KUMBATINE NATIONAL PARK AND KUMBATINE STATE CONSERVATION AREA

PLAN OF MANAGEMENT

NSW National Parks and Wildlife Service

Part of the Department of Environment and Climate Change

March 2009

This plan of management was adopted by the Minister for Climate Change and the Environment on 18th March 2009.

Acknowledgments

This plan of management is based on a draft prepared by staff of the Mid North Coast Region of the NSW National Parks and Wildlife Service (NPWS) with assistance of the Northern Directorate Planning Group.

NPWS specialists, the Regional Advisory Committee and members of the public provided valuable information and comments.

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FOREWORD

Kumbatine National Park and Kumbatine State Conservation Area are located south of Kempsey on the mid-north coast of NSW, and have a combined area of 15,883 hectares.

The parks contain rolling and steep forested hills, providing known habitat for 14 threatened animal species, including the koala, yellow-bellied glider, squirrel glider and three species of large forest owl. They are also part of an important wildlife corridor that, together with areas of state forest and other lands, links the coastal reserves of Maria National Park, Hat Head National Park and Limeburners Creek Nature Reserve in the east with Willi Willi National Park in the west.

Kumbatine National Park and Kumbatine State Conservation Area contain a number of Aboriginal sites, including open camp sites and scarred trees, while Kumbatine National Park also contains convict lime kilns that are listed as items of state and national significance. Both parks are used for a range of recreational activities, including bushwalking, horse riding and car touring.

A draft plan of management for Kumbatine National Park and Kumbatine State Conservation Area was on public exhibition from 19 December 2003 until 22 March 2004. The submissions were carefully considered before adopting this plan.

This plan contains a number of actions to achieve the priorities listed in the NSW State Plan, including *Better environmental outcomes for native vegetation, biodiversity, land, rivers, and coastal waterways* (Priority E4) through the restoration of old quarries and other areas of past disturbance, ongoing vegetation monitoring, control of pest animals and weeds, and research into the ecological effects of fire. The plan also contributes to *More people using parks, sporting and recreational facilities, and participating in the arts and cultural activity* (Priority E8) by providing additional opportunities for visitors to enjoy the park, including opportunities to visit the historic lime kilns and participate in horse riding and vehicle touring. By encouraging appropriate guided tours of the park, this plan will also assist in achieving *Increased business investment in rural and regional NSW* (Priority P6).

This plan of management establishes the scheme of operations for Kumbatine National Park and Kumbatine State Conservation Area. In accordance with section 73B of the *National Parks and Wildlife Act 1974*, this plan of management is hereby adopted.

Carmel Tebbutt MP Deputy Premier Minister for Climate Change and the Environment

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1. MANAGEMENT CONTEXT

1.1 LEGISLATIVE AND POLICY FRAMEWORK

The management of national parks and state conservation areas in NSW is in the context of 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 matters to be considered in the preparation of a plan of management are listed in Section 72AA of the NPW Act. NPWS policies relate to nature conservation, cultural 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 *Environmental Planning and Assessment Act 1979* (EP&A Act) requires the assessment and mitigation of environmental impacts of any works proposed in this plan.

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

1.2 MANAGEMENT PURPOSES AND PRINCIPLES

1.2.1 Management Principles for National Parks in NSW

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.

Under the NPW Act, national parks are to be 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 conservation of natural and cultural values; and

• provide for appropriate research and monitoring.

1.2.2 Management Principles for State Conservation Areas in NSW

State conservation areas are reserved under the NPW Act to protect and conserve areas that contain significant or representative ecosystems, landforms or natural phenomena or places of cultural significance; that are capable of providing opportunities for sustainable visitor use and enjoyment, the sustainable use of buildings and structures or research; and that are capable of providing opportunities for uses permitted under other provisions of the Act.

Under the Act, state conservation areas (SCAs) are managed to:

- conserve biodiversity, maintain ecosystem functions, protect natural phenomena and maintain natural landscapes;
- conserve places, objects and features of cultural value;
- provide for the undertaking of uses permitted under other provisions of the NPW Act (including uses permitted under section 47J, such as mineral exploration and mining) having regard to the conservation of the natural and cultural values of the state conservation area;
- provide for sustainable visitor use and enjoyment that is compatible with conservation of the area's natural and cultural values and with uses permitted in the area;
- provide for sustainable use (including adaptive reuse) of any buildings or structures or modified natural areas having regard to conservation of the area's natural and cultural values and with other uses permitted in the area; and
- provide for appropriate research and monitoring.

The Act also requires review of the classification of SCAs every 5 years to determine whether they should or should not receive either a national park or nature reserve classification. The classification review for state conservation areas is described in section 47M of the Act and is undertaken in consultation with the Minister administering the *Mining Act 1992*.

1.2.3 Regional Forest Agreements

Regional Forest Agreements (RFAs) are one of the principle means of implementing the National Forest Policy Statement of 1992. Under this Statement the Commonwealth, State and Territory governments agreed to work towards a shared vision for Australia's forests. This aimed to maintain native forest estate, manage it in an ecologically sustainable manner and develop sustainable forest-based industries. The Statement provided for joint comprehensive assessments of the natural, cultural, economic and social values of forests. These assessments formed the basis for negotiation of RFAs that provide, amongst other things, for Ecologically Sustainable Forest Management (refer section 6 Research and Monitoring).

The planning area was established during the process leading up to the RFA for North East NSW. The process leading up to the RFA provided for major additions to the reserve system, including establishment of Kumbatine National Park and State Conservation Area.

2 THE PLANNING AREA

2.1 LOCATION, GAZETTAL AND REGIONAL SETTING

Kumbatine National Park was gazetted on 1 January 1999 as part of the outcomes of the Regional Forest Agreement for Lower North East NSW. In January 2003 an area of 1,727 hectares was added to the park. In May 2003 an additional 207ha was purchased for inclusion into the park. The park now totals 15,100ha. Adjoining the park is the Kumbatine State Conservation Area (SCA) which was gazetted in January 2003 and comprises two parcels totalling 783ha. Kumbatine National Park and Kumbatine SCA (referred to herein as "the planning area") were formerly part of Ballengarra, Kippara, Maria River, Kalateenee and Boonanghi State Forests.

The planning area lies 10 km to the south of Kempsey on the western side of the Pacific Highway and lies along the Cooperabung Range, much of which is the watershed between the Hastings and Macleay Rivers (see Park Map, last page of plan). Kumbatine Creek, after which the planning area was named, flows into the Wilson River.

The planning area is an important wildlife corridor as together with areas of state forest and other forested lands it forms a forested link between the coastal reserves of Maria National Park, Hat Head National Park and Limeburners Creek Nature Reserve to the east and Willi Willi National Park to the west.

The Cooperabung Range forms part of the boundary between the Local Government Areas (LGA) of Hastings and Kempsey. The majority of the planning area lies to the east of the range within Hastings LGA. The planning area is within the Kempsey Local Aboriginal Land Council and the Dunghutti Tribal area.

Surrounding land uses include timber harvesting on adjacent state forests and cattle grazing in the Old Rollands Plains Road, Pipers Creek Road and Davis Road areas.

As well as the national park and SCA, the planning area includes several Ministerial roads which are vested in the Minister for the Environment on behalf of the Crown for the purposes of Part 11 of the NPW Act. These roads do not form part of the gazetted area of the park and state conservation area and were created by the *Forestry and National Parks Estate Act 1998* to ensure that the access arrangements which existed immediately before the parks creation (primarily for timber hauling and private property access) could continue, even if they were for purposes that did not meet the objectives of the NPW Act. The management of these roads is subject to the NPW Regulations and the requirements of the EP&A Act.

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.

The planning area protects a forested landscape of rolling to steep slopes. The geology, landform, climate and plant and animal communities of the area, plus its location, have determined how it has been used by humans. Past forestry activities, increased fire frequency and lime extraction have modified the landscape of the planning area.

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.

3 VALUES AND MANAGEMENT DIRECTIONS

3.1 VALUES OF THE AREA

The planning area is regionally significant for its plant and animal species and wildlife corridor values. It is also of state and national significance for its historic values.

Natural values include:

- a wide range of forest communities, including dry sclerophyll forests, moist sclerophyll and rainforest;
- ten significant plant species, most of which are at the known limit of their distribution;
- habitat for 14 threatened animal species, including the koala, yellow-bellied glider squirrel glider, and three species of large forest owl;
- protection of the headwaters of Dungay, Marlo Merrican and Kumbatine Creek/Glencoe Creeks; and
- a wildlife corridor providing a link between the coast and tablelands.

Landscape values include:

- part of the natural backdrop to the mid north coast; and
- part of a continuous forested area linking the coast to the tablelands.

Cultural heritage values include:

- Aboriginal sites, including open camp sites and scarred trees; and
- convict lime kilns gazetted as items of state and national significance and on the register of the National Trust.

Recreation and tourism values include:

- a range of recreational opportunities in a natural setting, including bushwalking, horse riding and car touring; and
- opportunities to interpret the convict lime kilns.

Research and educational values include:

- geological processes, diverse and significant plant and animal communities, cultural features and a variety of management issues provide opportunities for education and research.
- opportunities (on and off park) for natural and cultural heritage community education programs about the values of the planning area.

3.2 SPECIFIC MANAGEMENT DIRECTIONS FOR THE PLANNING AREA

The planning area will be managed to conserve its natural and cultural heritage while providing opportunities for limited sustainable public use.

Major strategies to achieve this are:

- Protect and conserve biodiversity and ensure that management programs are conducted in an ecologically sustainable manner;
- Encourage public awareness, appreciation and understanding of the natural values in the planning area;
- Minimise the impact of pest plants and animals and monitor introduced plants and animals;
- Protect, conserve and interpret the historic lime kilns;
- Protect and conserve Aboriginal heritage, in collaboration with the Aboriginal community;
- Maintain the current low-key recreation setting for day use;
- Provision for horse riding and scenic driving on designated roads only;
- Encourage and facilitate scientific research and monitoring programs with an emphasis of incorporating their outcomes into the management operations of the planning area;
- Control inappropriate activities such as fire wood collection and rubbish dumping, in liaison with local Council; and

• Manage any permitted mineral exploration and mining interests within the SCA to ensure best environmental practice and ecological sustainability.

4 CONSERVATION OF NATURAL AND CULTURAL HERITAGE

4.1 SCENIC AND CATCHMENT VALUES, GEOLOGY AND SOILS

Scenery in the planning area varies from dry sclerophyll forests on ridge tops with expansive views, to moist sclerophyll forest and rainforest in the cooler shaded gullies.

The area has a mean annual rainfall of 1200-1600mm draining north into Dungay Creek which runs into the Macleay River, and south predominantly into Glencoe Creek/Kumbatine Creek/Stockyard Creek and Marlo Merrican Creek.

Kumbatine Creek, Stockyard Creek and Marlo Merrican Creek are major tributaries of the Wilson River which is used for watering stock in the Rollands Plains area and supplies the domestic water for the township of Telegraph Point. Combatine and Dungay Creeks drain the northern fall. These streams supply water for stock and ultimately enter the Macleay River below the intake for Kempsey's water supply.

The majority of the planning area comprises rolling to steep slopes with ridge crest elevations of 200 - 520m on Carboniferous lithic sandstones and mudstones with low quartz. The lower slopes are within the Marlo Merrican area of mudstones supporting dense moist hardwood forest often with a rainforest understorey and gallery rainforest.

The area northwards from Goanna Road has varying topography and geology including a narrow, tightly folded, bed of Carboniferous limestone. This limestone bed runs through Yessabah Nature Reserve and continues up the Macleay valley into Willi Willi Caves and The Castles Nature Reserves with outcrops in Carrai and Oxley Wild Rivers National Parks.

Historical exploration licences have identified deposits of tin and copper in the western SCA (refer section 8.1 Mining and mineral exploration).

Desired Outcomes

- The scenic values and natural landscape features of the park are protected.
- The catchment values, water quality and health of the park's creeks are maintained or improved.
- Any mining or exploration activities in the SCA have minimal impact on the values of the planning area.
- Management activities are carried out in an ecological sustainable manner that minimises soil erosion, siltation and water pollution.

Strategies

- Liaise as needed with Hastings and Kempsey Councils, State Forests of NSW (SFNSW), Country Energy and other authorities to maintain the water quality of the parks' catchments.
- Maintain roads and trails to minimise erosion and maintain water quality (refer sections 6.2.3 Vehicle access and 9 NPWS management facilities and operations).
- Locate and design visitor facilities to minimise their visual impact from roads and other viewpoints (refer section 6 Education and Recreation Opportunities).
- Ensure assessment of applications for mining or mineral exploration in the SCA considers the conservation of natural and cultural values and ensure best practice management (refer section 8.1 Mining and mineral exploration).
- Identify areas of landscape disturbance and implement measures to stabilise disturbance. Restoration and rehabilitation will be undertaken in areas where there are significant affects on landscape, hydrological, scenic, aesthetic or other values.

4.2 NATIVE PLANTS AND ANIMALS

4.2.1 Native plants

Vegetation in the planning area is important as, together with areas of state forest and other forested lands (including freehold land), it forms a forested link between the coastal reserves of Maria National Park, Hat Head National Park and Limeburners Creek Nature Reserve to the east and Willi Willi National Park to the west.

The planning area was surveyed for forest types by SFNSW prior to its reservation. Dry forest types cover most of the planning area. A simplified list of forest types is provided in table 1. There are also small areas of spotted gum forest and rainforest.

(adapted from Research Note 17 SFNSW) Description % area Cumulative grey gum/ironbark/white mahogany 69.2 69.2 inland brush box 17.3 86.6 5.3 91.9 white, red mahogany/ironbark/grey gum tallowwood/blue gum 95.4 3.5 dry blackbutt 2.3 97.7 rock 0.6 98.3 blue aum 98.6 0.4 Plantation 0.3 98.9 flooded gum 0.3 99.3 Cleared 0.3 99.5 forest red gum 0.3 99.8 low viney myrtle rainforest 0.2 100.0

Table 1 Forest types in the planning area

Five plant species have been identified as being at their geographic limit. Six other plant species, one at its limit and five listed under the *Threatened Species Conservation Act 1996,* may also occur in the planning area as suitable habitat is present (refer table 2). A Priorities Action Statement, which includes recovery plans where relevant, has been prepared and will be used to guide management of threatened species in the area.

Common name	Scientific name	TSC status or significance
Known to occur		
desmodium	Desmodium nemorosum	Southern limit
grey ironbark	Eucalyptus placita	Northern limit
broad-leaved geebung	Persoonia levis	Northern limit
geebung	Persoonia stradbrokensis	Southern limit
Possibly occurring		
grevillea	Grevillea guthrieana	Endangered #
grass	Agrostis sp A	Eastern limit
vine	Cynanchum elegans	Endangered [#]
Silkpod	Parsonsia dorrigoensis (sp B)	Vulnerable
small paperbark	Melaleuca groveana	Vulnerable
rock or ground orchid	Sarcochilus hartmannii	Vulnerable^

Table 2 Significant plants within the planning area

also listed as endangered under the *Environment Protection and Biodiversity Conservation Act* 1999 (*Commonwealth*)

^ also listed as vulnerable under the Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)

The majority of the planning area has been logged several times with the vegetation naturally regenerating to native species. Lantana is widespread in the planning area and is adversely affecting the integrity of native vegetation (refer section 5.2 Introduced species).

There are nine vegetation survey plots in the planning area established in 1993 and 1997 by North East Forest Biodiversity Study with assistance of NPWS to monitor changes in species composition, canopy cover and other changes.

Future vegetation surveys should be based on maintaining and monitoring these survey plots, and on new surveys specifically targeting:

- Potential habitats for significant plant species;
- Non-forest areas such as rock outcrops;
- Rainforest and the ecotonal areas around rainforests, particularly brush box (*Lophostemon confertus*) dominated forest ecosystems; and
- Forest ecosystems with historically low commercial timber value and relatively undisturbed which have not been well surveyed in the past.

Desired Outcomes

- The full range of native plant species and communities in the planning area is conserved, and in particular significant species are protected from threatening processes.
- Minor areas of past disturbance such as log dumps are allowed to continue to regenerate.
- Significant areas of native vegetation are retained on neighbouring lands.

Strategies

- Undertake or encourage vegetation surveys, in particular to ascertain the presence of significant species, rock outcrop communities, rainforest and the ecotonal areas around rainforests and undisturbed forests in the planning area.
- Maintain existing permanent vegetation monitoring plots and survey at least once every five years to monitor changes in species composition, canopy cover and other changes.
- Protect native vegetation, in particular threatened and significant plant species or restricted plant communities from visitor impacts, effects of introduced species and inappropriate fire regimes (refer sections 5.2 Introduced Species, 5.3 Fire Management and 6 Education and Recreation Opportunities).
- Relevant actions in the Threatened Species Priorities Action Statement and recovery plans will be implemented for threatened species found in the planning area.

4.2.2 Native animals

Ecosystems have been altered in the planning area by past land uses such as timber harvesting and through a continuing high number of wild fires. Introduced plants and animals have also impacted on wildlife habitat values.

Although wild dogs, including dingoes have been declared as pest animals under the *Rural Lands Protection Act 1998* (RLP Act), the park has been listed as a dingo management area because of its high quality dingo habitat (refer section 5.2.2 Pest animals).

Despite previous disturbance, the forest communities in the planning area provide habitat for a diversity of animal species, including 14 threatened native animals, and potential habitat for others (refer Tables 3 and 4). In part this reflects the importance of the planning area as part of a corridor of vegetated lands linking the eastern escarpment of the Great Dividing Range to coastal habitats. Natural regeneration in the planning area and retention of vegetation on private lands in the vicinity of the corridor would also enhance its value as a wildlife corridor for local and migratory species.

_Common name	Scientific name	TSC status
Mammals		
spotted-tailed quoll	Dasyurus maculatus	Vulnerable ^r
Koala	Phascolarctos cinereus	Vulnerable ^r
rufous bettong	Aepyprymnus rufescens	Vulnerable ^r
yellow-bellied glider	Petaurus australis	Vulnerable ^r
large bent-wing bat	Miniopterus schreibersii	Vulnerable ^r
little bent-wing bat	Miniopterus australis	Vulnerable ^r
greater broad-nosed bat	Scoteanax rueppellii	Vulnerable
red-legged pademelon	Thylogale stigmatica	Vulnerable ^r
Birds		
glossy black cockatoo	Calyptorhynchus lathami	Vulnerable ^r
wompoo fruit dove	Ptilinopus magnificus	Vulnerable
powerful owl	Ninox strenua	Vulnerable ^r
masked owl	Tyto novaehollandiae	Vulnerable ^r
sooty owl	Tyto tenebricosa	Vulnerable ^r
Amphibians		
giant barred frog	Mixophyes iteratus	Endangered ^{r#}

 Table 3 Threatened animals known to occur in the planning area

r recovery plan in preparation

also listed as endangered under the *Environment Protection and Biodiversity Conservation Act* 1999 (Commonwealth)

Common name	Scientific name	TSC status
Mammals		
brush-tailed phascogale	Phascogale tapoatafa	Vulnerable ^r
common planigale	Planigale maculata	Vulnerable
parma wallaby	Macropus parma	Vulnerable ^r
squirrel glider	Petaurus norfolcensis	Vulnerable
eastern chestnut mouse	Pseudomys gracilicaudatus	Vulnerable
large-footed fishing bat	Myotis adversus	Vulnerable
large-eared pied bat	Chalinolobus dwyeri	Vulnerable ^
golden-tipped bat	Kerivoula papuensis	Vulnerable
long nosed potoroo	Potorous tridactylus	Vulnerable
eastern false pipistrelle	Falsistrellus tasmaniensis	Vulnerable
Birds		
square-tailed kite	Lophoictinia isura	Vulnerable
barking owl	Ninox connivens	Vulnerable
rufous scrub-bird	Atrichornis rufescens	Vulnerable
rose-crowned fruit dove	Ptilinopus regina	Vulnerable
swift parrot	Lathamus discolor	Endangered ^{r#}
bush stone-curlew	Burhinus grallarius	Endangered ^r
Amphibians	-	-
green-thighed frog	Litoria brevipalmata	Vulnerable

Table 4 Threatened animals for which the planning area provides suitable habitat

r recovery plan in preparation

also listed as endangered under the Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)

^ also listed as vulnerable under the Environment Protection and Biodiversity Conservation Act 1999

Other significant species that have been recorded near the planning area include Lathams snipe (*Gallinago hardwickii*), osprey (*Pandion haliaetus*) and white-throated needletail (*Hirundapus caudacutus*).

A Priorities Action Statement, which includes recovery plans where relevant, has been prepared and will be used to guide management of threatened species.

Research on the ecology of species found in the planning area is needed to identify threats and appropriate management strategies (refer section 7 Research and monitoring).

Desired Outcomes

- The full range of native animals found in the planning area is conserved.
- Disturbed areas are allowed to regenerate.
- There is an increase in knowledge of the occurrence and distribution of native species within the park to assist in management decisions.
- Neighbouring areas conserve remaining native habitat near the planning area.

Strategies

- Protect the habitats of threatened and significant fauna species from visitor impacts, introduced species and inappropriate fire regimes (refer sections 5.2 Introduced species, 5.3 Fire management and 6 Education and recreation opportunities).
- Encourage and undertake research that provides information on habitat requirements of native flora and fauna (refer section 7 Research and Monitoring).
- Encourage the retention of native vegetation on adjoining lands, to enhance the value of the park as a native animal corridor (refer section 4.2.1 Native Plants).
- Implement relevant actions in the Threatened Species Priorities Action Statement for animals present in the planning area.

4.3 ABORIGINAL HERITAGE

Aboriginal communities have an association and connection to the land. The land and water biodiversity values within a landscape are central to Aboriginal spirituality and contribute to Aboriginal identity. Aboriginal communities associate natural resources

with the use and enjoyment of foods and medicines, caring for the land, passing on cultural knowledge and strengthening social bonds. Aboriginal heritage and nature are inseparable from each other and need to be managed in an integrated manner across the landscape.

Aboriginal sites known to occur in the park include open camp sites, isolated objects and scarred trees. The majority of sites are open campsites, concentrated in the Connection Road, Caswells Creek and Main Range Trail areas. Many of the sites in the planning area are not accurately mapped and their exact location should be determined to prevent accidental disturbance. An Aboriginal gravel deposit site and shelter is located in the eastern SCA. The gravel site consists of several shallow holes built into a ridge top gravel scree. The Aboriginal shelter is located below the ridge line, to the north (SFNSW PMP mapping).

The NPWS acknowledges the right of Aboriginal people to make decisions about their own heritage. It is NPWS policy to encourage the Aboriginal community to participate in the management of Aboriginal cultural heritage and NPWS actively consults with relevant persons for cultural heritage information and advice.

The planning area is within the Kempsey Local Aboriginal Land Council (LALC) and the Dunghutti Tribal area.

Desired Outcomes

- Aboriginal sites are protected from damage by human activities.
- Aboriginal people are involved in management of Aboriginal cultural values in the park.
- There is improved understanding of the cultural significance of the park.

- Manage Aboriginal heritage in consultation with the Kempsey Local Aboriginal Land Council, the Dunghutti Elders group and other relevant Aboriginal community organisations. Ensure the planning areas' Aboriginal cultural heritage is not presented to the public without the permission of the local Aboriginal community.
- Provide information on Aboriginal cultural heritage in the planning area to the Kempsey Local Aboriginal Land Council and the Dunghutti Elders.
- Accurately map the location of the stone arrangement, modified trees and other sites, to ensure their protection from accidental damage. Assess if there is a threat to their long term preservation and determine any works required.
- Undertake impact assessment prior to implementing activities with the potential to damage Aboriginal sites and places. Works will be modified or relocated if necessary to protect sites and places of cultural significance.
- Encourage further research into the Aboriginal heritage of the planning area, including any post contact sites of cultural significance to the community in

consultation with the Kempsey Local Aboriginal Land Council, the Dunghutti Elders group and other relevant Aboriginal community organisations.

4.4 HISTORIC PLACES

Pipers Creek Lime Kilns

Surveyor James Ralfe discovered limestone in the Pipers Creek area in 1831. In 1834 the police magistrate at Port Macquarie was directed to supply twenty prisoners to construct a road and lime kiln. Lime extracted from the planning area was used for mortar in buildings in Port Macquarie and also barreled and transported by ship to Sydney.

There are four known convict-built lime kilns in the planning area, some of which were reactivated during the early 1940s to supplement family income during the Depression era.

A plan for the site (Austral Archaeology, 1996) stated that:

"The Pipers Creek Lime kilns site is of rare and representative historical significance at both state and national levels. It demonstrates part of the philosophy behind convictism (forced labour to benefit the state) in conjunction with the use of a simple but proven technology.

The lime kilns are considered to be a good example of technical achievement. They exemplify a particular technology, have the principal characteristics of an important class of items, and are a scarce - perhaps unique – example of a particular style of kilns.

The site is of local representative significance because of the regard in which it is held by the local community. It is also well known nationally to researchers and those interested in lime kiln technology.

The site is of national research value as it has the potential to yield new historical, cultural, technical and archaeological information. It provides rare evidence of past technology in combination with convict culture."

The kilns are listed on the Register of the National Estate, the National Trust Register and the North Coast Regional Environmental Plan.

A plan of management for the lime kilns and associated features prepared for SFNSW (Austral Archaeology 1996), includes recommendations for conservation of the lime kilns, public access, interpretation and management. The recommendations of this plan are generally consistent with the 1996 plan other than the interpretation strategies, which have been modified taking into account erosion hazards and vehicle use of the roads and trails in the area. For example, the proposed day visitor facilities have been relocated from a narrow ridge top road to a more suitable flat area with space available for parking. The lime kilns are identified as features "I", "J" and "K" in the 1996 plan of management. The Plan does not identify a fourth kiln located north west of kiln "J" on a creek bank referred to here as Kiln "L" or other mining relics west of kiln "J" identified as possible quarries and encampment sites.

The following provides a general description of some of the management issues associated with each of the lime kilns:

Lime Kiln "I"

This kiln has been cut into a hillside and has a level construction and working surface in front of the firing chamber. It is reported to have been constructed in the 1940s when the kiln was reopened (Pers comm Phillips 2002)

To date NPWS has carried out programs to conserve the kiln and to minimise the impact of vegetation regrowth on the structure. Large trees immediately adjacent to the kiln have been removed. Timber from one ironbark tree removed was used to replace the arch-bar. The old lintel has been stored on top of the kiln. The stone work has been repointed with lime mortar. Vegetation has been removed from the nearby lime store and fire risk reduction carried out in the vicinity. Dense lantana in the creek line, which must be crossed to access the kiln, has been partially cleared. Interpretation is yet to be installed.

Lime Kiln "J"

This kiln has double stone lintels over the fire draw holes and stone retaining walls at either end of the kiln. NPWS has carried out programs to minimise the impact of vegetation regrowth on the structure and the kiln has been conserved.

This site provides the best opportunity for interpretation of the historic values of the kilns to visitors. There is good vehicle and walking access to the site and an existing cleared area is suitable for development a parking area and an interpretation display.

Lime Kiln "K"

There are three fire box/draw hole openings to the kiln on the northwest side and an earth filled retaining wall at either end of the kiln. NPWS has carried out programs to minimise the impact of vegetation regrowth on the structure and to conserve it. The kiln is easily accessible by foot from Bonnie Corner Road and along Convict Road and offers opportunities for visitor interpretation.

Lime Kiln "L"

This kiln is west of kiln J and is cut into the bank of Pipers Creek. There is no archaeological description of this kiln available. It appears to have two fire box/draw hole openings, but these are covered by silt from creek flooding. The front wall is a very thin structure of hand fitted rock, but this may only be the outer part of the wall as it would be of insufficient strength to support a load of wood and lime bearing upon it. The kiln is in a poor state of repair and is threatened by nearby trees.

Other Features Associated with the Lime Kilns

There are numerous other features associated with the lime kilns in the park and most are located close to kilns I and J. Features include:

- the remains of a brick structure thought to be the guardhouse;
- rough stones set in lime mortar on a raised impression;
- treeless grassy area;

- shallow depressions thought to be exploratory digs for limestone;
- large water-filled circular depression 2m deep;
- tumbled remains of rough stone walls thought to be the cookhouse;
- pile of rubble, gravel, small stones 30m from kiln I; and
- a consolidated lime block 20m from kiln I.

More features are likely to be discovered in the vicinity of existing sites, and care should be taken to record and protect these sites. Moveable items such as tools and leg irons may be found in the area, and their location should be recorded and the items conserved in a secure location.

There is a great deal of local interest in the lime kilns of the planning area which could be fostered by the formation of a supportive volunteer group.

Other Historic Places

There are several "numbered" or "lettered" trees scattered throughout the park. These trees comprise a shield with incised numerals or alphabetic letters and were mapped as reference points by early surveyors. There is a "lettered" tree stump at the Convict Road - Bonnie Corner Road intersection. 53 Tree Road is named after the same numbered tree. These trees are important reference points related to early surveying records.

Minor sites of mobile sawmills and leveled sites are found throughout the planning area with little remaining other than decaying offcuts of timber.

Desired Outcomes

- Historic features and their setting are appropriately conserved, managed, and where appropriate interpreted following the implementation of conservation works.
- The immediate precincts of the kilns are protected from visual impact from any management or visitor infrastructure or activities.
- Public vehicle access is restricted to Silo Road, Bonnie Corner Road and part of Mill Trail only, as other access routes are steep and on highly erodible soils.

- Continue to implement recommendations in Pipers Creek Lime Kilns Plan of Management (Austral Archaeology 1996), regarding the repair and maintenance of the kilns and associated features. This includes removal of vegetation growing in structures and fire risk reduction around the kilns.
- Review the Pipers Creek Lime Kilns Plan of Management to incorporate access changes, works undertaken, and additional sites including Kiln L.
- Undertake conservation works on additional sites following professional investigation.

- Complete interpretation work on Kiln I and its setting, and limit visitation until works are completed.
- Provide a small carpark on Mill Trail just before the creek crossing, and gate Mill Road from this point to prevent vehicular access. Maintain a short walking track from the carpark to the Kiln J.
- Provide a small car park and turning area at the corner of Bonnie Corner Road and Convict Road and allow walking access only to Kiln K along Convict Road. Maintain Convict Road as a management trail.
- Control vegetation threatening Kiln L and seek professional advice about its restoration and/or conservation. Limit visitation until works are completed.
- Public access will be provided to Kilns J and K and they will be promoted through the brochure for the area. Access to Kilns I and L will be restricted and encouraged only through organised tours such as the NPWS Discovery Program (refer to 61. Promotion, Interpretation and Education, and 6.2.1 Day Use).
- Before undertaking any new works in the vicinity of the kilns, assess the site in detail for unidentified heritage items.
- Encourage or undertake further research to locate other kilns or relics that may exist in the area. Develop conservation strategies for any new sites.
- Record other features associated with the lime kilns. Monitor these sites and undertake actions necessary to prevent their degradation from trees growing on the structures or other threatening processes.
- Encourage and support the formation of a community group to assist with the preservation and interpretation of the limekilns area.
- Record the location of small saw mill sites and other associated features. Allow saw mill sites/clearings to naturally revegetate.
- Record and enter on the NPWS historic register and fire plans the location of numbered and lettered trees and other cultural heritage sites.

5 PARK PROTECTION

5.1 SOIL EROSION

Soil erosion is a natural feature of the environment, however it can be accelerated as a result of human activity. Rainfall, vegetation cover, soil erodibility and slope can all influence soil erosion. The soils of the planning area are grouped into four associations in respect to erodibility and soil moisture retention (Atkinson 1999):

Highlands - west of Main Range Trail

These soils are extremely erodible, very stony, and with low water retention, which results in rapid run-off. Road drainage (culverts) in side-cuttings must be maintained to prevent surface erosion of roads. Ridge top roads are less susceptible to erosion.

Highlands - east of Main Range Trail / Lowlands – north of Main Range trail

These soils are highly to extremely erodible, stony and with low water holding capacity.

Lowlands – south of Main Range Trail

These soils are low in erosion risk, and are generally on moderate slopes with good vegetative cover.

Goanna Road to Pacific Highway

Soils are variable with the lower elevation areas being subject to waterlogging. Moderate slopes reduce the erosion risk in this section of the park.

The high susceptibility of some soil types in the planning area to erosion and the steep terrain has implications for management as areas of soil disturbance inevitably require substantial works to stabilise. Areas of specific concern include parts of the vehicle access network, in particular roads and trails in the western section of the park.

Desired Outcome

• Soil erosion in the planning area is minimised.

Strategies

- Design and undertake all works in a manner that minimises soil erosion.
- Maintain roads and management trails to a suitable standard to minimise soil erosion and regularly inspect road culverts for blockages (refer sections 6.2.3 Vehicle access and 9 NPWS Management facilities and operations).
- Include objectives and actions for minimising erosion arising from prescribed fires and wildfires in fire planning and management programs (refer section 5.3 Fire management).

5.2 INTRODUCED SPECIES

Introduced species are any plant or animal species not native to the planning area. Introduced species within the planning area and on adjoining land, are of concern because they have the potential to have detrimental effects on ecological values and can spread to and from neighbouring land. In addition, the *Noxious Weeds Act 1993* and the *Rural Lands Protection Act 1998* requires public authorities to control noxious weeds and declared pest animals, respectively, on land that they manage. The NPWS Mid North Coast Region has a Regional Pest Management Strategy (NPWS 2001) which prioritises the areas and pest species to be targeted. This strategy outlines actions to be taken in collaboration with neighbours, other government agencies, Rural Lands Protection Boards, local government, regional pest committees, CSIRO, universities and community groups such as Landcare, Dunecare and Bushcare volunteers. The strategy is reviewed every five years.

5.2.1 Pest plants

There has been no comprehensive study of weeds undertaken in the planning area, however casual observation indicates that lantana (*Lantana camara*) is common throughout the planning area, particularly in moist and semi moist areas. Giant Parramatta grass (*Sporobolus fertilis*) occurs in isolated patches along roadways. Crofton weed (*Ageratina adenophora*) is frequent in disturbed areas to the west of the planning area.

Apart from lantana, pest plant species are currently a minor problem within the planning area, with a low density and a low number of species. Most species appear to be associated with past disturbance and along road sides.

The majority of introduced species are considered unlikely to threaten the vegetation of the planning area, however, crofton weed, red lantana and giant Parramatta grass are declared noxious weeds which require monitoring and action taken as necessary to control and prevent spreading.

Plantations

There is a 42ha plantation of introduced species on Cooperabung Range Road. The great majority of this area was planted to blackbutt, (*Eucalyptus pilularis*) in the 1960's by SFNSW, a species which although occurring naturally within the planning area did not occur specifically in this area. The blackbutt plantation was logged for small poles in the late 1980's. It is considered that this plantation will eventually return to its natural floristic composition.

There are also some small trial areas of radiata pine (*Pinus radiata*) and Gympie messmate (*E. cloeziana*). The radiata pine is in very poor health and does not appear to be have generated any wildlings. The Gympie messmate is in good health but is unlikely to spread due to the moist shady understorey restricting the light necessary for its regeneration.

An assessment of plantations in the Northern Directorate is currently being undertaken to determine appropriate removal and rehabilitation programs for plantations in parks and reserves. This will include time frames and methods for removal and rehabilitation.

5.2.2 Pest Animals

Introduced animals can have a significant impact on native flora and fauna, and can also impact on the activities of planning area neighbours. There is little information on the

density or abundance of introduced animals in the planning area. Foxes (*Vulpes vulpes*), cats (*Felis catus*) and wild dogs (*Canis familiaris*) were reported in a 1998 Kempsey RLPB/NPWS survey of landholders in the vicinity of the planning area and are also known to occur within the planning area. Fox and dingo baiting as well as an opportunistic dingo (*Canis lupus dingo*) DNA sampling study has been undertaken in the planning area.

Wild dogs, including dingoes, have been declared as pest animals under the *Rural Lands Protection Act 1998* (RLP Act) throughout NSW. Hence the NPWS has a statutory obligation to control wild dogs on its estate.

Under the RLP Act, however, public lands which are considered to contain high quality dingo habitat have been listed as dingo management areas. This includes the planning area. The RLP Act requires public land managers, such as the NPWS, to assist in the preparation of a wild dog management plan for dingo management areas. These plans are to identify methods for the control of wild dogs and the conservation of dingoes in these areas and are to be approved by the Kempsey Rural Lands Protection Board (RLPB).

The NPWS considers the dingo to be part of the native fauna of NSW, which it has a responsibility to conserve. It is also recognised that wild dogs from NPWS estate can impact on livestock on adjacent areas and that there is a need for management to minimise their attacks on stock.

In 2001 and 2002 cooperative wild dog baiting programs were conducted by NPWS, SFNSW, the Kempsey RLPB and neighbours. This program involved the use of sand mounds, soft jawed traps and 1080 poisoning.

Other pest animals known to occur in the planning area are the rabbit (*Oryctolagus cuniculus*), house mouse (*Mus musculus*), cattle (*Bos sp.*), and the black rat (*Rattus rattus*). Pest animals likely to occur in the planning area are the brown hare (*Lepus capensis*) and feral pig (*Sus scrofa*).

Desired Outcomes

- Introduced species are controlled and if possible, eradicated from the planning area.
- The impact of introduced species on native plants and animals is minimised.
- Core populations of dingos are conserved within the dingo management area.

- Priorities for pest animal control will be fox and wild dog control and dingo management in accordance with the Regional Pest Management Strategy.
- Conduct a survey of pest plant species and/or include pest plant species in vegetation surveys to assist development of control strategies (refer section 4.2.1 Native plants).

- Seek the cooperation of neighbours in implementing pest plant and animal control programs. Undertake control in cooperation with the Kempsey RLPB, Kempsey Council, the Mid North Coast Weeds Advisory Council and other stakeholders.
- Continue to opportunistically carry out DNA sampling of dingo and wild dog populations to determine the degree of hybridisation of dingoes in the park. Assist in the preparation and implementation of a wild dog management plan to be approved by the Kempsey RLPB.
- Remove and rehabilitate plantations of introduced species in accordance with the Northern Directorate strategy for the management of plantations in parks and reserves when completed.

5.3 FIRE MANAGEMENT

Fire is a natural feature of many environments and is essential for the survival of some plant communities. However, inappropriate fire regimes can lead to loss of particular plant and animal species and communities, and high frequency fires have been listed as a key threatening process under the TSC Act.

The primary fire management objectives of the NPWS are to protect life and property and community assets from the adverse impacts of fire, whilst managing fire regimes to maintain and protect biodiversity and cultural heritage (NPWS, 2005). The NPWS uses a zoning system for bushfire management which is compatible with the zoning used by the Hastings and Kempsey Bush Fire Management Committees (BFMC) in their bushfire risk management plans. Vegetation communities in the planning area such as rainforests and wet sclerophyll forest are sensitive to fire.

In regard to Kumbatine National Park and State Conservation Area, a separate fire management strategy has been prepared. Annual hazard reduction programs, which may include mechanical fuel reduction techniques, prescribed burning and fire trail works, are submitted to the BFMC.

Fire history

The planning area has been subjected to very frequent and intense wild fire, caused by arson, lightning strikes and escapes from hazard reduction burning in the surrounding area.

Ecological requirements

Fire regimes are a major determinant of the distribution and abundance of plants and animals in the planning area. They also affect erosion patterns, hydrological regimes and nutrient cycles. Ecological research suggests that a fire frequency of between 5 and 30 years is generally appropriate for the park's vegetation communities, except the wet sclerophyll forest and rainforest, which should have a less frequent fire regime. Wet sclerophyll is considered a fire sensitive community as it contains many rainforest species in the mid and lower strata. Indications are that this community has acted as a natural firebreak, at least in the past 15 years. However, wet sclerophyll vegetation

diversity is likely to be enhanced by the continued exclusion of fire for the next 40+ years and fire should be excluded from rainforest communities (Bradstock 1995).

Variability of fire intervals and area burnt is important to conserve floristic diversity and habitat for animals. The fires most damaging to fauna communities are those that occur during the breeding season because they kill young animals and increase exposure to predators. The north and north west slopes of the planning area have been subjected to fire frequency beyond that required to maintain biodiversity.

Fire control infrastructure

The roads, management trails and bridges within the planning area are of strategic importance in fire suppression activities. Many of the bridges in the planning area are reaching the end of their structural life and are currently being replaced.

The Bears Road/Connection Road quarry is useful as a helicopter landing area during fire suppression. There is a small dam at the Convict Road – Bonnie Corner Road intersection that was constructed by SFNSW for fire suppression purposes.

Desired Outcomes

- Fire regimes are appropriate for long-term maintenance of the planning area's plant and animal communities.
- The potential for spread of bush fires on, from or into the planning area is minimised.
- Persons and property on or immediately adjacent to the planning area are protected from bushfires.
- Aboriginal sites, historic places and culturally significant features are protected from damage by bush fires.

- Implement the fire management strategy for the planning area.
- Use of heavy fire fighting machinery should be restricted to existing roads and trails (which may include dormant trails).
- Continue to actively participate in the Kempsey and Hastings Bush Fire Management Committees. Maintain close contact and cooperation with neighbours, Council and Rural Fire Service officers, and volunteer Rural Fire Service brigades.
- Where appropriate, carry out fuel management in cooperation with neighbours.
- Close the planning area to public use as necessary during periods of extreme fire danger.

- Maintain a network of road and trails, including associated bridges, for fire management as identified on the Park Map (end page).
- Encourage research into the ecological effects of fire in the planning area, particularly the fire response of significant plant species and the fire requirements of the plant communities.

6 EDUCATION AND RECREATION OPPORTUNITIES

6.1 PROMOTION, INTERPRETATION AND EDUCATION

Promotion and presentation of the natural and cultural heritage values of national parks to visitors is a core function of NPWS. Information provision in general assists the protection of natural and cultural heritage, promotes support for conservation and increases the enjoyment and satisfaction of visitors.

Although visitation to planning area is low, the convict lime kilns are an important historic value of the planning area and have potential to be promoted to visitors. NPWS Discovery tours of the convict lime kilns were first undertaken in 2002 at the request of the National Trust and local heritage groups. The only other promotion of the planning area currently is directional signs to and within the park.

Promotion and interpretation of the planning area's features, in particular the lime kilns, should be in a manner which protects their special values and encourages appropriate visitor use.

Desired Outcomes

- There is widespread community understanding and appreciation of the planning area's natural and cultural values.
- There is community understanding and support for management programs such as fire and introduced species management.
- Visitors adopt minimal impact behaviour.

- Prepare a planning area information brochure outlining the natural and cultural values as well as permitted horse riding and car touring routes.
- Emphasise the following themes in the brochure:
 - biodiversity of the planning area;
 - values of the planning area as a wildlife corridor linking to other national parks, nature reserves and other forested areas; and
 - historic values of the planning area.

- Update the brochure to include information on the lime kilns once conservation works and day visitor facilities are completed (refer also sections 4.4 Historic Places and 6.2.1 Day Use).
- Continue to utilise the convict limekilns as a Discovery Tour destination.
- Liaise with neighbours and community organisations to promote community understanding of planning area values and management strategies.
- Maintain low key directional signage at major road junctions.
- Install entry signs at major entrances to the planning area to advise of visitor use restrictions including prohibition on dogs, restrictions on horse riding areas and fire restrictions.

6.2 RECREATION OPPORTUNITIES

The planning area caters mainly for day visitors seeking a low-key nature based experience. The main recreation activities undertaken in the planning area include; bush walking by small recreational groups; bird watching; occasional visits by Adult Education groups; an annual horse endurance ride in the Bonnie Corner/Goanna Road area and scenic driving. Guided tours by NPWS Discovery program of the convict lime kilns were undertaken in 2002 at the request of the National Trust and local heritage groups.

Current visitation to the planning area is low compared to other parks and reserves in the area. This is mainly because the planning area offers few destinations or facilities accessible by two-wheel drive vehicle other than the historic lime kilns (refer section 4.4 Historic Places).

Vehicle access is limited because the soils of the planning area are highly erodible and roads are unsuitable for regular traffic. Although the planning area provides an attractive natural setting it does not offer significant vistas or special destinations such as unusual rock formations, rivers, waterfalls or distinctive vegetation communities comparable to other parks in the region.

Provision for visitor use of the planning area has been considered in a regional context. Other land managed by the NPWS and other authorities in the region provides diverse opportunities for recreational activities. Camping areas are provided at Brushy Mountain and Plateau Beech in Werrikimbe National Park. Day use recreation areas are provided at Wilson River in Willi Willi National Park.

Desired outcomes

• An appropriate range of low key nature based recreation opportunities and facilities are provided with minimal impact on natural and cultural values.

- Manage the planning area for a low level of day use with minimal visitor facilities (refer 6.2.1 Day use).
- Monitor visitor impacts and if necessary close areas temporarily or permanently or otherwise restrict access if there is an unacceptable damage to natural or cultural values.
- Encourage minimal impact recreation through information signs and other appropriate means (refer 6.1 Education and Recreation Opportunities).

6.2.1 Day use

There are currently no day use facilities in the planning area. The main day visitor destination in planning area is the historic limekilns, which will remain as a low key day use area. Visitors will be encouraged to undertake tours to the limekilns through NPWS Discovery programs to improve their understanding of the value of the limekilns and to manage visitor impacts at this sensitive site (refer 6.1 Promotion, Interpretation and Education). Access to the limekilns should also be limited because of erodible soils in the area. Limekilns J and K will be the two kilns which will be promoted in the area, whilst access to the other kilns will be encouraged only through organised Discovery Tours (refer section 4.4 Historic Places).

Strategies

- Provide a small carpark and horse hitching rail on Mill Trail just before the creek crossing, and gate Mill Trail from this point. Access to Kiln J from the carpark will be by walking only.
- At the intersection of Bonnie Corner Rd and Convict Rd, near Kiln K, provide a turning circle for a small bus, a horse hitching rail and walking track access only to Kiln K and I.
- Promote limekilns J and K in the brochure as available for public viewing and manage public access to kilns I and L through the NPWS Discovery Program (refer section 6.1 Promotion, Interpretation and Education).
- Fuel stoves only will be permitted in the planning area and no garbage facilities will be provided.

6.2.2 Horse riding

Horse riding was permitted in the area for many years by SFNSW prior to reservation of the park. The Kundabung and Macleay Endurance and Pleasure Riding Club has held an annual endurance ride in the area since 1988 and annual consent has been granted for the event by NPWS since the park was reserved. The endurance ride has used a number of roads and trails in the planning area including Tobys, Jones, Simons, Lenehans, McKays and Bonnie Corner Roads and these have been identified as suitable for continued use subject to annual consent (see table 5). Non commercial group rides have been undertaken through the planning area via Bears Road, Connection Road, Combatine Creek Road, Dungay Creek Road and Duneight Road. Duneight Road continues to the north of the park as a closed road across private property and then into State Forest. The route continues in State Forest on forest roads. Other recreational riding, including horse and sulky, has occurred in the park for many years, primarily on the roads indicated on the horse trail map (page 27) and in table 5 (pages 25 and 26). There have been no commercial horse riding activities undertaken in the park.

Under the NPWS policy on horse riding, horse riding is permitted in national parks and state conservation areas providing it does not have unacceptable impacts or conflict with other recreation activities. Overnight or organised activities require permission from the NPWS Regional Manager. Camping with horses is not considered an appropriate activity due to a lack of suitable holding areas and watering sites. Whilst group activities of a recreational nature may be considered appropriate, NPWS policy does not encourage competitive events. However NPWS recognises that the annual endurance event has occurred since 1988.

Park roads, public roads and management trails identified in this plan as generally suitable for recreational, commercial, approved group and competitive event horse riding are located between Davis Road and the Pacific Highway only (see horse trail map, page 27, and Table 5). In recognition of past use, an exception has been made to allow non commercial and non competitive event riding for groups of up to 20 riders by consent to use Bears Road west of Davis Road, Connection Road, Combatine Creek Road, Dungay Creek Road and Duneight Road for a maximum of 1 event per annum (refer Table 5). General recreational use of these roads west of Davis Road will not be permitted.

The designated horse riding roads and trails have been determined on the basis that they provide a network that:

- is structurally sound, well drained and not steeply aligned to facilitate sustainable riding;
- provide thoroughfare or key linkages to adjoining off park opportunities which enable extended and variable rides;
- have low traffic volumes and clear lines of sight; and
- have been traditionally used for the annual endurance event.

Name	Description
Old Coast Road	Public road (not part of the park)
Tobys Road	Management trail
3	5
Jones Road	Management trail
Simons Road	Park road
Hassels Road	Management trail
Lenehans Road	Park road
McKays Road	Management trail
Bonnie Corner/Silo Road	Park road
*Mill Trail	Park road to carpark (no horse riding beyond carparks)
Clay Gully Road	Management trail
*Molly Milligan Road	Park road
*Cooperabung Range Road	Park road
*Pipers Creek Road	Park road
*Merrican Road	Park road
*Old Rollands Plains Road/	Public road (not part of the park)
Rollands Plains Road	
*Bears Road (east)	Park road (east of Davis Road)
** Bears Road (west)	Park road (see Park Map, end page)

Table 5 Schedule of permitted horse riding roads and trails

*Davis Rd	Park road
**Connection Road	Management trail (see Park Map)
**Combatine Creek Road	Management trail (see Park Map)
**Dungay Creek Road	Management trail (see Park Map)
**Duneight Road	Management trail (see Park Map)
* Compartment 66Trail	Trail (This trail will only be available whilst the owner of
	Portion 66 allows access through his property.)

* Recreational horse riding only – commercial, group and endurance events not permitted ** These roads are not generally not available for horse riding, including recreational horse riding, but special consent may be given for non commercial and non competitive event riding only for groups of up to 20 riders for a maximum of 1 event in total per annum.

- Allow recreational horse riding on roads and management trails east of Davis Road only as shown on the horse trail map (page 27) and described in table 5
- The use of sulkies on management trails east of Davis Road as shown on Map 2 may be allowed by permit only.
- Subject to consent, allowone non commercial, non competitive event ride per annum for groups not exceeding 20 riders on Bears Road (west), Connection Road, Combatine Creek Road, Dungay Creek Road and Duneight Road. General recreational horse riding will not be permitted on these roads.
- Permit the existing annual endurance event to use Tobys, Jones, Simons, Lenehans, McKays and Bonnie Corner Roads only (as described in table 5) subject to annual consent and with appropriate conditions. Routes may be varied within those available in Table 5 and numbers limited by the Regional Manager if necessary to protect park values. No new competitive horse riding events will be permitted (refer section 6.2.7 Commercial and Group Activities).
- Permit commercial horse riding groups subject to a commercial operators licence and limits on numbers, frequency, routes and other conditions as identified in the commercial activity licence.
- Riding off roads and trails and overnight camping with horses will not be permitted.
- Locate horse hitching rails at the carparks near the kilns to allow riders to leave their horses and walk to the kilns. Horses will not be permitted on Mill Trail past the carparks.
- Install appropriate signage to indicate permitted horse riding roads and trails in the planning area.
- Monitor impacts of horse riding on park values in the planning area to establish and maintain appropriate carrying capacity and assess any impacts, including periodic inspections to monitor impacts and rates of use along designated horse riding routes. Temporarily or permanently close roads or trails to horse riding if unacceptable impact attributable to horse riding occurs. Monitoring and closures will be determined in consultation with park users.

• Develop cooperative agreements with horse riding groups, such as the endurance event organisers, to promote safe and low impact riding on designated roads and trails.



6.2.3 Vehicle access

A network of roads provides vehicle access to the planning area. Major access roads include Davis, Gearys Flat, Kumbatine Brook, Marrowin Brook, Old Rollands Plains, Clearfield, Dungay Creek, Molly Milligan, Pipers Creek, Cooperabung Range, Silo and Old Coast Roads (see Park Map). These are all weather 4WD roads.

Most park roads are maintained as 4WD all weather roads. Bears Road (west of Davis Road), Silo Road/Bonnie Corner Road to Mill Trail and Mill Trail are 2WD dry weather access park roads. The most immediate access to the lime kilns is from Old Coast Road via Silo Road, the first kilometre of which passes through private lands.

The road network was previously established by SFNSW and many of the roads and trails are no longer required for park management and do not lead to a visitor destination. These roads will be closed and allowed to revegetate.

Because the planning area is steep to very steep with limited gravel resources and few visitor destinations it is not practicable or desirable to provide a road network for extended two wheel drive touring.

The planning area also includes 'Ministerial roads', which have been created to ensure the continuation of access arrangements which existed immediately before the park's creation. This primarily relates to use of these roads for timber hauling and private property access (refer section 9 NPWS Management Facilities and Operations). Some of these roads are also available for public vehicle access (refer Park map, end page).

- Maintain Bears Road, (West of Davis Road) and Silo/Bonnie Corner Road to Convict Road to dry weather 2WD standard. Maintain other park roads to 4WD all weather standard (see Park Map, end page).
- A small carparking area will be located along Mill Trail near kiln J and the trail will be gated from this point. Mill Trail will also be gated at the intersection of Bonnie Corner Rd near Goanna Rd (refer 6.2.1 Day Use).
- Maintain Ministerial roads for access for relevant stakeholders and allow public vehicle use of Ministerial roads designated as park or public roads (refer Section 9 NPWS Management Facilities and Operations and Park Map).
- Negotiate with the owner of the land through which the eastern end of Silo Road runs for continuing access.
- Negotiate with SFNSW regarding maintenance of Silo Road.
- Temporarily close roads and trails if necessary because of environmental impacts, for fire management, pest control or natural heritage conservation purposes.

6.2.4 Walking

Walking occurs at a moderate level in the planning area mainly because the planning area offers few destinations for walkers such as significant vistas, rivers, waterfalls or other distinctive attractions. Guided Discovery Ranger and Adult Education groups have used the Silo, Bonnie Corner, Convict and Clay Gully Roads as a walking loop.

As the vegetation of the planning area returns to a more natural state and the planning area becomes more well known it is expected that walking may increase in popularity particularly in the Kumbatine Brook Road, Marrowin Brook, Molly Milligan Road and Merrican Road areas where there is stream side vegetation, rainforest and tall moist eucalypt forest.

Walking will also be encouraged in the lime kiln area with the provision of short walking tracks when conservation works at the kilns are completed (refer section 9.4 Historic places).

Strategies

• Provide short walking tracks into the lime kilns J and K once conservation works are completed (refer section 9.4 Historic places).

6.2.5 Cycling

Cycling in the planning area currently occurs at a low level. Road surfaces and steep grades along many roads and trails in the park are generally unsuited to cycling. Cycling is not permitted off roads and trails.

Strategies

- Allow cycling on public roads, park roads and management trails.
- Prohibit cycling off road or trails.
- Monitor management trails for excessive erosion and other environmental impacts which may be caused by cycling, and if necessary permanently close certain management trails.

6.2.6 Camping

Very occasional self-reliant overnight camping has occurred in the planning area. The low level of camping in planning area is mainly attributed to the lack of destinations and availability of suitable camping sites with reliable water supply.

- Formal camping sites and facilities will not be provided in the planning area.
- Permit remote camping in the planning area subject to the following conditions:

- camping will not be allowed within 200m of roads and trails, watercourses and 2km from day use sites at the lime kilns;
- camping will only be permitted for a maximum duration of 3 nights at any one place and;
- fuel stoves only will be permitted (wood fires will only be allowed at the day use area at Kiln J refer section 6.2.1 Day use).
- Monitor the impacts of camping and review the park camping policy if required.

6.2.7 Commercial and group activities

Commercial tourism operators require a licence under the NPW Act to operate in national parks and state conservation areas in NSW. The NPWS commercial licence has a number of strict accreditation requirements that must be met by operators to enable them to operate. Currently there are no licensed commercial operators in the planning area.

Group activities (defined as 20 persons or more for this planning area) require prior consent from NPWS. Usage by groups has been limited in the past to an annual endurance horse riding event (refer section 6.2.2 Horse Riding), and very occasionally 4WD, bush walking, and non-commercial tours of the convict lime kilns.

Commercial tours and group activities should be nature based and facilitate understanding and appreciation of the natural and cultural heritage values of the planning area. Proposals are also assessed against the availability of more appropriate off reserve venues, conflict with other visitors, visitor safety and potential impacts on planning area values. In particular, activities, which are primarily of a sporting nature, may be better catered for outside reserves. Licence conditions may be imposed regarding group size, supervision, transport type, activities permitted, equipment and monitoring.

Four wheel driving as a commercial activity may be permitted on public and park roads only, subject to conditions necessary to control impacts on natural and cultural values. The area to the west of Old Rollands Plains Road will be the preferred area for such activities, to reduce conflict with horse riders. Car rallies will not be permitted in the park.

Desired outcome

• Commercial and group activities do not impact on the parks natural and cultural values or other visitors to the planning area.

Strategies

• Permit commercial tours and group activities for activities that are safe, ecologically sustainable, compatible with other visitor use, and enhance visitor understanding of the planning area.

- Permit the existing annual endurance event to use designated roads and trails subject to annual consent (refer section 6.2.2 horse riding). No new competitive sporting events will be permitted.
- Limits on group sizes, frequency of use and activities will apply to commercial and group activities to minimise environmental impacts and conflicts with other park users.
- Allow vehicle based tours only on public roads, park roads and to the lime kilns via Silo/Bonnie Corner Road. Commercial 4WD tours will be permitted west of Old Rollands Plains on park and public roads, subject to licence conditions.
- Permit commercial tour access to Kilns J and K only when conservation works are completed (refer section 4.4 Historic places).

7 RESEARCH AND MONITORING

Research and monitoring can improve understanding of the planning area's natural and cultural heritage, and the processes which affect them. Research also establishes the requirements for management of particular species.

It is NPWS policy, that research involving Aboriginal cultural heritage is carried out in consultation with the local Aboriginal community.

Research to date has concentrated on describing plants and animals in the planning area. Fox and dingo baiting using sand mounding for track identification has been carried out to identify animals as well as opportunistic dingo DNA sampling study.

The purpose of scientific study in the planning area is to improve understanding of its natural and cultural heritage and the processes, which affect them. Research also establishes the requirements for management of particular species.

Achievement of ecologically sustainable forest management (ESFM) requires continuous improvement based on evaluation and monitoring of the impact of management actions. Performance indicators of ESFM have been identified for the Lower North East Region of NSW and a monitoring program is being developed using the indicators to provide feedback on management programs and directions for future adaptive management.

There are nine established vegetation monitoring plots established within the planning area which predate the reservation of the park and were established to monitor changes in vegetation (refer section 4.2.1 Native Plants).

Desired Outcomes

Research enhances the information base and assists management of the planning area.

- Research causes minimal environmental damage.
- Monitoring programs are in place to detect any changes in the status of planning area's resources and are used to inform better management practices.
- The Aboriginal community is involved in research into their heritage or culture.

Strategies

- Undertake or encourage research identified under the RFA along with topics identified in this plan of management. Key areas of research and monitoring will be those of direct relevance to management and include:
 - fire regimes for maintenance of biodiversity;
 - the optimum number of hollow-bearing trees and the effectiveness of artificial roosts for forest bat species, arboreal mammals and forest owls;
 - the impact of fire regimes on weed invasion;
 - targeted searches for threatened species that have potential habitat within the planning area or have not been recorded within the last 10 years;
 - habitat use by the brush-tailed phascogale;
 - impacts of predation by foxes and/or other feral animals; and
 - conservation requirements for the lime kilns.
- Permit appropriate research by other organisations and individuals and promote the above topics, or other topics of direct relevance to management, for research and monitoring.
- Require research structures and long term markers to be placed in locations that will minimise their visual impact and require their removal upon completion of the research.
- Liaise with, and provide a copy of findings to the Kempsey Aboriginal Land Council when undertaking research into Aboriginal heritage.
- Record all findings regarding Aboriginal Heritage on the Aboriginal Heritage Information Management System (AHIMS).
- Continue monitoring of existing vegetation plots to determine changes to vegetation in the planning area (refer section 4.2.1 Native Plants).

8 OTHER USES

8.1 MINING AND MINERAL EXPLORATION

The SCA was gazetted to provide for the undertaking of uses permitted under section 47J, such as mineral exploration and mining. The written concurrence of the Minister for the Environment is required before a mining interest can be granted in SCAs. Kumbatine SCA will otherwise be managed in accordance with this plan as if it were a national park.

Historical exploration licences in the western section of the SCA have identified deposits of tin and copper, however there are no current mineral titles or applications in the SCA in the planning area.

Department of Mineral Resources (DMR) and Department of Sustainable Natural Resources are the lead authorities for mining, mineral exploration and mine site rehabilitation. The DMR is required under the EP&A Act to undertake an environmental assessment for mining activities in consultation with the NPWS through the issuing of licences for mineral exploration and mining.

8.2 BEE KEEPING

There are forty bee sites located within the park that predate the park's reservation. There are no bee sites within the SCA. The European honey bee (*Apis mellifera*) can have adverse impacts on some native plants and animals (Paton, 1996). NPWS policy on bee keeping allows existing sites to continue but does not allow any new or additional sites. It may be necessary to relocate existing bee sites within the park where apiary activities result in unacceptable environmental impacts, user conflicts or are inconsistent with park management.

Access to apiary sites require the use of roads or management trails, some of which may be proposed for closure and rehabilitation because they may present hazards to users and/or threats to the environment.

8.3 POWER LINE EASEMENTS

A power line easement 1.3km in length crosses the eastern section of the planning area in a NNW - SSE direction (see Park Map, end page). The easement has a cleared width of approximately 50m and has an associated maintenance trail called Power Line trail. This line is part of the Port Macquarie to Kempsey high voltage line. The draft Yellow-bellied Glider Recovery Plan (NPWS 2002) identified that linear clearings as narrow as 50m can form significant barriers to movement for the species. The existing easement, therefore, may represent an east-west barrier to movement of some fauna species at the regional scale.

Prior to gazettal of the national park, the line operated under an occupation permit with SFNSW. Currently, the transmission line is under license with NPWS and operates under similar conditions as the occupation permit with SFNSW. The line is maintained by Country Energy in consultation with NPWS, and maintenance of the line is based on 'Procedures for Powerline Maintenance in Lands Administered by NPWS' (Electricity Association of NSW, 1994).

Desired Outcomes

- No new non- park infrastructure is developed in the park.
- Non-park uses have minimal environmental impact.
- The existing power line easement does not represent a dispersal barrier to the yellow-bellied glider and other fauna.

Strategies

- Applications for mining or mineral exploration in the SCA will be subject to environmental assessment by DMR and will require the concurrence of the Minister for the Environment. Assessment will consider the conservation of natural and cultural values and ensure best practice management.
- Review the classification of the SCA every 5 years to determine whether it should be reclassified as a national park or nature reserve in accordance with section 47M of the NPW Act and in consultation with the Minister administering the Mining Act 1992.
- Investigate whether existing authorised apiary sites in the planning area need to be relocated elsewhere in the planning area due to unacceptable environmental impacts, user conflicts or management programs such as the closure or alteration of a road or trail. Relocation of any existing apiary sites will be in accordance with the NPWS policy on bee keeping and will be undertaken in consultation with the consentee.
- Permit apiarists to clear a minimal area of their existing hive sites by mowing/slashing only.
- Monitor use of apiary sites, including any feral bee hives that may have established in the planning area.
- Trail maintenance of Power Line trail and the easement will be the responsibility of the power provider and in accordance with the NPWS licence conditions and 'Procedures for Powerline Maintenance in Lands Administered by NPWS' (Electricity Association of NSW, 1994).
- Liaise with the power provider to minimise any impact of the power line easement on the movement of the yellow-bellied glider and other fauna.
- Prohibit any new non-NPWS facilities in the planning area unless consistent with the NPW Act.

9 NPWS MANAGEMENT FACILITIES AND OPERATIONS

The planning area is administered by the Mid North Coast Region of the NPWS. The area office is located at Arakoon State Conservation Area and an area workshop is located in Kempsey.

Management trails

Implementation of the management programs identified in this plan requires a system of management trails in addition to the public road system. Management trails are shown on the Park Map. The purpose of management trails is to enable fire, weed, feral animal and public use management. Vehicle access to the management trails is restricted to essential NPWS management purposes and other essential purposes authorised by the regional manager. The roads required for fire management will be maintained to the standard identified in the fire management strategies for the planning area.

Ministerial Roads

The planning area includes 'Ministerial roads', which are vested in the Minister for the Environment on behalf of the Crown for the purposes of Part 11 of the NPW Act. They were created under section 13 of the *Forestry and National Parks Estate Act 1998* to ensure the continuation of access arrangements which 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 the National Parks and Wildlife Regulation and the requirements of the EP&A Act.

Ministerial roads within the planning area will require regular maintenance unless the historic use of the road ceases and the roads are not required for park access or management purposes. Maintenance will be by agreement with the historic users of these roads. Ministerial roads in the park are:

Bears Road (west of Davis Road) **Combatine Creek Road** Compartment 66 Trail Connection Road Cooperabung Range Road Davis Road Dungay Creek Road Geary's Flat Road Jones Road Kippara Range Road McIllwains Road Merrican Road New Tower Road (western section) **Pipers Creek Road** Power Line Trail Simons Road Tuckybunyubah Road

Roads within the State Conservation Areas and the 1 January 2003 addition to the park are ministerial roads until such time as a determination of their final status has been made. These roads include part Kumbatine Brook Road, part Marowin Brook Road, Boonanghi Trail, Duneight Road and Low Range Road.

Reserved road alignments

There are several reserved road alignments within portion 42 Parish of Beranghi (purchased but not yet gazetted) that serve no purpose and it is not viable or desirable to construct these roads. These road reserves should be added to the park.

Quarries

There are four active quarries in the planning area used by NPWS for the maintenance of roads and visitor facilities. Two large pits are located at Mocking Bird Quarry adjacent to the Pacific Highway and the Old Coast Road. The Connection Road Quarry is located near the junction of Main Range Trail and Bears Road east. Two smaller quarries are located on Bears Road. A disused quarry is on the closed T- tree road which runs northwards from Cooperabung Range Road, west of Pipers Creek Road. An assessment of quarries was undertaken for reserves in the Mid North Coast Region in 2002 and the quarries in the planning area will be managed taking into account this report (NPWS 2002b).

SFNSW manage a number of roads outside the planning area which provide key access for visitors to the park as well as NPWS. The Mocking Bird and Connection Road quarries are a valuable source of gravel for maintenance of these roads.

The Connection Road quarry is also used as a helicopter landing and re-fuelling site, particularly during fires. Bears Road quarries are used for maintenance of Bears Road.

There is a large number of uprooted tree stumps within Mocking Bird quarry, which have the potential to harbor feral animals such as foxes. These stumps were imported onto the site from road widening of the Pacific Highway. Burning these stumps may cause a smoke hazard to traffic on the Pacific Highway. Other options for removal may need to be considered.

Desired Outcomes

- Management facilities adequately serve the needs of management and have acceptable environmental impact.
- Management infrastructure is located off park or on disturbed areas on park wherever possible and will be subject to environmental impact assessment.
- Reserved road alignments in Portion 42 Parish of Beranghi are added to the park.

- Maintain park roads and management trails shown on the Park map (end page) to a suitable standard for NPWS management purposes.
- Maintain ministerial roads for access for relevant stakeholders in accordance with a memorandum of understanding with SFNSW.
- Allow public vehicular use of all public and park roads. Management trails are not available for public access (refer Park Map).
- Use, and with prior consent allow SFNSW to use, pushed up gravel from quarries in the planning area for maintenance of roads that provide strategic visitor and/or NPWS management access to the planning area.
- No other additional infrastructure will be provided in the planning area other than temporary minor storage facilities associated with park management works.

- Remove stumps in Mocking Bird quarry, bench the cliff and use the resulting gravel for roads in the planning area, and then close and rehabilitate.
- The Bears Road quarries will continue to be rehabilitated and the Connection Road quarry will be retained as a helipad for management operations.
- Determine the final classification of roads and trails within the 1 January 2003 addition to the park and the SCA.
- Seek to have the reserved road alignments in Portion 42 Parish of Beranghi added to the park.

10 PLAN IMPLEMENTATION

This plan of management establishes a scheme of operations for Kumbatine National Park and State Conservation Area. It will remain in force until amended or replaced in accordance with section 73B of the NPW Act. The plan is part of a system of management which includes the NPW Act, management policies, established conservation and recreation philosophies, and strategic planning at corporate, directorate and regional levels. The latter may include development of related plans such as regional recreation plans, species recovery plans, fire management plans and conservation plans.

Relative priorities for identified activities are set out in the table below. These priorities are subject to the availability of necessary staff and funds and to any special requirements of the Director-General or Minister.

The environmental impact of proposed activities will be assessed at all stages in accordance with established environmental assessment procedures. If the impacts of any activity proposed in this plan are found to be unacceptable, the activity will not be undertaken or be modified so as to comply with the environmental assessment.

- Undertake an annual review of progress in implementing this plan of management.
- Management programs will be implemented and managed in accordance with the principles of adaptive management and the precautionary principle.
- Undertake an assessment after 5 years of the effectiveness of managing the national park and state conservation areas in accordance with this plan and of the degree of success in achieving the plan's objectives and desired outcomes. Base the evaluation on the monitoring programs set out in this plan and any others that may be developed.

Table 6 Implementation Priorities (summary of strategies)

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.

Section	Activity	Priority	
4	CONSERVATION OF NATURAL AND CULTURAL HERITAGE		
4.1	SCENIC AND CATCHMENT VALUES, GEOLOGY AND SOILS		
	Liaise with relevant authorities to maintain water quality of catchments.	High	
	Maintain roads and trails to minimise erosion and maintain water quality.	High	
	Locate and design visitor facilities to minimise visual impact.	High	
	Any mining or exploration in the SCA has minimal impact.	High	
	Identify and restore areas of landscape disturbance where necessary	Low	
4.2	NATIVE PLANTS AND ANIMALS		
4.2.1	Native Plants		
	Undertake/encourage vegetation surveys for significant species.	Low	
	Maintain vegetation monitoring plots.	Medium	
	Protect native vegetation from visitor impacts, effects of introduced species and inappropriate fire regimes.	High	
	Implement relevant actions in the Priorities Action Statement for threatened species.	High	
4.2.2	Native Animals		
	Protect habitats from visitor impacts, introduced species and inappropriate fire regimes.	High	
	Encourage/undertake research on habitat requirements.	High	
	Encourage the retention of native vegetation on adjoining lands.	High	
	Implement relevant actions in the Priorities Action Statement for threatened species.	High	

Section	Activity	Priority
4.3	ABORIGINAL HERITAGE	
	Manage Aboriginal heritage in consultation with relevant Aboriginal community organisations.	High
	Provide information on cultural heritage to the Kempsey LALC and the Dunghutti Elders.	High
	Accurately map Aboriginal sites, and assess any threats.	Medium
	Undertake impact assessment for activities with the potential to damage Aboriginal heritage.	High
	Encourage further research.	Medium
4.4	HISTORIC PLACES	
	Continue to implement Pipers Creek Lime Kilns Plan of Management (1996) for the repair and maintenance of the kilns and other features.	High
	Review the plan to incorporate recent changes/works.	High
	Undertake conservation works on additional sites following professional investigation.	High
	Complete interpretation of Kiln I and its setting	High
	Provide a small carpark on Mill Trail and walking track to Kiln J.	High
	Provide a carpark and turning area on Bonnie Corner Road.	Medium
	Control vegetation threatening Kiln L and seek professional advice about its restoration and / or conservation.	High
	Undertake cultural heritage assessment prior to undertaking new works in the vicinity of the kilns.	low
	Encourage/ undertake research to locate other sites in the area. Develop conservation strategies for any new sites.	Low
	Monitor lime kiln sites and prevent further degradation.	Medium
	Encourage formation of community group to assist with the kilns area.	Medium
	Record saw mill sites and other associated features. Allow sites/clearings to naturally revegetate.	Medium
	Record on the NPWS historic register and fire plans the location of numbered and lettered trees and other cultural heritage sites.	Medium

Section	Activity	Priority
5	PARK PROTECTION	
5.1	SOIL EROSION	
	Design and undertake all works in a manner that minimises soil erosion.	High High
	Maintain roads and management trails to minimise soil erosion.	-
	Minimise erosion arising from prescribed fires and wildfires in fire planning and management programs.	High
5.2	INTRODUCED SPECIES	
5.2.1 & 5.2.2	Pest Plants and Animals	
	Undertake pest animal and plant control in accordance with the Regional Pest Management strategy.	High
	Conduct a survey of pest plant species.	Medium
	Seek the cooperation of neighbours in pest control programs. Undertake control in cooperation with authorities and stakeholders.	High
	Carry out opportunistic DNA sampling of dingo and wild dog populations. Assist in the preparation and implementation of a wild dog management plan.	Medium
	Remove and rehabilitate plantations of introduced species in accordance with the draft Northern Directorate strategy.	Low
5.3	FIRE MANAGEMENT	
	Implement the Fire Management Strategy for the planning area.	High
	Restrict heavy fire fighting machinery to existing roads and trails (including dormant trails).	High
	Participate in the Kempsey and Hastings Bush Fire Management Committees. Maintain contact/cooperation with others.	High
	Where appropriate, carry out fuel management with neighbours.	High
	Close planning area to public during periods of extreme fire danger.	High
	Maintain a network of road and trails for fire management as identified on Fig 1.	High
	Encourage research into ecological effects of fire in the planning area.	Medium

Section	Activity	Priority
6	EDUCATION AND RECREATION OPPORTUNITIES	
6.1	PROMOTION, INTERPRETATION AND EDUCATION	
	Prepare a planning area information brochure.	High
	Update the planning area brochure when the lime kilns are restored.	Medium
	Undertake Discovery activities to the lime kilns.	High
	Promote community understanding of planning area values and management.	Medium
	Maintain low key directional signage at major road junctions.	Medium
	Install entry signage on permitted and prohibited activities.	High
6.2	RECREATION OPPORTUNITIES	
	Manage the planning area for a low level of day use with minimal visitor facilities.	High
	Monitor visitor impacts.	Medium
	Encourage minimal impact recreation.	Medium
6.2.1	Day Use	
	Provide a small carpark, horse hitching rail and a gate on Mill Trail.	Medium
	Provide a carpark, turning circle and hitching rail at the intersection of Bonnie Corner Rd and Convict Rd.	Medium
	Permit fuel stoves only in the planning area.	High
6.2.2	Horse riding	
	Allow recreational horse riding only on roads and management trails as shown on the horse trail map and described in table 5.	High
	Allow sulkies on management trails east of Davis Rd by permit only.	High
	Permit the annual endurance event to use roads described in table 5 subject to annual consent and with appropriate conditions.	High
	Permit commercial horse riding groups subject to commercial operators licence and with appropriate conditions.	High
	Prohibit cross country riding and overnight camping with horses.	High
	Provide hitching rails at Convict Road and Mill Trail. Horses will not be permitted in the lime kiln area.	High

	Install appropriate signage to indicate permitted horse riding roads and trails in the planning area.	Medium
	Monitor impacts of horse riding on park values. If necessary develop carrying capacities. Temporarily or permanently close roads or trails to horse riding if unacceptable impact occurs.	Medium
	Develop cooperative agreements with horse riding groups to promote safe and low impact riding.	Medium
6.2.3	Vehicle access	
	Maintain Bears Road, (West of Davis Road) and Silo/Bonnie Corner Road to Convict Road to dry weather 2WD standard. Maintain other park roads to 4WD all weather standard (see Park Map).	High
	Gate Mill Trail from the carpark near kiln J and at the intersection of Bonnie Corner Rd near Goanna Rd.	Medium
	Maintain Ministerial roads and allow public vehicle use of Ministerial roads designated as park or public roads.	High
	Negotiate with the owner of the land through which the eastern end of Silo Road runs for continuing access.	High
	Negotiate with SFNSW regarding maintenance of Silo Road.	High
	Temporarily close roads and trails if necessary.	High
6.2.4	Walking	
	Provide short walking tracks to the lime kilns.	Medium
6.2.5	Cycling	
	Allow cycling on public roads, park roads and management trails.	High
	Prohibit cycling off road or trails.	High
	Monitor management trails for excessive erosion and other environmental impacts, and if necessary permanently close certain management trails.	Medium
6.2.6	Camping	
	Camping	
	Formal camping sites and facilities will not be provided in the planning area.	High
	Formal camping sites and facilities will not be provided in the planning	High High
	Formal camping sites and facilities will not be provided in the planning area. Permit remote camping in the planning area in accordance with the	

Section	Activity	Priority
6.3	COMMERCIAL AND GROUP ACTIVITIES	
	Permit appropriate commercial tours and group activities.	High
	Permit the existing annual endurance event. No new competitive sporting events will be permitted.	High
	Allow vehicle based tours on public roads, park roads and to the lime kilns via Silo/Bonnie Corner Road. Commercial 4WD tours will be permitted west of Old Rollands Plains on park and public roads.	High
	Permit commercial tour access to kilns J and K only when conservation works are completed.	High
7	RESEARCH AND MONITORING	
	Undertake/encourage research.	Medium
	Permit appropriate research by other organisations and individuals.	Medium
	Minimise the visual impact of research.	High
	Liaise with, and provide a copy of relevant findings to the Kempsey LALC.	High
	Record findings regarding Aboriginal heritage on the Aboriginal Heritage Information Management System (AHIMS).	High
	Continue monitoring of existing vegetation plots.	Medium
8	OTHER USES	
	Applications for mining or mineral exploration in the SCA will require environmental assessment by DMR and concurrence of the Minister for the Environment.	High
	Review the classification of the SCA every 5 years.	Medium
	Investigate the need to relocate apiary sites in the planning area.	Medium
	Permit maintenance of existing hive sites by mowing/slashing only.	High
	Monitor use of apiary sites, including any feral bee hives.	Medium
	Trail maintenance of Power Line trail and the easement will be the responsibility of the power provider.	High
	Liaise with the power provider to minimise any impact of the power line easement on the movement of the yellow-bellied glider and other fauna.	High
	Prohibit any new non-NPWS facilities in the planning area.	High

Section	Activity	Priority
9	NPWS MANAGEMENT FACILITIES AND OPERATIONS	
	Maintain park roads and management trails shown on the Park Map.	High
	Maintain ministerial roads in accordance with a MOU with SFNSW.	High
	Allow public vehicular use of public and park roads (refer Figure 1).	High
	Use, and allow SFNSW to use, pushed up gravel for maintenance of roads that provide strategic visitor and/or NPWS management access.	High
	No other additional park infrastructure will be provided in the park other than temporary minor storage facilities.	High
	Remove stumps at Mocking Bird quarry, bench the cliff and use the resulting gravel for roads in the planning area, then close and rehabilitate.	Low
	Determine the final classification of roads and trails within the January 2003 addition to the park and the State Conservation Areas	Medium
	Seek to have the reserved road alignments in Portion 42 Parish of Beranghi added to the park.	Low
10	PLAN IMPLEMENTATION	
	Undertake an annual review of implementation.	High
	Management programs will be implemented and managed in accordance with the principles of adaptive management and the precautionary principle.	High
	Assess effectiveness and success of the plan after 5 years.	Medium

11 ACRONYMS

AHIMS EP&A Act JAMBA	Aboriginal Heritage Information Management System <i>Environmental Planning and Assessment Act 1979</i> Agreement between the Government of Japan and the Government of Australia for the Protection of Migratory Birds and Birds in Danger of Extinction and their Environment (dated 6 February 1974)
NAHU	Northern Aboriginal Heritage Unit
NPW Act	NSW National Parks and Wildlife Act 1974
NSCABD	The National Strategy for the Conservation of Australia's Biological Diversity. Commonwealth Department of the Environment, Sport and Territories, Canberra
NPWS	NSW National Parks and Wildlife Service
PMP	Preferred Management Priority Mapping (SFNSW management tool)
RFA	Regional Forest Agreements
RLP Act	Rural Lands Protection Act 1998
RLPB	Rural Lands Protection Board
RTA	NSW Roads and Traffic Authority
SFNSW	State Forests of NSW
TSC Act	NSW Threatened Species Conservation Act 1995

12 GLOSSARY

Biodiversity	Biological diversity, namely the variety of life forms: the different
	plants, animals and microorganisms, the genes they contain, and
	the ecosystems they form. It is usually considered at three levels:
	genetic diversity, species diversity and ecosystem (TSC Act)

Bushfire hazard reduction work

The establishment or maintenance of fire breaks on land, by reduction or modification of available fuels within a predetermined area to mitigate against the spread of a bushfire. Fuel reduction may be achieved by the controlled application of appropriate fire regimes, manual removal, slashing, grazing or other means. Fuel modification is a manipulation of fuels (e.g. through lopping, chipping, crushing and mowing) to reduce their flammability (NPWS 2001)

- Bushfire Any fire in vegetation (NPWS 2001)
- Cultural heritage Encompasses past and present cultural associations of all people in Australia, including tradition, knowledge and customs. It can be tangible (i.e. have physical manifestations in the form of art, buildings etc.) or intangible (i.e. spiritual or social associations,

songs, stories and cultural practices). Cultural significance includes values that are social, spiritual, aesthetic, historic and scientific. When natural resources acquire meaning for a particular group, they become cultural resources as well. (AHC 1996, NPWS)

Ecologically sustainable use

	Using society's natural resources within the capacity of the species and ecosystems, so that the health, diversity and productivity of the environment and the ecological processes on which life depends are conserved and enhanced, and the quality of life, now and in the future, can be increased. (based on AHC 1996, NSCABD, NPWS 2000)
Ecotones	The boundary between two distinct ecosystems or communities, where species and elements of both are present.
Endangered	A species, population or ecological community that is listed in Schedule 1 of the <i>TSC Act</i> as in danger of becoming extinct (NPWS 2001)
Fauna	Any mammal, bird, reptile or amphibian. NPWS has responsibility for the conservation of fauna. Note this definition excludes fish or invertebrates. (NPW Act)
Feral species	A domesticated species that has become wild (NSCABD)
Fire authorities	Organisations (including land management authorities such as NPWS) vested by the <i>RF Act</i> with the responsibility to suppress fires. Under the <i>RF Act</i> , Fire management activities on NPWS reserves are the responsibility of NPWS (NPWS 2001)
Fire Management	Includes all activity associated with the use and control of fire in bushland designed to achieve stated objectives for the protection of life and property, and the maintenance of wildlife communities (NPWS 1989)
Fire management p	
	A plan of operations to prevent, detect and suppress unplanned fires and to reduce bushfire hazard, prepared by a Bushfire Management Committee, constituted under the <i>RF Act</i> for coordinated fire management and operations within a rural fire district.
Forest types	A system for classifying and mapping vegetation communities based on identifying the dominant or the most abundant commercial tree species from aerial photos. The then Forestry Commission of NSW developed and applied this system to the State Forests of NSW.
Geographic Information System (GIS) A computer-based system that allow very large amounts of data t be displayed and printed in map form. Data can be manipulated and interrogated in a variety of ways. Most GISs can also be used	

	to make predictions based on available information (e.g. potential distributions of rare and threatened species) (QPWS 2000).
Historic places	Landscapes, sites buildings or other works together with pertinent contents and surroundings and include structures, ruins, archaeological sites and areas (NPWS 1989)
Historic sites	Lands reserved as a historic site under the NPW Act (NPW Act)
Introduced species	A species occurring in an area outside its historically known natural range as a result of intentional or accidental dispersal by human activities. Also known as exotic or alien species. (NSCABD)
Ministerial roads	Road corridors through the park/ reserve which, although managed by NPWS, do not form part of the gazetted area of the park/ reserve. Typically the access to adjacent State forest or private land, these roads are vested in the name of the Minister for the Environment.
Park roads	Access roads, which form part of the gazetted area of a park/ reserve, maintained by the NPWS for public use primarily to access visitor facilities and points of interest.
Policy	A statement of attitude and courses of action, directed toward the attainment of the corporate goals and/or objectives of the Service (NPWS 1989)
Recovery plan	A document, prepared under the <i>TSC Act</i> , that identifies the actions to be taken to promote the recovery of a threatened species, or endangered population or ecological community. (NPWS 2001)
Regeneration	The recovery of natural integrity following disturbance or degradation. This can be achieved through totally natural processes or an assisted process, where human intervention (through removing weeds or planting seedlings) accelerates recovery (AHC 1996)
Rehabilitation	An obligation under the World Heritage Convention to restore degraded areas to naturally functioning ecosystems that can continue to support and pose no threat to World Heritage values (CERRA 2000)
Senesce	The loss of limbs from the canopy as a tree ages, creating hollows in the limbs or trunk. Most relevant for eucalypt trees, this indicates the tree has reached late maturity. (based on Peel 1993)
Wildling	A plant not transplanted to its growing site

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