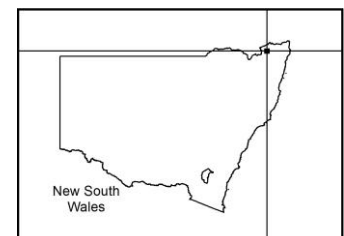




Plan of Management



Cataract National Park and State Conservation Area



**CATARACT NATIONAL PARK
AND
STATE CONSERVATION AREA

PLAN OF MANAGEMENT**

NSW National Parks and Wildlife Service

July 2013

This plan of management was adopted by the Minister for the Environment on 8 July 2013.

Acknowledgments

This plan of management is based on a draft plan prepared by staff of the Northern Tablelands Region of the NSW National Parks and Wildlife Service (NPWS), Office of Environment and Heritage.

NPWS acknowledges that these reserves are in the traditional country of the Jubullum – Bundjalung and Githabul People.

Cover photograph of the Clarence River looking into Cataract State Conservation Area, and grass trees, plants that epitomise the harsh Australian landscape. Photographs by John T. Hunter.

For additional information or any inquiries about this reserve or this plan of management, contact the NPWS Kyogle Area Office, 136 Summerland Way Kyogle NSW 2474 or by telephone on 02 6632 0000.

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FOREWORD

Cataract National Park and State Conservation Area are located 100 kilometres north-east of Tenterfield and cover a combined area of over 4000 hectares along the eastern escarpment of the Great Dividing Range.

Cataract National Park and State Conservation Area are rich in biodiversity and protect unique combinations of dry and wet rainforest communities and a number of threatened fauna species. They are part of a valuable regional wildlife corridor in the Clarence River catchment, and contain Aboriginal sites and places of significance.

The New South Wales *National Parks and Wildlife Act 1974* requires that a plan of management be prepared for each national park and state conservation area. A draft plan of management for Cataract National Park and State Conservation Area was placed on public exhibition from 28 October 2011 to 30 January 2012. The submissions received were carefully considered before adopting this plan.

The plan contains a number of actions to achieve the NSW 2021 goal to protect our natural environment, including the protection and monitoring of threatened and biogeographically significant species and communities, protection of water catchment values, and control and where possible eradication of introduced plants and animals. The plan also provides opportunities for bushwalking, cycling and horse riding.

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

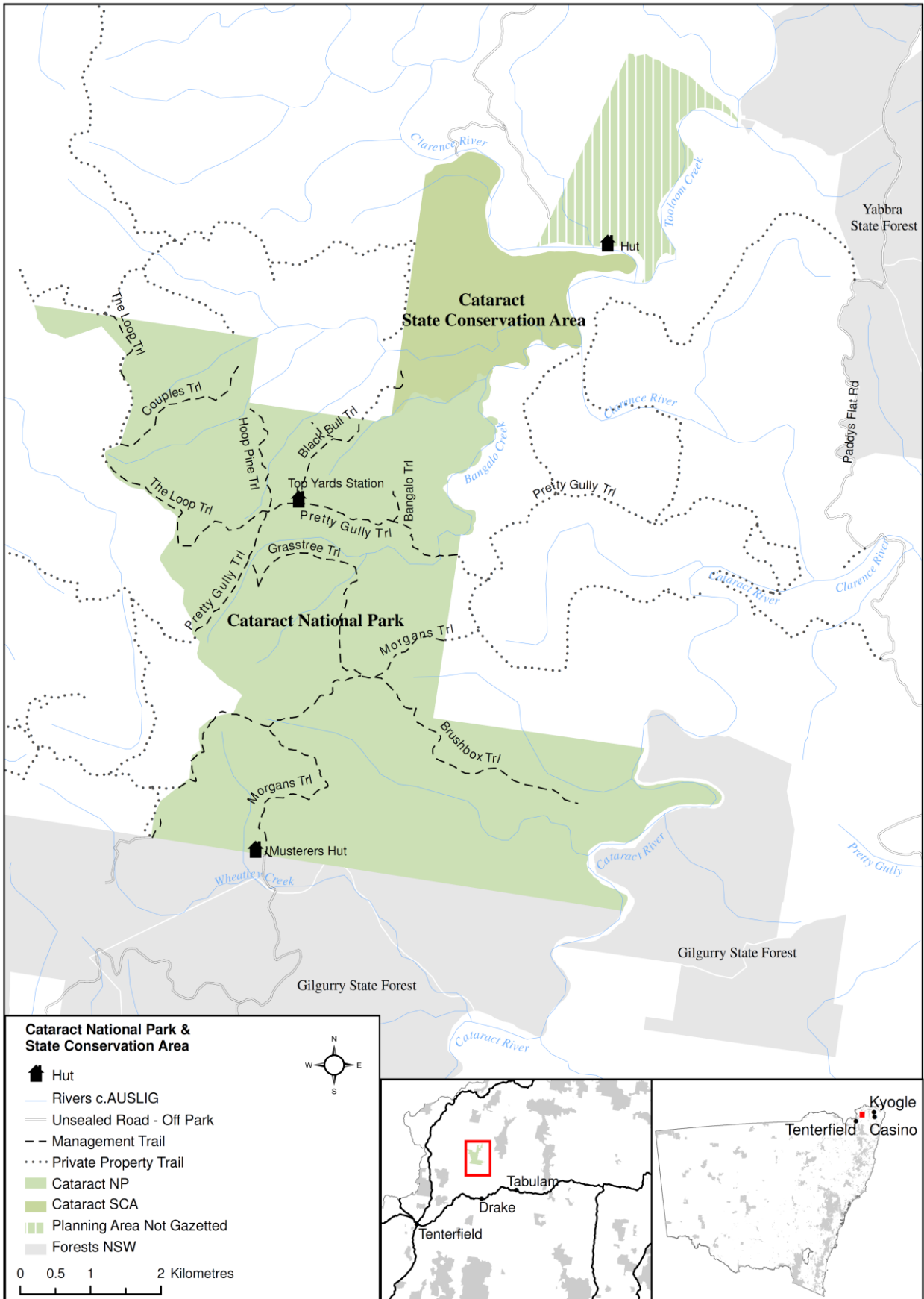


Robyn Parker MP
Minister for the Environment

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MAP 1. THE PLANNING AREA



1. LOCATION, GAZETTAL AND REGIONAL CONTEXT

This plan of management applies to lands reserved as Cataract National Park and Cataract State Conservation Area and those adjoining lands that have been acquired by the National Parks and Wildlife Service (NPWS) but not yet gazetted as part of the park or state conservation area. These lands and any future additions will be managed in accordance with the management principles outlined in this plan and will be referred to in this document as the 'planning area'.

The planning area is located approximately 100 kilometres north-east of Tenterfield, 50 kilometres north of Drake and 40 kilometres north-west of Tabulam in the north-east of NSW (refer to Map1). The planning area is accessed via Paddys Flat Road from the Bruxner Highway between Tabulam and Drake.

The planning area is comprised of three parcels of land, totalling approximately 4499 hectares. The main parcel of Cataract National Park (3458 hectares) was reserved in January 2003. Immediately north of this on the southern bank of the Clarence River, another parcel (572 hectares) was gazetted in August 2006 as Cataract State Conservation Area. A further 388 hectares of land has been purchased by NPWS (refer to Map 1), but is yet to be gazetted as additions to the park.

The planning area is a broad, large-scale landscape of vegetation along the eastern escarpment of the Great Dividing Range. It is rich in biodiversity and protects unique combinations of dry and wet rainforest communities and a number of threatened fauna species. The planning area contains places of significant cultural and heritage value relating to traditional Aboriginal and European use of the landscape.

The planning area is located within the NSW North Coast Bioregion. Other nearby reserves include Maryland, Yabbra, Tooloom, Boonoo Boonoo and Timbarra National Parks, Jubullum Flat Camp Aboriginal Area, and Demon and Captains Creek Nature Reserves. The planning area is surrounded by private property and State forest, and the region is becoming increasingly popular for plantation forestry.

The planning area is located within the administrative areas of the Tenterfield Shire Council, the Northern Rivers Catchment Management Authority and the Jubulum and Mulli Mulli Aboriginal Land Councils. The planning area is located adjacent to the Githabul Peoples native title determination and Indigenous Land Use Agreement of the 28th February 2007.

2. MANAGEMENT CONTEXT

2.1. LEGISLATIVE AND POLICY FRAMEWORK

The management of national parks and state conservation areas in NSW is in the context of the legislative and policy framework, primarily the *National Parks and Wildlife Act 1974* (NPW Act) and Regulation, the *Threatened Species Conservation Act 1995* (TSC Act) and the policies of the National Parks and Wildlife Service (NPWS).

Other legislation, international agreements and charters may also apply to management of the area. In particular, the *Environmental Planning and Assessment Act 1979* (EPA Act) may require the assessment and mitigation of the environmental impacts of works proposed in this plan. The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) also applies in relation to actions that may impact on threatened species listed under that Act.

A plan of management is a statutory document under the NPW Act. Once the Minister has adopted a plan, no operations may be undertaken within Cataract National Park and Cataract State Conservation Area except in accordance with this plan. This plan will also apply to any future additions to these parks. Should operations be proposed for Cataract National Park and/or Cataract State Conservation Area or any additions that are not in accordance with this plan, an amendment to this plan or a new plan will be prepared and exhibited for public comment.

2.2. MANAGEMENT PURPOSES AND PRINCIPLES

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 or tourist use and enjoyment.

Under the Act (section 30E), national parks are managed to:

- conserve biodiversity, maintain ecosystem functions, protect geological and geomorphological features and natural phenomena and maintain natural landscapes;
- conserve places, objects, features and landscapes of cultural value
- protect the ecological integrity of one or more ecosystems for present and future generations;
- promote public appreciation and understanding of the park's natural and cultural values;
- provide for sustainable visitor or tourist 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.

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 or tourist 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 (section 30G), state conservation areas 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 or tourist 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.

Land is reserved as a state conservation area primarily where mineral values preclude reservation as another category. The NPW Act requires a review of the classification of state conservation areas every five years in consultation with the Minister administering the *Mining Act 1992*. A review was undertaken in November 2008 in which the status of Cataract State Conservation Area remained unchanged.

In the long term it is intended for Cataract State Conservation Area to be added to Cataract National Park, and therefore management of the state conservation area will also be guided by the management principles for national parks as far as possible.

2.3. STATEMENT OF SIGNIFICANCE

The planning area is considered to be of significance for its:

Landscape/Catchment values

- Located within the Paddys Flat/Upper Clarence subcatchment at the junction of the Clarence River and Tooloom Creek with 4.5 kilometres of Clarence River frontage.

- The elevation ranges from around 100 metres to 900 metres above sea level with relatively steep and mountainous topography, dissected by tributaries to Bangalo Creek and Cataract River.

Biological values

- The variety of forest ecosystems includes small pockets of old growth tallwood, stringybark apple and bloodwood. There is also 30 hectares of rainforest.
- Several threatened species including the brush-tailed rock wallaby, rufous bettong, spotted-tailed quoll, Hastings River mouse, and parma wallaby.
- It is a valuable regional wildlife corridor in the Clarence River catchment area linking areas of largely intact contiguous forest.

2.4. SPECIFIC MANAGEMENT DIRECTIONS

This plan aims to conserve the natural and cultural heritage values of the planning area, while providing opportunities for low key ecologically sustainable visitor use. This will be achieved through the following:

- protection and monitoring of threatened and biogeographically significant species and communities;
- protection of Aboriginal and European heritage values and the involvement of local Aboriginal people in the management of these values;
- control, and where possible eradication of introduced plant and animal species;
- protection of water catchment values;
- management of fire to protect life and assets, and conserve biodiversity;
- provision of opportunities for recreation in a remote natural setting consistent with the protection of the areas natural and cultural values; and
- maintenance of relationships with neighbours and other organisations so as to enhance the protection and viability of the park.

3. VALUES

The location, landforms and plant and animal communities of an area have determined how it has been used and valued. Both Aboriginal and non-Aboriginal people place values on natural areas, including aesthetic, social, spiritual and recreational values. These 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, various aspects of natural heritage, cultural heritage, threats and on-going use are dealt with individually, but their inter-relationships are recognised.

3.1. GEOLOGY, LANDSCAPE AND HYDROLOGY

The topography is moderately sloping throughout the planning area. The landscape rises from the Clarence and Cataract Rivers to Mt Currawinya at an elevation of 900 metres above sea level towards the south-western boundary of the planning area. A series of creeks and drainage lines including Tooloom, Bangalo, Dinner Camp, Couples, Right-hand and Wheatleys Creeks flow east and south-east to the Clarence and Cataract Rivers.

Precipitous Paleozoic igneous granite and basalt up-lifts dominate the landscape, with heavy clay soils on slopes and ridges. Less heavy Quaternary alluvial and clay/loam soils are present on valley flats and lower areas (Hunter 2006).

The soils are very erodible throughout the planning area, largely due to the velocity of water flowing from the high elevations of Mount Currawinya and surrounding areas to the creeks and adjacent rivers. This is particularly evident along fire trails and previously cleared gullies.

3.2. NATIVE PLANTS AND ANIMALS

The planning area contains vegetation communities generally found along the lower altitudes of the eastern escarpment and associated foothills of the Great Dividing Range. These communities include river oak riparian forest, red grass grassland, river oak – red gum forest, rainforest, grey gum – ironbark forest, brush box – messmate forest, and ironbark – grey box forest, and small pockets of old growth tallowwood, stringybark apple and bloodwood (Hunter 2006).

To date a total of 437 vascular plant taxa from 108 families and 285 genera have been identified within the planning area. The dominant plant species include forest oak (*Allocasuarina torulosa*), grey gum (*Eucalyptus biturbinata*) and ironbark (*Eucalyptus crebra*) with an understorey of barbed-wire grass (*Cymbopogon refractus*), blady grass (*Imperata cylindrica*) and snow grass (*Poa sieberiana* var. *sieberiana*) (Hunter 2006).

There were no state or nationally listed threatened flora species found within the planning area. However two regionally significant species were recorded, *Solanum nobile* and *Acacia orites* (Hunter 2006).

Much of the planning area has been lightly and selectively logged, particularly the areas of dry rainforest that contain hoop pine (*Araucaria cunninghamii*). Prior to its gazettal most of the planning area was used for cattle grazing as part of 'Top Yards' station.

The vegetation of the planning area supports a multitude of wildlife, particularly macropods. The NPWS ATLAS of NSW Wildlife identifies 175 fauna species within and around the planning area. A comprehensive fauna survey of the planning area is yet to be conducted. A survey conducted on the neighbouring 'Currawinya' property revealed 194 vertebrate species, 30 mammal species and 13 threatened species (Jago 2006).

A number of animals listed under the *Threatened Species Conservation Act 1995* (TSC Act) occur, or are predicted to occur, in the planning area. The endangered brush-tailed rock-wallaby is known to occur in the eastern sector of the planning area, particularly along the Clarence River. The rufous bettong, which is listed as vulnerable under the TSC Act, is also quite common throughout the planning area and is often observed in the extensive grasslands.

Table 1. Threatened fauna recorded in or near the planning area.

Common name	Scientific name	Legal status*
Sooty owl	<i>Tyto tenebricosa</i>	Vulnerable ▲
Powerful owl	<i>Ninox strenua</i>	Vulnerable ▲
Barking owl	<i>Ninox connivens</i>	Vulnerable
Masked owl	<i>Tyto novaehollandiae</i>	Vulnerable ▲
Glossy black-cockatoo	<i>Calyptorhynchus lathami</i>	Vulnerable
Golden-tipped bat	<i>Kerivoula papuensis</i>	Vulnerable
Little bentwing-bat	<i>Miniopterus australis</i>	Vulnerable
Southern myotis	<i>Myotis macropus</i>	Vulnerable
Koala	<i>Phascolarctos cinereus</i>	Vulnerable # ▲
Yellow-bellied glider	<i>Petaurus australis</i>	Vulnerable
Rufous bettong	<i>Aepyprymnus rufescens</i>	Vulnerable
Brush-tailed phascogale	<i>Phascogale tapoatafa</i>	Vulnerable
Brush-tailed rock-wallaby	<i>Petrogale penicillata</i>	Endangered # ▲
Spotted-tailed quoll	<i>Dasyurus maculatus</i>	Vulnerable #

* Status under TSC Act

Denotes species also listed as nationally threatened under the EPBC Act.

▲ Has an endorsed recovery plan.

Source: NPWS ATLAS of NSW Wildlife and Jago (2006)

Many of these species are thought to rely on the planning area as a strong-hold between the more developed areas of the coastal fringe and the cooler areas of the Tablelands (Jago 2006). The planning area provides extensive habitat for large

predators such as spotted-tailed quolls and dingos (*Canis lupus dingo*). It also provides valuable habitat for species such as the brush-tailed rock-wallaby and rufous bettong that have special requirements, e.g. rocky north facing slopes with grassy understorey vegetation.

A number of key threatening processes (KTPs) are relevant to the management of flora and fauna in the planning area including:

- invasion of native plant communities by exotic perennial grasses;
- predation by the feral cat (*Felis catus*) and the European red fox (*Vulpes vulpes*);
- human-caused climate change; and
- high frequency fire resulting in the disruption of life cycle processes in plants and animals and loss of vegetation structure and composition.

The NSW *Threatened Species Priorities Action Statement* (PAS) has been prepared which outlines broad strategies and detailed priority actions to promote the recovery of threatened species, populations and Endangered Ecological Communities and to manage key threatening processes. Individual recovery plans may also be prepared for threatened species to consider management needs in more detail. Priority actions and recovery plans will be used to guide management of threatened species in the planning area.

3.3. IDENTIFIED WILDERNESS

2926 hectares within Cataract National Park has been identified as wilderness under the NSW *Wilderness Act 1987* (NPWS 2001). This is part of a larger identified wilderness covering neighbouring state forest, and leasehold and freehold lands.

Under the Wilderness Act, identified wilderness is a statement of values: it does not specify any management requirements. In contrast, land declared as wilderness must be managed for its wilderness values and certain higher impact activities are not usually permitted.

3.4. ABORIGINAL HERITAGE

Aboriginal communities have an association and connection to the land. The land and water 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, kinship systems and strengthening social bonds. Aboriginal heritage and connection to nature are inseparable from each other and need to be managed in an integrated manner across the landscape.

These reserves are in the traditional country of the Jubullum – Bundjalung and Githabul People. The planning area is located within the areas of the Jubullum Local Aboriginal Council, and the Mulli Mulli Local Aboriginal Land Council. The planning area is located adjacent to land subject to the Githabul People's native title determination and Indigenous Land Use Agreement.

Aboriginal sites are places with evidence of Aboriginal occupation or that are in some other way significant to Aboriginal culture. They are important as evidence of Aboriginal history and as part of the contemporary culture of local Aboriginal people. A preliminary Aboriginal and European cultural heritage study was conducted within the planning area. It identified possible sites and places of significance to Aboriginal people and their culture including numerous artefact sites and a large knapping or tool making site on the banks of the Cataract River (Hodder 2005).

A comprehensive Aboriginal cultural heritage survey of the planning area has not been completed.

While the Office of Environment and Heritage (OEH) has legal responsibility for the protection of Aboriginal objects and places, OEH acknowledges the right of Aboriginal people to make decisions about their own heritage. It is therefore policy that Aboriginal communities be consulted and involved in the management of Aboriginal sites, places and related issues and the promotion and presentation of Aboriginal culture and history.

3.5. EUROPEAN HERITAGE

Cultural heritage is the value people have given to items through their associations with those items. The NPWS protects and conserves the cultural and heritage landscapes located in NSW parks and reserves. Conservation involves identifying, assessing, protecting and maintaining the important cultural and heritage values of landscapes, resources, places and objects. In NSW, the protection and management of cultural heritage follows the principles and procedures of the Illustrated Burra Charter – Good Practice for Heritage Places (Marquis-Kyle & Walker 2004).

Neighbours of the park have provided information on past use of the planning area. They note the planning area was used for cattle grazing and timber harvesting from World War II until its reservation under the NPW Act. During this time, infrastructure such as huts, dams and yards were built. The planning area was also popular for gold mining, with evidence of past mining occurring at the junction of the Clarence River and Tooloom Creek.

'Top Yards Station', which is located at the intersection of Black Bull Trail and Pretty Gully Trail, comprised a hut, outbuildings, cattle yards, a large dam and water tanks. It is believed that this infrastructure was built in the early 1980s, however the outbuildings and yards were burnt in the 2003 wildfires. Little remains of this past infrastructure.

Musterers Hut, on the southern boundary of the planning area on Morgans Trail, is a small tin hut, which is in fair condition, adjacent to a small dam.

A more recent development (most probably in the 1990s) is a hut in the northern part of the planning area near the junction of the Tooloom Creek and Clarence River. This was built as holiday accommodation for the previous owners and is in fair condition.

Other types of infrastructure found in the planning area include the original timber post double fences historically used to isolate 'tick' affected quarantine areas. These fences were periodically checked by teams of men on horseback, called 'Tickies' from the Quarantine Department. It has been suggested by neighbours that Musterers Hut and Top Yards Hut are locally significant because they represent the semi-permanent camps built in the area in the 1900s and used by the 'Tickies'.

3.6. VISITOR USE AND RESEARCH

NPWS parks provide a range of opportunities for tourism and recreation and are visited by local residents and domestic and international tourists. The NPWS park system provides for both passive and active recreational pursuits.

The management of recreation and tourism in NPWS parks aims to ensure that visitors enjoy, experience and appreciate the parks while park values are conserved and protected. Visitor opportunities provided in the natural and undeveloped settings afforded by the NSW parks systems are generally those at the low key end of the spectrum. The provision of visitor opportunities offering a range of recreation experiences is a key goal for recreation planning across a region. The specific recreation opportunities provided at any one NPWS park depends on:

- the park or reserve's classification and associated management principles under section 30 of the NPW Act (refer to Section 2.2);
- consideration of the park's values in the context of the broader landscape;
- the level and nature of demand for particular tourism and recreation products; and
- management sustainability.

The planning area generally experiences low levels of visitation as it is surrounded by private property and State forest, limiting public access. Morgans Trail on Map 1, continues south on to State Forest and is a public road maintained by Forests NSW. The trail is steep and can be dangerous, especially after rain. NPWS does not use this trail for vehicle access due to the safety risk and for this reason it is not considered appropriate that public vehicles use this trail for access to the park either.

There are no visitor facilities provided in the planning area and current levels of visitation are centred on nature based recreation such as bushwalking, cycling, horse riding and bird watching.

The planning area is rich in threatened species and provides opportunities for research and monitoring. Previously, studies have been undertaken by university students and ecologists within the planning area on the endangered brush-tailed rock-wallaby. In 2008 fauna ecologist Russell Jago conducted a brush-tailed rock-wallaby survey in Cataract National Park. It was confirmed that the area opposite Big Fish Flat on the Clarence River supported a colony of rock-wallabies.

4. ISSUES

4.1. WEEDS AND PEST ANIMALS

Pest species are animals (including invertebrates) and plants that have negative environmental, economic and social impacts and are most commonly introduced species. Pests may have impacts across the range of park values, including impacts on biodiversity, cultural heritage, catchment and scenic values.

The control of all pest species within the planning area is undertaken in accordance with the NPWS Northern Rivers Regional Pest Management Strategy (OEH 2012). This strategy identifies appropriate control mechanisms and management strategies for all pest species throughout the Region. The strategy identifies feral cats, feral cattle, foxes and wild dogs as priority pest animal species for control within the planning area. Lantana (*Lantana camara*), Coolatai grass (*Hyparrhenia hirta*) and giant Parramatta grass (*Sporobolus fertilis*) and are the priority weed species identified in the strategy. Control of lantana is a priority in order to prevent bell miner associated dieback.

A total of 43 weed species have been identified in the planning area (Hunter 2006). This is relatively low in comparison to other NPWS parks on the NSW north coast. Most weed species within the planning area were not found in large numbers and were recorded infrequently. Lantana is the main weed species affecting the biodiversity and ecology of the planning area.

Lantana is a large flowering shrub native to Central and South America, originally brought to Australia as an ornamental garden plant. Lantana is a vigorous invader of disturbed areas, often forming dense thickets. It competes with native plants and excretes allelopathic inhibitors into the soil, retarding native plant growth and regeneration, altering habitat values and fire regimes, and impeding access. It is spread mainly by birds. Lantana occurs in coastal and eastern escarpment areas from Narooma to the Queensland border. It thrives in warm environments with high rainfall where the weed grows along forest edges, penetrates disturbed rainforest and invades open eucalypt woodlands and pastures. Lantana has been declared a noxious weed in NSW and is also listed as a Weed of National Significance.

Introduced animals, including the wild dog, European fox and domestic cat, cause damage to animal communities through predation and competition for food and shelter. In particular, these animals can significantly affect the populations of brush-tailed rock-wallabies and rufous bettongs.

Wild dogs, including dingos, are a declared pest under the *Rural Lands Protection Act 1998* (RLP Act) due to their impacts on livestock. NPWS therefore has a statutory obligation to control wild dogs on its estate. The dingo, however is also considered to be part of the native fauna of NSW, and certain areas of public land that provide high quality dingo habitat have been listed as dingo management areas in Schedule 2 of the Wild Dog Control Order made under the RLP Act. Cataract

National Park and State Conservation Area are not currently listed under this Schedule 2.

Cattle straying from neighbouring properties onto the planning area are an ongoing issue. Cattle impact the soil causing erosion and damage native vegetation. They are also a major source of weed translocation from adjacent weedy infestations.

Populations of feral pigs are a newly emerging issue in the planning area and on adjoining properties. 'Predation, habitat degradation, competition and disease transmission by feral pigs' is listed under the TSC Act as a Key Threatening Process. Strategic control of feral pigs is required in conjunction with neighbours and the New England Livestock Health and Pest Authority.

The overriding objective of the pest management strategy is to minimise adverse impacts of introduced species on biodiversity and other park and community values whilst complying with legislative responsibilities. NPWS prioritises its control programs to focus on those areas where the impacts are likely to be greatest.

4.2. FIRE

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.

There are three main property assets within the planning area as well as adjoining neighbour fencing that are threatened by fire. The main assets are the remains of Top Yards station, Musterers Hut on the southern boundary, and the hut near the junction of the Tooloom Creek and Clarence River.

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.

Before gazettal of the planning area, most of the area was burnt every two to three years to provide 'green pick' in rotation for cattle grazing. Since reservation of the national park and state conservation area most of the area has been frequently burnt, either by fires escaping from neighbouring properties or lightning strikes. Within the tall open forest communities, there is evidence of a dominant understorey of grasses suggesting that fires in these areas have been repeated in close succession. Even within the southern section of the planning area where closed forest occurs on a southerly aspect, fire has penetrated in recent history.

A separate (map-based) fire management strategy has been prepared for the planning area (NPWS 2006). The fire management strategy outlines the recent fire history of the planning area, key assets within and adjoining the planning area including sites of natural and cultural heritage value, fire management zones including strategic and land management zones and fire control advantages such as management trails and water supply points. Any hazard reduction and ecological

burning proposals and fire trail works are submitted annually to the Northern Tablelands Bush Fire Management Committee.

4.3. ISOLATION AND FRAGMENTATION

The area surrounding the planning area has been extensively cleared, which has resulted in a high loss of biodiversity and fragmentation of habitat in the region. Long term conservation of biodiversity depends upon the protection, enhancement and connection of remaining habitat across the landscape, incorporating vegetation remnants on both public and private lands. Nearby vegetated areas contribute to the habitat values of the planning area and provide ecological corridors to other vegetated areas. Maintaining the integrity of the remaining habitat within the planning area and, where possible, linking this to adjacent areas of vegetation to facilitate wildlife corridors is important in ensuring long term viability of the planning area's biological values.

4.4. CLIMATE CHANGE

Climate change has been listed as a key threatening process under the TSC Act. Projections of future changes in climate for NSW include higher temperatures, increasing sea levels and water temperatures, elevated CO₂, more intense but possibly reduced annual average rainfall, increased temperature extremes and higher evaporative demand. These changes are likely to lead to greater intensity and frequency of fires, more severe droughts, reduced river runoff and water availability, regional flooding and increased erosion.

Climate change may significantly affect biodiversity by changing population size and distribution of species, modifying species composition, and altering the geographical extent of habitats and ecosystems. The potential impact of climate change is difficult to assess since it depends on the compounding effects of other pressures, particularly barriers to migration and pressure from feral animals. Species most at risk are those unable to migrate or adapt, particularly those with small population sizes or with slow growth rates.

Programs to reduce the pressures arising from other threats, such as habitat fragmentation, invasive species, bushfires, pollution and urban expansion, will help reduce the severity of the effects of climate change.

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6. IMPLEMENTATION

Current situation	Desired outcomes	Management response	Priority*
<p>6.1 On-park ecological conservation</p> <p>The planning area supports a variety of forest ecosystems common to the Great Dividing Range. The rainforest and brushbox-messmate tall forest have been restricted in their distribution within the planning area by previous management practices (grazing and fire).</p> <p>The forests and woodlands of the planning area support a diversity of fauna including a number of threatened species such as the brush-tailed rock-wallaby and the rufous bettong. Knowledge about these and other threatened fauna species in the planning area is limited.</p>	<p>Native plant and animal species and communities are conserved.</p> <p>Structural diversity and habitat values are restored in areas subject to past disturbance.</p> <p>Landscape and catchment values are protected.</p> <p>The effects of climate change on natural systems are reduced.</p>	<p>6.1.1. Implement relevant actions in the Threatened Species Priorities Action Statement and recovery plans for threatened species in the planning area.</p> <p>6.1.2. Implement fire, pest and weed management programs to protect biodiversity values and increase the planning area's ability to cope with future disturbances, including climate change.</p> <p>6.1.3. Undertake vegetation surveys in new additions to the planning area.</p> <p>6.1.4. Undertake targeted surveys and monitoring for threatened flora and fauna species and communities/populations, particularly the brush-tailed rock-wallaby and rufous bettong.</p>	<p>High Ongoing</p> <p>High Ongoing</p> <p>Medium Ongoing</p> <p>Medium Ongoing</p>
<p>6.2 Cultural heritage</p> <p>The planning area is part of a landscape associated with the Jubullum – Bundjalung and Githabul Aboriginal people.</p> <p>The planning area has a history of Aboriginal use, grazing, and timber harvesting, and use as a Tick Station. Known sites include Aboriginal artefact sites and a large knapping site, and huts and other structures thought to</p>	<p>Aboriginal places and values are identified and protected.</p> <p>Aboriginal people are involved in management of the Aboriginal cultural values of the park.</p>	<p>6.2.1. Consult with and involve the Jubullum Local Aboriginal Council, the Mulli Mulli Local Aboriginal Land Council and the Githabul Corporation in the management of the planning area including management of Aboriginal sites, places and values and interpretation where appropriate.</p> <p>6.2.2. Encourage further research into the Aboriginal and historic heritage values of the planning area with</p>	<p>High Ongoing</p> <p>Medium</p>

Current situation	Desired outcomes	Management response	Priority*
<p>have been built in the 1980s and 1990s. The heritage value of the huts and other structures has not been assessed.</p> <p>Knowledge about Aboriginal and non-Aboriginal cultural heritage values within the planning area is limited.</p> <p>The main threat to cultural heritage is fire.</p>	<p>Historic features are identified and protected.</p> <p>Negative impacts on Aboriginal and historic heritage values are stable or diminishing.</p>	<p>the Jubullum and Mulli Mulli Local Aboriginal Land Councils, the Githubal Corporation and other relevant community organisations.</p> <p>6.2.3. Undertake an assessment of the significance of the buildings and structures within the planning area and develop historic heritage action statements for significant heritage items.</p> <p>6.2.4. Undertake asset protection works around cultural heritage sites in the planning area to mitigate damage from fire.</p>	<p>Medium</p> <p>High Ongoing</p>
<p>6.3 Visitor use and services</p> <p>There are limited opportunities for recreation within the planning area, because the planning area is surrounded by private property and State Forest. Morgans trail to the south of the park is considered an safety risk and will not be promoted as public vehicle access to the planning area.</p> <p>The provision of recreation within the planning area will be limited to recreational activities such as bushwalking, horse riding, camping and cycling.</p> <p>Park neighbours are an important component in the management of the planning area as it is surrounded by private property and state forest.</p>	<p>Visitor use is appropriate and ecologically sustainable.</p>	<p>6.3.1. Permit walking, cycling and horse riding on management trails within the planning area, and minimum impact bush camping. A trail by trail assessment of suitability and potential impacts (beneficial or negative) for cycling and horse riding will be undertaken before these uses are permitted.</p> <p>6.3.2. Public vehicle access will not be permitted in the planning area and no visitor facilities other than signs will be provided.</p> <p>6.3.3. Liaise with neighbours to encourage reporting of illegal activities occurring within the planning area.</p> <p>6.3.4. Access to trails may be restricted, or other mitigation measures implemented, if public use is shown to be introducing weeds or causing damage and erosion to trails, particularly after wet weather.</p> <p>6.3.5. Camping with horses is not permitted.</p>	<p>High Ongoing</p> <p>Medium Ongoing</p> <p>Medium Ongoing</p> <p>Medium Ongoing</p> <p>Ongoing</p>

Current situation	Desired outcomes	Management response	Priority*
<p>6.5 Weeds and pest animals</p> <p>The most significant weed species in the planning area are lantana, giant Parramatta grass and coolatai grass. Seasonal weed control programs are conducted within the planning area.</p> <p>Stray cattle are the main pest animal species within the planning area, whilst others include wild dogs, foxes, cats, deer and feral pigs.</p> <p>Cattle continue to stray onto the park causing soil compaction and soil erosion.</p> <p>Wild dogs and foxes prey on the threatened species in the planning area including the brush-tailed rock-wallaby.</p>	<p>Introduced plants and animals are controlled and where possible eliminated.</p> <p>Negative impacts of weeds on park values are stable or diminishing.</p> <p>Negative impacts of pest animals on park values are stable or diminishing.</p> <p>Pest control programs are undertaken where appropriate in consultation with neighbours.</p>	<p>6.5.1. Manage and monitor introduced species in accordance with the Regional Pest Management Strategy. Priority for ongoing control programs will be given to lantana, foxes, wild dogs and feral cattle.</p> <p>6.5.2. Develop and implement a five year Lantana Control Strategy for the planning area.</p> <p>6.5.3. Seek the cooperation of neighbours in implementing weed and pest control programs. Undertake control in cooperation with the New England Livestock Health and Pest Authority, Currawinya Landcare group, and Forests NSW.</p> <p>6.5.4. Install gates or grids at entrances to the planning area to prevent entry by straying cattle.</p> <p>6.5.5. Encourage the construction and maintenance of boundary fences to exclude cattle from the planning area. Fencing assistance may be provided in accordance with NPWS policy.</p> <p>6.5.6 Prepare and implement a site specific plan for the management of feral pigs.</p>	<p>High Ongoing</p> <p>High Ongoing</p> <p>High Ongoing</p> <p>High</p> <p>High Ongoing</p> <p>High</p>

Current situation	Desired outcomes	Management response	Priority*
<p>6.6 Fire management</p> <p>Fire is a natural feature of many environments but inappropriate fire regimes can lead to loss of particular plant and animal communities. High frequency fires have been listed as a key threatening process under the TSC Act.</p> <p>The Cataract National Park and State Conservation Area Reserve Fire Management Strategy was approved in 2006.</p> <p>The planning area has a history of being regularly burnt to encourage fresh 'green pick' for cattle.</p> <p>Within the planning area there are three structures which could be threatened by fire, including Top Yards station, Musterers Hut and the hut near the junction of Tooloom Creek and the Clarence River.</p> <p>The planning area contains fire sensitive rainforest and old growth forest communities.</p>	<p>Life, property and natural and cultural values are protected from fire.</p> <p>Fire regimes are appropriate for conservation of native plant and animal communities.</p> <p>Negative impacts of fire on natural and cultural heritage values are stable or diminishing.</p>	<p>6.6.1. Implement the Reserve Fire Management Strategy for the planning area.</p> <p>6.6.2. Participate in the Northern Tablelands Bush Fire Management Committee. Maintain coordination and cooperation with Rural Fire Service, Forests NSW and neighbours regarding fuel management, fire suppression and notification procedures.</p>	<p>High Ongoing</p> <p>High Ongoing</p>

Current situation	Desired outcomes	Management response	Priority*
<p>6.7 Infrastructure and maintenance</p> <p>Erosion is an ongoing issue for management trails within the planning area.</p> <p>Currently NPWS staff and contractors access the planning area through private property, as the constructed road formation is not on the road reserve.</p> <p>There are three huts in the planning area, two of which are in a very dilapidated condition.</p>	<p>Soil erosion is minimised.</p> <p>Water quality and health of planning area streams is improved</p> <p>Infrastructure and assets required for management purposes are routinely maintained.</p>	<p>6.7.1. Maintain the network of roads and management trails identified on Map 1, in accordance with NPWS Policies.</p> <p>6.7.2. Formalise an access agreement for vehicular access for management purposes with the neighbouring property of 'Currawinya'.</p> <p>6.7.3 The hut near the junction of Tooloom Creek and the Clarence River will be maintained as a remote hut for visitors and staff. Subject to a heritage assessment (see 6.2.3), the other huts may removed.</p>	<p>High Ongoing</p> <p>Medium Ongoing</p> <p>Low</p>

*** Priority**

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.

Ongoing is for activities that are undertaken on an annual basis or statements of management intent that will direct the management response if an issue that arises.