

MIDDLE BROTHER NATIONAL PARK

PLAN OF MANAGEMENT

NSW National Parks and Wildlife Service

Part of the Department of Environment and Conservation (NSW)

June 2004

This plan of management was adopted by the Minister for the Environment on 16 June 2004.

ACKNOWLEDGMENTS

This plan is based on a draft plan prepared by Simon Pitt, with assistance from Eric Claussen, Lee Middleton, Kim Luckie, David Edwards, Ron Myson and Donna Turner. Input from other Mid North Coast Regional staff, the Mid North Coast Regional Advisory Committee, and members of the public who made submissions on the draft plan is also gratefully acknowledged.

Cover photograph of 'Benaroon', a tree in Middle Brother National Park and one of the largest (by volume) known living blackbutt (*Eucalyptus pilularis*) trees in NSW, taken by Kim Luckie, NPWS.

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FOREWORD

Middle Brother National Park is located approximately 30km south west of Port Macquarie on the mid-north coast of New South Wales. The park covers an area of 1,830ha encompassing Middle Brother Mountain, the central mountain in the Three Brothers Mountain chain.

Approximately 1,090 hectares of the park is dedicated as part of The Three Brothers Mountains Aboriginal Place, which also includes South Brother and North Brother Mountains. The declaration of an Aboriginal Place over the area signifies the spiritual importance of the mountains to the local Aboriginal people.

Middle Brother Mountain is an important part of the east-west habitat corridor between coastal reserves such as Crowdy Bay National Park, Dooragan National Park and Queens Lake Nature Reserve, and reserved areas immediately east of the Comboyne Plateau.

The park contains a diverse range of ecosystems as a result of its varied geology, rich soils, and range of elevations, aspects and slopes. Threatened species include the giant barred frog (*Mixophyes iteratus*) and Three Brothers wattle (*Acacia courtii*).

The *National Parks and Wildlife Act 1974* requires that a plan of management be prepared for each national park. A plan of management is a legal document that outlines how the area will be managed in the years ahead.

A draft plan of management for Middle Brother National Park was placed on public exhibition from 13 December 2002 until 28 March 2003. The exhibition of the plan of management attracted 13 submissions that raised 9 issues. All submissions received were carefully considered before adopting this plan of management.

An important emphasis of this plan is to protect the Aboriginal values associated with the park as part of the Three Brothers Mountains Aboriginal Place. The plan also aims to preserve the aesthetic qualities and habitat values of Middle Brother National Park and protect threatened and significant flora and fauna. Opportunities for day use recreation activities such as walking, horse riding, scenic driving and hang gliding, will also be provided in the park.

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

BOB DEBUS

Minister for the Environment

1. NATIONAL PARKS IN NEW SOUTH WALES

1.1 LEGISLATIVE AND POLICY FRAMEWORK

The management of Middle Brother National Park (referred to herein as 'the park') is based on a legislative and policy framework, primarily the *National Parks and Wildlife Act 1974* (NPW Act), the *Threatened Species Conservation Act 1995* (TSC Act) and the policies of the NSW National Parks and Wildlife Service (NPWS). The policies arise from the legislative background, the NPWS corporate goals and internationally accepted principles of park management. They relate to nature conservation, Aboriginal and historic heritage conservation, recreation, commercial use, research and communication.

Other legislation, international agreements and charters may also apply to management of the area. In particular, the *NSW Environmental Planning and Assessment Act 1979* (EPA Act) requires the assessment and mitigation of environmental impacts of any works proposed in this plan.

The planning area includes 'Ministerial roads,' which are those roads that do not form part of the gazetted park and are vested in the Minister for the Environment on behalf of the Crown for the purposes of Part 11 of the NPW Act. Ministerial roads were created under section 13 of the *Forestry and National Parks Estate Act 1998* to ensure the continuation of access arrangements that existed immediately before the park's creation. This primarily relates to use of these roads for timber hauling and private property access. Whilst Ministerial roads do not form part of the gazetted park area, the management of these roads is subject to the provisions of this plan, the NPW Act's *Land Management Regulations 1995* and the requirements of the EPA Act.

A plan of management is a statutory document under the NPW Act. Once the Minister has adopted a plan, no operations may be undertaken within Middle Brother National Park except in accordance with the plan. The plan will also apply to any future additions to the park. Where management strategies or works are proposed for the park or any additions that are not consistent with the plan, an amendment to the plan will be required.

1.2 NATIONAL PARKS IN NEW SOUTH WALES

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

The following general objectives, derived from the NPW Act, apply to the management of national parks in New South Wales:

- conserve biodiversity, maintenance of ecosystems, protection of geological and geomorphological features and natural phenomena and maintenance of 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 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 conservation of natural and cultural values; and
- provide for appropriate research and monitoring (section 30E).

1.3 ABORIGINAL PLACES

The majority of the Middle Brother National Park lies within the Three Brothers Aboriginal Place (AP). An Aboriginal Place is an area of special significance to Aboriginal culture gazetted under Section 84 of the NPW Act. The declaration of an Aboriginal Place provides recognition of the significance of an area and its heritage values which relate to traditions, observances, customs, beliefs or history of Aboriginal people.

Aboriginal Places are protected under Section 90 of the NPW Act and may not be damaged, defaced or destroyed without the consent of the Director-General of the NPWS. However, their declaration does not change the status of the land but may limit use as far as preventing activities that may destroy, damage or deface the Aboriginal Place.

1.4 MANAGEMENT OBJECTIVES FOR MIDDLE BROTHER NATIONAL PARK

In addition to the above principles, future management of the park will also focus on the following specific objectives emphasising the conservation of natural and cultural heritage:

- Protect the Aboriginal values associated with the park as part of the Three Brothers Mountain Aboriginal Place;
- Preserve the aesthetic qualities of Middle Brother Mountain as an important local backdrop to Kendall and Hannam Vale and as a notable landmark of the mid north coast of NSW;
- Protect threatened species, populations and habitat, with special attention to the giant barred frog (*Mixophyes iteratus*) and Three Brothers wattle (*Acacia courtii*);
- Protect stands of old growth forest around the Bird Tree Day Use Area;
- Protect significant flora, including two Rare and Threatened Plant species (ROTAP) *Goodenia fordiana*, and the large-flowered milk vine (*Marsdenia lilsae*), as well as the painted bottlebrush (*Callistemon acuminatus*) which is at its geographical limit;
- Manage the park as part of a regional network of protected areas, particularly as a habitat corridor between the coast and the Comboyne Plateau;
- Protect bridges within the park for microbat habitat; and
- Provide opportunities for day use recreation activities such as walking, horse riding, scenic driving and hang gliding, where they have minimal impact on the environment and complement other surrounding recreational facilities.

2. MIDDLE BROTHER NATIONAL PARK

2.1 LOCATION, GAZETTAL AND REGIONAL SETTING

Middle Brother National Park (herein referred to as 'the park') is located approximately 30km south west of Port Macquarie on the mid-north coast of New South Wales (NSW). The park covers an area of 1,830ha encompassing Middle Brother Mountain, the central mountain in the Three Brothers Mountain chain (see park map). The Three Brothers Mountains are made up of three distinct mountains, South Brother, Middle Brother and North Brother, which are located between the villages of Moorland and Laurieton.

The park was gazetted on the 1 January 1999 under the *Forest and National Park Estate Act 1998* as an outcome of the North East Regional Forest Agreement. The park was previously part of Middle Brother State Forest in the Kendall Management Area.

The park is situated in the Hastings Local Government Area near the villages of Kew, Kendall and Johns River. The park borders the Middle Brother State Forest to the north, south and west. The Pacific Highway, Watson Taylors Lake and Crowdy Bay National Park are located to the east and Dooragan National Park (which encompasses North Brother Mountain) is located to the northeast. Other surrounding land uses are cattle grazing, dairy operations, forestry plantations and small hobby farms.

There is an area of crown land on the summit of Middle Brother Mountain in the park of approximately 16 hectares. A small section of this land is currently leased to the Commonwealth government for telecommunication purposes and there is a telecommunication tower at the summit. Three other transmission towers are in the park which are sublet to other agencies.

The Three Brothers Mountains Aboriginal Place, which was gazetted on 21 December 2001, includes South Brother, Middle Brother and North Brother Mountains. The area of land dedicated as an Aboriginal Place in Middle Brother National Park is approximately 1090 hectares of the park, west of Stoney Creek Rd (see map). The declaration of an Aboriginal Place over the area signifies the spiritual importance of the mountains to the local Aboriginal people.

Middle Brother Mountain is an important part of the east-west habitat corridor between coastal reserves such as Crowdy Bay National Park, Dooragan National Park, Queens Lake Nature Reserve and reserved areas immediately east of the Comboyne Plateau.

2.2 LANDSCAPE CONTEXT

Natural and cultural heritage and on-going use are strongly inter-related and together form the landscape of an area. Much of the Australian environment has been influenced by past Aboriginal and non-Aboriginal land use practices, and the activities of modern day Australians continue to influence bushland through recreational use, cultural practices, the presence of introduced plants and animals and in some cases air and water pollution.

Both Aboriginal and non-Aboriginal people place cultural values on natural areas, including aesthetic, social, spiritual, recreational and other values. Cultural values may be attached to the landscape as a whole or to individual components, for example to plant and animal species used by Aboriginal people. This plan of management aims to

conserve both natural and cultural values. For reasons of clarity and document usefulness natural and cultural heritage, non-human threats and on-going use are dealt with individually, but their inter-relationships are recognised.

2.3 NATURAL AND CULTURAL HERITAGE

2.3.1 Landform, Geology and Soils

Elevations in the park rise from less than 10m above sea level in the east near Watson Taylors Lake to ridges over 500m. Middle Brother Mountain dominates the park and reaches 558m at the summit. The mountain is a significant landscape feature on the coastal plain along with South and North Brother Mountains.

The park ranges in slope from steep cliffs on the southern side of the mountain to moderate slopes in the northern part of the park.

The park receives 1400-1800mm of rainfall per annum and contains the upper-catchment of several creeks. The southwestern part of the park drains into Jerrys Creek, which runs into the Stewart River and thence Watson Taylors Lake. The remainder of the catchment drains into Stony Creek, directly into Watson Taylors Lake.

The majority of the park's geology is associated with the igneous intrusion that forms Middle Brother Mountain, which is composed of granites and granodiorites. The north east section of the park contains a mixture of sedimentary rocks which are part of the Grants Head Formation, composed of sandstones and siltstone which have been affected by the intrusion of granite (Myson, 2001).

The dominant soil across the park is generally well structured red brown earths. Thin soil layers exist on the steep slopes of the Mountain, particularly on the southern side.

Middle Brother Mountain as part of the Three Brothers Mountains is of strong iconic significance due to their visual prominence in the local landscape (Gay, 2000). The mountain is a prominent landmark used by vessels to navigate along the coast. The mountain provides a good vantage point, overlooking the lower Manning Valley to the south, North Brother Mountain to the north and the Comboyne Plateau to the west. Scenic creeks and waterfalls are scattered through the park.

2.3.2 Native Plants

The park contains a diverse range of ecosystems as a result of its varied geology, rich soils, and range of elevations, aspects and slopes. The vegetation in the park also varies greatly in age class due to the history of logging under former state forest tenure.

There are 27 forest ecosystems recorded in the park. The main forest communities are wet sclerophyll and dry sclerophyll forest communities with areas of rainforest along creeks and gullies. The dominant forest types across the park are moist and dry blackbutt (*Eucalyptus pilularis*), with substantial proportions of the park being occupied by stands of flooded gum (*Eucalyptus grandis*), brushbox (*Lophostemon confertus*), and an association of narrow-leaved white mahogany (*Eucalyptus acmenoides*), red mahogany (*Eucalyptus resinifera*), grey ironbark (*Eucalyptus siderophloia*) and grey gum (*Eucalyptus propinqua*). There are also several areas of subtropical and dry rainforest forest associated with the stands of brushbox and flooded gum.

The park contains two of the largest (by volume) known living blackbutt (*Eucalyptus pilularis*) trees in NSW. These trees are known locally as the 'Benaroon' and the 'Bird Tree' (State Forests 2000). These trees are located at the Bird Tree day use area off Grey Gum Ridge Road.

Old growth forest of high conservation value exists along Stoney Creek and the southern face of Middle Brother Mountain. There are also significant stands of old growth vegetation around the Bird Tree day use area and in the vicinity of Charlies Yard Road.

The park is important at a regional level for a number of rare, threatened and significant plant species. One hundred and fifty-six plant species have been recorded in the park.

Three Brothers wattle (*Acacia courtii*) has been recorded in the park and is listed as vulnerable under the TSC Act. It occurs as a locally endemic population, and was a significant factor in the gazettal of this area as a national park. The only other known occurrences of this species are on South Brother Mountain and on North Brother Mountain in Dooragan National Park.

The park contains two recorded Rare or Threatened Australian Plants (ROTAP) species: the large-flowered milk vine (*Marsdenia lilsae*) and *Goodenia fordiana* (Briggs and Leigh, 1988). The park also contains predicted habitat for threatened species such as *Hakea trineura*, *Eucalyptus fergusonii* subsp *fergusonii*, milky silkpod (*Parsonsia dorrigoensis*) and the endangered *Hibbertia hexandra* (State Forests 2000).

There is an unusual occurrence of blue-leaved stringybark (*Eucalyptus agglomerata*) which is near its northern limit on the coast, and painted bottlebrush (*Callistemon acuminatus*) reaches its northern limit of distribution in the park. A number of species are at the southern limit of their distribution including the tall westringia (*Westringia amabilis*), green-leaved rose walnut (*Endiandra muelleri*), broom shrub (*Olyscia ruseifolia*), Comboyne bottlebrush (*Callistemon comboynensis*), almond-leaved fireweed (*Senecio amygdalifolius*), mountain raspwort (*Gonoearpus areophilus*), and bitter vine (*Piptoealyse moorei*).

A tallowwood (*Eucalyptus microcorys*) plantation, which was planted in 1937 by Forests NSW, is located on the southern side of the park off Grey Gum Ridge Road (see park map). The park also contains blackbutt and flooded gum plantations.

2.3.3 Native Animals

The varying combinations of vegetation communities and topography have provided a wide range of fauna habitats in the park. Fauna surveys conducted in April 2001 and May 2002 recorded 89 species of vertebrates including 12 amphibian, 8 reptile, 65 bird and 19 mammal species (James, 2001). Ten of these species are recognised as threatened species under the TSC Act (see table 1).

Table 1. Threatened Species recorded in Middle Brother National Park.

Common Name	Scientific Name	Status
Amphibians		
Southern barred frog	<i>Mixophyes balbus</i>	*Vulnerable
Giant barred frog	<i>Mixophyes iteratus</i>	*Endangered
Birds		
Wompoo fruit-dove	<i>Ptilinopus magnificus</i>	Vulnerable
Glossy black-cockatoo	<i>Calyporhynchus lathami</i>	Vulnerable
Powerful owl	<i>Ninox strenua</i>	Vulnerable
Sooty owl	<i>Tyto tenebricosa</i>	Vulnerable
Mammals		
Spotted-tailed quoll	<i>Dasyurus maculatus</i>	*Vulnerable
Yellow-bellied glider	<i>Petaurus australis</i>	Vulnerable
Little bentwing-bat	<i>Miniopterus australis</i>	Vulnerable
Large bentwing-bat	<i>Miniopterus schreibersii</i>	Vulnerable

* Also listed under the *Commonwealth Environmental Protection and Biodiversity Conservation Act 1999*

Table 2 lists species that may occur in the park as predicted by models developed as part of the comprehensive regional assessment (CRA) process.

Table 2. Threatened Species predicted to occur in Middle Brother National Park.

Common Name	Scientific Name	TSC Status
Amphibians		
Green-thighed frog	<i>Litoria brevipalmata</i>	Vulnerable
Birds		
Square-tailed kite	<i>Lophoictinia isura</i>	Vulnerable
Masked owl	<i>Tyto novaehollandiae</i>	Vulnerable
Mammals		
Yellow-bellied sheath-tail-bat	<i>Saccolaimus falviventris</i>	Vulnerable
Golden-tipped bat	<i>Kerivoula papuensis</i>	Vulnerable
Greater broad-nosed bat	<i>Scoteanax rueppelli</i>	Vulnerable
Eastern freetail bat	<i>Mormopterus norfolkensis</i>	Vulnerable
Large-footed myotis	<i>Myotis adversus</i>	Vulnerable
Brush-tailed phascogale	<i>Phascogale tapoatafa</i>	Vulnerable
Common planigale	<i>Planigale maculata</i>	Vulnerable
Squirrel glider	<i>Petaurus norfolcensis</i>	Vulnerable

The number of threatened species recorded or predicted to occur in the park indicates the high conservation values. A population of the giant barred frog (*Mixophyes iteratus*), which is listed as an endangered species exists in the Jerrys Creek area and this recording is one of the few known populations of this species in the region. The two bent-wing bat species have been recorded under several bridges in the park.

Large forest owls and the yellow-bellied glider have been identified in the park, and are good indicators for biodiversity due to their reliance on large areas of high quality habitat. Records of spotted-tailed quolls are also indicative of the park's high conservation values. These species are high order predators and rely on an intact food chain to survive in natural settings.

Another significant species recorded is the rainforest bird, the pale-yellow robin (*Tregellasia capito*). This species is rarely seen in the region due to the decline of rainforest habitat (Tony Bischoff *pers.comm*).

The park is an important east-west habitat corridor link for the migration of certain species such as the glossy black cockatoo.

2.3.4 Aboriginal Heritage

Middle Brother National Park is a landscape of high cultural importance to local Aboriginals including the Biripi people. The majority of the park lies within the Three Brothers Mountains Aboriginal Place (see map), which also includes Dooragan National Park.

The Aboriginal Place declaration recognises the parks cultural significance for its connection with traditional ceremonial practices and the importance of Aboriginal law. The Three Brother Mountains are the focus of a Dreamtime story of three brothers of the Biripi tribe who lived near the Camden Haven River. The legend invariably has been altered over time and by different storytellers, and there are a number of different versions.

The version below is brief description as told by Harry Buchanan in 1976 (NPWS Aboriginal Sites Register), Harry Buchanan was a Gumbangirra tribal elder and was told many of the Aboriginal legends throughout the Kattang, Biripi, Thungutti and Gumbangirra tribes ranging from Taree to Grafton.

'The three brothers had undergone their initiation and they were required to live in the bush for several months before returning to their tribe. During this period, the brothers became worried about their parents and the youngest brother volunteered to check on them. Just as he was leaving, he saw an old witch arrive near their camp. When the youngest brother arrived at his parents' camp he told them how he had seen the old witch and the father said 'go quickly or the old lady will kill your two brothers and eat them'. Just before he left, his father gave him a special boomerang which was to keep him safe.

When he arrived back, he saw the old woman and she said she had eaten his brothers and was now going to eat him. Before she got a chance, he hit her on the head with the boomerang and killed her. He then gathered his brother's bones and buried them where North Brother and Middle Brother Mountains stand today. He then went to where the South Brother Mountain now is and because he was ashamed that he had not saved his two brothers, he killed himself. The mighty spirits of creation stirred that night, and where each body lay, there rose a mountain to mark the tragedy. From this time on the mountains were know as the 'Three Birroguns' or wise men of the Biripi tribe'.

The local Aboriginal people have maintained contemporary connection with Middle Brother Mountain. During the second World War, a number of Aboriginal families moved there from North haven and worked as sleeper cutters on the mountain (Gay, 2000). Today, the area continues to be used for a range of cultural purposes.

There are two recorded Aboriginal sites in the park which are listed on the NPWS Aboriginal sites register. Another site of cultural significance in the park is the large blackbutt tree known locally as 'Benaroon' (Gay, 2000) which is an Aboriginal word for blackbutt.

The park is within the Purfleet-Taree Local Aboriginal Land Council area and Biripi tribal area. NPWS undertakes liaison with the Local Aboriginal Land Council, the Giuiwan Elders and the Biripi people in regards to the management and interpretation of Aboriginal heritage in the park.

2.3.5 Non-Aboriginal Heritage

The Three Brother Mountains are a symbol of shared heritage as Captain James Cook gave them the same name without knowing that the Aboriginal people had already named them the Three Brothers.

The Middle Brother mountain area has a long history of timber harvesting and forestry operations and was a valuable timber resource. Middle Brother State Forest was established in 1916, and the whole area was selectively logged until gazetted as National Park in 1999. Initially the northern side of the mountain was extensively logged and later, during the 1950s, the more inaccessible areas on the southern side of the mountain were logged with heavy machinery. Most of the Stony Creek catchment, north of TV Road was logged in the early 1960s, though some seed trees were retained. The western end of Cliff Road was relogged in the late 1990's.

Towns that were built around this industry include Johns River, Herons Creek, Stewart River, Batar, Rossglen, Kendall and Kew as well as many other communities of the Camden Haven area (Fenning, 1997).

The significance of the Mountain's forests were recognised by early loggers. Remnants such as the 'Bird Tree' area, was formally a Preferred Management Priority Reserve Area under previous state forest tenure. This classification recognised its long term conservation value and today the 'Bird Tree' area is representative of the type of forest that once covered Middle Brother Mountain and its surrounds.

The naming of Bird Tree is uncertain, although there are two theories on the origin of the name: the tree was named after a local logger, who had the surname Bird and had a reputation for felling a big tally of trees per day, the other cutters used to say 'that's a big tree, we will leave it for Bird'; the other theory is that owing to the trees large size, loggers in the area used to say 'that tree is too big, we will leave it for the birds'.

2.3.6 Visitor Use

Middle Brother Mountain is used for a range of low-key recreation activities including bushwalking, bird watching, horse riding, hang gliding and rock climbing. The Bird Tree day use area is located in the northern section of the park off Grey Gum Ridge Rd. It provides a loop walking track through the old growth forest to the two large blackbutt trees, Benaroon and Bird Tree. Many visitors to the park visit this location to see the largest blackbutts in NSW. There are currently no picnic facilities at this location.

Devils Hole Lookout is located off TV Rd and offers impressive views over Middle Brother, Dooragan and Crowdy Bay National Parks, and Watson Taylors Lake. The lookout is situated on a steep rock face and has safety concerns regarding visitor use. There is an old barrier on the lookout, though visitor access needs to be improved at the lookout.

The park provides opportunities for self-reliant bushwalking through a variety of forest types. There are a number of vantage points that offer visitors views across the Manning Valley, Comboyne Plateau and Crowdy Bay National Park.

A site on Middle Brother Mountain (Hannam Vale Lookout) is occasionally used for hang gliding, rock climbing and abseiling. This location provides views over the Hannam Vale valley. Access is difficult and the area is badly eroded and requires rehabilitation.

There is a site on the top of Middle Brother Mountain in the area of crown land, which is occasionally used as a lookout and hang gliding site. The Department of Lands manages this area of crown land.

Horse riders occasionally use some of the roads and management trails in the park.

In 2002, commercial quad bike tours commenced operations on certain park roads in the park.

In recent years, car rallies have been occurring in the neighbouring Middle Brother State Forest. This activity is not consistent with the park's conservation values or visitor safety, and there is currently no rallying occurring within the park boundary. Park roads are occasionally used as a transport stage for vehicles. Consent must be obtained prior to the event to use the park for transportation of rally vehicles.

2.4 THREATS AND ISSUES FOR MANAGEMENT OF THE PARK

2.4.1 Pest Species

A draft Pest Species Strategy has been prepared for the park (NPWS, 2002a). The park has been identified as a low priority for targeted pest species control programs, due to the few pest species recorded, lack of neighbouring stock losses and the lack of priority threatened species as recognised under the Red Fox Threatened Abatement Plan (excluding the spotted-tailed quoll).

Lantana (*Lantana camara*) is the most common and invasive pest plant in the park and is most dense along the roads and former logging tracks. Other bushland weeds that occur throughout the park in low densities include the noxious weed, giant Parramatta grass (*Sporobolus africanus*), groundsel bush (*Baccharis halmimifolia*), crofton weed (*Ageratina adenophora*) and blackberry (*Rubus fruticosus*) (STATE FORESTS 2000, NPWS 2002a). Roadsides and areas of previous disturbance have the highest diversity of bushland weeds.

High priority weed control sites include the park interface with the Pacific Highway (NPWS 2002a) and along old logging tracks and management trails. The eastern boundary of the park, especially along Charlies Yard Road and Haydons Road, needs to be monitored on an annual basis to reduce the further spread of weeds in this area into the park (NPWS 2002a).

Introduced animal species recorded in the park include wild dog (*Canis familiaris*), red fox (*Vulpes vulpes*), feral cat (*Felis catus*), house mouse (*Mus musculus*) (NPWS 2002a), cattle (*Bos sp*) and the black rat (*Rattus rattus*).

Fox and dog control is conducted in the park in conjunction with the Kempsey Rural Lands Protection Board (RLPB), Forests NSW and park neighbours. Predation by feral cat and fox are both listed as key threatening processes under the TSC Act and the Commonwealth's *Environmental Protection and Biodiversity Conservation Act 1999*. The NSW Threatened Abatement Plan for the red fox (NPWS, 2001) has recently been prepared and any fox control programs in the park will be guided by this document.

The aggressive aquatic pest species the plague minnow (*Gambusia holbrooki*) is also likely to inhabit the freshwater streams in the park. *Gambusia holbrooki* inhabit nearly

every freshwater habitat in south eastern Australia (NPWS, 2002c), and are a serious predator to some threatened frog and native fish species.

2.4.2 Fire Management

Fire is an important factor influencing the environment of the park. The optimum fire regimes vary according to the different vegetation types and fire history.

According to fire history records few fires have occurred within the park over the last 20 years. Whilst this may suit wet forest types in the park, areas of dry forest communities in the northern part of the park will approach the maximum fire-free threshold over the next 10 years (Bradstock, 1995).

The management trails in the southern section of the park near Algona Rd will be retained to provide protection to the number of private properties in this location. These management trails will enable prescribed burns to be undertaken whilst maintaining and protecting biodiversity.

A recent review of fire management planning throughout the Northern Field Branch by NPWS has resulted in a modified approach to fire planning based on the level of complexity involved. In regard to Middle Brother National Park, the NPWS considers that the park requires that separate map based fire management strategies be prepared. Fire management strategies are yet to be compiled for the park. Annual hazard reduction programs are submitted to the district Bush Fire Management Committees.

2.4.3 Road Access

A combination of Ministerial roads, management trails and snig tracks exist both within and outside of park boundaries. The main access roads to the park are Middle Brother Rd and Haydons Rd from the east, Stoney Creek Rd from the north and Mudfords Rd from the west. TV Road is a Ministerial road that traverses local council, forest, Department of Lands and NPWS tenures. The road is used as the main entry point to the park and to service the telecommunication/transmission towers near the summit. This road is maintained to a 2WD standard to ensure all year access to the towers.

Charlies Yard Road, Mudfords Road and Grey Gum Ridge Road traverse the northern boundary of the park. These roads are located outside of the park boundary in the adjoining state forest, but act as important access points to the reserve particularly to sites such as Benaroon and Bird Tree. Sections of Stoney Creek Road and Haydons Road are within the park and provide access to the park and provide scenic drives through the park.

The access trails leading to the southern transmission towers and the spur trail to the Hannam Vale lookout are badly eroded and boggy in wet weather. They are not appropriate for public vehicles. The trails will be maintained to service the transmission towers and provide pedestrian access to the lookout.

Management trails are used by NPWS for the purpose of weed control and fire advantages. These trails may be utilised by bush walkers but are not suitable for public vehicle use.

In addition to the park road and management trail network, there are a number of tracks remaining from former logging operations. These tracks facilitate unregulated access, erosion, the spread of weeds and the movement of introduced animals and plants through the park. They are in poor condition and not required for public access or management purposes.

2.4.4 Quarries

There are two quarries in the park located near Stoney Creek Road and Mudfords Road, which provide material for road works in the park and adjoining state forest. The quarries are managed under a joint management agreement with NPWS and Forests NSW. Both quarries contain large reserves of meta sediments which are important for road maintenance within the park and adjoining shared roads (NPWS 2002 b).

2.4.5 Monitoring and Research

A number of recent research projects have been undertaken in the park including: flora and fauna surveys and studies (State Forests, 2000; James, 2001; Bischoff, 2002); a pest species survey (NPWS, 2002a); a geology study (Myson, 2001); and a targeted survey on the distribution and abundance of *Acacia courtii* (NPWS, 2002).

The park contains a control water quality monitoring site used by Forests NSW as a paired catchment native forest monitoring site. The paired catchment program consists of monitoring two sites in the catchment, one which remains untreated (the site in the park) and the other site in an area subject to logging activity (in the Middle Brother State Forest). This program has been operating in the park and state forest since 1995, and is likely to continue in the park until 2004. Monitoring of water quality in the park is undertaken according to the EPA specifications.

2.4.6 Telecommunications Towers and Associated Infrastructure

Middle Brother Mountain is an important site for telecommunication towers. Four separate tower sites are established on the summit and provide telecommunication services including television and telephone connections to the mid north coast region.

A major telecommunication tower is located on the vacant crown land on the top of Middle Brother Mountain. The crown land is managed by the Department of Lands and a section within this inholding is leased to the Commonwealth government for telecommunication purposes. The telecommunications tower is security fenced, and a consent agreement operates over the area. Access agreements also exist for the continued use of TV Rd to access the tower.

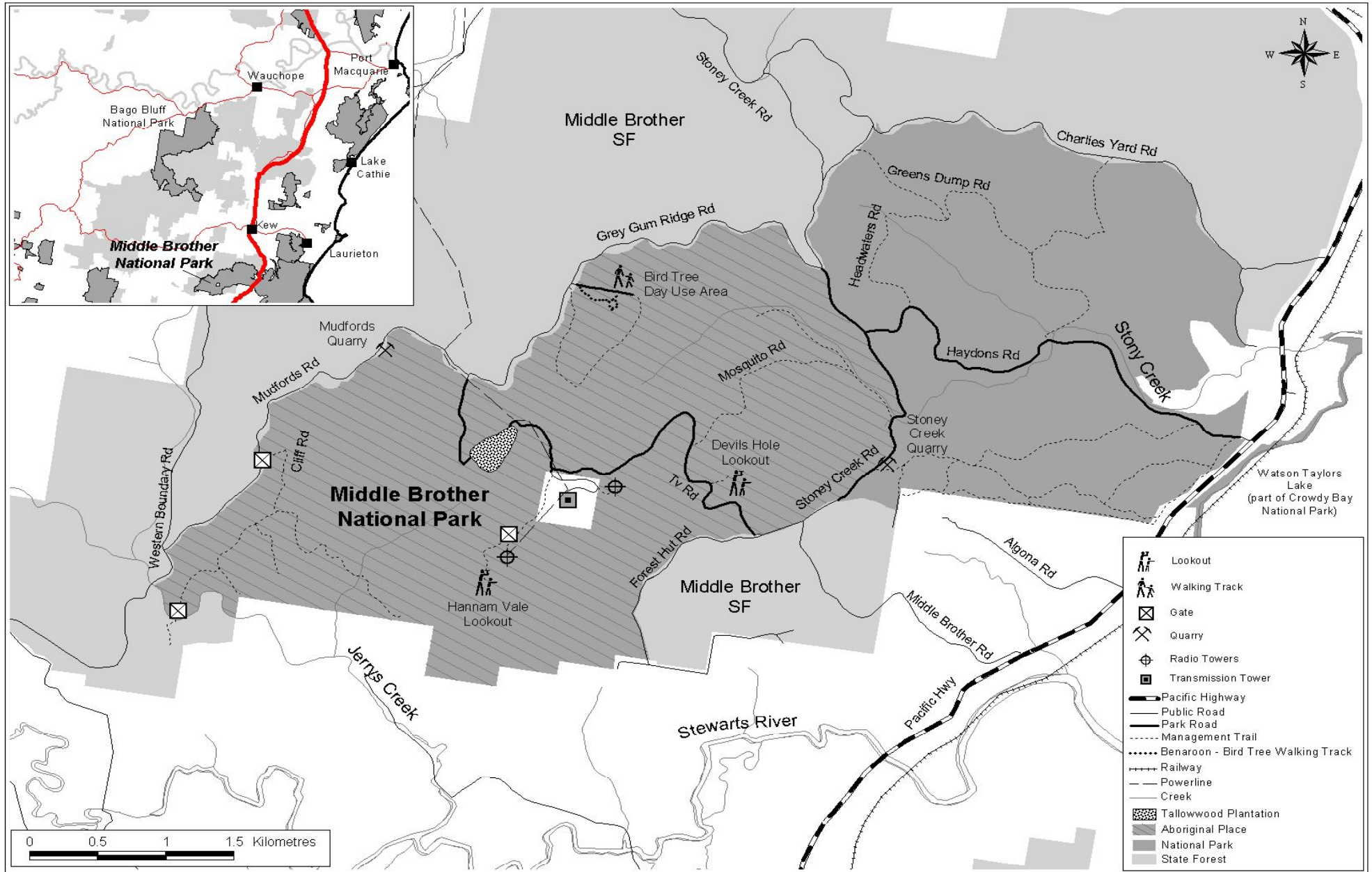
Three smaller radio transmission towers are situated in the park. These transmission towers are leased to three different companies, some of whom sublease the equipment. The towers are subject to occupation permits, which were originally issued by State Forests and are now administered by NPWS.

A power line easement, which is also subject to an occupation permit, exists on the northern flank of the mountain (see park map). The power line traverses forest, national park and the crown land at the summit of Middle Brother Mountain.

An uninterrupted power supply is essential for the telecommunication towers. NPWS encourages the placing of this power line underground as an economically viable and

environmentally beneficial alternative to ensure a continuous uninterrupted power supply to the telecommunication network over the long term. An underground line will increase the safety of park users and maintenance workers on NPWS estate, reduce the likelihood of wildfire as a result of powerline arcing and reduce environmental impact by ending the need for periodic maintenance and the lopping of vegetation surrounding the easement.

3. PARK MAP



4. MANAGEMENT ISSUES AND STRATEGIES

Current Situation	Desired Outcomes	Strategies	Priority
<p>Native Fauna</p> <p>There are 10 threatened fauna species recorded in the park. Recovery Plans are scheduled to be prepared for these species.</p> <p>A population of the giant barred frog (<i>Mixophyes iteratus</i>) exists in the Jerrys Creek area. This is one of a few known populations of this species in the region.</p> <p>Many of the bridges in the park provide important roosting habitat for threatened bat species.</p>	<ul style="list-style-type: none"> • Biodiversity in the park is maintained and there is no loss of threatened species or their habitat. • Microbat roosting sites are preserved and protected. • <i>Mixophyes</i> populations along Jerrys Creek are protected and maintained. • Water quality is maintained and erosion minimised. 	<ul style="list-style-type: none"> • Implement Recovery Plans for threatened species when they are prepared. • Encourage research programs to identify and monitor populations of threatened species and to verify the existence of predicted fauna within the park. • Maintain bat roosting opportunities associated with bridges in the park. This may include installing bat boxes in the event of bridge replacements. • Establish the distribution of the <i>Mixophyes spp.</i> populations along Jerrys Creek. • Prevent fire near Jerrys Creek and avoid the use of fire retardant and pesticides near the creek (refer to Native Fauna). • Gate Cliff Road and implement erosion control measures down to Jerrys Creek. 	<p>Medium</p> <p>Medium</p> <p>Medium</p> <p>High</p> <p>High</p> <p>High</p>
<p>Native Flora</p> <p><i>Acacia courtii</i> is a threatened flora species that is only recorded in the Three Brother Mountains area. The species is considered to be at risk of extinction in the wild within 20 to 50 years under present conditions (Briggs and Leigh 1988). Threats to this species include disturbance due to frequent fire.</p> <p>The park contains two of the largest (by volume) known living blackbutt trees in NSW, 'Benaroon' and the 'Bird tree'.</p>	<ul style="list-style-type: none"> • Native flora including threatened and significant species are protected. • Improve knowledge of threatened and significant plants, animals, ecology and habitat requirements. 	<ul style="list-style-type: none"> • Implement relevant Recovery Plans and Threat Abatement Plans upon their completion. • Monitor populations of <i>Acacia courtii</i> in conjunction with monitoring programs in Dooragan National Park and survey the park to map any additional populations of <i>Acacia courtii</i>. • Protect areas containing <i>Acacia courtii</i>, and old growth forest areas including 'Benaroon' and the 'Bird Tree' from inappropriate fire regimes. 	<p>Medium</p> <p>High</p> <p>High</p>

Current Situation	Desired Outcomes	Strategies	Priority
<p>Native Flora (continued)</p> <p>Old growth forest stands of high conservation value exists along Stoney Creek and the southern flank of Middle Brother Mountain.</p> <p>Significant species include <i>Goodenia fordina</i>, large-flowered milk vine and painted bottlebrush.</p> <p>A tallowwood plantation exists within the park, off Grey Gum Ridge Road. State Forest interpretive signs remain in the area.</p>	<ul style="list-style-type: none"> Natural processes, such as succession of regenerating forest communities, in the park continue. 	<ul style="list-style-type: none"> Encourage surveys to improve information on the park's flora. Liaise with neighbours to encourage the retention and appropriate management of key habitat and corridors adjacent to the park through Voluntary Conservation Agreements or other appropriate strategies. Priority areas will be land bordering the park, and the Jerrys Creek and South Brother areas. Interpret the history of the tallowwood plantation for visitor interest. 	<p>Medium</p> <p>Medium</p> <p>Low</p>
<p>Cultural Heritage</p> <p>The park is a significant local landmark and has important historic heritage values.</p> <p>The majority of the park is part of the Three Brothers Mountains Aboriginal Place which holds spiritual significance for a number of Aboriginal tribal groups including the Biripi, Birpai, Worimi, Bunyah and Gumbangirra people. An informal management group, represented by Aboriginal Elders, has been established for the ongoing management of the Aboriginal Place.</p> <p>Future management will be carried out in the spirit of collaboration to help ensure that their cultural values are maintained.</p>	<ul style="list-style-type: none"> The cultural heritage values of the park are identified, recorded and managed in accordance with their significance. Aboriginal heritage values associated with the park are protected and managed in partnership with the Aboriginal community. 	<ul style="list-style-type: none"> NPWS will continue to consult with Elders and other relevant persons from the Biripi, Birpai, Worimi, Bunyah and Gumbangirra tribal areas about the ongoing management of the Three Brothers Mountains Aboriginal Place. Further research into the cultural and heritage significance of sites and values in the park will be encouraged, subject to appropriate consultation with the relevant Aboriginal community groups. Any cultural heritage sites found in the park will be recorded, conserved and protected in consultation with the local Aboriginal community and the LALC. Encourage research into the area's history since European settlement. 	<p>High</p> <p>Medium</p> <p>High</p> <p>Low</p>

Current Situation	Desired Outcomes	Strategies	Priority
<p>Visitor Use</p> <p>The park is used for a range of low-key recreation activities including bushwalking, bird watching, hang gliding and rock climbing.</p> <p>The Bird Tree day use area provides a loop walking track through the old growth forest to the two large blackbutt trees, Benaroon and Bird Tree. Historically, people have climbed these trees and there are safety issues concerning this use. There are currently no picnic facilities at this location.</p> <p>Devils Hole Lookout is situated on a steep rock face and has safety concerns regarding visitor access.</p> <p>There is an informal lookout over the Hannam Vale valley which is located at the end of a management trail that passes through the crown land inholding (see park map). This area is also occasionally used for abseiling, rock climbing and hang gliding.</p> <p>The access trail to the Hannam Vale Lookout is badly eroding and boggy in wet weather. The lookout is eroding and requires rehabilitation works.</p> <p>There is an informal lookout at the summit on the Crown land managed by the Department of Lands. This area is also used for abseiling, rock climbing and hang gliding.</p>	<ul style="list-style-type: none"> • Visitor use is compatible with park values and complements other opportunities provided in the region. • There is minimal risk to visitor safety in the park. • Climbing / abseiling of Benaroon and the Bird tree will be discouraged. • Adventure activities undertaken within the park are safe, low impact and have minimum conflict with other visitor uses. 	<ul style="list-style-type: none"> • Low key visitor facilities to be provided at the Bird Tree day use area include: <ul style="list-style-type: none"> – 2 to 3 picnic tables; – interpretative signs; and – walking platform around the base of Bird Tree to protect the tree from soil compaction and manage visitor access. • Devils Hole Lookout will be upgraded to provide low key visitor facilities, including: <ul style="list-style-type: none"> – a small viewing platform and ramp; – a small carpark for 5 vehicles; and – interpretative signs on the surrounding landscape and threatened species (<i>Acacia courtii</i>) in this locality. • Upgrade the management trail that leads to the Hannam Vale Lookout to a two wheel drive (dry weather standard). Install a gate on the management trail at bottom carpark and on the trail that leads to the telecommunications site. Maintain and upgrade the trail from the carpark to the Lookout and telecommunications site for pedestrian use and management and emergency vehicles only. • At the Hannam Vale Lookout, provide a grassed ramp, undertake rehabilitation works and allow natural revegetation of degraded areas in consultation with the Mid North Coast Hang Gliding Association. • Horse riding will be permitted on the following: TV Road, Stoney Creek Road, Haydons Road, Mosquito Trail, Greens Dump Trail and Headwaters Trail (see park map). 	<p>High</p> <p>Medium</p> <p>High</p> <p>High</p> <p>Low</p>

Current Situation	Desired Outcomes	Strategies	Priority
<p>Visitor Use (continued)</p> <p>Horse riding occurs occasionally in the park.</p> <p>Commercial quad bike tours are a new activity on certain park roads within the park.</p> <p>Car rallies occur in the neighbouring State Forest. Sections of the park are occasionally used as a transport stage for rally vehicles.</p>		<ul style="list-style-type: none"> • Public vehicle access will be restricted to park roads as shown on the map. Only vehicles that are registered by the Roads and Traffic Authority will be allowed to access the Park. • Commercial quad bike riding on park roads will be monitored to determine any impacts on natural and cultural values and on other park users. The commercial quad bike permit will be reviewed annually. • No car rallying or marshalling points will be permitted in the park, and consent must be obtained to use the park as a transport stage for rally vehicles. • There will be no additional hang gliding, rockclimbing and abseiling sites in the park. Rock climbing use will be monitored to assess impacts and conflicts with other users. No climbing or abseiling of trees will be allowed. • Self-reliant, remote camping is permissible, though vehicle-based camping will not be permitted in the park. 	<p>High</p> <p>High</p> <p>Medium</p> <p>Medium</p> <p>Low</p>
<p>Pest Species</p> <p>A draft Regional Pest Management Strategy and a pest strategy for the park has been prepared. The park has been identified as low priority for pest control programs, due to the few pest species recorded and lack of neighbouring stock losses.</p>	<ul style="list-style-type: none"> • Introduced species are controlled and where possible eradicated. 	<ul style="list-style-type: none"> • Finalise and implement the pest species strategy for the park in compliance with the Mid-north Coast Regional Pest Management Strategy. Implement any finalised Threatened Abatement Plans. • Undertake integrated pest animal control programs for foxes and dogs and cats in 	<p>High</p> <p>Low</p>

Current Situation	Desired Outcomes	Strategies	Priority
<p>Pest Species (continued)</p> <p>Priority pest plants in the park include lantana, giant Parramatta grass, groundsel and crofton weed.</p> <p>Pest animals recorded in the park include wild dogs, foxes and feral cats. Wild dog control is the highest priority. Fox and cat predation are listed as key threatening processes under the TSC Act. A Regional Pest Management Strategy has been prepared for these species.</p> <p>Fox and dog control is currently conducted in the park in conjunction with the Kempsey RLPB, Forests NSW and park neighbours.</p>		<p>in conjunction with the Kempsey RLPB, Forests NSW and park neighbours.</p> <ul style="list-style-type: none"> • Undertake a survey of the park to map weed distribution and develop and implement weed control programs accordingly. • Avoid, where possible, the use of pesticides near creeklines with emphasis on Jerrys Creek. Where pesticide use is needed, bioactive agents (such as roundup) are recommended (refer to <i>Native Fauna</i>). • Monitor the park for the spread of weeds in particular the eastern boundary along Charlies Yard Rd and Haydons Rd. 	<p>High</p> <p>High</p> <p>Medium</p>
<p>Fire Management</p> <p>Wet sclerophyll, rainforest communities and threatened species in the park require protection from unplanned fire.</p> <p>Fire management strategies are yet to be prepared for the park.</p> <p>Improvements to the mapping and condition of trails and water points are required in the north east of the park.</p>	<ul style="list-style-type: none"> • Fire in the planning area is managed to protect biodiversity, human life and property. • A cooperative approach is developed for fire management with neighbours and other fire authorities. 	<ul style="list-style-type: none"> • Fire management strategies will be prepared and implemented for the park. All available information including the comprehensive fire history records from Forests NSW will be consulted. • Establish fire regimes that are consistent with identified fire frequency thresholds for the park's vegetation communities. • Coordinate with other fire authorities and park neighbours regarding fuel management and fire suppression in and adjoining the park. • Exclude fire from wet sclerophyll and rainforest communities in the park. • Protect the 'Bird Tree' and 'Benaroon' from damage by fire and fire suppression activities. 	<p>High</p> <p>High</p> <p>High</p> <p>High</p>

Current Situation	Desired Outcomes	Strategies	Priority
<p>Fire Management (continued)</p>		<ul style="list-style-type: none"> • Close fire management trails to public vehicle use to prevent trail degradation. • Establish asset protection zones in areas parallel to Algona Rd and the Pacific Highway. 	<p>High</p> <p>Medium</p>
<p>Management Operations and Road Access</p> <p>A combination of Ministerial roads, shared roads, park roads, management trails and logging tracks exist both within and outside of park boundaries. These roads are important in that they provide a range of users access to the park, park inholdings and associated infrastructure. Each road type requires a differing management focus.</p> <p>TV Road is a Ministerial Road and must be maintained to a 2WD standard. The Department of Lands and telecommunication companies utilise the road routinely to gain access to the transmission towers at the summit of Middle Brother Mountain.</p> <p>Charlies Road, Grey Gum Ridge Road and Mudfords Road are outside the park boundary and are important access points to the park and associated infrastructure.</p> <p>There are numerous former log dumps, and logging tracks that are progressively degrading due to erosion, weed invasion and unregulated vehicle use. These areas are redundant and require closure and rehabilitation.</p> <p>Cliff Rd and the southern link road which crosses Jerrys Creek, are eroding from high levels of traffic, which may be effecting the water quality in Jerrys Creek and the habitat for giant barred frog.</p>	<ul style="list-style-type: none"> • Management operations have minimal impact and facilitate the conservation of park's values. • A strategic road and trail system is developed. • Neighbours are informed of park management programs. 	<ul style="list-style-type: none"> • Maintain all roads and management trails shown on the park map. Management trails will be gated as necessary to restrict unauthorised access. • Seek an agreement with Forests NSW about maintaining Charlies Road, Grey Gum Ridge Road and Mudfords Road to a 2WD standard so as to ensure continued access of a suitable standard to park features such as 'Benaroon' and 'Bird Tree'. • Seek an agreement with Forests NSW, Department of Lands and the lessees/licensees about maintaining TV Road to a 2WD standard so as to ensure continued access of a suitable standard to the towers on the summit of Middle Brother Mountain. • Close and rehabilitate disturbed areas associated with former logging operations such as log dumps and logging tracks that are no longer required. • Gate Cliff Road and the southern link road, which crosses Jerry Creek to stop erosion and protect populations of the giant barred frog in the Jerrys Creek catchment. ▪ Implement erosion and sediment control and revegetation works where necessary. 	<p>High</p> <p>Medium</p> <p>High</p> <p>High</p> <p>Medium</p> <p>Medium</p>

Current Situation	Desired Outcomes	Strategies	Priority
<p>Telecommunications and Easements</p> <p>There are four telecommunication/transmission sites on the mountain which are currently leased to other agencies and the Commonwealth government. An area of Crown land at the summit is managed by the Department of Lands. New lease agreements are currently being negotiated with the tower operators including responsibilities for road maintenance, rent, and conditions for use of the area.</p> <p>The powerline easement in the park is currently above ground and requires vegetation management within a wide easement. The power line could be moved under ground ('underboring') to reduce power supply interruptions, easement width, vegetation clearing, habitat disturbance, safety issues and fire risk.</p>	<ul style="list-style-type: none"> • Existing telecommunication tower sites and electricity transmission easements are managed to minimise impacts and share associated maintenance costs. 	<ul style="list-style-type: none"> • Finalise licenses for telecommunication/transmission towers in the park. • Seek an agreement with Country Energy about the maintenance of the power line easement. • Investigate the option of relocating the power line underground in the easement or along existing access roads. • No additional non-service facilities will be approved within the park. 	<p>High</p> <p>Medium</p> <p>High</p> <p>High</p>

Current Situation	Desired Outcomes	Strategies	Priority
<p>Research</p> <p>The park provides a wide range of research opportunities. The park is easily accessible and contains a wide range of vegetation communities. It is also surrounded by a range of different land uses which offers the opportunity for comparative studies.</p> <p>A number of recent research projects have been undertaken in the park including flora and fauna surveys and studies and a geology study.</p> <p>The park contains a control water quality monitoring site used by Forests NSW. The program has been operating in the park since the mid 1990s, and is likely to continue until 2004.</p>	<ul style="list-style-type: none"> • The values of the planning area and their corresponding threats are better understood. • Research programs are conducted in a coordinated and sustainable manner. 	<ul style="list-style-type: none"> • Encourage or undertake research into the following topics: <ul style="list-style-type: none"> – Information on <i>Acacia courtii</i>, including distribution, habitat requirements and effects from fire; – the distribution and abundance of the <i>Mixophyes</i> populations along Jerrys Creek; and – information on the heritage and Aboriginal values of the park. 	<p>Low</p>

Legend for priorities:

High priority activities are those imperative to achievement of the objectives and desired outcomes. They must be undertaken in the near future to avoid significant deterioration in natural, cultural or management resources.

Medium priority activities are those that are necessary to achieve the objectives and desired outcomes but are not urgent.

Low priority activities are desirable to achieve management objectives and desired outcomes but can wait until resources become available.

For additional information or enquires on Middle Brother National Park or this plan of management, contact the NPWS Mid North Coast Regional Office at PO Box 61, Port Macquarie NSW 2444, or by phone on (02) 6586 8300.

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