by:
- undertaking fire management plans as outlined in Section 4.6;
 - controlling pest plant and animal species (see Section 4.5);
 - confining the use of vehicles to formed roads and trails (see Section 5.4); and
 - siting and designing recreation facilities and camping areas to minimise vegetation disturbance (see Sections 5.1 and 5.2).
- 4.2.3 Make research into the impact and management of threatening processes (e.g. fire and invasion from exotic species - see Section 6.3) a high priority and, where possible, encourage research into the response of plants to climate change.
- 4.2.4 Minimise disturbances of rare vegetation ecosystems, old growth and areas of concentration of rare plants through, for example, ensuring that no new roads or trails traverse these areas.
- 4.2.5 Promote the understanding and protection of native plants through interpretation programs (see Section 6.1).

4.3 NATIVE ANIMALS

BACKGROUND

The rugged and relatively isolated areas of the Escarpment Parks provide habitat for a diverse range of native animals. Over a hundred and six species of birds, sixty-two species of mammals and forty-five species of amphibians and reptiles have been recorded within the Parks. Due to the remote nature of much of the Parks it is likely that there are other species as yet unrecorded. Of the recorded species, six are classified as endangered and thirty as vulnerable under the *Threatened Species Conservation Act 1995*.

Areas containing old growth forests, moist forests, wet gullies or rainforest are unusually high in species diversity, and in numbers of threatened and uncommon animal species. These areas contain a suite of hollow-nesting birds and arboreal marsupials, as well as other species such as the spotted-tailed quoll (*Dasyurus maculatus*), a ground-dwelling animal, which is mainland Australia's largest carnivorous marsupial. The old growth forests in Monga and around Badja are rich in arboreal animal species and in the number of individuals. Riparian and rainforest habitats also provide refuge for animals during drought and wildfire events.

The vulnerable yellow-bellied glider (*Petaurus australis*) lives in a variety of eucalypt-dominated habitats, ranging from low open forests on the coast to tall forests in the ranges and low woodland west of the Dividing Range. The vulnerable white-footed dunnart (*Sminthopsis leucopus*) is a mouse-sized marsupial carnivore, which is at the northern limit of its distribution in the Deua. This animal prefers woodland and open forest with a heath understorey. Land clearing and urbanisation, particularly in coastal areas, have greatly reduced its range and population. Protecting the animals' habitat in a large Park is likely to provide the greatest security for its future.

The caves of Deua National Park are important habitat for many species of highly specialised fauna. They contain a number of important roosting and maternity sites for two species of bat: the threatened eastern bentwing bat (*Miniopterus schreibersii oceanensis*) and the eastern horseshoe bat (*Rhinolophus megaphyllus*). A number of aquatic and terrestrial cave adapted invertebrates have also been recorded in the Parks' caves including species with an extremely limited range and others which have yet to be classified (Thurgate et al 2001).

Fossils and owl pellet deposits found around Marble Arch contain evidence of a number of rare, extinct or locally extinct species.

More than a hundred species of birds have been sighted in the Park. Of these, the regent honeyeater (*Xanthomyza phrygia*) is considered endangered. Vulnerable species include the brown treecreeper (*Climacteris picumnus*), hooded robin (*Melanodryas cucullata*), olive whistler (*Pachycephala olivacea*), pink robin (*Petroica rodinogaster*), diamond firetail (*Stagonopleura guttata*) and glossy black-cockatoo (*Calyptorhynchus lathami*). The Parks are recognised as having a diverse population of birds of prey, including several species of owl. Vulnerable owl species include the barking owl (*Ninox connivens*), powerful owl (*Ninox strenua*) and masked owl (*Tyto novaehollandiae*). Along with bats, the caves in the Parks are known to be a habitat for the sooty owl (*Tyto tenebricosa*).

Reptiles in the Parks include the eastern brown snake (*Pseudonaja textilis*), red-bellied black snake (*Pseudechis porphyriacus*), diamond python (*Morelia spilota*), eastern water skink (*Eulamprus quoyii*), black rock skink (*Egernia saxatilis*) and weasel skink (*Saproscincus mustelinus*).

A number of threatened amphibians are found in the Parks including the endangered stuttering frog (*Mixophyes balbus*) and giant barred frog (*Mixophyes iterates*), and the vulnerable giant burrowing frog (*Heleioporus australiacus*) and Littlejohn's tree frog (*Litoria littlejohnii*).

ISSUES/OPPORTUNITIES

- ▶ Maintenance of animal diversity in the Park largely relies on management of habitat (see Section 2.3) and minimising the impact of introduced species, fire and human disturbance (see Section 2.5).
- ▶ Understanding and detecting the response of animals to management strategies and, therefore, the effectiveness of strategies are difficult. Current sand-plot monitoring programs are useful to increase this understanding.
- ▶ Invertebrate taxa in the Escarpment Parks, as in the rest of Australia, are largely unknown.
- ▶ Little is known about fish in the Park but some of the lower east-flowing streams are important as breeding areas for the Australian bass (*Macquaria novemaculeata*) and the Australian grayling (*Prototroctes maraena*). The Mongarlowe River is an important breeding area for the Macquarie perch (*Macquaria australasica*). Populations of both species have declined across their range. Management of fish in NSW is the responsibility of NSW Fisheries but, where their habitats are located in national parks, their habitats can be protected by managing catchments.
- ▶ Some populations of fauna species have become locally extinct e.g. koalas in Woila Creek. There is a need to consider the feasibility of the reintroduction of locally extinct, native animal species such as koalas.
- ▶ There are a number of species that, although not listed under the *Threatened Species Conservation Act*, are of special management concern because individuals and populations are extremely susceptible to habitat disturbance (these species are identified in the Appendix Tables A5 and A6). Such disturbances include road construction, inappropriate fire regimes, predation by feral animals, infrastructure construction and other activities that remove or alter habitat. There is a need to consider and prioritise protection of habitat for these species when planning and undertaking management operations.
- ▶ Cave roosting bats are particularly susceptible to disturbance during the winter hibernation and summer maternity seasons. Access to significant roosting and maternity sites will be restricted during these times (in accordance with the threatened species priority actions for the eastern bentwing bat).
- ▶ The impact of unrestricted visitation on bat and invertebrate communities in Bendethera, Marble Arch and Wyanbene caves is yet to be determined and would benefit from further study.

- ▶ The presence of populations of the endangered smoky mouse (*Psuedomys fumeus*) and the vulnerable brush-tailed rock wallaby (*Petrogale penicillata*) in parts of the Parks where slope, rockiness and lack of water and food lead to low fox, dog and cat numbers.
- ▶ Wild dogs, including dingoes, have been declared pest animals under the *Rural Lands Protection Act 1998* because they can cause losses to livestock. Most of Deua, Monga and Wadbilliga National Parks are covered by Pest Control Order 2, which means that wild dog control plans must be developed that account for the protection of neighbouring stock from wild dog attack whilst conserving dingo populations (see also Section 4.5).
- ▶ Due to their considerable size and altitudinal range, the Parks provide opportunities for evolution and shifts in species' ranges in response to climatic variations.
- ▶ Chemicals, such as those in herbicides and pesticides, can quickly enter the water table through the karst drainage system with potentially detrimental effects on aquatic fauna both in the cave system and at the cave efflux.

DESIRED OUTCOME

Populations of all native animals are to be maintained and viable populations of threatened species supported to recover.

GUIDELINES AND ACTIONS

- 4.3.1 Maintain animal habitat through the control of introduced species, limiting the impact of recreation activities and utilising appropriate fire management regimes (see also Section 4.6).
- 4.3.2 Manage threatened species in accordance with the management guidelines outlined in Appendix Table A5 and the provisions of species recovery plans and the priorities action statement.
- 4.3.3 Continue monitoring threatened species as identified in adopted recovery plans and continue existing programs monitoring the abundance of ground animal species (sand-plot monitoring and annual winter quoll scat search).
- 4.3.4 Continue to protect aquatic habitats through appropriate fire and weed management, road closures and effective maintenance of roads and trails to minimise siltation and turbidity.
- 4.3.5 Give priority (see also Section 6.3) to monitoring and/or research into:
 - the impact of pest species, especially dogs, on native animals;
 - dynamics of pest species;
 - the impact and management of threatening processes (for example, high fire frequency and invasion of exotic species) on native plants and animals (see also Sections 2.5, 4.5 and 4.6); and
 - the presence of populations of the endangered smoky mouse (*Psuedomys fumeus*) and the vulnerable brush-tailed rock wallaby (*Petrogale penicillata*).

- 4.3.6 Encourage the community, neighbours and visitors to report sightings of threatened species.
- 4.3.7 Investigate the feasibility of reintroducing species that are now locally extinct, such as koalas, into areas of suitable habitat in the Escarpment Parks.
- 4.3.8 Restrict recreational access to caves/cave sections which contain significant bat colonies during hibernation and maternity periods where applicable.
- 4.3.9 Reduce or avoid the use of herbicides and pesticides in karst environments. During chemical application cave entrances and karst features should be treated in the same manner as riparian zones.

4.4 WATER, RIVERS AND WILDERNESS

BACKGROUND

The Brogo, Tuross and Deua Rivers flow through and dissect the Escarpment Parks. These rivers are important to Aboriginal people, both spiritually and culturally. The Brogo River is part of a 'dreaming track' or song line, associated with the Dulagar or Yowie. The lower Deua River contains a complex of sites associated with the Seven Sisters and some of these sites are within Deua National Park. These sites have very high ceremonial and spiritual significance to contemporary Aboriginal people. A Monaro/Snowy River story tells of the journey made by Djimalang the Platypus from the Shoalhaven River to the Snowy River.

The Parks play an important role in maintaining good water quality for farms and townships on the coast and, in some cases, the tablelands. There are sixteen catchments within the Parks of which the largest are the Deua, Tuross and Brogo. With the recent additions to Deua National Park, the Parks protect the headwaters of the Deua River. The entire upper catchment of the Mongarlowe River is within the boundaries of Monga National Park. The upper reaches of the Buckenbowra and Clyde River catchments are protected in Monga National Park.

The Shoalhaven River rises on the western side of the Minuma Range in Deua National Park and, after a long northward journey, finally cuts through the range and enters the sea east of Nowra. The Deua River rises high in the mountains south-east of Bendethera and then meanders north through a deep valley on its one hundred and fifty kilometre journey to the coast where it flows into the sea at Moruya Heads. The Brogo and Wadbilliga Rivers rise on opposite sides of the seven-kilometre wide Wadbilliga plateau. The Brogo flows south to the Bega River and reaches the sea north of Tathra, while the Wadbilliga flows north to the Tuross River and empties into the sea at Tuross Heads, approximately ninety kilometres to the north. The south-western corner of Deua National Park and the western side of Gourock National Park drain into the Murrumbidgee River system.

The river systems within Deua, Wadbilliga and Monga National Parks are characterised by having water that is largely free from turbidity, siltation and bacterial contamination.

The Burra-Oulla Creek system, including the small Diamond Creek catchment, is in an exceptionally undisturbed condition. The swamp and peat areas of the upper Shoalhaven River in Deua National Park and Badja Swamps Nature Reserve act as a large 'absorption' area evening out the effects of fluctuations in rainfall from season to season.

Under Section 61 of the NPW Act, a watercourse, river or part of a river may be declared a 'wild river'. The purpose of this declaration is to identify, protect and conserve any watercourse of natural origin, which exhibits substantially natural flow and contains remaining examples of the biological, hydrological and geomorphological processes associated with river flow and its catchment in a condition largely undisturbed since European occupation of New South Wales. Wild rivers are managed to maintain these natural processes. Parts of the Brogo River are declared as a 'wild river' under the Act. Those parks and adjoining areas that fall within the Southern Rivers Catchment (Gourock National Park and Deua National Park) fall within the scope of Sydney's Drinking Water Catchment REP No.1 2007 and its associated Action Plan.

The NPWS contributed to the development of the Southern Rivers Catchment Action Plan. The Southern Rivers Catchment Management Authority is responsible for the development and implementation of Action Plans.

The catchments for rivers in the Parks are also further protected through wilderness declarations. The Brogo Wilderness Area (39,900 hectares) in Wadbilliga National Park was gazetted in 1983 and the core of the wilderness in Deua National Park was gazetted in 1994. The most recent wilderness declarations were made in 2002 and followed a comprehensive and extensive assessment. From this assessment, an additional 33,949 hectares were declared as wilderness within the Parks. The six wilderness areas shown in Table 2 below provide a core of wilderness extending north-south along the forests of the great escarpment. These areas are shown on Map A14 and described in the table below.

Wilderness areas assist in the long-term protection of biological diversity, they serve as scientific reference areas and provide opportunities for solitude and appropriate self-reliant recreation. The protection of natural values has priority over providing for recreational use of wilderness areas.



I Trapnell, View of the Wadbilliga Cascades near the Cascades Camping Ground, Wadbilliga National Park

Table 2: Wilderness Areas in the Escarpment Parks (as at 30.6.2009)

Name	National Park(s)	Area (hectares)	Year declared
Brogo	Wadbilliga NP	39,900	1983 (original) , 1998 (additions)
Woila-Deua	Deua NP	26,996	1994 (original), 2002 (additions)
Tuross	Wadbilliga NP	20,592	2002
Burra Oulla	Deua NP	17,776	1994 (original) 1996 (additions) 2002 (additions)
Yowrie	Wadbilliga NP	15,787	1999
Buckenbowra	Monga NP Deua NP	9,180	2002
Total		130,231	

ISSUES/OPPORTUNITIES

- ▶ Although there is still strong community debate about the wilderness boundaries, with many differing viewpoints, it is not within the scope of this Plan to revisit or change wilderness declarations.
- ▶ There are extensive wilderness areas in the Parks.

DESIRED OUTCOME

The maintenance of wilderness areas, wild rivers and catchments in a largely unmodified state with self-perpetuating natural systems.

GUIDELINES AND ACTIONS

- 4.4.1 In accordance with Section 9 of the Wilderness Act, wilderness areas will be managed according to the following principles:
- the protection and restoration (where applicable) of the unmodified state of the area and its plant and animal communities;
 - the preservation of the capacity of the area to evolve in the absence of significant human interference; and
 - the provision of opportunities for solitude and appropriate self-reliant recreation.
- 4.4.2 Manage natural and cultural heritage, pest species and fire in wilderness areas, with special attention paid to minimising detrimental effects on wilderness values.
- 4.4.3 Permit scientific research subject to the written consent of the Director-General if:
- it does not permanently diminish wilderness values; and either
 - it assists in the protection and management of the conservation resources of the area; or
 - it can be demonstrated that the research potential of the project is significant and that it could not be appropriately undertaken outside the wilderness areas.

4.4.4 Continue to contribute to the development and implementation of relevant catchment actions and targets.

4.4.5 In accordance with Section 61 of the NPW Act, any rivers or parts of rivers declared wild rivers will be managed in accordance with the following principles:

- the restoration (wherever possible) and maintenance of the natural biological, hydrological and geomorphological processes associated with wild rivers and their catchments, including natural flow variability, and
- the identification, conservation and appropriate management of Aboriginal objects and Aboriginal places.

4.5 INTRODUCED ANIMALS AND PLANTS

BACKGROUND

Introduced animal species can seriously affect native plants and animals by modifying the richness and abundance of species, and influencing how a whole ecosystem functions. They can also have significant effects on the economic and social values of neighbouring areas.

Management of pest species within the Escarpment Parks is undertaken in accordance with the Far South Coast Region Pest Management Strategy. The aim of this strategy is to maximise the effectiveness of pest control programs in cooperation with other agencies and park neighbours. It identifies the major pest species within the region, establishes criteria for prioritising control programs and, for each species, outlines distribution, impacts, control methods and management strategies.

The strategy also identifies the criteria applied to establish the priorities for the pest control programs. Applying these criteria, pest species are identified as of high, medium and/or low priority, which determines how resources are allocated to control programs. The following pest species are of high priority for action within the Escarpment Parks:

Wild Dogs

Much of the current pest species management is focussed on wild dogs (*Canis* spp.). The majority of wild dogs in the Parks are in the forested escarpment country in Wadbilliga, Deua and Monga National Parks. Wild dogs prey on domestic stock, particularly sheep.

The local Livestock Health and Pest Authorities, NPWS, Forests NSW and neighbours have developed cooperative wild dog control plans in accordance with the *Rural Lands Protection Act 1998*. Most of Deua, Monga and Wadbilliga National Parks are covered by Pest Control Order 2, which means that plans must be developed that account for the protection of neighbouring stock from wild dog attack whilst conserving dingo populations. These plans have been completed for the Escarpment Parks.

Red Fox

Predation by red foxes (*Vulpes vulpes*) is considered a major threat to native animal populations (especially those middle-weight range species which have the highest incidence of extinction for mammals in Australia). As a result, predation by the European red fox was declared a Key Threatening Process in NSW and a Threat Abatement Plan has been developed. Foxes can prey upon domestic stock and can have a high impact, predominantly on lambs. Foxes also assist in the dispersal of several weed species - mainly blackberry (*Rubus fruticosus ssp. Agg.*).

Feral Pig

Within the Escarpment Parks, the highest densities of feral pigs (*Sus scrofa*) have been reported from the wetter escarpment areas of the Bega Swamp in Wadbilliga National Park, Gourock National Park and Badja Swamps Nature Reserve. Pigs are also known to occur or have been reported in Deua and Monga National Parks. Feral pigs degrade habitat, especially swamp areas, and feed on native plants and animals. Pig-trapping programs are ongoing with much of the work being focused on the upland swamp areas of Wadbilliga and Deua National Parks, Badja Swamps Nature Reserve and along the Deua River.

Weeds

Compared to other protected areas, weeds are a relatively minor issue in terms of variety and spread. However, there are a number of high priority plant pest species within the Escarpment Parks that have been declared noxious in the local area under the *Noxious Weeds Act 1993*. Infestations of serrated tussock (*Nassella trichotoma*) occur in Deua National Park on cleared river flats adjacent to the Shoalhaven and Deua Rivers. Blackberry (*Rubus fruticosus ssp. Agg.*) infestations occur in Wadbilliga, Monga, Deua and Gourock National Parks.



A Brown, View of Deua River, Deua National Park

Willows (*Salix spp.*) are restricted to riparian zones in Wadbilliga, Monga and Deua National Parks. A comprehensive control program along the Brogo River in Wadbilliga National Park began in 1996. Annual monitoring and follow-up work indicates a major reduction in the distribution of willows. The sources of infestations of other weeds along the rivers are often outside the Parks. Examples are Broom (*Cytisus scoparius*), tree of heaven (*Ailanthus altissima*) and privet (*Ligustrum lucidum*) in Deua National Park. Control programs have been developed and are being implemented for these priority weed species using a range of control methods. Also important are programs to increase community awareness of pest species and co-operative management programs.

ISSUES/OPPORTUNITIES

- ▶ Wild dogs cause losses to livestock and ongoing cooperative control programs are required, primarily along the boundaries of the Parks.
- ▶ While pest management efforts will primarily focus on wild dogs, there is a need to manage emerging issues such as populations of feral deer, horses, cats and cattle.
- ▶ While it is relatively easy to measure the immediate results of pest management actions, for example by counting the animals trapped, it is much harder to measure long-term effects, particularly on biodiversity.

DESIRED OUTCOME

Control, and where possible eradicate, pest species to minimise their adverse effects on the biodiversity of the Parks, cultural heritage, social and economic environment and to limit spread to and from adjoining lands, with the highest priority being given to those species that have the greatest impact.

GUIDELINES AND ACTIONS

- 4.5.1 Undertake pest species management and control in accordance with the priorities defined in the Far South Coast Pest Management Strategy. In addition to these priorities, eliminate willows from the Brogo River, Monga and Deua National Parks and control tree of heaven in Monga National Park.
- 4.5.2 Review pest management strategies for the Escarpment Parks within the three-yearly review of the Regional Pest Management Strategy, and update with:
 - pertinent new research findings and information, or the emergence of significant, previously unforeseen, management issues;
 - the results of monitoring programs, where they indicate the need for changes to management; or
 - where existing management strategies are not achieving stated objectives.
- 4.5.3 Continue to prepare, review, evaluate and implement cooperative pest management programs, including the wild dog/fox control plans, with neighbours, Rural Land Protection Boards and Forestry NSW and develop cooperative programs for weeds such as Broom (*Cytisus scoparius*).
- 4.5.4 Provide information to the community on pest species and programs and

encourage neighbour and community involvement in pest species control projects.

- 4.5.5 Monitor the distribution and abundance of pest species and biological control releases to determine the effectiveness of control programs.
- 4.5.6 Use data management systems (e.g. FeralBASE) to record and evaluate pest species management programs. Implement systematic monitoring programs aimed at evaluating the impact of pest control programs on native animals, especially those control programs focussed on dog and foxes.

4.6 FIRE

BACKGROUND

Documentary evidence of Aboriginal use of fire in the forests of the South Coast region is extremely limited. Several early European accounts note that fire was used for hunting, either as a means of moving game or for smoking animals out of trees (Sullivan 1982). It was also used for signalling, the promotion of new growth to attract game to an area, and to clear undergrowth for easier walking along pathways and around living areas. Early records indicate that such fires often burnt large tracts of forest. Deliberately or inadvertently, these fires resulted in the containment of rainforest communities to fire-protected sites and the maintenance of more productive open forest types across large parts of the landscape.

Fires ignited by electrical storms would have occurred relatively frequently. The introduction of cattle grazing in parts of what are now the Parks would have resulted in changes in fire occurrence, frequency, extent and distribution. The extent to which individual graziers burnt their country would have varied, fires being lit if and when seasonal conditions allowed. Some of these would have burnt out of control from time to time and areas that were not specifically targeted for pasture improvement would have been burned. Some would have also been lit deliberately to reduce the threat of wildfire.

Fire history records are available for the area that is now Wadbilliga National Park (north of Cobargo) from 1938 and for Deua National Park from 1980. The records (from State Forest Fire Atlas) before 1980 are anecdotal and general, with more accurate records being kept after 1980. This information shows however, that, for the southern areas of the Escarpment Parks, significant fires occur every six to eight years and in the north every ten years.

From the records, the risk of fire in the Parks has been greatest during spring and in January. Lightning is the dominant cause of wildfire, closely followed by illegal ignitions. Fires resulting from negligence or accidents account for about 9% of fires each year, and are primarily escapes from burning-off practices on surrounding lands. During the summers of 2001/02 and 2002/03, lightning strikes ignited intense wildfires that burnt over 52,000 hectares of Deua and Monga National Parks. These fires burnt some areas of the Parks more intensely than others.

The first record of prescribed burning is within Wadbilliga National Park in 1974/75.

Large areas, chiefly in the 1970s, were burned as a result of the broad area, aerial ignition practices of that era. Prescribed burning has continued since the Park was declared.

The Service is represented on all of the Bush Fire Management Committees (established under the *Rural Fires Act 1997*) that cover the Parks and is involved in the preparation and implementation of Bush Fire Risk Management Plans. The Service, in consultation with the Bush Fire Management Committees, has prepared and adopted Fire Management Plans for Wadbilliga National Park (NPWS, 2004), Deua National Park and Badja Swamps Nature Reserve (NPWS 2004), Monga National Park (NPWS 2005) and Gourcock National Park (NPWS 2005). A range of strategies are identified in these plans to manage key risks. Strategies include:

- ▶ The identification of Fire Management Zones:
 - Asset Protection Zones
 - Strategic Wildfire Control Zones
 - Land Management Zones
 - Fire Exclusion Zones
- ▶ The location and maintenance of fire management trails and roads
- ▶ The identification of the required fire threshold to maintain the biodiversity of different vegetation communities e.g. the nana heath (*Allocasuarina nana*) which is likely to be nearing upper biodiversity thresholds and needs fire to ensure its biological diversity.
- ▶ The nomination of areas exceptionally susceptible to damage from fire (such as karst areas which can be damaged by both fire, chemical retardants used for fire suppression and smoke), rare eucalypt, acacia and nana heath communities that require protection from fire for long periods, and Aboriginal sites which can be damaged by machinery or hand line construction during bush fire suppression operations.
- ▶ Strategies for education, cooperation and enforcement, which include working in partnership with local communities.
- ▶ Research and monitoring, including establishing sites in major vegetation communities to monitor the effect of fire regimes on biodiversity.

The fire management plans also identify bush fire management risks as they relate to surrounding lands. Locations within and around the Parks where there is an intermediate or higher bushfire risk to life and property include private property in the Deua River valley, Bettowynd area, along the Belowra Road, at Brassknocker, Puen Buen (Upper Brogo), Yowrie and Brogo Dam.

In general, the Service will give high priority to hazard reduction in Asset Protection zones in and adjoining the Parks over the next few years, except for the recently burnt areas in Deua and Monga National Parks. Prescribed burns will also be implemented in land management zones to meet park management objectives.

ISSUES/OPPORTUNITIES

- ▶ Issues related to fire are identified in the Fire Management Plans above.
- ▶ There is a need to increase levels of understanding and communication between the community and Service of the Service's fire management planning, policies and programs.
- ▶ Fire can lead to the deterioration of karst environments by impacting on landforms to stimulate erosion and changes to chemical and biological processes.
- ▶ Potential impacts of fire management activities on cultural heritage.

DESIRED OUTCOME

Management of fire to achieve ongoing protection of life and property within and surrounding the Parks and the long-term conservation of natural and cultural values.

GUIDELINES AND ACTIONS

- 4.6.1 Implement and manage fire in accordance with adopted Fire Management Plans.
- 4.6.2 Accept that while fire management is primarily aimed at long-term conservation of plant and animal communities, in some areas the Service may burn more often than is desirable for biodiversity protection, in order to protect life and property and to prevent wildfires burning large areas of any one vegetation type at any one time.
- 4.6.3 In addition to annual update, review adopted Fire Management Plans as required. Include in these reviews:
- pertinent new research findings and information on the emergence of significant, previously unforeseen management issues;
 - the results of monitoring programs, where they indicate the need for changes to management; or
 - where existing management strategies are not achieving stated objectives.
- 4.6.4 Prohibit the use of chemical retardants for fire fighting within the catchments of karst areas and wetlands.
- 4.6.5 Continue to participate in community-based fire management planning and operations, primarily through involvement in local Bush Fire Management Committees.
- 4.6.6 Continue to liaise with all relevant public and private authorities, and individuals regarding fire management including the Rural Fire Service (RFS), Forests NSW, NSW Fire Brigades, local councils and park neighbours.
- 4.6.7 Raise awareness of fire management issues within neighbouring communities and among park visitors. This will include:
- descriptions and explanations of the fire management decision-making, research and strategies adopted for the Park;

- fostering understanding of the implications of fire and its impact on Park values; and
- the promotion of fire safety and fire protection procedures for park neighbours and park visitors.

- 4.6.8 Identify and undertake, or contribute to, research projects aimed at improving knowledge and understanding of fire management in the Parks. Give priority to research into the recovery and long-term implications for biodiversity from the 2002 Deua fires.
- 4.6.9 Ensure the results of this (4.6.8) and other relevant research informs fire management decision-making and are considered in reviews of the Fire Management Plans.
- 4.6.10 Ensure that cultural heritage issues related to fire management are addressed in consultation with local communities with historic interest/links to the Parks; especially local Aboriginal communities.
- 4.6.11 Manage fire in accordance with the provision of relevant threatened species recovery plans.
- 4.6.12 Undertake cooperative hazard reduction programs with the Rural Fire Service, Forests NSW and neighbours where appropriate.
- 4.6.13 As far as possible high intensity fire should be excluded from karst. The timing, location and intensity of prescribed burns should be managed to have the least negative effects on karst landforms and ecosystems, whilst ensuring the viability of endemic plant species such as the Bendethera wattle.
- 4.6.14 The use of heavy machinery, particularly tracked vehicles, should be avoided in karst environments to prevent environmental damage and risk of collapse.

 *Creation of country
Nadji (rainbow serpent)*

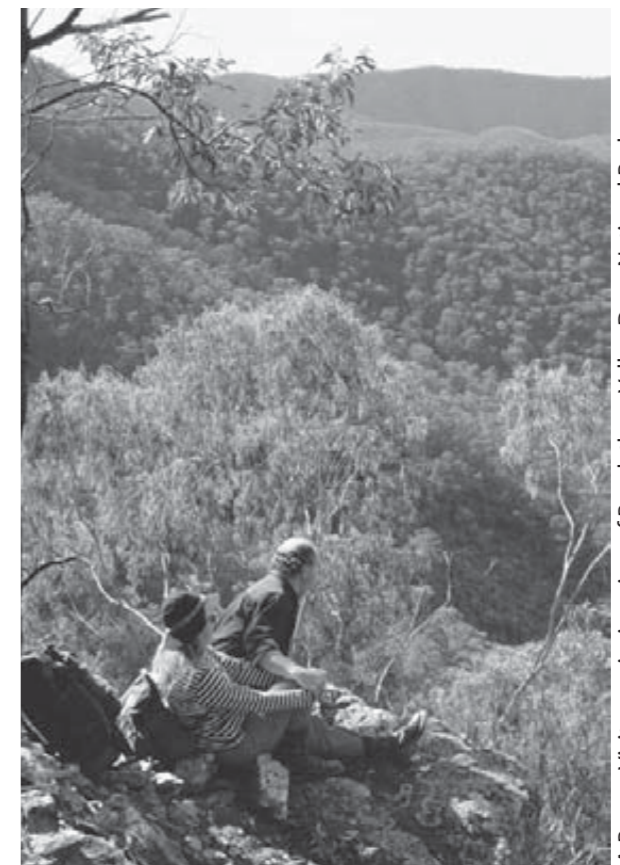
 *Native Dingo*

 *Controlled fire*



Chapter 5

Visitor Use and Enjoyment of the Parks



A Brown, Visitors enjoying view of Bendethera Valley, Deua National Park

Chapter 5:

Visitor Use and Enjoyment of the Parks

5.1 VISITORS AND VISITOR FACILITIES

BACKGROUND

People visit the Escarpment Parks for many reasons especially the natural heritage, the beauty of the rugged mountains and rivers, and the opportunity to appreciate nature. Others are drawn by the strong and rich cultural heritage and for some people particular activities and destinations represent direct personal links with family and community histories. The escarpment landscape is the focus of many recreational activities and experiences. Popular recreational activities include walking (both remote bushwalking and shorter day walks), camping, picnicking, driving, horse riding, cycling, fishing, photography and caving.

Visitors value different aspects of the Park experience. For some these are the adventure, excitement, exploration and ability to enjoy the outdoors. For others the values are more intrinsic and are derived from just being within the Parks: the spiritual connections, beauty, solitude, peace, the sounds of nature and relaxation. Other values that visitors have expressed are the health benefits obtained when undertaking outdoor activities, the economic and social contribution of Parks to surrounding areas and the tourism industry, and the opportunity to socialise and meet with like-minded people.

To support such activities, there is a range of visitor infrastructure, including roads and car parks, walking tracks, picnic tables and seats, shelters, fireplaces, toilets, camping areas, viewing platforms, signs and information bays. Visits to the Park are seasonal, with visitor numbers peaking during holidays, mainly in the summer and Easter holiday periods. The nature of a visitor's recreational experiences can, therefore, vary with the numbers of other people in the Park.

Visitors often decide to visit the Park while visiting the region for other purposes or while travelling through the region. For this reason, the Service, in conjunction with other land management agencies, has developed a Regional Nature Tourism and Recreation Plan (NPWS, 2004) that considers and makes recommendations for opportunities for regional nature tourism across all land tenures. As part of this, NPWS has developed a comprehensive information system encompassing all nature tourism and recreation sites, including those within the Escarpment Parks. Day-use areas and walking tracks were classified according to their level of development. These classification systems are shown at Appendix Tables A1, A2 and A3. In addition, a Visitor Monitoring Strategy (NPWS, 2003) informs where, how and when visitor information is collected for priority sites within the Escarpment Parks.

NOTE

Nature Reserves are refuge areas of special scientific interest where natural environments, phenomena, and wildlife can be studied without human interference. The provision of recreational opportunities is not a primary objective of Nature Reserves. Badja Swamps Nature Reserve is relatively inaccessible and there are no recreational facilities. This Chapter therefore makes no provision for recreation within Badja Swamps Nature Reserve and reference to the 'Escarpment Parks' in this context generally excludes this Reserve.

ISSUES/OPPORTUNITIES

- ▶ There is a need to ensure that recreational facilities are appropriate to the Parks and have minimal impact on the conservation of natural and cultural heritage.
- ▶ The consideration of recreational activities in a regional context and across various land tenures, and the recognition that the Park should only provide opportunities for those recreational activities that are based upon the appreciation of the natural and cultural attributes of the place and that are ecologically sustainable.
- ▶ The systematic monitoring of recreation-related effects and the collection of qualitative and quantitative visitor information are essential if recreation in the Park is to be managed in a sustainable way.
- ▶ There is a need to consider the requirements of people with disabilities and to provide them with opportunities for access when planning and constructing recreational facilities.



I Trapnell, Visitors enjoying Mongarlowe River dayuse area, Monga National Park

DESIRED OUTCOME

Provision of an appropriate range of recreational opportunities within the Escarpment Parks, consistent with the protection of the area's natural and cultural values and that also satisfies a range of visitor expectations within a regional context.

GUIDELINES AND ACTIONS

- 5.1.1 Ensure that the types, standards and capacities of the visitor facilities provided at any particular place comply with the designated classification (for camping areas, day-use areas, walking tracks, roads) described in Appendix Tables A1, A2 and A3.
- 5.1.2 Discourage the recreational use of areas of ecological or cultural sensitivity, or those regarded as unsafe, including but not limited to:
 - areas of threatened species habitat;
 - vegetation communities that are restricted in distribution and which are, therefore, especially vulnerable to disturbance;
 - places that contain culturally sensitive Aboriginal sites or values; and
 - cultural heritage features that are vulnerable to disturbance.
- 5.1.3 Minimise the environmental impact of recreation by encouraging minimal impact practices, which include hygienic and ecologically-sound waste disposal practices, the use of portable stoves and discouraging the clearing of leaf litter/ground material for campsites.
- 5.1.4 Liaise with other tourism and land management agencies to implement the Far South Coast Nature Tourism and Recreation Plan (2004) through the Far South Coast Nature Tourism Network, to ensure that recreation planning and management within the region complements the management of the Escarpment Parks.
- 5.1.5 Continue to implement the Far South Coast Visitor Monitoring Strategy (NPWS, 2003) that informs where, how and when visitor information is collected for priority sites within the Escarpment Parks.
- 5.1.6 Where there is concern about the ecological impact of an activity or conflicts between visitors' expectations, establish monitoring programs and limits of acceptable change, and determine appropriate responses with consideration to the types and quality of visitor experiences being provided and impacts on natural and cultural heritage. This may include for example, the rest and rotation of campsites at the Cascades, Deua River and Bendethera.
- 5.1.6 Keep in mind the requirements of people with disabilities when planning and constructing recreational facilities, such as short walking tracks and picnic facilities.

5.2 CAMPING AND PICNICKING

BACKGROUND

The Escarpment Parks provide opportunities for both picnicking and camping in diverse settings ranging from eucalypt forests along rivers to open valleys with grassy flats. Most of these camping and day-use areas have been developed in the past thirty years, with day-use facilities in Monga National Park being established recently. While the camping and picnic areas are busy or, in some cases full, during the summer and Easter holidays, at other times they usually offer a quiet and tranquil setting. All camping and picnic areas provide a base for a variety of recreational activities consistent with park values, ranging from nature appreciation, canoeing and walking to fishing.

There are ten vehicle-based camping areas in the Escarpment Parks, three of which are accessible by 4WD only (if using a vehicle to access the site). Across the eight camping areas there is capacity for up to 145 sites. All camping areas and facilities can be used by day visitors. In addition there are four picnic areas with facilities intended for day visitors only (camping not permitted). Table 3 shows the location and nature of camping and picnic areas and the facilities provided at each.

There are six camping areas in Deua National Park. Three are located beside the Deua River (Deua River, Dry Creek and Bakers Flat), near the Araluen Road with capacity for up to twenty-two sites. Of these, the Dry Creek site has 4WD access only. In the north-western section of the Park close to the Big Hole, is the Berlang camping area, which has up to fifteen sites and is a good base for caving trips, walks to the Big Hole and Marble Arch, and swimming in the nearby Shoalhaven River. The Wyanbene Cave camping area has five to ten sites and offers a base for both caving and bushwalking. Bendethera Valley is a remote campsite accessible by 4WD only and offers a different recreational experience and setting to other camping areas in the Park being an open valley along the Deua River, with river crossings and grassy flats. It is a good base for walking, swimming, caving and picnicking. Given that Bendethera is a large open valley, it caters for more people than the site limit in Table A1 for a basic camping area. It should be managed to provide a low-key, remote experience and setting.

There are four camping areas in Wadbilliga National Park. Lake Creek camping ground has up to fifteen sites and is located on Bourkes Road, west of Cobargo. Cascades camping ground is on the western side of Wadbilliga National Park near Tuross Falls and has twenty sites. A walking track leads from this campground to a viewing platform overlooking Tuross Falls. Supers Memorial Camp is a basic area used especially by horse riders, and there are a number of camping areas with no facilities along the Tuross River.

While day visitors may use all of the facilities at campgrounds, there are four areas set aside for day visits only. Hanging Mountain on the eastern side of Deua National Park has picnic facilities and a viewing platform that provides excellent views across to the coastal foothills and the Eurobodalla coast. Wadbilliga Crossing picnic area on Wadbilliga Road provides day-use facilities only. There are two picnic areas in Monga National Park on the Mongarlowe River.

There are no recreational facilities provided in Gourock National Park and no picnic or camping facilities within Badja Swamps Nature Reserve.

ISSUES/OPPORTUNITIES

- ▶ The Service is required to assess and manage tree risk (i.e. the risk of a tree falling or dropping limbs) to reduce the level of risk to visitors while preserving the ecological integrity of trees and tree communities. This can require regular inspections and, in some cases, modification to the layout of existing campgrounds and/or a reduction in the number of campsites available. In some instances where the trees are important for aboreal species habitat, the protection of this habitat would have priority over tree risk management. In these circumstances, it could mean closure of a camping or picnic area.
- ▶ In terms of facilities provided, Bendethera is considered to be a basic camping area. However, given that it is in a large open valley, many campers use it at peak times making it difficult to manage Bendethera so that it maintains a low-key, remote experience and setting.
- ▶ There is a need to provide cost-effective management and servicing of camping areas to ensure that visitor expectations are met.
- ▶ Damage is caused to vegetation by the collection of firewood (both 'live' and 'dead' material). This results in the loss of understorey and regrowth and affects wildlife habitat.
- ▶ Compaction of the root zone around existing trees in campsites leads to stress and dieback, which can result in an increased risk of dead limbs, requiring removal of the tree. Tree removal for safety also detracts from the amenity of the camping area.
- ▶ No formal provision has been made for camping in Monga National Park, but the incidence of camping in day-use areas is increasing as are public requests for a designated camping area, especially in the western section of the Park.
- ▶ There is a need to monitor the use of fire-places and, where unregulated use has unacceptable consequences, to implement appropriate management responses (e.g. by encouraging the use of gas stoves or the provision of fire wood and/or additional fire places).

DESIRED OUTCOME

The provision of a range of camping and picnic opportunities in diverse settings that people can enjoy while still ensuring the protection of natural and cultural values.

GUIDELINES AND ACTIONS

- 5.2.1 Provide and manage existing camping and picnic areas in those locations shown on Maps A10 and A11 and in accordance with their location, nature and classification shown in Table 3 and Appendix Tables A1 and A2.
- 5.2.2 Formalise and provide suitable facilities for the Tuross River camping area in Wadbilliga National Park. Review all other camping areas adjacent to Belowra Road on the Tuross River and close and rehabilitate those areas where facilities will not be provided.
- 5.2.3 Investigate appropriate formal camping opportunities in the western section of Monga National Park and, if appropriate and funds permit, construct a basic camping area.
- 5.2.4 Where necessary to ensure public safety, delineate sites suitable for camping. Consider closure of sections of camping areas where tree risk management will affect aboreal species habitat and/or undertake tree maintenance/pruning.
- 5.2.5 Maximise the promotion of minimum-impact camping practices and the opportunities to educate visitors about the natural and cultural values of the Parks.
- 5.2.6 Regularly monitor the condition of campsites and 'rotate and rest' campsites if necessary to minimise loss of ground cover and subsequent soil erosion.

Table 3: Location and Nature of Day-Use and Camping Areas (Note: Camping and Day-Use Facility Classifications are defined in Appendix Table A1 and A2)

Park name	Bushwalking	Camping	Caving/abseiling	Cultural heritage appreciation	Cycling/mountain biking	Fishing	Horse riding	Nature study/bird watching	Picnicking	Rock climbing/abseiling	Scenic viewing	Swimming	Peak usage ³	Off-peak usage ²	Visitor monitoring
Berlang	✓	✓	✓ ⁴					✓	✓		✓	✓	bc		✓
Site name															
Day-use facility classification1, Camping facility classification2															
Landscape setting, local setting															
Primary day-use type															
Basic day-use area, basic camp area															
Tableland forest/woodland															
Picnic area															
Trackhead															

1 See Appendix Table A2 for definition of day-use classifications
 2 See Appendix Table A1 for definition of camping classifications
 3 bc – below capacity, ac – at capacity, ec – exceeding capacity (based on Ranger Observation as at 31/08/2005)
 4 Permit required for access into the Big Hole and for all caves at Marble Arch except the main arch
 5 Permit required for all caves except Bendethera Main Cave

Table 3: Location and Nature of Day-Use and Camping Areas (Note: Camping and Day-Use Facility Classifications are defined in Appendix Table A1 and A2)

Park name	Bushwalking	Camping	Caving/abseiling	Cultural heritage appreciation	Cycling/mountain biking	Fishing	Horse riding	Nature study/bird watching	Picnicking	Rock climbing/abseiling	Scenic viewing	Swimming	Peak usage ³	Off-peak usage ²	Visitor monitoring
Big Badja	✓				✓						✓		bc	bc	
Site name															
Day-use facility classification1, Camping facility classification2															
Landscape setting, local setting															
Primary day-use type															
Basic day-use area, no camping															
Tableland forest/woodland															
Lookout, 300 m walking track															
Wyanbene Caves	✓	✓	✓ ⁵					✓	✓				bc	bc	
Site name															
Day-use facility classification1, Camping facility classification2															
Landscape setting, local setting															
Primary day-use type															
Basic day-use area, basic camp area															
Tableland forest/woodland															
Trackhead															
Bendethera 5	✓	✓	✓ ¹	✓	✓		✓	✓	✓			✓	ac	bc	✓
Site name															
Day-use facility classification1, Camping facility classification2															
Landscape setting, local setting															
Primary day-use type															
Basic day-use area, basic camp area															
Hinterland grassland/heath															
Picnic area															
Hanging Mountain	✓			✓					✓		✓		ac	bc	
Site name															
Day-use facility classification1, Camping facility classification2															
Landscape setting, local setting															
Primary day-use type															
Basic day-use area, no camping															
Hinterland high point															
Lookout															
Picnic area															
Bakers Flat		✓		✓		✓		✓	✓			✓	ac	bc	✓
Site name															
Day-use facility classification1, Camping facility classification2															
Landscape setting, local setting															
Primary day-use type															
Basic day-use area, remote camp area															
Hinterland water site															
Picnic area															
Deua River		✓		✓		✓		✓	✓			✓	ac	bc	✓
Site name															
Day-use facility classification1, Camping facility classification2															
Landscape setting, local setting															
Primary day-use type															
Basic day-use area, basic camp area															
Hinterland water site															
Picnic area															
Dry Creek		✓				✓		✓				✓	bc	bc	✓
Site name															
Day-use facility classification1, Camping facility classification2															
Landscape setting, local setting															
Primary day-use type															
Basic day-use area, basic camp area															
Hinterland water site															
Access point															

1 See Appendix Table A2 for definition of day-use classifications
 2 See Appendix Table A1 for definition of camping classifications
 3 bc – below capacity, ac – at capacity, ec – exceeding capacity (based on Ranger Observation as at 31/08/2005)
 4 Permit required for access into the Big Hole and for all caves at Marble Arch except the main arch
 5 Permit required for all caves except Bendethera Main Cave

Table 3: Location and Nature of Day-Use and Camping Areas (Note: Camping and Day-Use Facility Classifications are defined in Appendix Table A1 and A2)

Park name	Bushwalking	Camping	Caving/abseiling	Cultural heritage appreciation	Cycling/mountain biking	Fishing	Horse riding	Nature study/bird watching	Picnicking	Rock climbing/abseiling	Scenic viewing	Swimming	Peak usage ³	Off-peak usage ²	Visitor monitoring
Dasyurus	✓				✓	✓	✓	✓	✓	✓	✓		bc	bc	
Medium day-use area, no camping															
Tableland forest/woodland															
Trackhead															
Mongarlowe River	✓				✓	✓		✓	✓		✓		bc	bc	✓
Medium day-use area, no camping															
Tableland forest/woodland															
Picnic area															
Penance Grove	✓							✓			✓		bc	bc	✓
No day-use facilities, no camping															
Tableland forest/woodland															
Trackhead															
Cascades	✓	✓							✓			✓	ec	bc	
Basic day-use area, basic camp area															
Hinterland water site															
Picnic area															
Lake Creek		✓							✓				bc	bc	
Basic day-use area, basic camp area															
Hinterland water site															
Picnic area															
Supers Memorial Camp		✓				✓			✓			✓	bc	bc	
Basic camp area															
Hinterland water site															
Tuross River		✓				✓			✓			✓	bc	bc	
Basic camp area															
Hinterland water site															
Picnic area															
Wadbilliga Crossing									✓			✓	ec	bc	
Basic day-use area, no camping															
Hinterland water site															
Picnic area															

1 See Appendix Table A2 for definition of day-use classifications

2 See Appendix Table A1 for definition of camping classifications

3 bc – below capacity, ac – at capacity, ec – exceeding capacity (based on Ranger Observation as at 31/08/2005)

4 Permit required for access into the Big Hole and for all caves at Marble Arch except the main arch

5 Permit required for all caves except Bendethera Main Cave

5.3 WALKING

BACKGROUND

There is a network of Aboriginal routes through the Escarpment Parks, some of which were used by the early settlers. A number of these, such as the historic Corn Trail, are used today for recreational walking. Today, the Escarpment Parks are especially known for walks in wild, remote and trackless localities that take from one to five days, requiring high levels of self-sufficiency, fitness and previous experience. These walks may be combined with walking on bridle tracks and fire management trails. Popular destinations for wilderness walkers in Deua National Park include the waterfalls along Diamond Creek, the Mother Woila and Tabletop area, and Brogo River and Wadbilliga Trig in Wadbilliga National Park.

There are also short walks on modified or hardened tracks that are suitable for people of various ages and fitness levels. The tracks are listed in Table 4 along with their classifications and lengths. In Wadbilliga National Park, at Cascades camping area, there is a two-kilometre walk with lookout platforms for viewing both the Cascades on the Tuross River and the Tuross Falls. In Deua National Park a return walk from the Berlang camping area, takes you past the Big Hole to Marble Arch. A 3.6 kilometre track to Bendethera Caves starts from a parking area at the end of Caves Road.

The Far South Coast Region Nature Tourism Recreation Plan (2004) indicated a demand for short (less than half a day) walks in the escarpment and hinterland areas. There are several walking tracks in Monga National Park and more are being developed to meet this demand. The historic Corn Trail, popular for walking and originally an Aboriginal pathway, was the first trade route between the Buckenbowra valley farmlands near the coast and the early European settlements on the tablelands near Braidwood. The trail traverses high mountain ridges and deep rainforest gullies and is located in the northern section of Monga National Park. Recently a series of short walks near Penance Grove and the Mongarlowe River have been developed in Monga National Park.

ISSUES/OPPORTUNITIES

- ▶ The Far South Coast Nature Tourism and Recreation Plan (NPWS, 2004), which has the primary objective of increasing the diversity of walking experiences in the region, made the following recommendations:
 - investigate and develop track-heads for short bushwalks in the Upper Deua River area that would have the pinkwood stands as a destination; and
 - investigate track-heads for self-reliant recreation into Tuross Gorge and Jillicambra Mountain (these may be off-Park).
- ▶ There are environmental impacts from walking which are common to all recreational activities such as soil erosion and the introduction and spread of weeds and pathogens, human waste disposal, the accumulation of rubbish and firewood collection, especially (though not exclusively), around campsites.

GUIDELINES AND ACTIONS

- 5.3.1 Continue to allow walking throughout the Parks.
- 5.3.2 Maintain those walking tracks identified in Table 4 and manage these in accordance with the nominated classification, which is detailed at Appendix Table A3.
- 5.3.3 Do not promote walking in areas of ecological or cultural sensitivity, or those regarded as unsafe, including but not limited to:
- vegetation communities that are restricted in distribution and are, therefore, especially vulnerable to disturbance, or are likely to come under increasing stress due to climate change; and
 - places that contain culturally sensitive Aboriginal sites and values or cultural heritage features that are vulnerable to disturbance.
- 5.3.4 Investigate and, if feasible, develop the following:
- track-heads for short bushwalks in the Upper Deua River area with the pinkwood forest at Hanging Mountain as one of the destinations (Deua National Park); and
 - options for a parking area for self-reliant recreation into Tuross Gorge and up Jillicambra Mountain. This may be developed in partnership with neighbours of the Parks and on private property.

Table 4: Walking Tracks in the Escarpment Parks

Park Track destination (section name)	Landscape setting, local setting	Track class ⁶	Distance (m) ⁷
Deua National Park			
Big Badja Trig	Tableland forest/woodland	Walking track	225
Berlang – The Big Hole	Tableland woodland/heath	Walking track	1,635
The Big Hole – Marble Arch	Tableland forest/woodland	Walking track	3,355
Wyanbene Cave portal	Tableland forest/grassland	Walking track	315
Bendethera Caves portal*	Hinterland forest/woodland	Walking track	3,650
Monga National Park			
Corn Trail*	Tableland forest/rainforest	Walking track	15,160
Mongarlowe Picnic Area to Penance Grove	Tableland forest/rainforest	Walking track	450
McCarthy's trail	Tableland forest/rainforest	Walking track	4,485
River Forest trail	Tableland forest/rainforest	Walking track	3,095
Mongarlowe River loop	Tableland forest	Graded path	440
Penance Grove Boardwalk	Tableland forest/rainforest	All access path	80
Wadbilliga National Park			
The Cascades	Hinterland water site	Graded path	180
Tuross Falls lookout	Hinterland water site	Walking track	1,845

* The Corn Trail and Bendethera Caves Portal as far as the Zig Zag Trail are dual use tracks for both walking and horse riding

⁶ See Appendix A3 for definition of track classes

⁷ Distances given are for one direction only, unless the walk is identified as a loop walk

5.4 DRIVING

BACKGROUND

The Service manages an extensive network of roads and trails in the Escarpment Parks that are required for essential management purposes. Given the remote and rugged landscapes of the area many of the trails require the high ground clearance and traction provided by the larger 4WD vehicles. There is a network of over 600 kilometres of trails available for public access, and the majority of these trails are within Deua National Park. There are 137 kilometres of unsealed trails that are usually suitable for 2WDs. These are located primarily near the peripheries of the Parks and generally lead to features of interest. There are no sealed roads within the Parks. Any registered vehicle, including a registered trail bike, can travel on this designated public road network (see Maps A10 and A11).

Recreational driving (either in 4WDs or 2WDs) and trail bike riding are popular activities in the Escarpment Parks to enable visitors to reach destinations, such as Bendethera, for sightseeing or for the activity itself. In the case of a destination, the route may be mostly within the one land tenure (for example Bendethera camping area in Deua National Park). For the purposes of sightseeing or if the focus is on the activity itself, then the type of land tenure may not be as important. For this reason, opportunities for recreational driving and trail bike riding have been considered within a regional context and across all land tenures.

ISSUES/OPPORTUNITIES

- ▶ In determining which of the roads and trails in the essential management network should be available for public use, the following have been considered:
 - that the area is outside declared Wilderness Areas;
 - current impacts on natural and cultural values and recreational use patterns;
 - the relationship with adjoining private land;
 - funding and maintenance (i.e. recreational use should not incur unacceptable increases in maintenance requirements) ; and
 - recreational patterns and preferences – for example, visitors have expressed a preference for circular routes and routes that link with roads and trails outside the Parks.
- ▶ During the consultation for this Plan, people expressed a range of views about the appropriate level of vehicular access to the Escarpment Parks. Some of these views and/or requests do not conform with policy or are outside the scope of this Plan. Examples of this include requests for access for 4WDs and trailbikes in declared Wilderness Areas and/or the attenuation of noise from registered trailbikes.
- ▶ In the Escarpment Parks, more environmental degradation is associated with illegal off-road driving activity compared to on-road legal driving activity. This degradation includes loss of vegetation cover, compaction, sedimentation of waterways and erosion. Accelerated erosion and sedimentation can occur on public

access trails as a result of increased use and/or irresponsible driving (e.g. after rainfall). These effects can be partly addressed through the encouragement of responsible driver and rider behaviour, law enforcement, temporary road closures and the reporting of inappropriate driving or riding.

- ▶ In many places, roads are narrow and winding which, combined with an increase in traffic volume and taking into account driver safety, could lead to the consideration of one-way routes.

DESIRED OUTCOME

Provision of a well-maintained road network that allows public vehicular access to recognised Park facilities and attractions, that is consistent with the protection of the natural and cultural values of the park and is cost-effective to manage.

GUIDELINES AND ACTIONS

- 5.4.1 Allow registered vehicles on the public road network shown on Maps A10 and A11, to enable access to features of key interest.
- 5.4.2 Maintain all roads to the standard indicated by the classification shown on Maps A10 and A11.
- 5.4.3 Temporarily close roads when:
 - they are untrafficable due to weather conditions;
 - vehicle use under current or predicted weather conditions would result in unacceptable damage;
 - maintenance works are required; or
 - vehicle use would cause unacceptable damage to recent road or maintenance works.Notify interest groups of any closures including the reason for the closure and when the road will reopen to traffic.
- 5.4.4 Permanently close roads as shown on Maps A10 and A11 to public vehicle use or consider one-way routes and/or controlled access arrangements:
 - if the road is not considered safe;
 - when on-going maintenance costs resulting primarily from recreational use are unsustainable and cannot be funded within budgetary allocations; or
 - when the environmental impacts of recreational vehicular traffic are unacceptable.

Liaise with relevant interest groups before implementing any permanent road closure or prior to designating a one-way route.

- 5.4.5 In consultation with land management agencies and private operators, have information available on driving and trail bike riding opportunities outside the Park and within the region.
- 5.4.6 Work collaboratively and in accordance with any adopted Memorandums/Memoranda of Understanding between the Service and recreational driving and/or trail bike riding groups on the development and promotion of codes of conduct that encourage responsible use. Include vehicle preparation and cleaning guidelines in codes of conduct.
- 5.4.7 Ensure appropriate soil conservation management of roads in construction and maintenance to minimise erosion.



I Trapnell, Walking through Marble Arch, Deua National Park

5.5 CYCLING

BACKGROUND

Cycling is not a major activity within Escarpment areas probably because of the rugged terrain, difficulty of riding and the distances from population centres. Cycling is more popular in the gentler terrain of the coastal areas. However, for the enthusiast, the Escarpment Parks offer cycling opportunities in spectacular landscapes. On the existing road network within the Parks it is possible to cycle from the tablelands to the coastal hinterland. The network of management trails provides opportunities for remote cycling experiences. Gentler day-trips are possible around Monga National Park.

ISSUES/OPPORTUNITIES

- ▶ There is an opportunity to promote cycling as an alternative means of experiencing and appreciating the values of the Park in a leisurely and relaxed way beyond the confines of motorised vehicles. Managed appropriately, cycling can be enjoyed by significant numbers of visitors with few environmental or social impacts.
- ▶ Adverse interaction may sometimes occur between cyclists and other users (e.g. walkers, horse riders and vehicles) as the intensity and frequency of all forms of access increase, and where there are different expectations about access, use of trails and behaviour.
- ▶ Like all recreational activities, there are potential environmental impacts associated with cycling, which include erosion of soils and tracks, increased soil compaction, and introduction of weeds and plant species not native to the area.

DESIRED OUTCOME

Provision of a range of cycling opportunities that encourages visitors to appreciate the values of the Park in ways that minimise adverse impacts.

GUIDELINES AND ACTIONS

- 5.5.1 Allow cycling on the public road network shown on Maps A10 and A11 and on all management trails outside of wilderness areas, with the exception of the Gollaribee Trail in the Buckenbowra wilderness, Monga National Park. Permit cycling on the Gollaribee Trail. Monitor the impacts of cycling on this trail over 12-24 months and, if impacts are acceptable, permit cycling on other management trails as shown on Maps A10 and A11 within wilderness areas.
- 5.5.2 Due to potential conflicts with walkers and horse riders, prohibit cycling on designated walking-tracks and on the Mongarlowe-Corn Trail link and the Corn Trail in Monga National Park.
- 5.5.3 Work collaboratively with recreational cycling groups on trail monitoring, maintenance, and the development and promotion of codes of conduct that encourage responsible use.

5.6 HORSE RIDING

BACKGROUND

There are a number of historic bridle tracks in the Parks that were used for transport between the tablelands and coast. Some of these tracks are used today for recreational horse riding, as are some of the roads and trails within the Escarpment Parks. Knowledge of bridle tracks in the Parks is incomplete and they are currently being researched and mapped (refer section 3.3). Currently the main trails used are the Corn Trail, Shoebridge Track and part of the Zig Zag Trail. Popular areas for recreational horse riding include the Corn Trail in Monga National Park and the Deua River valley and Bendethera in Deua National Park. Local recreation groups have taken an active interest in the history of the bridle tracks and their management, with many horse riders expressing a strong historic connection to the Escarpment Parks as a result of horse riding activity.

For bridle tracks outside wilderness areas, Park Rangers have undertaken periodic assessment of the environmental impact of horses on tracks. Over a two-year period, at current levels of use, the level of impact has been low with no indication of any increase.

ISSUES/OPPORTUNITIES

- ▶ There is a need to assess the cultural heritage of the Escarpment Parks in a regional context, including that of the old bridle tracks. Despite any recommendations arising from these assessments, horse riding is and will continue to be prohibited on a number of bridle tracks due to wilderness declarations. The only exception to this is where access to bridle tracks is required to undertake approved management works.
- ▶ Environmental impacts resulting from horse riding and camping with horses, many of which are shared with other recreational activities, may include the erosion of soils and tracks, an increase in soil compaction, the introduction of weeds and plant species not native to the area and conflict with other recreational uses.

DESIRED OUTCOME

Opportunities for visitors to travel through the Parks on horseback on the recreational road network and on management trails and bridle tracks outside wilderness areas.

GUIDELINES AND ACTIONS

- 5.6.1 Allow horse riding on the recreational road network and on management trails and bridle tracks outside wilderness areas. Based on an assessment of the significance and ecological impacts, determine which bridle tracks may be used for horse riding.
- 5.6.2 Review where horse riding is allowed or the conditions under which horse riding can be undertaken within the Escarpment Parks should there be unacceptable environmental damage. Undertake such a review in consultation with interest groups.

- 5.6.3 Due to potential conflicts with walkers, prohibit horse riding on designated walking-tracks with the exception of Bendethera Caves portal, for access to the Zig Zag Bridle Track, and the Corn Trail.
- 5.6.4 Continue to undertake an annual assessment of the environmental impact of horses on bridle tracks outside wilderness areas (primarily the Shoebridge Track and Corn Trail).
- 5.6.5 Allow horse riding on the identified dual use trails: Mongarlowe-Corn Trail link, Corn Trail in Monga National Park and Bendethera Portal (as far as the Zig Zag Trail) in Deua National Park.
- 5.6.6 Allow camping with horses at Supers Memorial Camp (Wadbilliga National Park) and Bendethera (Deua National Park). Implement a permit system for these horse camps if considered necessary due to either volume of use or environmental impact.



A Brown, View over the Big Hole, formed when the ceiling of an underlying limestone cave collapsed, Deua National Park

- 5.6.7 Work collaboratively with recreational horse riding groups on trail monitoring, maintenance and the development and promotion of codes of conduct that encourage responsible use.

5.7 CAVING

BACKGROUND

Caves at Bendethera and Wadbilliga have both ceremonial and spiritual significance to Aboriginal people. Waterways and caves near Bendethera were believed to cure many ailments and had ceremonial importance for newly-married couples. The Wyanbene Caves form part of a Monaro/Snowy River Dreamtime story that tells of Djamalang the Platypus who created the Wyanbene Caves while travelling from the Shoalhaven to the Snowy River.

The Bendethera and Wyanbene Caves have been used for recreation since the late 19th century. Europeans discovered Bendethera Caves in 1875. Within fifteen years a public Caves Reserve was established because of the interest in the unusual landforms. In 1890 walkways, stairs, ladders and ropes were installed in the Main Cave to make it easier to explore. This Reserve was incorporated into Deua National Park in 1979. The first recorded descent into the Big Hole was in the nineteenth century.

All the karst areas contain features of high conservation or scientific importance that are sensitive to any human activity. Unrestricted recreational access (no permit) is permitted at Bendethera Main Cave, the entrance section of Wyanbene Cave and to the Marble Arch itself. Permits are required for the remainder of Wyanbene Cave and for the Big Hole, as well as all other caves in the Parks. As part of the permit system, trip reports must be submitted within fourteen days of the trip date. They are collated and stored at the NPWS Braidwood office. Recreational access is permitted to some caves and prohibited from others. There are a number of caves where no access is permitted for recreation or any other purpose.

ISSUES/OPPORTUNITIES

- ▶ Access to caves, the application process for access and the balance between access and conservation were identified as key issues through the Plan of Management consultation.
- ▶ In 1986 the NPWS developed a draft Deua National Park Karst Area Management Plan (NPWS 1986) detailing management prescriptions for karst areas which is an excellent resource document. It does, however, require updating with particular attention to management actions.
- ▶ Caves are some of the most fragile and easily disturbed environments in the Park, with all cave visits resulting in some degree of damage. Surface and subsurface effects associated with caving may include:
 - damage and destruction of vegetation resulting in the formation of foot tracks to cave entrances (and attendant soil erosion and siltation);
 - physical alterations to caves (for access);

- alterations to cave hydrology, including water chemistry;
 - alterations to air movements and micro-climates;
 - the compaction or liquefaction of floors;
 - the erosion or disturbance of cave sediments and their contents;
 - the inadvertent or intentional destruction of or damage to speleothems;
 - the destruction of cave animals; and
 - the introduction of alien organisms, nutrients and pollutants into cave systems.
- ▶ The access regimes for caves within the Park vary according to their relative robustness (potential for damage), the significance of their values and visitor safety considerations as established in the draft Karst Area Management Plan (1986) (see Guideline 4.1.1).
 - ▶ The Service is largely reliant on the activities of caving groups for knowledge of the cave resources of the Park and to report on the condition of caves that are visited. Information from trip reports has been summarised and is also used to determine maintenance and management activities (e.g. improvements to the Wyanbene gate system).
 - ▶ Resourcing and practicality of monitoring programs.
 - ▶ The impacts on caves being used for training exercises by cave rescue groups, including Wyanbene.

DESIRED OUTCOMES

Protection of karst areas and, where compatible with this, provision of recreational caving opportunities in ways that minimise damage yet increase the understanding of conservation values of karst systems.

GUIDELINES AND ACTIONS

- 5.7.1 Review the Management Practices described in the Deua National Park Draft Karst Area Management Plan (1986). This review will include an assessment of the extent of past damage and usage patterns. Implement management recommendations from this review provided they do not change the current access arrangements. If they require a change to access, place the proposals on exhibition as an amendment to this Plan.
- 5.7.2 Continue to allow unrestricted recreational access (no permit) to Bendethera Main Cave, the entrance section of Wyanbene Cave and to Marble Arch itself. Manage access to restricted access caves and the 'Big Hole' through a permit system. The system will also be used as a means of correlating use and disturbance levels in individual caves and as a direct means of informing cavers of the requirements for minimising damage. (See also Guideline 4.1.1 in relation to cave reference areas.)
- 5.7.3 To reduce the likelihood of unauthorised access, do not publicise or promote the locations of restricted access caves.

- 5.7.4 The Karst Area Management Plan will include suggested visitor management regimes, which may include but not be limited to provisions relating to: the number of people who may enter a cave at any time; appropriate party sizes (which may include minimum and maximum party sizes for particular caves); any appropriate limits on the frequency of use; and any seasonal or other restrictions due to the need to minimise impacts on cave biota and cave processes.
- 5.7.5 Establish monitoring programs for all caves susceptible to disturbance from visits. These may include:
 - photopoint monitoring of sites that are likely to be damaged;
 - monitoring sensitive features at risk of erosion from foot traffic; and
 - monitoring potentially vulnerable cave animal communities.
 Cave monitoring programs will be directly linked to the visitor management regimes for individual caves.
- 5.7.6 Review cave management regimes regularly to take into account the results of monitoring and any new pertinent information.
- 5.7.7 Cavers must be acquainted with, and abide by, all relevant codes of conduct and current best practice standards endorsed by the NPWS (currently the Australian Speleological Federation Incorporated Code of Ethics and Conservation, Safety Code and Minimal Impact Code).
- 5.7.8 Encourage permit holders to:
 - monitor and report on use of the karst system;
 - keep records of cave use and condition;
 - inform the NPWS of any noticeable damage or concerns; and
 - provide the results of any study or survey undertaken to the NPWS.
- 5.7.9 Standardise the trip report form specifying required information in consultation with user groups.
- 5.7.10 Liaise with peak training bodies regarding appropriate access to Wyanbene Cave. Permit rescue orientation and familiarisation with this cave system. Prohibit access for general cave rescue training that could be conducted at a less sensitive site.



Chapter 6

Talking about and Understanding the Parks



Bats, caving



Stalactites, stalagmites



Camping



Meeting, picnicking



Trapnell, Visitors enjoying Deua National Park

Chapter 6:

Talking about and Understanding the Parks

6.1 WELCOMING PEOPLE: INFORMATION, EDUCATION AND INVOLVEMENT

BACKGROUND

The Service uses a variety of methods to convey messages to different audiences and to engage the public actively in park management with the aims of increasing awareness of Park values, encouraging appropriate behaviour and enhancing the quality of visitor experiences. Methods include the provision of visitor information (such as brochures at tourist information centres), contact with customer service officers and staff in the Parks, information displays and signs, and general information points (for example, the NPWS web page and the NPWS information centres).

The Far South Coast Escarpment Parks, along with other Parks in the region, form an integral component of the region's natural and social fabric. The Parks are significant tourism attractions for the region and park visitors make an important contribution to both surrounding businesses and communities. The provision of high quality visitor information and interpretation both in-park and off-park assists in sustaining tourism and protecting the Parks' values.

During the consultation phase of preparing this plan many people expressed a passion for and concern about the Escarpment Parks and a desire to actively participate in and contribute to park management. Volunteer groups have assisted in maintenance of sites including the Corn Trail, the clean up of Bendethera, weed control along the Brogo River and there are Landcare Groups in the Deua River valley. The Service also works cooperatively with park neighbours on management programs such as fire and pest control. The Service liaises and works with other community groups and the Regional Advisory Committee.

ISSUES/OPPORTUNITIES

- ▶ In 1999 the NPWS prepared a comprehensive Interpretative Strategy for what was then the Eden District. This Strategy has formed the basis of subsequent interpretative strategies, including a Draft Interpretation Strategy for Monga National Park completed in 2004.
- ▶ Both interpretative and directional signage within and to Wadbilliga and Deua National Parks require ongoing review. Signs can be of different ages and, therefore, of different standards and in variable condition. There are a number of park facilities and destinations that are not signposted.
- ▶ The Far South Coast Region has prepared a draft Community Relations Strategy (2004-2009). This details strategies, outcomes and responsibilities relating to information and interpretation, environmental and conservation education, media, neighbour relations, interagency and stakeholder relations, volunteers, nature-based tourism and commercial recreation. There are a number of regional

strategies that will be of direct benefit to the Escarpment Parks and also a number of strategies specific to the Parks. Specific strategies relate to upgrading information and interpretation.

- ▶ There is scope to improve visitor education on appropriate park use (e.g. appropriate driving), and on the natural and cultural values of the Parks, and to involve community groups in facilitating this.
- ▶ There is a need to develop consistency in the standard, appearance and quality of visitor interpretation, education and information facilities and services. There is an opportunity to develop a uniform or 'signature' appearance for the Parks.
- ▶ There is an opportunity to strengthen and expand active community involvement in the planning, development and implementation of park management activities. For example, recreational 4WD groups are interested in assisting with some maintenance activities and the encouragement of appropriate driving behaviour.

DESIRED OUTCOME

Visitors enjoy, understand and appreciate the natural and cultural values of the Parks and have opportunities to participate in park management thus strengthening their support for ongoing park protection.

GUIDELINES AND ACTIONS

- 6.1.1 Undertake an inventory and assessment of the currency, scope, adequacy and effectiveness of existing publications, displays and signs (directional, contextual or interpretative) for Wadbilliga and Deua National Parks within the context of relevant adopted interpretation strategies and design guidelines. Based on this, develop and implement an Interpretation Strategy for Deua and Wadbilliga National Parks. Ensure that this strategy addresses:
 - the adequacy of directional signage to and within the Parks;
 - the provision of information about visitors from the Visitor Management System;
 - the provision of information on opportunities for regional nature tourism recreation.
- 6.1.2 Encourage continued community involvement in park management and investigate new opportunities for involvement. Such opportunities may relate to the promotion of appropriate visitor behaviour (e.g. driving codes of conduct), assistance with the protection and interpretation of heritage sites, and monitoring impacts on the Parks.
- 6.1.3 Communicate with recreation groups and clubs to involve them in ongoing planning, management and monitoring where appropriate.
- 6.1.4 Continue cooperative arrangements with neighbours in undertaking park

management activities such as fire management and pest control programs. Participate in local community days to encourage community involvement and provide information to neighbours and the surrounding community on park management issues.

- 6.1.5 Continue to recognise the importance of promoting community awareness, understanding and appreciation of the conservation of natural and cultural heritage through interpretative displays and educational activities.
- 6.1.6 Continue active participation with local and regional tourism authorities and economic development organisations in the development and implementation of regional tourism strategies to ensure the promotion of ecologically sustainable tourism within the Parks.
- 6.1.7 Liaise with other organisations that provide information to park visitors to ensure all information is accurate, consistent, up to date and promotes appropriate visitor expectations and behaviour. Encourage relevant authors and publishers to liaise with NPWS regional staff regarding park information and encourage the promotion of minimal impact recreational use in publications.

6.2 AUTHORISED USES AND MANAGEMENT OPERATIONS

BACKGROUND

Commercial Recreation Activities

Certain commercial activities in the Parks are permitted under the *National Parks and Wildlife Act 1974* and associated regulations. The NPWS requires commercial operators to be licensed.

There are currently eight licensed commercial tour operators carrying out activities within the Escarpment Parks. One operator is licensed to conduct mountain bike tours within Deua National Park and the others are 4WD based tours operating across Deua, Wadbilliga and Monga National Parks.

Commercial Beekeeping

There are sixty-one apiary sites in the Parks linked to thirteen licensed apiarists. All of these sites are in the areas of Monga, Deua, Wadbilliga and Gourock National Parks acquired in 2001 as former Forests NSW lands as a result of the Southern RFA.

Public Utility Infrastructure

There are twenty known trigonometric stations located within the Parks. Access for maintenance of the stations is generally undertaken on foot or by helicopter and is very infrequent. These stations were constructed prior to the gazettal of the Parks and have a low impact on park values. There are a number of power and telephone line easements throughout the Parks.

There are five telecommunication sites within the Parks. They comprise towers and associated infrastructure that were in place prior to the gazettal of the area as national park. The towers at Peak Alone, Wadbilliga National Park, are used by the NSW Roads and Traffic Authority, NSW Police, Eurobodalla Shire Council, Vodaphone Australia and the Telstra Corporation for the purposes of operating a telecommunications service and network. The NPWS is currently negotiating licenses for the continued use of this facility under Section 153 of the NPW Act. Telstra also has telecommunication towers on Misty Mountain Road in Monga National Park and Belimba Fire Trail in Deua National Park. Eurobodalla Shire Council has a radio base site in Monga National Park. An additional tower is located at the Belowra East Fire Trail, Wadbilliga National Park. The NSW Rural Fire Service have a tower on Boundary Mountain in Monga National Park.

Forests NSW erected the Plumwood and Peak Alone fire towers, which are now within the Park, for fire surveillance. They play a vital role in the early detection of wildfires. The tower view covers a range of land tenures, with NPWS and Forests NSW being the major landholders. A cooperative approach to management of the fire towers has been developed and an agreement between Forests NSW and NPWS is in place for the operation of the towers.

Access to Inholdings

There are two different arrangements for access to inholdings. For those parts of the Parks that were created before the Southern RFA, access is formalised through Section 153 of the NPW Act.

Under the *National Park Estate (Southern Region Reservations) Act 2000* the status of each access road covered by this legislation was assessed to determine its inclusion or exclusion from the Parks.

NPWS Management Facilities and Operations

The Service's management operations relate primarily to the provision of visitor facilities, fire management, introduced plant and animal control, rehabilitation and restoration works and ongoing functions associated with the protection and enhancement of the Parks' natural and cultural values. Infrastructure supporting management operations include management tracks and storage areas.

ISSUES/OPPORTUNITIES

- ▶ Currently, commercial recreational use of the Parks is low but it may increase in future and involve a variety of activities.
- ▶ There is a need to ensure the adequate identification, mapping and documentation of all infrastructure within the Parks.
- ▶ Access to inholdings within the Parks, whether the land was acquired before or after the Southern RFA process, must be identified and, in most cases, licences and easements negotiated.
- ▶ There may be a need for the removal, rehabilitation or identification of alternative uses for infrastructure that is no longer required, such as the Telstra tower on Belimbla Fire Trail.
- ▶ The European honeybee (*Apis mellifera*) can have adverse effects on some native plants and animals (Paton 1996). After thorough assessment, it may be necessary to relocate existing bee sites if apiary activities result in unacceptable environmental impacts, conflict between park users or are inconsistent with the aims of park management.
- ▶ Access to apiary sites requires the use of roads or management trails, some of which may be proposed for closure and rehabilitation because they could be hazardous to users or a threat to the environment.
- ▶ Apiarists are licensed for each individual set-down site, not for the bee range. About 50% of set-down sites (actual point locations identified by grid references) have been identified in Parks so far. Determination of many of the set-down sites has been problematic. Irregular use and maintenance due to access issues and the recent drought conditions have contributed to the difficulty of determining site locations.

DESIRED OUTCOMES

Management of commercial recreational activities, public utility and management infrastructure and other commercial activities consistent with the protection of the Parks' natural and cultural heritage values.

GUIDELINES AND ACTIONS

- 6.2.1 Continue to implement a commercial licensing system for all commercial activities within the Parks. Ensure the long-term protection of the natural and cultural values of the Parks and the experiences, safety and recreational opportunities of visitors to the Parks by prescribing licences with (where consistent with the NPWS overall approach):
- the approved activities;
 - location and frequency of activities;
 - maximum group sizes and minimum guide ratios for each activity;
 - guide standards;
 - fees; and
 - guidelines for appropriate behaviour.
- 6.2.2 No commercial operations will be permitted in wilderness areas, and each proposed operation will be assessed and only licensed if it is consistent with the long-term protection of the natural and cultural values of the Parks and does not detract from the experiences of other visitors.
- 6.2.3 Confirm the status of public utility infrastructure to determine if it is still operational. If it is no longer operational, compel the removal of these facilities and rehabilitation of the sites. Also identify where it is possible to rationalise existing infrastructure with a view to reducing the number of sites. Continue to licence operational facilities under the provisions of the NPW Act.
- 6.2.4 Co-locate any necessary additional radio communication infrastructure with existing facilities where possible.
- 6.2.5 Continue to work cooperatively with Forests NSW to ensure the effective utilisation of Plumwood and Peak Alone fire towers.
- 6.2.6 Ensure all infrastructure within the Parks is documented on the Service's geographic information system.
- 6.2.7 Develop agreements for the maintenance of easements with other authorities for all infrastructure within the Parks.
- 6.2.8 Manage beekeeping in accordance with NPWS beekeeping policy, apiarists' consent conditions and the following guidelines:
- the maintenance of sites will be by mowing or slashing only;
 - normal site maintenance will not disturb mineral earth or top soil;
 - regular maintenance of sites by the above means will be encouraged; and

- tree clearing (a tree is defined as having a trunk greater than 20 cm in diameter), clearing of heavier regrowth or widening of an existing site is not permitted without written consent of the Regional Manager and/or preparation of a Review of Environmental Factors

- 6.2.9 Identify set-down sites for all existing apiarist licences. Where set-down sites cannot be identified or are unacceptable because of access, safety or environmental reasons the site may be relocated within the apiarist's bee range, in consultation with the apiarist. Where an alternative set-down site cannot be found, the licence for that particular site will be cancelled.
- 6.2.10 Maintain vehicle access to licensed bee sites where the Service requires the access trail for essential management purposes. Where vehicle access is required primarily for the purpose of access to a beekeeping site(s), consider obtaining a contribution from the beekeeper toward the cost of maintaining the access to a standard determined by the Regional Manager.
- 6.2.11 Close and rehabilitate access tracks to bee sites if there are unacceptable environmental or safety risks associated with them.
- 6.2.12 Maintain good communication with the owners of inholdings about park management issues and other matters of mutual concern.
- 6.2.13 Maintain the management of the trail network as indicated in Maps A10 and A11. Limit the construction of additional management trails to the following situations:
- the minor realignment of an existing route to a more environmentally acceptable location, combined with rehabilitation of the original route;
 - temporary trails in emergency situations such as wildfire control (Section 4.6).
- 6.2.14 Close and rehabilitate management trails no longer required for management purposes.
- 6.2.15 Permit the use of horses for particular management operations and when horse use is essential, such as for introduced plant and animal control programs, search and rescue operations, and maintenance programs of bridle tracks.

6.3 RESEARCH AND MONITORING

BACKGROUND

Research within the Escarpment Parks provides information that contributes to effective management and good decision-making and to improving understanding of community and economic values. It can also help identify characteristics of visitors to the Parks, the natural and cultural resources, the processes that affect them and how they change with time. Most research within the Parks has focussed on plants and animals, especially rare or endangered species, pest species management and karst environments. Making provision for appropriate research and monitoring is a principle for the management of National Parks and Nature Reserves.

Increasingly, monitoring and evaluation are being recognised as essential tools for park management across the world. While research provides specific information on the Parks' values and processes, monitoring is aimed at capturing baseline data, typically on the condition of these values, and charting the nature and rate of change in condition over time. When collected and maintained in a systematic way, this information provides the basis for an evaluation of the effectiveness of management policies and actions in achieving management objectives contained in this Plan and informing adaptive management decisions. The reporting and review process is vital for ensuring transparency and accountability.

Established monitoring programs in the Escarpment Parks are mostly for the monitoring of pest species and ongoing monitoring and reporting through the annual State of the Parks Assessment. Aboriginal Cultural Heritage Assessments are also being undertaken for the Eurobodalla and Bega Local Government Areas. Under the Eden and Southern Regional Forest Agreements all forest managers including Forests NSW, Department of Infrastructure, Planning and Natural Resources and the Service must demonstrate ecologically sustainable forest management (ESFM). ESFM aims to maintain or increase the full suite of forest conservation values for present and future generations across the NSW native forest estate, including:

- ecosystem biodiversity, health, vitality, productive capacity and functional processes;
- the productive capacity and functional processes of soil and water;
- long-term social and economic benefits; and
- natural and cultural heritage values.

ESFM is an over-riding management principle but will be implemented primarily through monitoring to provide feedback on management programs and directions for future adaptive management. Adaptive management combines management, monitoring and evaluation, enabling the adjustment and refinement of park policies and actions on the basis of monitoring results and the outcomes of performance evaluation.

ISSUES/OPPORTUNITIES

- ▶ With the exception of sand-plot monitoring of ground fauna species and fire response monitoring in Deua National Park, the NPWS is not doing systematic monitoring such as water quality monitoring.
- ▶ There is a need for on-going scientific study to improve understanding of the Parks' natural and cultural heritage and the processes that affect them, and to improve management strategies.
- ▶ Priority areas for research are:
 - the development of greater understanding of Aboriginal heritage and the conduct of a survey of heritage that is not restricted to a physical site(s);
 - threatened species as identified in recovery plans; and
 - cultural heritage values as identified in the Regional Cultural Heritage Study.
- ▶ There are opportunities to:
 - recognise and incorporate the knowledge and expertise of local communities in research initiatives;
 - undertake collaborative research projects with relevant research institutions and organisations; and
 - improve the communication of natural and cultural scientific information to staff and other relevant stakeholders and thereby ensure that new information is incorporated into management approaches and practices.
- ▶ The interpretation of the results of monitoring is not simple, especially in terms of assessing long-term trends and maintaining the resources to sustain a monitoring program on a long-term basis. Monitoring in the Escarpment Parks is focussed on key issues (post-fire recovery and wild dog management) to maximise the effective use of the available resources.

DESIRED OUTCOME

Park management is based on an understanding of values and trends in the condition of values and, as a result, uses adaptive management principles.

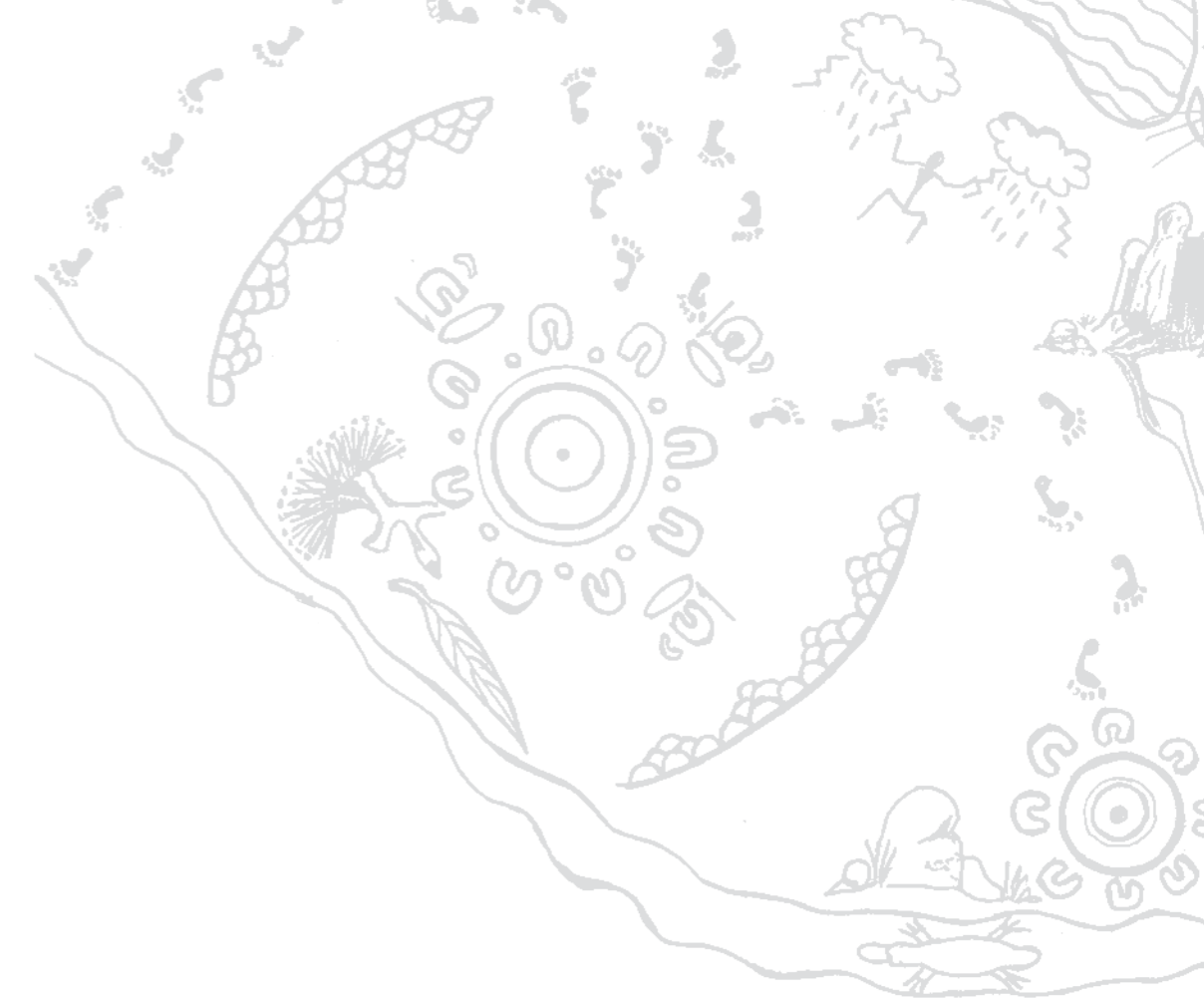
GUIDELINES AND ACTIONS

- 6.3.1 Develop and implement a comprehensive ESFM monitoring program that:
 - establishes monitoring protocols and techniques;
 - identifies research programs to fill knowledge gaps and improve the ability to collect and interpret data;
 - improves adaptive management processes; and
 - develops processes to collate results and report on compliance with ESFM requirements.

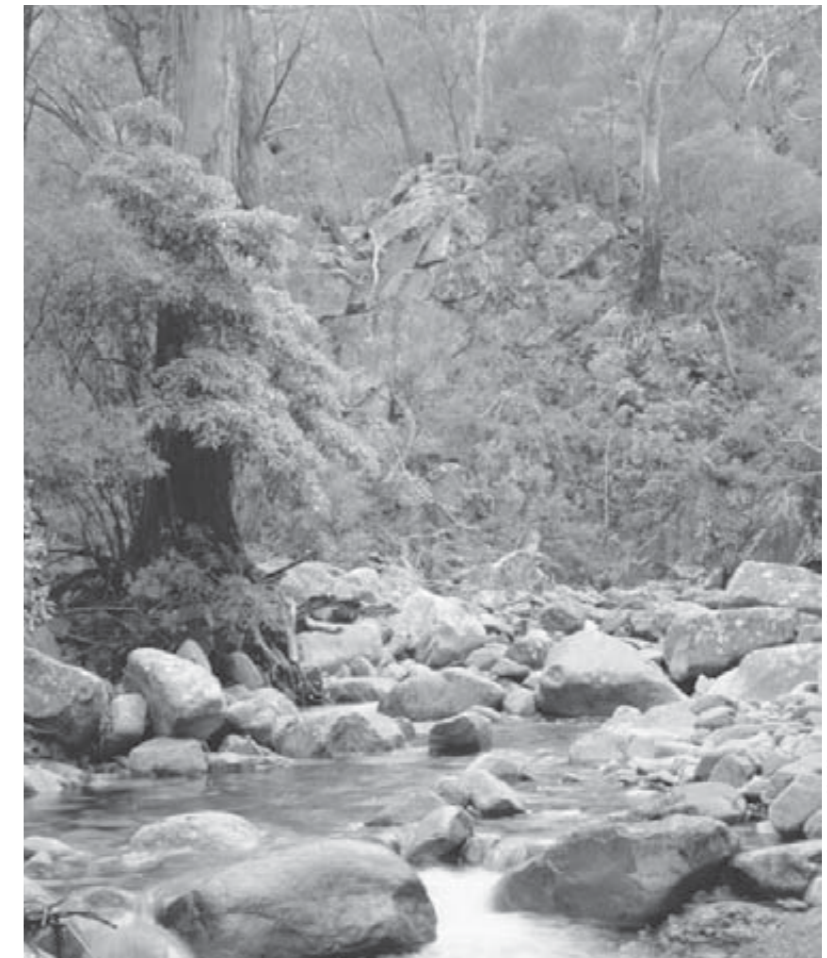
- 6.3.2 Give priority to monitoring those things affected by threatening processes or where management makes a difference and the NPWS wants to know what that difference may be. Three key priority areas are:
- sand-plot monitoring and animal responses;
 - continued implementation of the comprehensive visitor monitoring program; and
 - monitoring the responses of animals and plants to fire.
- 6.3.3 Undertake research into the Parks' natural and cultural heritage and impacts of human activities in order to improve management. High priority will be given to those topics listed in this Plan under Issues and Opportunities and other areas developed under ESFM programs.
- 6.3.4 Make the Parks available for appropriate research by other organisations and individuals. Encourage external researchers to investigate the identified high priority research topics.
- 6.3.5 Ensure that research activities comply with the objectives and policies of this plan of management.
- 6.3.6 Involve the Aboriginal community in the design and implementation of research relating to Aboriginal heritage and in the use of the information derived from this research.
- 6.3.7 Permit research that impacts upon the Parks values only where it will make a significant contribution to addressing timely and specific research questions, where it cannot be undertaken outside the Parks and after it has been subject to an environmental assessment.
- 6.3.8 Apply appropriate conditions to all licences and approvals granted for research, survey and monitoring projects within the Parks to ensure that the conduct of research activities does not adversely affect park values, park visitors or general public safety.
- 6.3.9 Encourage opportunities for training in field research techniques for field-based staff to facilitate their participation in research and monitoring in the Parks and the transfer of skills and knowledge.
- 6.3.10 Ensure that key research findings and the results of ongoing research programs in the Parks are communicated to NPWS staff, the community and other significant stakeholders on a regular basis, and ensure that park management activities are informed by these findings.



Rivers, waters & wilderness



Chapter 7 Implementation



M van Ewijk, Wadbilliga River, Wadbilliga National Park

Chapter 7: Implementation

The NPWS will implement this Plan within the annual programs of the NPWS Far South Coast Region, taking into consideration regional priorities, the availability of funding and staff, and any specific requirements of the Director-General or the Minister.

Regional and area programs are subject to on-going review within which works and any other activities carried out in parks and reserves of the Far South Coast region will be evaluated in relation to the priorities in this Plan. As a guide to the implementation of the specific actions in this Plan, relative priorities (high, medium, low) have been assigned to each action and these are summarised in Table 5.

The following criteria have been used to allocate priorities:

High: Imperative to achieve the Plan's stated management strategies and desired outcomes and, if deferred, would result in an unacceptable loss of natural and/or cultural heritage values.

Medium: Important to achieve the Plan's stated management strategies and desired outcomes, but can be deferred without unacceptable loss of natural and/or cultural heritage values.

Low: Programs that can be undertaken after high and moderate priority programs have been completed or which can be undertaken by other means such as using volunteers, applying for grant money, a concession operation, sponsorship or similar.

Table 6 summarises the guidelines in the Plan (it is noted that some of these guidelines may contain a smaller action component). The relevant area managers will prepare a comprehensive plan implementation program. This program will identify estimated costs and funding sources for each action, recommend the area of responsibility and nominate the projected completion date. Actions within the Plan will be incorporated into relevant regional and area operational plans when possible.

The Regional Manager will monitor the implementation of this Plan on an annual basis. This will identify actions that have been implemented in the previous year, those that are ongoing and priorities for following financial years. Timing of this evaluation should coincide with the NPWS financial management process, in particular, immediately prior to developing proposals for the following financial year's budget. This will ensure that actions that are scheduled for implementation in subsequent years are appropriately resourced. A review of the progress of implementation will be conducted with NPWS staff and the Regional Advisory Committee annually.

Table 5: Actions identified in this Plan

ACTION	DESCRIPTION	PRIORITY
Chapter 3: Connections between People and the Land that is now the Far South Coast Escarpment Parks		
3.2	Implement the conservation management recommendations of the Far South Coast Region Cultural Heritage Management Strategy 2003 – 2008 (NSW NPWS, 2003) detailed in the Appendix Tables A11-A13. Ensure cultural heritage management in the Parks considers and, where relevant, is consistent with adopted cultural heritage management strategies and conservation management plans.	High
3.3	Manage bridle tracks in cooperation with community and interest groups and with consideration for the values of all tracks within the region, both within and outside the Parks. Carry out research into the history, location and significance of the various tracks. Based on an assessment of significance and ecological impacts, adopt a management approach that may vary from active management to no action, recreational access to no access.	Ongoing
3.8	Encourage and seek funding to undertake a traditional knowledge and naming project to capture surviving traditions, place names, knowledge, skills, customs, practices and beliefs associated with the Escarpment Parks. Make the recording of the oral histories and knowledge (where appropriate) a high priority. The naming project should focus on: - retrieving and recording Aboriginal names for landscape features, plants and animals in the Parks; - retrieving and recording names which are no longer in use; and - recording unofficial names currently in use by local people for landscape features.	High
3.10	Foster and support the ongoing participation of community groups in the management of the cultural heritage of the Parks. Invite Aboriginal and non-Aboriginal community members to participate in public education and interpretation of the cultural values of the Parks.	High
3.11	Develop and implement a management plan for the Bendethera Precinct that protects cultural heritage values, maintains the essential open character of Bendethera, includes assessment and inventory of cultural sites and features within the caves, and ensures that recreational and camping activities have minimal impact on the environment.	Medium
Chapter 4: Knowing and Looking after the Escarpment Parks		
4.1 THE CREATION OF THE LANDSCAPE		
4.1.4	Close and rehabilitate disturbed areas and illegal access tracks not required for public use or management.	High
4.1.5	Permit the continued operation of the two quarries as shown on Maps A10 and A11 subject to the completion of a quarry management and rehabilitation plan.	Medium
4.2 NATIVE PLANTS		
4.2.1	Implement the provisions of recovery plans and the priorities action statement for plant species and communities within the Parks listed under the Threatened Species Conservation Act.	High
4.2.2	Protect and enhance the conservation status of plants and communities in the Parks, particularly those identified in Table A4 (plant species of particular management concern) by: - undertaking fire management plans as outlined in Section 4.6; - controlling pest plant and animal species (see Section 4.5); - confining the use of vehicles to formed roads and trails (see Section 5.3); and - siting and designing recreation facilities and camping areas to minimise vegetation disturbance (see Sections 5.1 and 5.2).	Medium

Table 5: Actions identified in this Plan

ACTION	DESCRIPTION	PRIORITY
4.3 NATIVE ANIMALS		
4.3.2	Manage threatened species in accordance with the management guidelines outlines in Appendix Table A5 and the provisions of species recovery plans and the priorities action statement.	High
4.3.3	Continue monitoring threatened species as identified in adopted recovery plans and continue existing programs monitoring the abundance of ground animal species (sand-plot monitoring and annual winter quoll scat search).	High
4.3.7	Investigate the feasibility of reintroducing species that are now locally extinct, such as koalas, into areas of suitable habitat in the Escarpment Parks	Low
4.4 WATER, RIVERS AND WILDERNESS		
4.4.4	Continue to contribute to the development and implementation of relevant catchment actions and targets.	Medium
4.5 INTRODUCED ANIMALS		
4.5.1	Undertake pest species management and control in accordance with the priorities defined in the Far South Coast. In addition to these priorities, eliminate willows from the Brogo River, Monga and Deua National Parks and control tree of heaven in Monga National Park.	High
4.5.2	Review pest management strategies for the Escarpment Parks within the three-yearly review of the Regional Pest Management Strategy, and update with: - pertinent new research findings and information, or the emergence of significant, previously unforeseen, management issues; - the results of monitoring programs, where they indicate the need for changes to management; or - where existing management strategies are not achieving stated objectives.	Medium
4.5.3	Continue to prepare, review and evaluate cooperative pest management programs, including the wild dog/fox control plans, with neighbours, Rural Land Protection Boards and Forestry NSW and develop cooperative programs for weeds such as Broom (Cytisus scoparius).	High
4.5.4	Provide information to the community on pest species and programs and encourage neighbour and community involvement in pest species control projects.	Medium
4.5.5	Monitor the distribution and abundance of pest species and biological control releases to determine the effectiveness of control programs.	High
4.5.6	Use data management systems (e.g. FeralBASE) to record and evaluate pest species management programs. Implement systematic monitoring programs aimed at evaluating the impact of pest control programs on native animals, especially those control programs focussed on dogs and foxes.	High
4.6 FIRE		
4.6.1	Manage fire in accordance with the provision of relevant threatened species recovery plans.	Ongoing
4.6.3	In addition to annual update, review adopted Fire Management Plans as required. Include in these reviews:: - pertinent new research findings and information on the emergence of significant, previously unforeseen management issues; - the results of monitoring programs, where they indicate the need for changes to management; or - where existing management strategies are not achieving stated objectives.	Ongoing
4.6.5	Continue to participate in community-based fire management planning and operations, primarily through involvement in local Bush Fire Management Committees.	Ongoing

Table 5: Actions identified in this Plan

ACTION	DESCRIPTION	PRIORITY
4.6.6	Continue to liaise with all relevant public and private authorities, and individuals regarding fire management including the Rural Fire Service (RFS), Forests NSW, NSW Fire Brigades, local councils and park neighbours.	Ongoing
4.6.7	Raise awareness of fire management issues within neighbouring communities and among park visitors. This will include: - descriptions and explanations of the fire management decision-making, research and strategies adopted for the Park; - fostering understanding of the implications of fire and its impact on Park values; and - the promotion of fire safety and fire protection procedures for park neighbours and park visitors.	Ongoing
4.6.8	Identify and undertake, or contribute to, research projects aimed at improving knowledge and understanding of fire management in the Parks. Give priority to research into the recovery and long-term implications for biodiversity from the 2002 Deua fires.	Low
4.6.11	Implement recovery plans for threatened species where fire management regimes are relevant.	High
4.6.12	Undertake cooperative hazard reduction programs with the Rural Fire Service, Forests NSW and neighbours where appropriate.	Ongoing
Chapter 5 Visitor Use and Enjoyment of the Parks		
5.1 VISITORS AND VISITOR FACILITIES		
5.1.4	Liaise with other tourism and land management agencies to implement the Far South Coast Nature Tourism and Recreation Plan (2004) through the Far South Coast Nature Tourism Network, to ensure that recreation planning and management within the region complements the management of the Escarpment Parks.	Ongoing
5.1.5	Continue to implement the Far South Coast Visitor Monitoring Strategy (NPWS, 2003) that informs where, how and when visitor information is collected for priority sites within the Escarpment Parks.	Medium
5.2 CAMPING AND PICNICKING		
5.2.1	Provide and manage existing camping and picnic areas in those locations shown on Maps A10 and A11 and in accordance with their location, nature and classification shown in Table 3 and Appendix Tables A1 and A2.	High
5.2.2	Formalise and provide suitable facilities for the Tuross River camping area in Wadbilliga National Park. Review all other camping areas adjacent to Belowra Road on the Tuross River and close and rehabilitate those areas where facilities will not be provided.	Low
5.2.3	Investigate appropriate formal camping opportunities in the western section of Monga National Park and, if found appropriate and funds permit, construct a camping area.	Medium
5.2.6	Regularly monitor the condition of campsites and 'rotate and rest' campsites as necessary to minimise loss of ground cover and subsequent soil erosion.	Ongoing
5.3 WALKING		
5.3.2	Maintain those walking tracks identified in Table 4 and manage these in accordance with the nominated classification, which is detailed at Appendix Table A3.	Ongoing
5.3.4	Investigate and, if feasible, develop the following: - track-heads for short bushwalks in the Upper Deua River area with the pinkwood forest at Hanging Mountain as one of the destinations (Deua National Park); and - options for a parking area for self-reliant recreation into Tuross Gorge and up Jillicambra Mountain (this may be developed in partnership with neighbours of the Parks and on private property).	Medium

Table 5: Actions identified in this Plan

ACTION	DESCRIPTION	PRIORITY
5.4 DRIVING		
5.4.5	In consultation with land management agencies and private operators, have information available on driving and trail bike riding opportunities outside the Park and within the region.	Ongoing
5.4.6	Work collaboratively and in accordance with any adopted Memorandums/ Memoranda of Understanding between the Service and recreational driving and/or trail bike riding groups on the development and promotion of codes of conduct that encourage responsible use. Include vehicle preparation and cleaning guidelines in codes of conduct.	Ongoing
5.5 CYCLING		
5.5.1	Allow cycling on the public road network shown on Maps A10 and A11 and on all management trails outside of wilderness areas, with the exception of the Gollaribee Trail in the Buckenbowra wilderness, Monga National Park. Permit cycling on the Gollaribee Trail. Monitor the impacts of cycling on this trail over 12-24 months and, if impacts are acceptable, permit cycling on other management trails as shown on maps A10 and A11 within wilderness areas.	Medium
5.5.3	Work collaboratively with recreational cycling groups on trail monitoring, maintenance, and the development and promotion of codes of conduct that encourage responsible use.	Ongoing
5.6 HORSE RIDING		
5.6.1	Allow horse riding on the recreational road network and on management trails and bridle tracks outside wilderness areas. Based on an assessment of the significance and ecological impacts, determine which bridle tracks may be used for horse riding.	Medium
5.6.4	Continue to undertake an annual assessment of the environmental impact of horses on bridle tracks outside wilderness areas (primarily the Shoebridge Track and Corn Trail).	Ongoing
5.6.7	Work collaboratively with recreational horse riding groups on trail monitoring, maintenance and the development and promotion of codes of conduct that encourage responsible use.	Ongoing
5.7 CAVING		
5.7.1	Review the Management Practices described in the Deua National Park Draft Karst Area Management Plan (1986). This review will include an assessment of the extent of past damage and usage patterns. Implement management recommendations from this review provided they do not change the current access arrangements. If they require a change to access, place the proposals on exhibition as an amendment to this Plan.	Medium
5.7.5	Establish monitoring programs for all caves susceptible to disturbance from visits. These may include: - photopoint monitoring of sites that are likely to be damaged; - monitoring sensitive features at risk of erosion from foot traffic; and - monitoring potentially vulnerable cave animal communities. Cave monitoring programs will be directly linked to the visitor management regimes for individual caves..	Medium
5.7.6	Review cave management regimes regularly to take into account the results of monitoring and any new pertinent information.	Ongoing

Table 5: Actions identified in this Plan

ACTION	DESCRIPTION	PRIORITY
5.7.10	Standardise the trip report form specifying required information in consultation with user groups.	Medium
5.7.11	Liaise with peak rescue training bodies regarding appropriate access to Wyanbene Cave. Permit rescue orientation and familiarisation with this cave system. Prohibit access for general cave rescue training that could be conducted at a less sensitive site.	High
Chapter 6: Talking about and Understanding the Parks		
6.1 WELCOMING PEOPLE: INFORMATION, EDUCATION AND INVOLVEMENT		
6.1.1	Undertake an inventory and assessment of the currency, scope, adequacy and effectiveness of existing publications, displays and signs (directional, contextual or interpretative) for Wadbilliga and Deua National Parks within the context of relevant adopted interpretation strategies and design guidelines. Based on this, develop and implement an Interpretation Strategy for Deua and Wadbilliga National Parks. Ensure that this strategy addresses: - the adequacy of directional signage to and within the Parks; - the provision of information about visitors from the Visitor Management System; and - the provision of information on opportunities for regional nature tourism recreation.	Medium
6.1.2	Encourage continued community involvement in park management and investigate new opportunities for involvement. Such opportunities may relate to the promotion of appropriate visitor behaviour (e.g. driving codes of conduct), assistance with the protection and interpretation of heritage sites, and monitoring impacts on the Parks.	High
6.1.3	Communicate with recreation groups and clubs to involve them in ongoing planning, management and monitoring where appropriate.	Ongoing
6.1.4	Continue cooperative arrangements with neighbours in undertaking park management activities such as fire management and pest control programs. Participate in local community days to encourage community involvement and provide information to neighbours and the surrounding community on park management issues.	High
6.1.6	Continue active participation with local and regional tourism authorities and economic development organisations in the development and implementation of regional tourism strategies to ensure the promotion of ecologically sustainable tourism within the Parks	High
6.1.7	Liaise with other organisations that provide information to park visitors to ensure all information is accurate, consistent, up to date and promotes appropriate visitor expectations and behaviour. Encourage relevant authors and publishers to liaise with NPWS regional staff regarding park information and encourage the promotion of minimal impact recreational use in publications.	Ongoing
6.2 AUTHORISED USES AND MANAGEMENT OPERATIONS		
6.2.1	Continue to implement a commercial licensing system for all commercial activities within the Parks. Ensure the long-term protection of the natural and cultural values of the Parks and the experiences, safety and recreational opportunities of visitors to the Parks by prescribing licences with: - the approved activities; - location and frequency of activities; - maximum group sizes and minimum guide ratios for each activity; - guide standards; - fees; and - guidelines for appropriate behaviour.	Ongoing

Table 5: Actions identified in this Plan

ACTION	DESCRIPTION	PRIORITY
6.2.3	Confirm the status of public utility infrastructure to determine if it is still operational. If it is no longer operational, compel the removal of these facilities and rehabilitation of the sites. Also identify where it is possible to rationalise existing infrastructure with a view to reducing the number of sites. Continue to licence operational facilities under the provisions of the National Parks and Wildlife Act.	Medium
6.2.6	Ensure all infrastructure within the Parks is documented on the Service's geographic information system.	Medium
6.2.7	Develop agreements for the maintenance of easements with other authorities for all infrastructure within the Parks.	Medium
6.2.9	Identify set-down sites for all existing apiarist licences. Where set-down sites cannot be identified or are unacceptable because of access, safety or environmental reasons the site may be relocated within the apiarist's bee range, in consultation with the apiarist. Where an alternative set-down site cannot be found, the licence for that particular site will be cancelled.	High
6.2.14	Close and rehabilitate management trails no longer required for management purposes.	Medium
6.3 RESEARCH AND MONITORING		
6.3.1	Develop and implement a comprehensive ESFM monitoring program that: - establishes monitoring protocols and techniques; - identifies research programs to fill knowledge gaps and improve the ability to collect and interpret data; - improves adaptive management processes; and - develops processes to collate results and report on compliance with ESFM requirements.	High
6.3.3	Undertake research into the Parks' natural and cultural heritage and impacts of human activities in order to improve management. High priority will be given to those topics listed in this Plan under Issues and Opportunities and other areas developed under ESFM programs.	High

Table 6: Guidelines identified in this Plan

GUIDELINE	DESCRIPTION
Chapter 3: Connections between People and the Land that is now the Far South Coast Escarpment Parks	
3.1	Conserve the cultural values of the Parks in accordance with the Australian ICOMOS (International Council on Monuments and Sites) Charter for the Conservation of Places of Cultural Significance (Burra Charter) and its guidelines.
3.4	Manage heritage places with shared histories to ensure that: - all aspects of the history of a place are identified, recorded and assessed; - cultural values of both Aboriginal and shared history are acknowledged at places where they co-exist; and - management of the remaining physical evidence of one historical theme or story is not at the expense of that of another.
3.5	Maintain a close liaison with Aboriginal communities regarding all aspects of park management, with an emphasis on promoting opportunities for direct involvement of Aboriginal people in park management, protection and interpretation. Where appropriate and of interest to both parties, provide some direction for how the Service and community can work together towards a joint management approach. Continue to support Aboriginal culture camps within the Parks.

Table 6: Guidelines identified in this Plan

GUIDELINE	DESCRIPTION
3.6	Before the promotion of any Aboriginal heritage site, consult with the local Aboriginal community in regard to whether access to the site is appropriate and undertake in cooperation with the Aboriginal community any management work necessary to protect the site, and the development of appropriate information to interpret the site.
3.7	Implement procedures for ensuring that natural and cultural heritage protection is considered in fire management activities likely to result in ground disturbance.
3.9	Encourage and support research initiatives and collaborative projects with research institutions, universities and other organisations that: <ul style="list-style-type: none"> - contribute to an understanding of the cultural values of the Parks and adjoining areas; - provide opportunities for relevant community members to develop research skills; and - are conducted in partnership with communities. Share findings from research through the Service's educational programs and activities and incorporate into interpretation where appropriate.
Chapter 4: Knowing and Looking after the Escarpment Parks	
4.1 THE CREATION OF THE LANDSCAPE	
4.1.1	Manage karst environments in accordance with the IUCN Guidelines for Cave and Karst Management (Watson et al 1997).
4.1.2	Use the Deua and Cleatmore karst areas as reference areas for scientific research. As they are relatively undisturbed karst systems, do not allow access to them for recreation purposes (see also Section 5.7 for management of recreational caving).
4.1.3	Implement best practice guidelines and principles for facility design and siting, ensuring that facilities harmonise with surroundings and are visually unobtrusive.
4.1.4	Implement adopted maintenance standards, guidelines and priorities for public access roads, management trails and walking tracks that minimise erosion and its impact on the Parks.
4.2 NATIVE PLANTS	
4.2.3	Make research into the impact and management of threatening processes (e.g. fire and invasion from exotic species - see Section 6.3) a high priority and, where possible, encourage research into the response of plants to climate change.
4.2.4	Minimise disturbances of rare vegetation ecosystems, old growth and areas of concentration of rare plants through, for example, ensuring that there are no roads or trails traversing these areas.
4.2.5	Promote the understanding and protection of native plants through interpretation programs (see Section 6.1).
4.3 NATIVE ANIMALS	
4.3.1	Maintain animal habitat through the control of introduced species, limiting the impact of recreation activities and utilising appropriate fire management regimes (see also Section 4.6).
4.3.4	Continue to protect aquatic habitats through appropriate fire and weed management, road closures and effective maintenance of roads and trails to minimise siltation and turbidity.
4.3.5	Give priority (see also Section 6.3) to monitoring and/or research into: <ul style="list-style-type: none"> - the impact of pest species, especially dogs, on native animals; - dynamics of pest species; - the impact and management of threatening processes (for example, high fire frequency and invasion of exotic species) on native plants and animals (see also Sections 2.5, 4.5 and 4.6); and - the presence of populations of the endangered smoky mouse (<i>Psuedomys fumeus</i>) and the vulnerable brush-tailed rock wallaby (<i>Petrogale penicillata</i>) in parts of the Parks where slope, rockiness and lack of water and food lead to low fox, dog and cat numbers.
4.3.6	Encourage the community, neighbours and visitors to report sightings of threatened species.
4.3.8	Restrict recreational access to caves/cave sections which contain significant bat colonies during hibernation and maternity periods where applicable.

Table 6: Guidelines identified in this Plan

GUIDELINE	DESCRIPTION
4.3.9	Reduce or avoid the use of herbicides and pesticides in karst environments. During chemical application cave entrances and karst features should be treated in the same manner as riparian zones.
4.4 WATER, RIVERS AND WILDERNESS	
4.4.1	In accordance with Section 9 of the Wilderness Act, wilderness areas will be managed according to the following principles: <ul style="list-style-type: none"> - the protection and restoration (where applicable) of the unmodified state of the area and its plant and animal communities; - the preservation of the capacity of the area to evolve in the absence of significant human interference; and - the provision of opportunities for solitude and appropriate self-reliant recreation.
4.4.2	Manage natural and cultural heritage, pest species and fire in wilderness areas, with special attention paid to minimising the effect on wilderness values.
4.4.3	Permit scientific research subject to the written consent of the Director-General if it: <ul style="list-style-type: none"> - does not permanently diminish wilderness values; and either - assists in the protection and management of the conservation resources of the area; or - it can be demonstrated that the research potential of the project is significant and that it could not be appropriately undertaken outside the wilderness areas.
4.4.5	In accordance with Section 61 of the NPW Act, any rivers or parts of rivers declared wild rivers will be managed in accordance with the following principles: <ul style="list-style-type: none"> - the restoration (wherever possible) and maintenance of the natural biological, hydrological and geomorphological processes associated with wild rivers and their catchments, including natural flow variability, and - the identification, conservation and appropriate management of Aboriginal objects and Aboriginal places.
4.6 FIRE	
4.6.2	Accept that while fire management is primarily aimed at long-term conservation of plant and animal communities, in some areas the Service may burn more often than is desirable for biodiversity protection in order to protect life and property.
4.6.4	Prohibit the use of fire fighting chemicals within the catchments of karst areas and wetlands, unless required for the protection of life and property.
4.6.9	Ensure the results of this and other relevant research inform fire management decision-making and are considered in reviews of the Fire Management Plans.
4.6.10	Ensure that cultural heritage issues related to fire management are addressed in consultation with local Aboriginal communities.
4.6.13	As far as possible, high intensity fire should be excluded from karst. The timing, location and intensity of prescribed burns should be managed to have the least negative effects on karst landforms and ecosystems, whilst ensuring the viability of endemic plant species such as the Bendethera wattle.
4.6.14	The use of heavy machinery, particularly tracked vehicles, should be avoided in karst environments to prevent environmental damage and risk of collapse.
Chapter 5: Visitor Use and Enjoyment of the Parks	
5.1 VISITORS AND VISITOR FACILITIES	
5.1.1	Ensure that the types, standards and capacities of the visitor facilities provided at any particular place comply with the designated classification (for camping areas, day-use areas, walking tracks, roads) described in Appendix Tables A1, A2 and A3.

Table 6: Guidelines identified in this Plan

GUIDELINE	DESCRIPTION
5.1.2	When designing facilities or sites, consider the following principles: <ul style="list-style-type: none"> - the placement of facilities so that they do not intrude upon the integrity of the feature(s) that visitors come to appreciate; - the design and layout of camping areas and day-use areas that include provisions for the separation of vehicles and pedestrians, adequate parking and turning spaces, the retention or planting of screening vegetation and the protection of aesthetic values; - the separation of conflicting recreational uses; - Avoiding compaction of the root zone around existing trees to minimise potential impacts on tree, a consequence of which be tree removal; - ensure that infrastructure is not sited in, or adjacent to, places of ecological or cultural sensitivity, or where there are potential safety hazards; and - the provision of appropriate safety information for visitors.
5.1.3	Minimise the environmental impact of recreation by encouraging minimal impact practices, which include hygienic and ecologically-sound waste disposal practices, the use of portable stoves and discouraging the clearing of leaf litter/ground material for campsites.
5.1.6	Where there is concern about the ecological impact of an activity or conflicts between visitors' expectations, establish monitoring programs and limits of acceptable change, and determine appropriate responses with consideration to the types and quality of visitor experiences being provided and impacts on natural and cultural heritage. This may include for example, the rest and rotation of campsites at the Cascades, Deua River and Bendethera.
5.1.7	Keep in mind the requirements of people with disabilities when planning and constructing recreational facilities, such as short walking tracks and picnic facilities.
5.2 CAMPING AND PICNICKING	
5.2.4	Where necessary to ensure public safety, delineate sites suitable for camping. Consider closure of sections of camping areas where tree risk management will affect threatened species habitat and/or undertake tree maintenance/pruning.
5.2.5	Maximise the promotion of minimum-impact camping practices and the opportunities to educate visitors about the natural and cultural values of the Parks.
5.3 WALKING	
5.3.1	Continue to allow walking throughout the Parks
5.3.3	Do not promote walking in areas of ecological or cultural sensitivity, or those regarded as unsafe, including but not limited to: <ul style="list-style-type: none"> - vegetation communities that are restricted in distribution and are, therefore, especially vulnerable to disturbance, or are likely to come under increasing stress due to climate change; and - places that contain culturally sensitive Aboriginal sites and values or cultural heritage features that are vulnerable to disturbance.
5.4 DRIVING	
5.4.1	Allow registered vehicles on the public road network shown on Maps A10 and A11, to enable access to features of key interest.
5.4.2	Maintain all roads to the standard indicated by the classification shown on Maps A10 and A11.
5.4.3	Temporarily close roads when: <ul style="list-style-type: none"> - they are untrafficable due to weather conditions; - vehicle use under current or predicted weather conditions would result in unacceptable damage; - maintenance works are required; or - vehicle use would cause unacceptable damage to recent road or maintenance works. Notify interest groups of any closures including the reason for the closure and when the road will reopen to traffic.

Table 6: Guidelines identified in this Plan

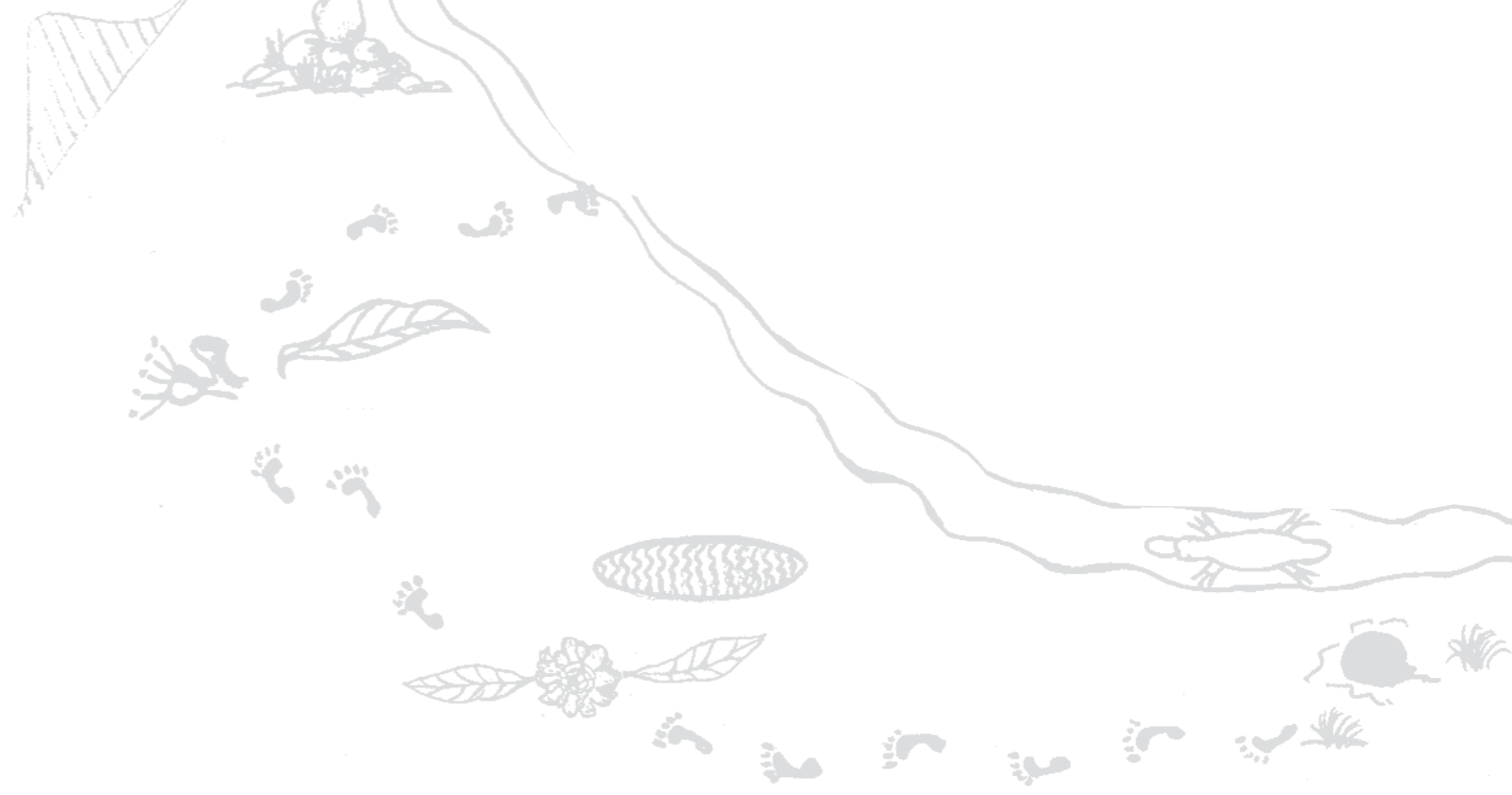
GUIDELINE	DESCRIPTION
5.4.4	Permanently close roads as shown on Maps A10 and A11 to public vehicle use or consider one-way routes and/or controlled access arrangements: <ul style="list-style-type: none"> - if the road is not considered safe; - when on-going maintenance costs resulting primarily from recreational use are unsustainable and cannot be funded within budgetary allocations; or - when the environmental impacts of recreational vehicular traffic are unacceptable. Liaise with relevant interest groups before implementing any permanent road closure or prior to designating a one-way route.
5.4.7	Ensure appropriate soil conservation management of roads in construction and maintenance to minimise erosion.
5.5 CYCLING	
5.5.2	Due to potential conflicts with walkers and horse riders, prohibit cycling on designated walking-tracks and on the Mongarlowe-Corn Trail link and the Corn Trail in Monga National Park.
5.6 HORSE RIDING	
5.6.2	Review where horse riding is allowed or the conditions under which horse riding can be undertaken within the Escarpment Parks should there be unacceptable environmental damage. Undertake such a review in consultation with interest groups.
5.6.3	Due to potential conflicts with walkers, prohibit horse riding on designated walking-tracks with the exception of Bendethera Caves portal for access to the Zig Zag Bridle Track and the Corn Trail.
5.6.5	Allow horse riding on the identified dual use trails: Mongarlowe-Corn Trail link, Corn Trail in Monga National Park and Bendethera Portal (as far as the Zig Zag Trail) in Deua National Park.
5.6.6	Allow camping with horses at Supers Memorial Camp (Wadbilliga National Park) and Bendethera (Deua National Park). Implement a permit system for these horse camps if considered necessary due to either volume of use or environmental impact.
5.7 CAVING	
5.7.2	Continue to allow unrestricted recreational access (no permit) to Bendethera Main Cave, the entrance section of Wyanbene Cave and to Marble Arch itself. Manage access to restricted access caves, including the Big Hole, through a permit system. The system will also be used as a means of correlating use and disturbance levels in individual caves and as a direct means of informing cavers of the requirements for minimising damage.
5.7.3	To reduce the likelihood of unauthorised access, do not publicise or promote the locations of restricted access caves.
5.7.4	The Karst Area Management Plan will include suggested visitor management regimes, which may include but not be limited to provisions relating to: the number of people who may enter a cave at any time; appropriate party sizes (which may include minimum and maximum party sizes for particular caves); any appropriate limits on the frequency of use; and any seasonal or other restrictions due to the need to minimise impacts on cave biota and cave processes.
5.7.7	Cave access may be further restricted or prohibited where monitoring indicates that unacceptable damage has occurred or is likely to occur.
5.7.8	Cavers must be acquainted with, and abide by, all relevant codes of conduct and current best practice standards endorsed by the NPWS (currently the Australian Speleological Federation Incorporated Code of Ethics and Conservation, Safety Code and Minimal Impact Code).
5.7.9	Encourage permit holders to: <ul style="list-style-type: none"> - monitor and report on use of the karst system; - keep records of cave use and condition; - inform the NPWS of any noticeable damage or concerns; and - Provide the results of any study or survey undertaken to the NPWS

Table 6: Guidelines identified in this Plan

GUIDELINE	DESCRIPTION
Chapter 6 Talking about and Understanding the Parks	
6.1 WELCOMING PEOPLE: INFORMATION, EDUCATION AND INVOLVEMENT	
6.1.5	Continue to recognise the importance of promoting community awareness, understanding and appreciation of the conservation of nature and cultural heritage through interpretative displays and educational activities.
6.2 AUTHORISED USES AND MANAGEMENT OPERATIONS	
6.2.2	No commercial operations will be permitted in wilderness areas, and each proposed operation will be assessed and only licensed if it is consistent with the long-term protection of the natural and cultural values of the Parks and does not detract from the experiences of other visitors.
6.2.4	Co-locate any necessary additional radio communication infrastructure with existing facilities where possible.
6.2.5	Continue to work cooperatively with Forests NSW to ensure the effective utilisation of Plumwood and Peak Alone fire towers.
6.2.8	Manage beekeeping in accordance with NPWS beekeeping policy, apiarists' consent conditions and the following guidelines: <ul style="list-style-type: none"> - the maintenance of sites will be by mowing or slashing only; - normal site maintenance will not disturb mineral earth or top soil; - regular maintenance of sites by the above means will be encouraged; and - tree clearing (a tree is defined as having a trunk greater than 20 cm in diameter), clearing of heavier regrowth or widening of an existing site is not permitted without written consent of the Regional Manager and/or preparation of a Review of Environmental Factors.
6.2.10	Maintain vehicle access to licensed bee sites where the Service requires the access trail for essential management purposes. Where vehicle access is required primarily for the purpose of access to a beekeeping site(s), consider obtaining a contribution from the beekeeper toward the cost of maintaining the access to a standard determined by the Regional Manager.
6.2.11	Close and rehabilitate access tracks to bee sites if there are unacceptable environmental or safety risks associated with them.
6.2.12	Maintain good communication with the owners of inholdings about park management issues and other matters of mutual concern.
6.2.13	Maintain the management of the trail network as indicated in Maps A10 and A11. Limit the construction of additional management trails to the following situations: <ul style="list-style-type: none"> - the minor realignment of an existing route to a more environmentally acceptable location, combined with rehabilitation of the original route; - temporary trails in emergency situations such as wildfire control (Section 4.6).
6.2.15	Permit the use of horses for particular management operations and when horse use is essential, such as for introduced plant and animal control programs, search and rescue operations, and maintenance programs of bridle tracks.
6.3 RESEARCH AND MONITORING	
6.3.2	Give priority to monitoring those things affected by threatening processes or where management makes a difference and the NPWS wants to know what that difference may be. Three key priority areas are: <ul style="list-style-type: none"> - sand-plot monitoring and animal responses; - continued implementation of the comprehensive visitor monitoring program; and - monitoring the responses of animals and plants to fire.
6.3.4	Make the Parks available for appropriate research by other organisations and individuals. Encourage external researchers to investigate the identified high priority research topics.
6.3.5	Ensure that research activities comply with the objectives and policies of this plan of management.

Table 6: Guidelines identified in this Plan

GUIDELINE	DESCRIPTION
6.3.6	Involve the Aboriginal community in the design and implementation of research relating to Aboriginal heritage and in the use of the information derived from this research.
6.3.7	Permit research that impacts upon the Parks values only where it will make a significant contribution to addressing timely and specific research questions, where it cannot be undertaken outside the Parks and after it has been subject to an environmental assessment.
6.3.8	Apply appropriate conditions to all licences and approvals granted for research, survey and monitoring projects within the Parks to ensure that the conduct of research activities does not adversely affect park values, park visitors or general public safety.
6.3.9	Encourage opportunities for training in field research techniques for field-based staff to facilitate their participation in research and monitoring in the Parks and the transfer of skills and knowledge.
6.3.10	Ensure that key research findings and the results of ongoing research programs in the Parks are communicated to NPWS staff, the community and other significant stakeholders on a regular basis, and ensure that park management activities are informed by these findings.



References



I Trapnell, Bendethera wattle, *Acacia covenyi*, Deua National Park

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Appendix



Trapnell, Enjoying the Deua River, Deua National Park

Appendix

Table A1: Camping Area Classifications*

Description	Remote camping area	Basic camping area	Camping area	Camping ground
Defined camping sites	☒	Optional	✓	✓
Vehicle access to site	☒	Optional	✓	✓
Long vehicle access	☒	Preferred	✓	✓
Resident manager	☒	☒	Optional	Optional
Powered sites	☒	☒	☒	Optional
Water (Reticulated)	☒	☒	Optional	✓
Water (tank or stream)	Optional	Preferred	Preferred	Optional
BBQs (gas or electric)	☒	Optional	✓	✓
BBQs (wood)	Optional	Optional	✓ (wood provided)	✓ (wood provided)
Tables	☒	Optional	✓	✓
Shelter/covered area	☒	Optional	✓	✓
Showers (hot water)	☒	☒	☒	Preferred
Showers (cold only)	☒	☒	Optional	✓
Toilets	Preferred (composting)	✓ (septic/ composting)	✓ (sewer preferred)	✓ (sewer preferred)
Garbage collection	☒	☒	Optional	✓
Recycling facilities	☒	☒	Optional	✓
Kiosk	☒	☒	Optional	Optional
Visitor centre	☒	☒	☒	Optional
Information shelter	☒	Optional	✓	✓
Site limit	5	20	40 (80 on coast)	100 (150 on coast)

* Only remote and basic camping areas are provided in the Parks.

Table A2: Day-Use Classifications

	Basic day-use	Medium day-use	Major day-use	Major facility
Water	Optional	Preferred	✓	✓ (reticulated)
BBQs	Optional	Optional	Preferred	✓
Tables	Optional	✓	✓	✓
Shelter/ covered area	Optional (over tables)	Optional (over tables)	✓	✓
Toilets	Preferred (composting)	✓	✓ (prefer. sewer)	✓ (prefer. sewer)
Garbage collection	☒	☒	Not preferred	Not preferred
Recycling facilities	☒	☒	✓ (where garbage service)	✓ (where garbage service)
Visitor centre	☒	☒	Optional	Optional
Information shelter	Optional	Preferred	✓	✓
Carparking	Optional	Preferred	✓ (including long vehicle)	✓ (including long vehicle)
Site limit	10	20	40	200

Table A3: Walking Track Classifications. Based on the Australian Standard for walking tracks (Standards Australia, 2001)

Description	General Description	Key track characteristics
All access path	Opportunity for large numbers of visitors, including those with reduced mobility, to undertake walks that have a high level of interpretation and facilities. Users can expect abundant opportunities to learn about the natural environment through interpretative signs or brochures. Users can expect frequent encounters with others.	Generally a broad, hard-surfaced track suitable for wheelchair use. A ramp is provided wherever there are steps. Width: 1200 mm or more. Well-maintained with minimal intrusions. Facilities along the track may include lookout platforms, seats and barrier rails. Users need no previous experience and are expected to exercise normal care regarding their personal safety.
Graded path	Opportunity for moderate numbers of visitors to walk easily in natural environments with the provision of a moderate to high level of interpretation and facilities. Users can expect to learn about the natural environment with moderate to abundant opportunities to learn through interpretative signs or brochures. Users can expect frequent encounters with others.	Generally a modified or hardened surface. Width: 900 mm or more. Well maintained with minimal intrusions. Facilities along the track may include lookout platforms, seats and barrier rails. Users need no previous experience and are expected to exercise normal care regarding their personal safety.
Walking track	Opportunity for visitors to walk in slightly modified natural environments requiring a moderate level of fitness and where the provision of interpretation signs and facilities is not common. Users can expect opportunities to observe and appreciate the natural environment with limited provision of interpretative signage. Users can expect occasional encounters with others.	Generally a modified surface, sections may be hardened. Width: Variable and generally less than 1200 mm. Kept mostly clear of intrusions and obstacles. Facilities usually not provided except for specific safety and environmental considerations. Users need no bushwalking experience and a minimum level of specialised skills. Users may encounter natural hazards such as steep slopes, unstable surfaces and minor water crossings. They are responsible for their own safety.
Hiking track	Opportunity for visitors to explore and discover relatively undisturbed natural environments along defined and distinct tracks with minimal (if any) facilities. Users can expect opportunities to observe and appreciate the natural environment without the provision of interpretative signage. Users can expect opportunities for solitude with few encounters with others.	Generally distinct without major modification to the ground. Encounters with fallen debris and other obstacles are likely. Facilities usually not provided except for specific safety and environmental considerations. Users require a moderate level of specialised skills such as navigation skills. Users may require maps and navigation equipment to successfully complete the track. Users need to be self-reliant, specifically in regard to emergency first aid and possible weather hazards.
Marked route	Opportunity for visitors with advanced outdoor knowledge and skills to find their own way along tracks that are often indistinct in remote locations. Users can expect frequent opportunities for solitude with few encounters with others.	Limited modification to natural surfaces, track alignment may be indistinct in places. Minimal clearing and there will be debris along the track. May include steep sections of unmodified surfaces. Facilities usually not provided except for specific safety and environmental considerations. Users require a high degree of specialised skills such as navigation skills. Users need to be self-reliant, specifically in regard to emergency first aid and possible weather hazards.
Unmarked route	Opportunity for highly experienced walkers to explore remote and challenging natural areas without reliance on managed tracks. Users can expect extended periods of solitude with few encounters with others.	No modification of the natural environment. May include steep sections of unmodified surfaces. Facilities usually not provided. Users require previous experience in the outdoors and a high level of specialised skills such as navigation skills. Users need to be self-reliant, specifically in regard to emergency first aid and possible weather hazards.

Note: The Australian Standard for walking tracks (AS156.1-2001) has been used as the basis for this track classification system. Refer to this standard for complete details on each class of track. The names given to each class of track have been applied for ease of use and comprehension and are not derived from the standard.

Table A4: Plants of Concern for Conservation Management

Scientific Name	Common Name	Legal Status
<i>Acacia blayana</i>	Blay's wattle	U
<i>Acacia coventyi</i>	Bendethera wattle; blue bush	U
<i>Acacia georgensis</i>		V
<i>Acacia kydrensis</i>		U
<i>Acacia lucasii</i>	Lucas's wattle; woolly-bear wattle	U
<i>Acacia olsenii</i>		U
<i>Acacia subtilinervis</i>		U
<i>Bertya brownii</i>		U
<i>Correa baeuerlenii</i>	Chef's cap correa	V
<i>Dampiera fusca</i>		U
<i>Dodonaea rhombifolia</i>	Broad-leaf hopbush	U
<i>Eucalyptus badjensis</i>	Badja gum	U
<i>Eucalyptus baeuerlenii</i>	Baeuerlen's gum	U
<i>Eucalyptus deuaensis</i>		U
<i>Eucalyptus gregsoniana</i>	Wolgan snow gum	U
<i>Eucalyptus latiuscula</i>		U
<i>Eucalyptus olsenii</i>	Woila gum	U
<i>Eucalyptus paliformis</i>	Wadbilliga ash	U
<i>Eucalyptus parvula</i>	Small-leaved gum; Kybean gum	V
<i>Eucalyptus triflora</i>	Pigeon House ash	U
<i>Eucalyptus wilcoxii</i>		U
<i>Grevillea acanthifolia</i> subsp. <i>paludosa</i>		E
<i>Grevillea macleayana</i>	Jervis Bay grevillea	U
<i>Haloragodendron baeuerlenii</i>		U
<i>Haloragodendron monospermum</i>		U
<i>Hibbertia hermanniifolia</i>		U
<i>Leionema carruthersii</i>		U
<i>Leptospermum deuense</i>		U
<i>Leptospermum subglabratum</i>		U

E1 Endangered Schedule 1 Species under Threatened Species Conservation Act

V = Vulnerable Schedule 2 Species under Threatened Species Conservation Act

U = Uncommon, Rare or Threatened Australian Plant (Briggs and Leigh 1996?)

P = Disjunct population ROTAP

Table A4: Plants of Concern for Conservation Management

Scientific Name	Common Name	Legal Status
<i>Leptospermum thompsonii</i>		V
<i>Monotoca rotundifolia</i>		E
<i>Myoporum bateae</i>		U
<i>Nematolepis elliptica</i>		U
<i>Philotheca obovalis</i>		P
<i>Pomaderris brogoensis</i>		U
<i>Pomaderris costata</i>		U
<i>Pomaderris gilmourii</i> var. <i>cana</i>		V
<i>Pomaderris gilmourii</i> var. <i>gilmourii</i>		U
<i>Pomaderris pallida</i>		V
<i>Pomaderris parrisiae</i>		V
<i>Pomaderris pauciflora</i>		U
<i>Pomaderris virgata</i>		U
<i>Prostanthera porcata</i>		U
<i>Prostanthera walteri</i>	Blotchy or monkey mint-bush	U
<i>Pseudanthus divaricatissimus</i>		U
<i>Pultenaea parrisiae</i> subsp. <i>parrisiae</i>		V
<i>Pultenaea villifera</i> var. <i>villifera</i>		U
<i>Spyridium cinereum</i>		U
<i>Styphelia psiloclada</i>		U
<i>Westringia kydrensis</i>		E
<i>Westringia lucida</i>		U
<i>Westringia saxatilis</i>		U

E1 Endangered Schedule 1 Species under Threatened Species Conservation Act

V = Vulnerable Schedule 2 Species under Threatened Species Conservation Act

U = Uncommon, Rare or Threatened Australian Plant (Briggs and Leigh 1996?)

P = Disjunct population ROTAP

Table A5: Guidelines For Management Of Threatened Fauna Species

Status	Survey	Research	Monitoring	Wildfire	Fuel Reduction Burns (FRB)	Predator Control	New (and if possible existing) Infrastructure
Long-nosed potoroo <i>Potorous tridactylus</i>							
V	Only as part of EIA for proposed activities	None planned	On-going	Avoid large control lines within known habitat	Modified burns with emphasis on strategic burning	Part of the park program	Exclude from within boundaries of identified populations*
White-footed dunnart <i>Sminthopsis leucopus</i>							
V	Only as part of EIA for proposed activities	Subject to funding	None planned	No special consideration	Protect potential nesting sites (eg logs) during FRB. Burn patch <10 ha. Avoid burning >50% of local habitat.	Part of the park program	Exclude from within boundaries of identified populations
Yellow-bellied glider <i>Petaurus australis</i>							
V	Only as part of EIA for proposed activities	None planned	Subject to funding	Avoid destroying hollow-bearing trees when constructing control lines	Avoid removing hollow-bearing tree during FRBs	Only incidental as part of the park program	Tailored to protect feed trees and dens
Squirrel glider <i>Petaurus norfolkensis</i>							
V	Only as part of EIA for proposed activities	None planned	Monitoring may occur if populations are located	All known populations will be a high priority for protection	Prefer low-intensity fire in winter. Avoid removing hollow-bearing trees.	Only incidental as part of the park program	Tailored to protect feed trees, understorey food resources and den
Brush-tailed phascogale <i>Phascogale tapoatafa</i>							
V	Only as part of EIA for proposed activities	None planned	Monitoring may occur if new populations are located	All known populations will be a high priority for protection	Avoid removing hollow-bearing trees. Burn patches <20 ha. Avoid burning >50% of local habitat.	Only incidental as part of the park program	Tailored to protect hollow-bearing trees
Grey-headed flying fox <i>Pteropus poliocephalus</i>							
V	Conduct searches for roosts (c) as part of EIA	None planned	Monitoring may occur if roost sites are located	All known populations will be a high priority for protection	Modify to keep away from known roost sites	Only incidental as part of the park program	No infrastructure within 200 m of roost sites. Minimise human disturbance.
Large-footed mouse-eared bat <i>Myotis adversus</i>							
V	Conduct searches for roosts (cts) as part of EIA for proposed activities	None planned	Monitoring may occur if roost sites are located	Major control lines should not be constructed within 100 m of known roost sites	Avoid known roost sites. Avoid removing hollow-bearing trees.	Only incidental as part of the park program	Do not increase numbers of human visitors to roost sites, no infrastructure within 200 m of roost sites
Greater broad-nosed bat <i>Scoteanax rueppellii</i>							
V	Conduct searches for roosts (t) as part of EIA for activities	None planned	Monitoring may occur if roost sites are located	Avoid destroying hollow-bearing trees when constructing control lines	Avoid known roost sites. Avoid removing hollow-bearing trees.	Only incidental as part of the park program	Maintain a 50 m wide vegetation buffer around roosting sites

E endangered
V vulnerable
(c) cave
(r) rock overhangs
(t) tree
(s) human built structures such as bridges, buildings and culverts

Table A5: Guidelines For Management Of Threatened Fauna Species

Status	Survey	Research	Monitoring	Wildfire	Fuel Reduction Burns (FRB)	Predator Control	New (and if possible existing) Infrastructure
Eastern false pipistrelle <i>Falsistrellus tasmaniensis</i>							
V	Conduct searches for roosts (cts) as part of EIA for proposed activities	None planned	Monitoring may occur if roost sites are located	Avoid destroying hollow-bearing trees when constructing control lines	Avoid removing hollow-bearing trees.	Only incidental as part of the park program	Maintain a 50 m wide vegetation buffer around roosting sites
Yellow-bellied sheath-tailed bat <i>Saccolaimus flaviventris</i>							
V	Conduct searches for roosts (t) as part of EIA for proposed activities	None planned	Monitoring may occur if roost sites are located	Avoid destroying hollow-bearing trees when constructing control lines	Avoid removing hollow-bearing trees.	Only incidental as part of the park program	Maintain a 50 m wide vegetation buffer around roosting sites
Golden-tipped bat <i>Kerivoula papuensis</i>							
V	Conduct searches for roosts (t) as EIA for proposed activities	None planned	Monitoring may occur if roost sites are located	Avoid destroying hollow-bearing trees when constructing control lines	Avoid removing hollow-bearing trees.	Only incidental as part of the park program	Maintain a 50 m wide vegetation buffer around roosting sites
Masked owl <i>Tyto novaehollandiae</i>							
V	Conduct searches for nests as part of EIA for proposed activities	On-going (SFNSW)	At known nest sites (SFNSW)	Avoid destroying hollow-bearing trees when constructing control lines	Rake hoe around known nesting sites. Avoid removing hollow-bearing trees.	Only incidental as part of the park program	No infrastructure within 200 m of known nesting sites
Sooty owl <i>Tyto tenebricosa</i>							
V	Conduct searches for nests as part of EIA for proposed activities	On-going (SFNSW)	At known nest sites (SFNSW)	Avoid destroying hollow-bearing trees when constructing control lines	Rake hoe around known nesting sites and keep burns out of riparian zones. Promote fire regimes suitable for small mammals.	Only incidental as part of the park program	No infrastructure within 200 m of known nesting sites
Powerful owl <i>Ninox strenua</i>							
V	Conduct searches for nests as part of EIA for proposed activities	On-going (SFNSW)	At known nest sites (SFNSW)	Avoid destroying hollow-bearing trees when constructing control lines	Rake hoe around known nesting sites. Avoid removing hollow-bearing trees.	Only incidental as part of the park program	No infrastructure within 200 m of known nesting sites

E endangered
V vulnerable
(c) cave
(r) rock overhangs
(t) tree
(s) human built structures such as bridges, buildings and culverts

Table A5: Guidelines For Management Of Threatened Fauna Species

Status	Survey	Research	Monitoring	Wildfire	Fuel Reduction Burns (FRB)	Predator Control	New (and if possible existing) Infrastructure
Barking owl <i>Ninox connivens</i>							
V	Conduct searches for nests as part of EIA for proposed activities	None planned	At known nest sites (SFNSW)	Avoid destroying hollow-bearing trees when constructing control lines	Rake hoe around known nesting sites. Avoid removing hollow-bearing trees.	Only incidental as part of the park program	No infrastructure within 200 m of known nesting sites
Pink robin <i>Petroica rodinogaster</i>							
V	None planned	None planned	None planned	No special consideration	Avoid riparian zones. Avoid FRB in spring and summer.	Only incidental as part of the park program	No special consideration
Olive whistler <i>Pachycephala olivacea</i>							
V	To be conducted as part of EIA for proposed activities	None planned	None planned	No special consideration	Avoid riparian zones. Avoid FRB in spring and summer.	Only incidental as part of the park program	None at known sites
Glossy black cockatoo <i>Calyptorhynchus lathami</i>							
V	Conduct searches for nests and feed trees as part of EIA for proposed activities	Possible research into feed tree and nest site selection	Nests may be monitored if found	No major control lines within 100 m of known nest sites. Avoid hollow-bearing trees when constructing control lines	Exclude fire from Allocasuarina littoralis stands, with diameter <20 -30 cm, where possible. Avoid removing hollow-bearing trees.	Only incidental as part of the park program	None within 100 m of known nests. No removal of feed trees
Giant burrowing frog <i>Heleioporus australiacus</i>							
V	Only as part of EIA for proposed activities	On-going (Forests NSW)	None planned	Major control lines should not be constructed within 100 m of known burrows	Avoid constructing control lines within known areas. Avoid burning in potential habitat in summer and autumn.	As above	None within 200 ha area surrounding records
Stuttering frog <i>Mixophyes balbus</i>							
V	Yes, to confirm past recordings	None planned	If found	Exclude fire from rainforest/successional rainforest areas.	Exclude from drainage lines, rainforest areas.	Known sites should be targeted	None within 200 ha area surrounding records or within 1 km upstream or downstream of records.

E endangered

V vulnerable

(c) cave

(r) rock overhangs

(t) tree

(s) human built structures such as bridges, buildings and culverts

Table A6: Species not found in the lists above but that have been recorded in the vicinity of the Escarpment Parks (i.e. ATLAS records) and that are currently listed as Endangered or Vulnerable.

Scientific name	Common name	Legal status
<i>Calyptorhynchus banksii</i>	Red-tailed Black-Cockatoo	V
<i>Climacteris picumnus</i>	Brown Treecreeper	V
<i>Dasyurus maculatus</i>	Spotted-tailed Quoll	V
<i>Haematopus longirostris</i>	Pied Oystercatcher	V
<i>Litoria littlejohni</i>	Littlejohn's Tree Frog	V
<i>Mastacomys fuscus</i>	Broad-toothed Rat	V
<i>Melanodryas cucullata</i>	Hooded Robin	V
<i>Miniopterus schreibersii oceanensis</i>	Eastern Bent-wing Bat	V
<i>Mixophyes iteratus</i>	Giant Barred Frog	E1
<i>Mormopterus norfolkensis</i>	Eastern Freetail-bat	V
<i>Petaurus norfolcensis</i>	Squirrel Glider	V
<i>Phascolarctos cinereus</i>	Koala	V
<i>Pseudomys fumeus</i>	Smoky Mouse	E1
<i>Pseudomys oralis</i>	Hastings River Mouse	E1
<i>Stagonopleura guttata</i>	Diamond Firetail	V
<i>Thinornis rubricollis</i>	Hooded Plover	E1

Table A7: Gazettal History of the Far South Coast Escarpment Parks

Year	Badja Swamps Nature Reserve	Deua National Park	Gourock National Park	Monga National Park	Wadbilliga National Park
1979	543	81,255			76,184
1994		743			468
1995		363			
1997					781
1999					6,731
2001		34,612	7,862	25,116	10,611
2003					239
2004		270			529
2006		4,789		1,348	
Total (ha)	543	122,033	7,862	26,464	95,542

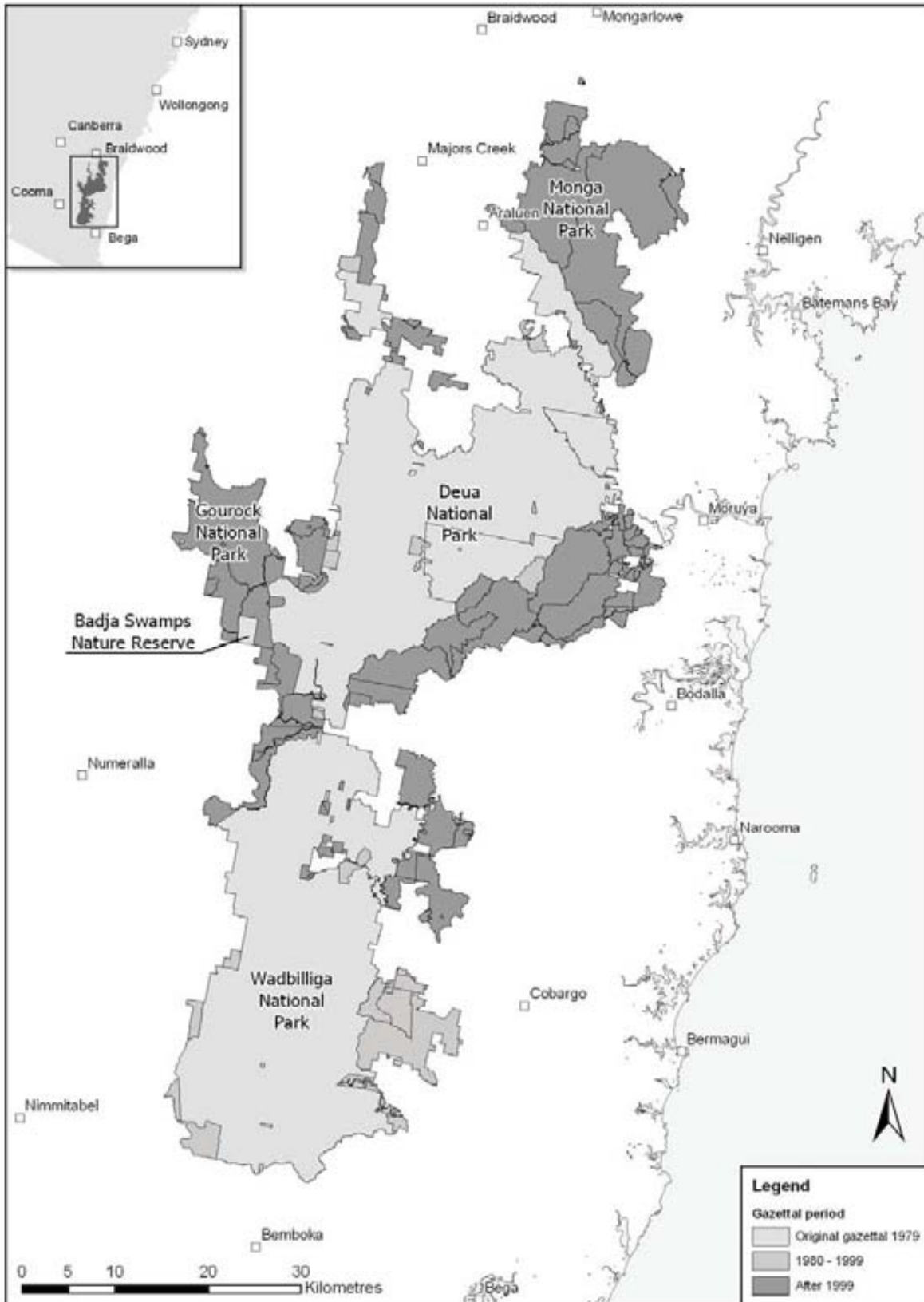
Table A8: Index of features in and around the Far South Coast Escarpment Parks

Location	Map	Reference
Araluen	A10	L6
Bakers Flat camping area	A10	O10
Belimbla fire trail	A10,A11	I18
Belowra	A11	I22
Belowra East fire trail	A11	J21
Bendethera	A10,A11	J15
Bendethera Cave	A10	I15
Berlang	A10	H9
Bettowynd	A10	J9
Big Badja	A10,A11	F17
Brassknocker	A11	J23
Brogo Dam	A11	J30
Brogo River	A11	G29
Buckenbowra River	A10	Q9
Buckenbowra valley	A10	P8
Burra Creek	A10	M14
Cascades camping area	A11	E23
Cobargo	A11	M27
Coondella Creek	A10	M15
Corn Trail	A10	O5
Corn Trail link	A10	O4
Dampier Mountain	A10,A11	I16
Dasyurus picnic area	A10	O5
Deua agricultural water race	A10	J15
Deua eucalyptus distillery	A10	I9
Deua Mountain	A10	I13
Deua River	A10	J14
Deua River camping area	A10	N9
Diamond Creek	A10	M16
Dry Creek camping area	A10	N10
Hanging Mountain	A10	N16
Jillicambra Mountain	A11	G21
Lake Creek camping area	A11	H24
Marble Arch	A10	I9
McCarthy's trail	A10	N5
Minuma Range	A10	I14

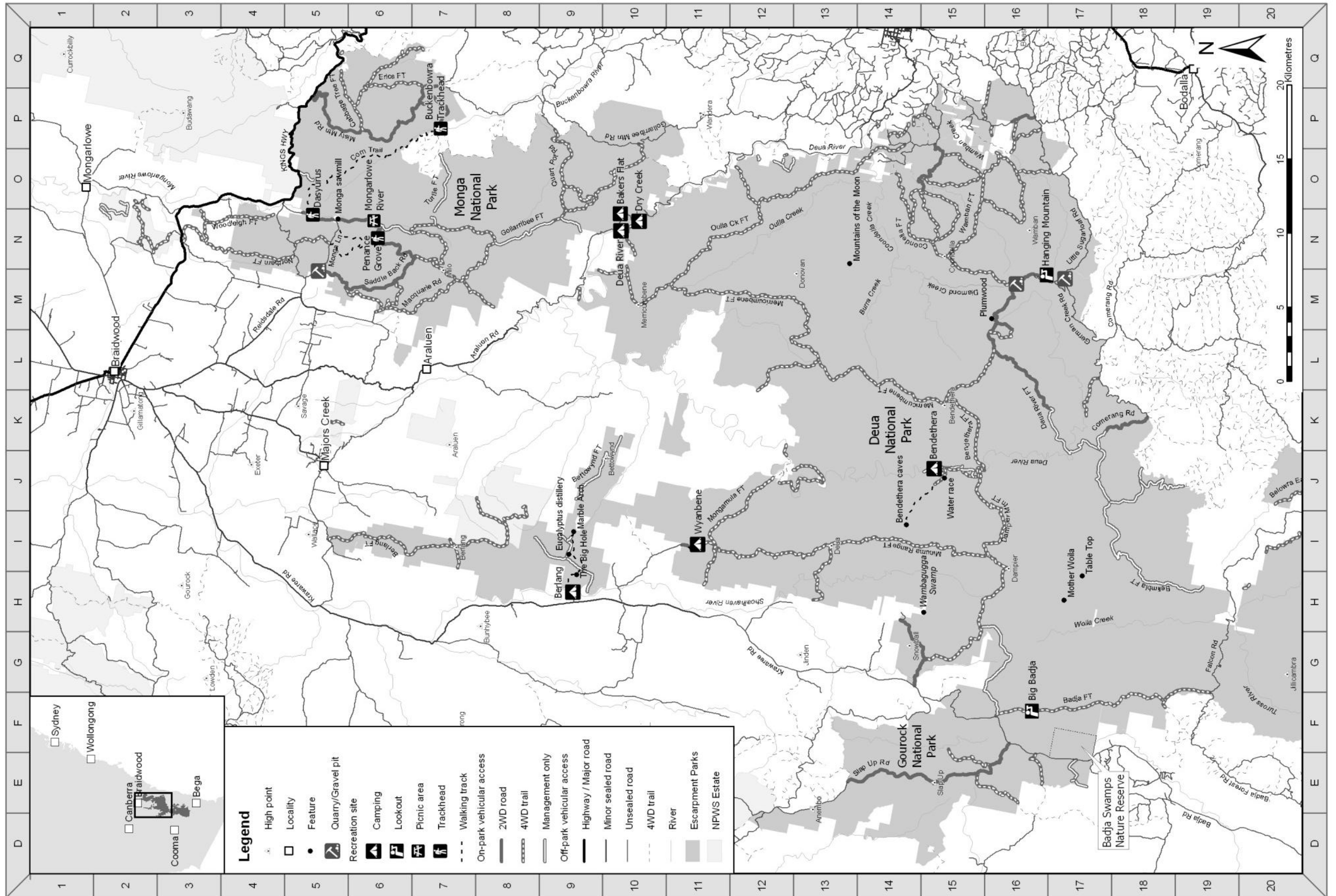
Table A8: Index of features in and around the Far South Coast Escarpment Parks

Location	Map	Reference
Misty Mountain road	A10	P5
Monga sawmill	A10	N5
Mongamula Mountain	A10	L12
Mongarlowe	A10	O1
Mongarlowe River	A10	O2
Mongarlowe River picnic area	A10	O6
Mother Woila	A10,A11	H17
Mount Donovan	A10	N13
Mountains of the Moon	A10	N14
Nerrigundah	A10	M20
Oulla Creek	A10	N12
Peak Alone	A11	K25
Penance Grove	A10	N5
Plumwood	A10	M16
Puen Buen	A11	I29
Shoalhaven River	A10	H7
Slap Up Trig	A10	E15
Sutherland's camp	A11	I24
Table Top Mountain	A10,A11	H17
The Big Hole	A10	H9
Tralfamadore	A11	J23
Tuross Falls	A11	E23
Tuross Gorge	A11	F23
Tuross River	A11	F21
Tuross River picnic area	A11	J22
Wadbilliga Crossing picnic area	A11	G24
Wadbilliga Mountain	A11	G26
Wadbilliga Plateau	A11	G26
Wadbilliga River	A11	G25
Wadbilliga Trig	A11	G26
Wambagugga Swamp	A10	H15
Wamban Creek	A10	P16
Wamban Mountain	A10	N17
Woila Creek	A10,A11	H19
Wyanbene Caves	A10	I11
Wyanbene Mountain (Trig?)	A10	I11
Yowrie	A11	J26

Map A9: Gazettal history of the Far South Coast Escarpment Parks



Map A10: Far south coast Escarpment parks - Northern tile



Map A11: Far south coast Escarpment parks - Southern tile

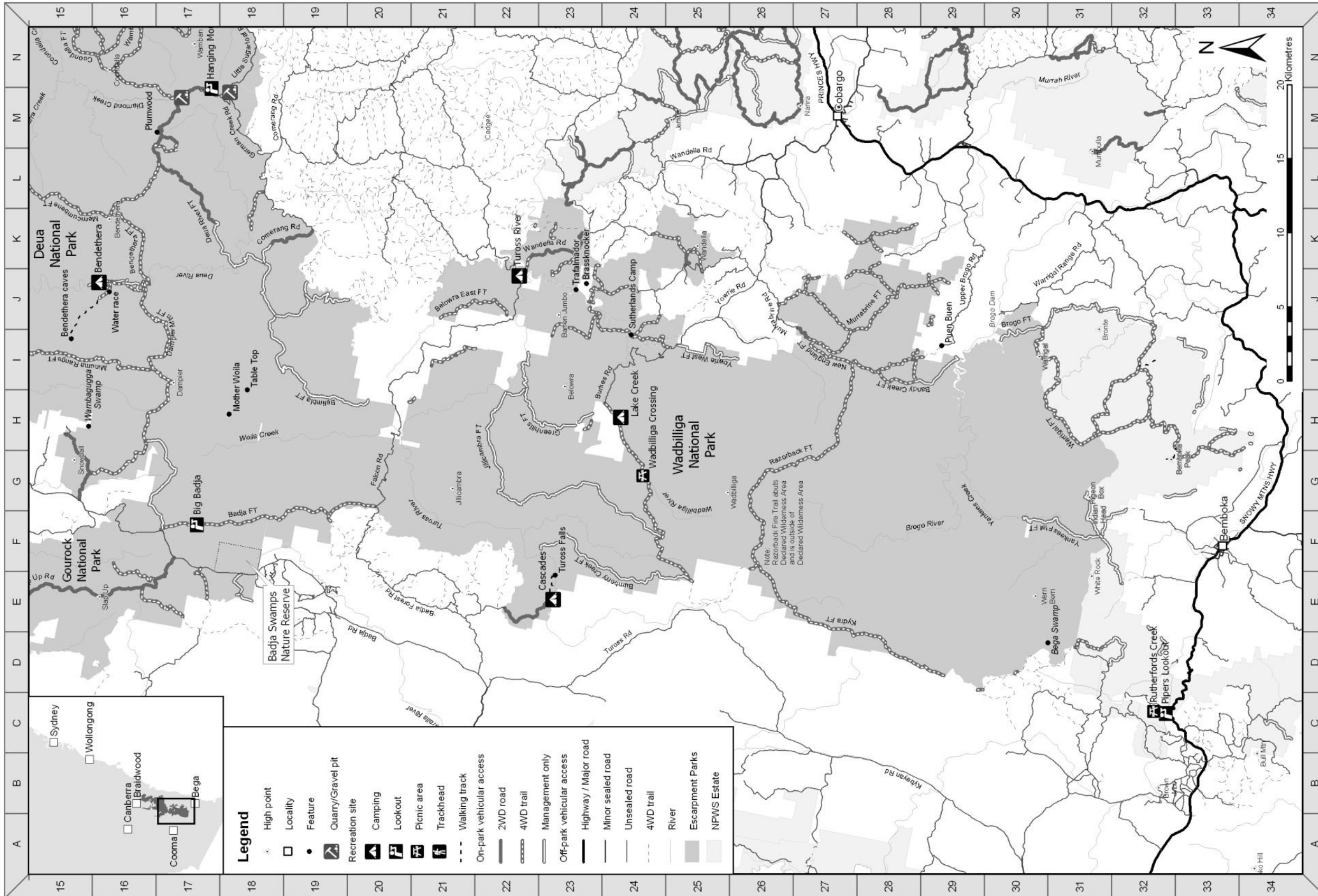


Table A12: High priority historic heritage places/landscapes to be actively managed (taken from: Far South Coast Region: Cultural Heritage Management Strategy 2003-2008)

Historic Themes	Conservation & Management Category	Comments	Management Actions	Action Priority
Bendethera homestead & complex				
Pastoralism; Aboriginal cultures (pre-contact heritage)	Regional/local destination places and landscapes	Site includes gardens, Chinaman's oven and water races	Minimal fabric stabilisation (water race, oven stone etc)	High
			Prepare Conservation Management Plan including Interpretation Plan for Aboriginal, historic and natural values of the place	High
			Undertaken scheduled works outlined in the CMP	Med
			Implement interpretation plan	Low
Wyanbene Caves				
Aboriginal cultures (pre-contact history); leisure	Regional/local destination places and landscapes	Bushrangers links; links to Chinese community; early Aboriginal sites; Karst system	Upgrade access to site and ensure locked gate operates effectively in restricting access to authorised groups	High
			Review Deua Karst Area Management Plan	Med
			Upgrade interpretation signage at the site	Med
			Consult Aboriginal communities to establish significance of place	Low

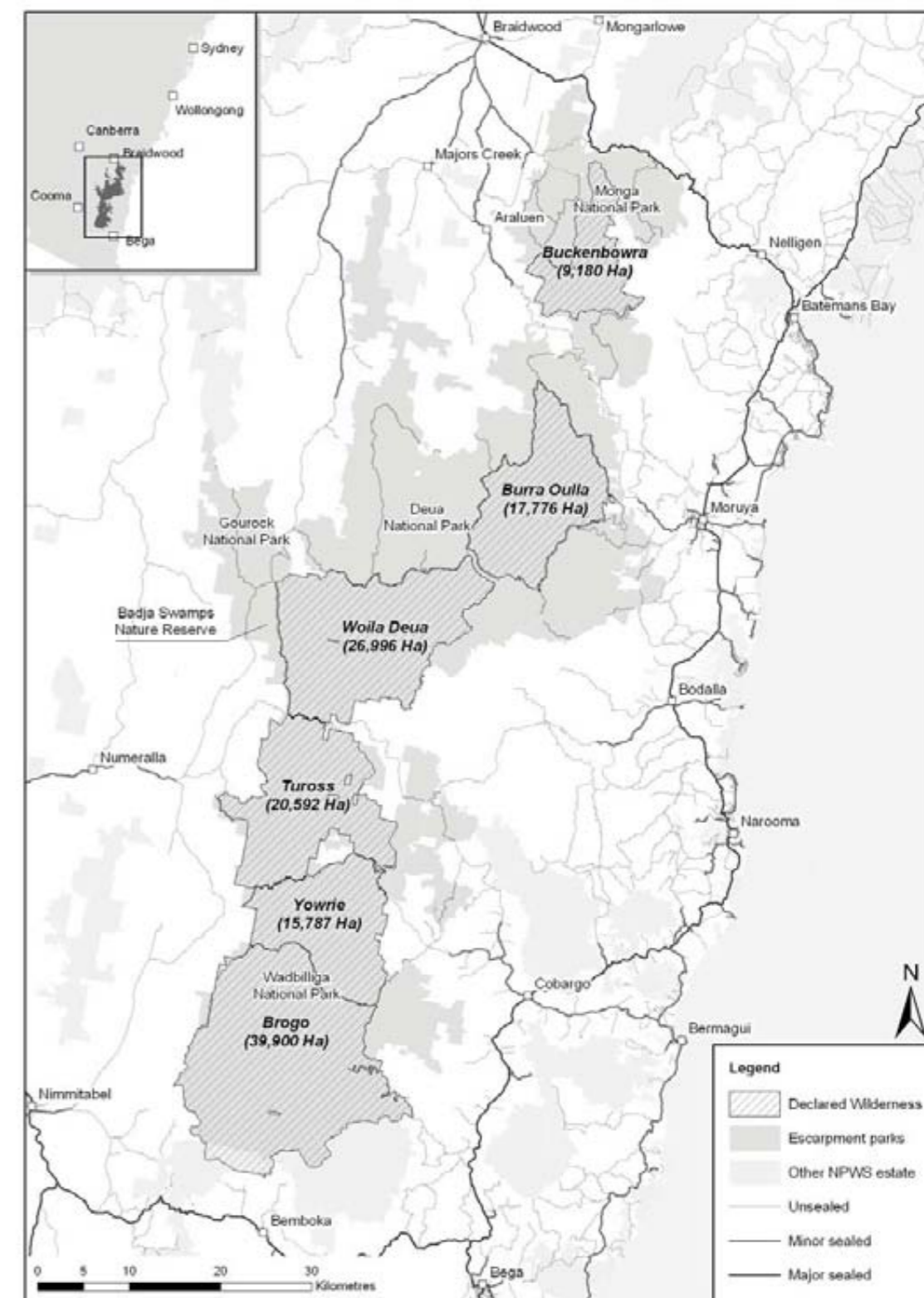
Table A13: Medium priority historic heritage places/landscapes to be actively managed when resources available (taken from: Far South Coast Region: Cultural Heritage Management Strategy 2003-2008)

Significance	Significance Type	Historic Themes & Association	Long Term Conservation & Management Outcomes	Comments
Corn Trail (Monga National Park)				
Regional	Historic; Aboriginal	Pastoralism; Aboriginal cultures; transport	Built heritage places – current assets. Some conservation value – adaptive reuse	To be extended and promoted as a major walking track and part of the new Monga National Park recreation opportunities.
Regional Bridle Trails (several national parks)				
Local	Historic; Aboriginal	Pastoralism; Aboriginal cultures	Archaeological places & landscapes. Adaptive re-use	Carry out significance assessments for the various trails in conjunction with local communities. May involve horse riders in works and research if required
Monga Sawmill (Monga National Park)				
Local	Historic	Forestry	Archaeological places/landscapes; monitor & manage as a ruin	May need to remove some structures to ensure public safety.
Deua Eucalyptus Distillery (Deua National Park)				
Local	Historic	Forestry	Archaeological places/landscapes; monitor & manage as a ruin	Old tank & scattered bottles.
Deua Gold Race CH mining (Deua National Park)				
Local	Historic	Mining	Archaeological places & landscapes Monitor & manage as a ruin	1850s gold rush Chinese mining centre. Subsistence mining was widespread especially during 1890s and 1930s Depressions.

Table A14: Low priority historic heritage places/landscapes that do not require active management (taken from: Far South Coast Region: Cultural Heritage Management Strategy 2003-2008)

Significance	Significance Type	Historic Themes & Associations	Long Term Conservation & Management Outcome	Comments
Deua Clearings (Deua National Park)				
Local	Historic	Pastoralism	No active management required	Old leases used in moving cattle down off Monaro, pastoral sub-theme

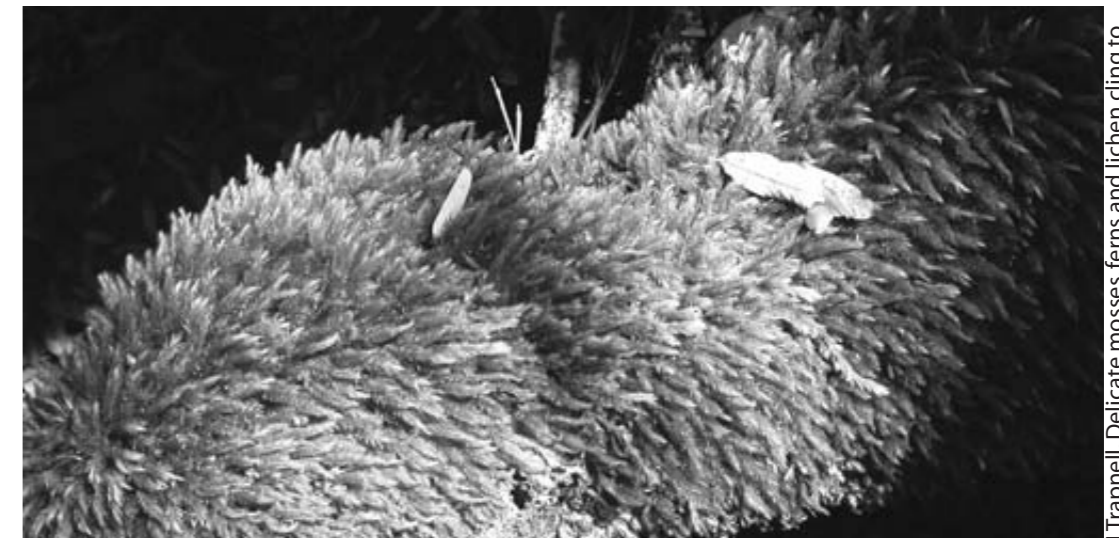
Map A14: Wilderness areas and boundaries





-  *Freshwater wetland*
-  *Dry sclerophyll*
-  *Rainforest Leaves*
-  *Heathland*
-  *Wet sclerophyll forest*

Glossary



Trapnell, Delicate mosses, ferns and lichen cling to the trunks of Tree Ferns, Monga National Park

Glossary

This glossary has been provided to assist readers of this plan. The definitions apply in the context of this Plan and may not be appropriate for other planning instruments. It is not comprehensive, especially in regard to specialist scientific terminology. Interested readers should consult specialist literature if further elucidation of scientific terminology is required. Italicised words and phrases indicate definitions elsewhere in this glossary. Square brackets [...] indicate the origin of many definitions.

Aboriginal place: a location containing physical and/or non-physical features resulting from Aboriginal occupation or use, or of significance to Aboriginal people such as landscape features and ceremonial areas. (Note: it does not refer, in the context of this Plan, to an Aboriginal place as defined under the *National Parks and Wildlife Act 1974*). See also *Place*.

Aboriginal site: a location containing features and/or physical evidence resulting from Aboriginal occupation or use. In this Plan, it is used in reference to locations with physical evidence. Note that this definition follows that of 'Aboriginal object' as defined in the *National Parks and Wildlife Act 1974*. This distinguishes it from 'Aboriginal place' which, within the context of this Plan, includes physical evidence and non-tangible values (e.g. mythological places).

Acceptable change/disturbance: the limits to the type and scale of change appropriate to an area. The limits may be due to environmental, social or economic concerns. What is acceptable or appropriate is determined by consultation with governments and communities, as well as by legislation and regulations. The limits of acceptable change establish the maximum 'damage' levels that society is prepared to accept for a resource. This is an acknowledgment that all human activities and uses of the park result in some degree of damage, and of the need to manage such disturbances within physical and social impact thresholds.

Adaptive management: park management policies and actions are adjusted and refined based upon the results of ongoing research and monitoring and the utilisation of outcomes of performance evaluation in planning.

Adopted: with reference to a plan of management - adopted by the Minister in accordance with Section 75(6) of the *National Parks and Wildlife Act 1974*.

Appropriate uses: those activities that are consistent with community expectations for the protection of natural and cultural features of the park.

Biodiversity (biological diversity): the variety of life forms: the different plants, animals and micro-organisms, the genes they contain and the *ecosystems* they form. It is usually considered at four levels: genetic diversity, species diversity, ecosystem diversity and community diversity. [Australian Natural Heritage Charter]

Bridle Track. Track that was used for transporting produce and moving stock (often using horses and in some cases wagons) from one location to another. Some of these tracks are used today for recreational horse riding. Many of these tracks were originally used and shown to Europeans by Aboriginal people.

Burra Charter: Australian ICOMOS (International Council on Monuments and Sites) Charter for the Conservation of Places of Cultural Significance and its guidelines. Compare with *Australian Natural Heritage Charter*.

Catchment area: the area drained by a stream, lake or other body of water.

Capacity: the ability of an ecosystem or infrastructure item to carry or support use within limits of *acceptable change*.

Climate change: defined by the United Nations Convention on Climate Change as “change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods”.

Community: (1) in an ecological context - all the living parts of an *ecosystem*; (2) in the context of plants and animals – a naturally-occurring group of organisms inhabiting a common environment; and (3) in the context of human society - the general public.

Conservation: all the processes and actions of looking after a place so as to retain its natural or cultural significance. It always includes protection, maintenance and monitoring. [Australian Natural Heritage Charter and Burra Charter]

Conservation management plan: a non-statutory document that outlines the significance of an item and how the item is to be managed. A conservation management plan is prepared in two sections: the first contains a description of the item, its setting, identification of its heritage values and a statement of significance; the second provides conservation policies and a strategy for their implementation.

Cultural connection: a relationship, attachment or association that people have with a place or landscape, arising from traditional, historical or contemporary events or experiences.

Cultural heritage: the value that people have given to items through their associations with those items. These associations may be traditional, historical and/or contemporary. Cultural value may be embodied in physical elements such as art, buildings, landscapes and human remains, or expressed in non-physical forms such as cultural practices and beliefs, knowledge, songs and stories. When natural elements in a landscape acquire meaning for people these elements become cultural heritage. [NPWS Cultural Heritage Division Guidelines]

Cultural landscape: a landscape in which some features are man-made or have been significantly modified as a result of human activity. It can also be defined as the way in which perceptions, beliefs, stories, experiences and practices give shape, form and meaning to the landscape. [NPWS Cultural Heritage Division Guidelines]

Cultural significance: aesthetic, historic, scientific, social or spiritual values for past, present or future generations. Cultural significance is embodied in the place itself, its fabric, setting, use, associations, meanings, records, related places and related objects. Places may have a range of values for different individuals or groups. The term cultural significance is synonymous with heritage significance and cultural heritage values. [Burra Charter]

Degradation: any decline in the quality of natural resources or the viability of *ecosystems*, caused directly or indirectly by human activities. [Australian Natural Heritage Charter]

Director-General: the Director of National Parks and Wildlife Service appointed under the *National Parks and Wildlife Act 1974*.

Ecological: the relations between plants and animals, and their environment.

Ecosystem: the dynamic interaction between the complex of *organisms* that make up a *community* with their non-living environment and each other. [Australian Natural Heritage Charter]

Endemic: only found in a specific locality.

Endangered species: an endangered species listed within the *Threatened Species Conservation Act 1995* or the *Fisheries Management Act 1994*.

Environment: includes (1) all aspects of the surroundings of organisms, whether affecting any organism as an individual or in his or her social groupings; (2) the natural, social and economic setting in which humans live.

Exotic: see *Introduced species*.

Feral: see *Introduced species*.

Fire regime: the pattern, frequency, seasonal distribution, size and intensity of fires within an ecosystem.

Fuel stove: a device for cooking that:(a) does not, during normal operation, affect the soil or vegetation surface it is used on (e.g. no coals that can burn into peat soil or hot material that can harm vegetation);(b) does not use fuel from local environment (e.g. may run on Shellite, methylated spirits or other fuels); and(c) does not leave any residue in the local environment. [Tasmanian Wilderness World Heritage Area Management Plan 1999] – does not appear in the document

Geographic Information System (GIS): is a system of computer hardware, software and procedures to facilitate the management, manipulation, analysis, modelling, representation and display of geo-referenced data to solve complex problems regarding planning and management of resources.

Geomorphological: pertaining to the study of landforms.

Government agency: includes a department of state, statutory or public authority, instrumentality, corporation, body or person whether federal state, territorial or local.

Habitat: has the same meaning as in the *Threatened Species Conservation Act 1995* or the *Fisheries Management Act 1994* - an area or areas, occupied or periodically or occasionally occupied, by a species, population or ecological community and includes any biotic or abiotic component.

Harm: to an animal (including an animal of a threatened species, population or ecological community) includes to hunt, shoot, poison, net, snare, spear, pursue, capture, trap, injure or kill, but does not include harm by changing the habitat of an animal. [National Parks and Wildlife Act 1974]

Heritage place/item: a place, building, work, relic, moveable object or precinct that relates to the settlement of NSW, apart from Aboriginal settlements more than 25 years old. It may include components, contents, spaces and views. [National Parks and Wildlife Act 1974 Regulations 2002]

Horse riding: the use of horses for recreational riding including the use of horses to draw carts, wagons or carriages.

Impact thresholds: see *acceptable change*.

Intangible or Intrinsic value: values that cannot be expressed in physical or direct monetary terms.

Interpretation: communicates ideas, stories, feelings and experiences to help people understand more about themselves and their environment. It reveals meanings and relationships through enticing and engaging stories via face-to-face programs, computer interactions, drama, brochures, signs and other methods.

Introduced species: a translocated or alien species occurring outside its historically known natural range as a result of intentional or accidental dispersal by human activities. [Australian Natural Heritage Charter]

Karst: landscapes (generally on limestone) with distinctive characteristics of relief and drainage arising primarily from a high degree of rock solubility.

Lease: an agreement which gives rise to the relationship of landlord and tenant or lessor and lessee. A lease of land conveys from the owner (the lessor) to the tenant or lessee an estate in the land with an exclusive right of possession for a certain period. [Service Policy]

Levels of acceptable change: see *Acceptable change*.

Licence: the permission by a competent authority (the licensor) to do something, which, without permission, would be unlawful. A licence with respect to property is a privilege to go onto land for certain purposes but does not operate to confer on or vest in the person granted the licence (the licensee) any estate in the land and may not give the licensee exclusive possession. [Service Policy]

Limits of acceptable change: see *Acceptable change*.

Maintenance: (1) the continuous protective care of the fabric and setting of a place. It does not include repair, which involves restoration or reconstruction. [Burra Charter]; (2) the continuous protective care of the *biodiversity* and *geodiversity* of a *place* and is to be distinguished from repair. Repair involves restoration and reinstatement. [Australian Natural Heritage Charter]

Management principles: in relation to land reserved under the *National Parks and Wildlife Act 1974* - the management principles set out in Division 2 of Part 4.

Management trail: a vehicle trail that is not available for public vehicular use.

Memorandum of Understanding (MOU): a formal, voluntary agreement between two or more parties that seeks to achieve mutually agreed outcomes through the efforts of both parties.

Minister: in this Plan - the Minister of the Crown from time to time administering the *National Parks and Wildlife Act 1974*.

Monitoring: the ongoing review, evaluation and assessment to detect changes in condition of the natural integrity of a *place*, with reference to a baseline condition. [Australian Natural Heritage Charter]

Montane: natural zone between tablelands and subalpine areas on the slopes of the ranges. The biogeographic zone of relatively moist, cool, upland slopes below timberline. It is characterised by large evergreen trees as a dominant life form.

National Parks and Wildlife Act 1974: the *National Parks and Wildlife Act 1974* (as amended) and the *National Parks and Wildlife Regulation 2002*.

Natural system: an ecosystem unaffected by modern humans.

Noxious weed: any plant species declared by an order under Section 7 of the *Noxious Weeds Act 1993* to be a noxious weed.

Off-road: driving or riding away from defined roads and tracks, i.e. cross-country over untracked ground.

Place: (1) a site or area with associated ecosystems, which are the sum of its *geodiversity*, *biological diversity* and natural processes. [Australian Natural Heritage Charter]; (2) a site or area with associated cultural or social values. See also *Aboriginal place*.

Precautionary principle: a principle that states that where there are threats or potential threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. [Australian Natural Heritage Charter]

Preservation: (1) natural - maintaining the *biodiversity* and/or an *ecosystem* of a *place* at the existing stage of *succession*, or maintaining existing *geodiversity*. [Australian Natural Heritage Charter]; (2) cultural - maintaining the *fabric* of a *place* in its existing state and retarding deterioration. [Burra Charter]

Prescribed burning: burning of vegetation undertaken as part of a fire management program.

Protection: taking care of a *place* by *maintenance* and by managing impacts to ensure that natural and cultural significance is retained. [Australian Natural Heritage Charter & Burra Charter]

Public road: has the same meaning as in the *Roads Act 1993*.

Recovery plan: has the same meaning as in the *Threatened Species Conservation Act 1995* or the *Fisheries Management Act 1994*.

Regeneration: the recovery of *natural integrity* following *disturbance* or *degradation*.

Rehabilitate: to restore disturbed natural or cultural features to near their original condition.

Restoration: (1) natural - returning existing habitats to a known past state or to an approximation of the natural condition by repairing degradation, by removing introduced species, or by reinstatement. [Australian Natural Heritage Charter]; (2) cultural - returning the existing fabric of a place to a known earlier state by removing accretions or by reassembling existing components without the introduction of new materials. [Burra Charter]

Riparian: pertaining to river banks, or dwelling on the banks of a river or other body of water.

Service: the National Parks and Wildlife Service established under the *National Parks and Wildlife Act 1974*.

Significance: historical, scientific, cultural, social, archaeological, natural or aesthetic value for past, present and future generations. It defines the meaning of a *place*. [based on the Australian Natural Heritage Charter and the Burra Charter]

Species: (1) has the same meaning as in the *Threatened Species Conservation Act 1995* or the *Fisheries Management Act 1994*; (2) any individual animal or plant capable of reproducing further individuals of the same genetic makeup.

State of Environment/State of Park reporting: statutory reporting, usually annual, which identifies the health, condition and trends of the natural and cultural heritage of reserved lands.

Statutory planning instruments: any document or plan having legal status prepared by a statutory authority.

Statutory authority: any of the following: (a) a government department; (b) an Administrative Office within the meaning of the *Public Sector Management Act 1988*; (c) a council or a county council within the meaning of the *Local Government Act 1993*; and (d) any other body constituted by or under an Act.

Subalpine: an area on the lower slopes of mountains especially below the tree line.

Succession: the process by which a plant community successively gives way to another until stability is reached. [Oxford English Dictionary]

Threatened species, populations and ecological communities (and their singular forms): as listed in the *Threatened Species Conservation Act 1995* or the *Fisheries Management Act 1994*.

Threatening process: has the same meaning as in the *Threatened Species Conservation Act 1995* or the *Fisheries Management Act 1994* - a process that threatens, or may have the capability to threaten, the survival or evolutionary development of species, populations or ecological communities.

Trackhead: the starting and finishing point for walking tracks.

Transparency: open public accountability of governmental or other organisational decision making.

Value: (1) the regard that something is held to deserve; importance or worth; (2) principles or standards of behaviour. [Oxford English Dictionary]

Vehicle: any description of vehicle on wheels or tracks but not including persons on skis.

Visitor facility: any structure, building or establishment in the park provided or used primarily for the enjoyment of visitors.

Vulnerable species: has the same meaning as in the *Threatened Species Conservation Act 1995* or the *Fisheries Management Act 1994*.

Wilderness: a large tract of remote land substantially unmodified by modern technological society or capable of being modified in that state, and of sufficient size to make practicable the long-term protection of its natural systems and declared to be a Wilderness under the *Wilderness Act 1987*.

Wild river: a river declared a wild river under the *National Parks and Wildlife Act 1974*.

