TOOLOOM NATIONAL PARK

PLAN OF MANAGEMENT

NSW National Parks and Wildlife Service

November 1999

This plan of management was adopted by the Minister for the Environment on 23rd November 1999.

Acknowledgments:

This plan is based on a draft plan of management prepared by staff of the NSW NPWS Lismore District, with the assistance of members of the NPWS District Advisory Committee.

Special thanks is extended to those members of the public who provided feedback on the draft plan.

Photograph of Tooloom rainforest by D. Charley.

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FOREWORD

The dedication of Tooloom National Park is part of a forestry and conservation reforms package which seeks, amongst other objectives, to protect forests of conservation significance in New South Wales. This plan of management fulfils a commitment by the New South Wales Government to prepare plans of management for the new national parks.

Tooloom National Park covers approximately 4390 hectares of the Koreelah Range which is one of a number of dominant volcanic features in upper north east New South Wales.

The Park has a rich diversity of vegetation communities which in turn has resulted in the number of species of mammals occurring within the Park being greater than for any other area of comparable size in Australia. The Park incorporates the former Tooloom Scrub Flora Reserve which is included on the World Heritage list as part of the Central Eastern Rainforest Reserves of Australia World Heritage Area.

The diverse vegetation communities have given rise to one of the richest fauna assemblages in Australia, with an exceptional variety of macropods and birds in particular. Consequently the Park is of high scientific value and has been used for scientific research for many years.

This plan of management recognises the conservation and research values of the Park. The plan aims to maintain these values by continuing to promote only low-key recreational use. Scientific research which provides information useful to the management of biodiversity in this and other nearby parks and reserves will be encouraged.

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

Bob Debus, MP
Minister for the Environment

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PART A: INTRODUCTION

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

Following exhibition of the Draft Plan of Management, the procedures for the adoption of a Plan of Management for a national park are:

- The Director-General refers the plan to the National Parks and Wildlife Advisory Council for their consideration and advice;

- The Director-General submits the plan to the Minister for the Environment, together with any comments or suggestions made from the Advisory Council; and

- The Minister may adopt the plan with or without alteration, or may refer the plan back to the Director-General and Advisory Council for further consideration.

A draft plan of management for Tooloom National Park was placed on public exhibition for three months closing on 2 November 1998, attracting 7 submissions which raised 8 issues. All comments received were referred to the Advisory Council for its consideration and advice. These comments, and those raised in the public submissions were in turn considered by the Minister before adopting this plan of management for Tooloom National Park.

No operations may be undertaken within Tooloom National Park except in accordance with this plan.

Additional information or inquiries on any aspect of this Plan may be obtained from:

Kyogle Area Office
NSW National Parks and Wildlife Service
Roxy Commercial Centre
Geneva Street (PO Box 174)
Kyogle NSW 2472

or phone (02) 6632 1473.

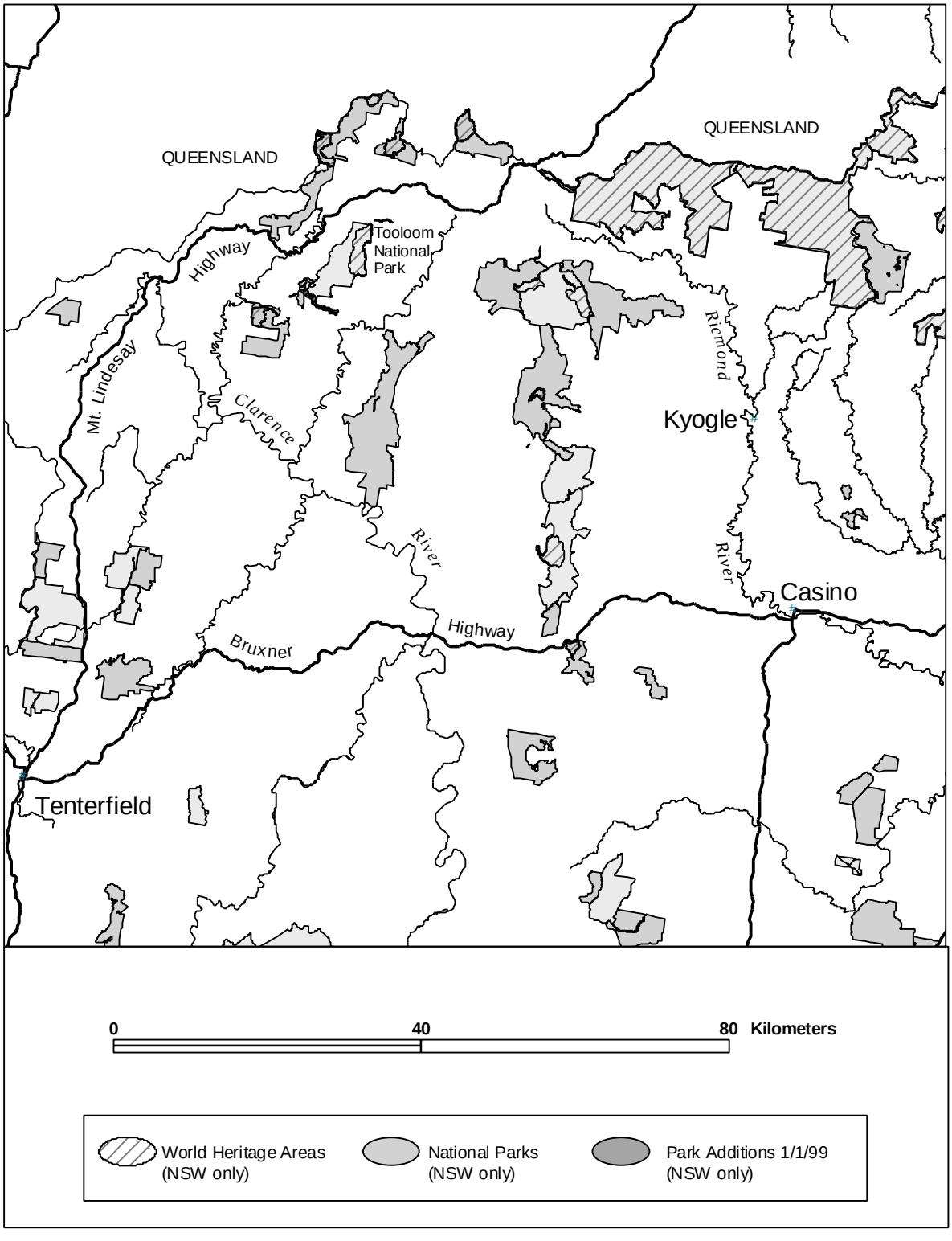

Figure 1: The Regional Setting for Tooloom National Park

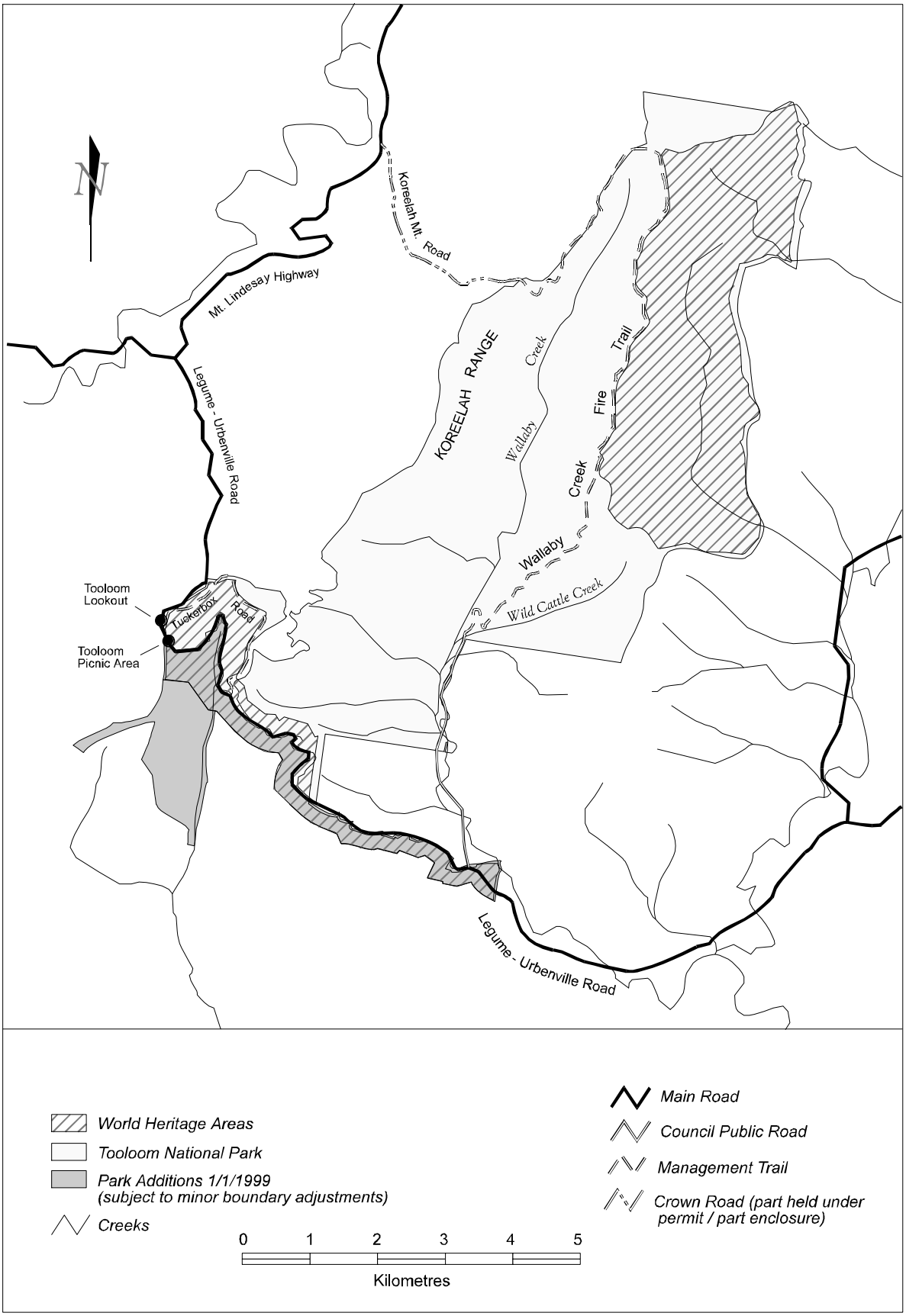

Figure 2: Tooloom National Park

PART B: MANAGEMENT CONTEXT

1. NATIONAL PARKS IN NEW SOUTH WALES

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

The International Union for the Conservation of Nature and Natural Resources (IUCN) - the World Conservation Union, in 1994 defined a National Park as:

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

2. TOOLOOM NATIONAL PARK AND WORLD HERITAGE LISTING

Tooloom National Park (referred to as "the Park" in this plan) encompasses an area of outstanding rainforest. Sections of the rainforest within the Park were previously dedicated as Tooloom Scrub Flora Reserve, with 705 ha. being dedicated under the *Forestry Act 1916* on 14 May 1937 and an additional 960 ha. on 26 September 1986. The Flora Reserve was included on the World Heritage list in 1994 as part of the "Central Eastern Rainforest Reserves of Australia" (CERRA). As from the 1 January 1999 the remaining section of the World Heritage listed Tooloom Scrub Flora Reserve (as it was previously known) was added to the Park, along with an adjoining section of State forest (refer to figure 2).

The CERRA property is significant for its outstanding examples of the earth's biological and geological evolutionary history, for its representations of ongoing geological processes and biological evolution, and for its provision of habitat for threatened species of plant and animals.

CERRA is a serial property, encompassing approximately 50 reserves between Newcastle and Brisbane. These are linked by their shared importance in conserving this region's globally significant rainforest. The Park is in the northern or border section of CERRA. In this vicinity, other CERRA reserves include (in NSW) part of: Captains Creek Nature Reserve; Toonumbar, Koreelah, Mount Clunie and Mount Nothofagus National Parks, and (in Queensland) Mount Barney and Main Range National Parks and Killarney State Forest.

The World Heritage values of the Park include:

- Large stands of hoop pine (*Araucaria cunninghamii*), an ancient and phylogenetically primitive conifer which represents the "Age of the Conifers" in the Jurassic Period;

- A concentration of primitive flowering plants originating in the Early Cretaceous which complements the centre of endemism in the Wet Tropics World Heritage property in far north Queensland;

- As part of the CERRA property, the most diverse assemblage of relict angiosperm taxa representing the primary radiation of flowering plants in the mid-Late Cretaceous;

- Subtropical rainforest, an analogue of the vegetation that was more widespread in the Late Cretaceous / Early Tertiary (the 'golden age' of flowering plants), which provides a unique record of evolution at the community rather than just the species level;

- A representation of aspects of the rise of modern dry-adapted floras;

- Outstanding examples of relict vertebrate and invertebrate fauna from ancient lineages linked to the break-up of Gondwana;

- Rainforest which provides an outstanding benchmark for the study of the ongoing evolution of plant and animal communities of Gondwanic origin;

- The principal habitat for many species of plant and animals of outstanding universal significance; and

- Many threatened species considered potentially vulnerable to extinction.

The International Convention for the Protection of the World's Cultural and Natural Heritage was adopted by the United Nations Educational, Scientific and Cultural organisation (UNESCO) in 1972. The World Heritage Convention provides a permanent legal and administrative framework for international cooperation and the collective protection of cultural and natural heritage of outstanding universal value. The Convention is designed to complement, aid and stimulate national initiatives, but not compete with them or take their place. The Convention clearly identifies that it is for each country to accept the responsibility for the conservation of it's own heritage.

The Convention provides for the listing of properties on the basis of cultural or natural heritage of outstanding universal value. CERRA represents a natural heritage of international significance because of its ancient and isolated reservoirs of a great variety of plant and animal species. The Central Eastern Rainforests Reserves of Australia were initially included on the World Heritage list in 1986 and extended in 1994. The other World Heritage properties are: Kakadu National Park, Shark Bay, Uluru - Kata Tjuta National Park, The Great Barrier Reef, Willandra Lakes Region, Tasmanian Wilderness, Wet Tropics of Queensland, Fraser Island, Australian Fossil Mammal Sites, the Lord Howe Island Group, Macquarie Island and Heard and McDonald Islands.

3. TOOLOOM NATIONAL PARK

3.1 REGIONAL SETTING, LOCATION AND DEDICATION

The Park is 10 kilometres southwest of Urbenville, in the County of Buller, Parishes of Beaury, Kangaroo and Mandle. It was previously part of Beaury State Forest, which was dedicated on 26 March 1913, and Tooloom Scrub Flora Reserve. The original section of the Park was gazetted on 22 December, 1995 and covers 3,980 hectares with a further addition of approximately 410 hectares having a commencement date of 1 January 1999 (refer to figure 2).

The Park and is located on the Koreelah Range, which is one of three almost parallel volcanic ranges extending south-west from the Focal Peak system whose main centre of eruption was nearby Mount Barney in south east Queensland. The Koreelah Range runs south from the McPherson Range.

Because the Park is located within a zone of overlap between two major biogeographic regions, the fauna of the Park are predominantly Torresian (subtropical) with some Bassian (temperate) species (Burbidge 1960). Torresian faunal assemblages are associated with the warm and wet habitats located on fertile soils while Bassian faunal assemblages are associated with cooler, drier habitats located on poorer soils. Many species occurring here are at or near the limits of their geographical range of distribution.

The Park contributes to a dramatic regional landscape of ranges, dissected plateaus and valleys. Surrounding land uses include forestry and agriculture. Accessible vantage points on the western side of the Park present views to Queensland, extending across to the Acacia Plateau and Wilsons Peak on the Great Dividing Range and Mount. Clunie and Bald Knob on the McPherson Range.

Given the Park's history of limited logging, fire and visitation it is relatively undisturbed and not the subject of significant threatening processes. Those processes which have a management implication for the Park are addressed later in this plan.

The Park is part of a system of protected areas in north eastern New South Wales and south eastern Queensland which includes Richmond Range, Mount Barney, Main Range, Border Ranges and Toonumbar National Parks as well as numerous State forests Flora Reserves and Forest Preserves.

The dedication of the Park, and the recent additions, form part of the State Government's forestry and conservation reforms package which seeks to protect forests of conservation significance in New South Wales.

The Park is in the NSW NPWS Kyogle Area Management Unit which forms the western part of the Lismore District.

3.2 NATURAL AND CULTURAL HERITAGE VALUES

3.2.1 Geology, topography, climate and soils

The Koreelah Range is composed of volcanic rock derived from the Focal Peak, a shield volcano which erupted in a series of massive flows 23 million years ago. Older sedimentary rocks of around 150 million years age belong to a formation known as the

Clarence - Moreton Basin and underlie the volcanic rock. Sedimentary rocks are exposed through natural erosion in the Wallaby Creek valley (Floyd 1979; Pugh 1982).

Elevation ranges from 400m to 1000m and a dissected landform results in a range of aspects and slopes. Plateau lands occur above 600m.

Regional climate varies with topography, aspect and distance from the coast creating a mix of warm sub-tropical and warm-temperate maritime conditions in the Park. The plateau lands generally experience greater rainfall (Pugh 1982) and more moderate temperatures than the surrounding valleys. Rainfall is variable but, on average, between 1000 and 1450 mm per year, with the majority associated with summer storm activity. (CMPS & F Environmental 1994). Urbenville, on the valley floor, records a mean monthly temperature range of 3-19^{o}C in winter and 15 - 31^{o}C in summer. Winter frosts are common in the valleys. Warm dry north-westerly winds prevail from August to October. Three creek systems drain the Park; Wallaby Creek, Rockhill Creek and Five Mile (Beaury) Creek. All three creeks form part of the headwaters of the Clarence River catchment and are of good water quality.

Fertile basalt-derived krasnozem and chocolate soils are found on the plateaus. Fine grained sedimentary deposits occurring on the eastern side of the Park have formed brown earths which have high levels of organic matter but vary in nutrient level. Poorer red and yellow earths occur at sites where sedimentary rocks have been exposed and leached by erosion (Austeco 1994a; Veness *et al.* 1994; Pugh 1986).

The diversity of topography and soils is responsible for creating a variety of micro-environments which support a range of vegetation and habitat.

3.2.2 Native flora

The Park is characterised by four broad vegetation types which reflect variations in geology, topography and climate. These are subtropical rainforest, dry rainforest, wet sclerophyll and dry sclerophyll forest. There are also 15 significant plants and plant associations in the Park.

Subtropical rainforest occurs in the Park where rainfall is high and krasnozem soils are deep. This is generally on the plateaus or the protected eastern and southern slopes (Pugh 1986; Floyd 1979, 1990). There are two subtropical rainforest associations in the Park. These are the black booyong (*Heritiera actinophylla)* and yellow carabeen (*Sloanea woollsii*) associations. The black booyong association is the dominant type of subtropical rainforest. The yellow carabeen association occurs as small stands in protected sites of high altitude, particularly in the headwaters of Five Mile Creek (Floyd 1979).

Common canopy species of these rainforest types include the giant stinging tree (*Dendrocnide excelsa*), pigeonberry ash (*Cryptocarya erythroxylon*), incense cedar (*Anthocarapa sp.*), giant water gum (*Syzygium francisii*), brown beech (*Pennantia cunninghamii*), rosewood (*Dysoxylum fraserianum*), native tamarind (*Diploglottis australis*) and strangler fig (*Ficus watkinsiana*) (Pugh 1986).

An area of subtropical rainforest is known as Tooloom Scrub. The name Tooloom was originally given to the township of Urbenville and 'Tooloom Scrub' initially referred to the entire forested area around the town (Pugh 1982). Tooloom Scrub later became the name of the State's first flora reserve in Beaury State Forest. It was dedicated in 1937 with large additions gazetted in 1986, following the Wran Government's Rainforest Decision. Tooloom Scrub Flora Reserve encompassed two separate areas of rainforest, both of which are now within the Park. Tooloom Scrub rainforest is of international significance, its conservation value having been recognised through its inclusion on the World Heritage list.

Two types of dry rainforest occur in the Park. A hoop pine (*Araucaria cunninghamii*) association occurs as small stands on the western slopes of Wallaby Creek on basalt soils and the eastern slopes on enriched sedimentary soils (Floyd 1979), and probably exists as a result of severe wildfires which occurred in 1915 and 1926 during periods of extreme drought (Floyd 1979). The second dry rainforest association is dominated by scaly myrtle (*Austromyrtus hillii*), brush bloodwood (*Baloghia lucida*) and scrub wilga (*Geijera latifolia*). This association exists on steep stony and dry slopes adjacent to dry sclerophyll forests.

Wet sclerophyll forest occurs in the Park adjacent to rainforest on soil derived from older sedimentary rock which has been enriched by the nearby basalts. These communities include brush box (*Lophostemon confertus*); Dunn's white gum (*Eucalyptus dunnii*); tallowwood (*E. microcorys*) - Sydney blue gum (*E. saligna*) association; Sydney blue gum, and white mahogany (*E. acmenoides*) - red mahogany (*E. resinifera*) - grey ironbark (*E. siderophloia*) - grey gum (*E. biturbinata*) association (Floyd, 1979).

Dry sclerophyll forest occurs in the Wallaby Creek valley where rainfall or soil nutrients and elevation are lower, and in some escarpment areas. There are six dry sclerophyll communities which reflect varying soil types and nutrient levels as well as fire frequency. These are forest red gum (*Eucalyptus tereticornis*); grey box (*E. moluccana*) - forest red gum association; forest red gum - grey gum -grey ironbark - rough-barked apple (*Angophora floribunda*) association; New England blackbutt (*E. campanulata*); grey ironbark - grey box association, and grey gum - ironbark - white mahogany association (Floyd, 1979).

It is the combination of the various forest types, from rainforest to dry sclerophyll forest, that provides the remarkable diversity of native fauna in the Park. Similarly the more open private property adjoining the Park adds to the diversity of habitat and is an integral component for the conservation of species diversity evident in the Park."

The Park contains forest which has not been harvested or silviculturally treated and constitutes old growth forest (SFNSW 1995). Old growth forest has been described as being *"regarded as an important conservation resource because of perceived ecological values related to age, structure and biodiversity in the presence of minimal disturbance, its perceived cultural and spiritual values which flow from these physical and biological attributes, and its increasing rarity in the face of industrialised society."* (NPWS, SFNSW and RACAC 1995).

3.2.3 Native fauna

The upper north-east New South Wales is of great zoological importance because of its unique fauna assemblages, high numbers of endemic and threatened fauna and over-wintering habitat for migratory species (Pugh 1986; NPWS 1994; RACAC 1996). The number of species of mammals occurring within the Park area in particular is greater than any other area of comparable size in Australia (Calaby 1966).

The diversity of fauna, and the relationships between environmental gradients and physiological tolerances is of scientific interest. Information generated from the study of species provides a greater understanding of community structure and biodiversity, and may assist in the conservation of populations and ecological processes (NPWS 1994).

Fauna surveys involving the Park have recorded no less than 13 species of snake, 10 species of macropod, 8 other species of mammal and 214 bird species. The area is of high scientific value because of this array of fauna, particularly with the exceptional variety of macropods and birds (Floyd 1979; RACAC 1996).

The significant faunal values noted above, as well as the values associated with the plants in the area's rainforests, are intrinsic to the World Heritage listing and status of the CERRA properties (NPWS 1994). Further discussion of World Heritage values of the Park is contained in section 2.

3.2.4 Culturally significant sites and places

The main Aboriginal community in the vicinity of the Park is Muli Muli, located 5km south of Woodenbong. Aboriginal people of Muli Muli have a strong affiliation with their surrounding landscape and forests including Tooloom National Park (SFNSW 1995).

Only limited archaeological surveys have been undertaken in the Park. Sites recorded include stone implements and holes in basalt screes where yams were once dug (Smith 1993). A small ring of a bora ground complex and a scarred tree have also been noted by Floyd (1979) as occurring in the vicinity but have not been verified. Other sites are likely to occur within the Park and may be revealed by future surveys. No mythological sites have been recorded in the Park.

Early exploitation of cedar in the Park area occurred from 1880, some years later than the coastal forests of upper north east New South Wales because of the remoteness of the area. European settlement of the area began in earnest around the turn of the century and focused on timber harvesting and saw milling. Beaury State Forest (incorporating the part which is now the Park) was dedicated as a State Forest on 26 March 1913. Northern sections of the Park were logged in the 1920s through until the 1940s. The sections of rainforest on either side of the Legume Road were formally protected as the State's first flora reserve in 1937. Timber harvesting and sawmilling outside the Park continues today but at a reduced scale.

No historic sites have been recorded in the Park.

PART C: MANAGEMENT OF TOOLOOM NATIONAL PARK

4. MANAGEMENT OBJECTIVES

4.1 GENERAL MANAGEMENT OBJECTIVES

The following general objectives apply to the management of Tooloom National Park. They are:

- The fulfilment of obligations under the World Heritage Convention, including the protection of World Heritage values;
- The protection and preservation of scenic and natural features;
- The conservation of wildlife;
- The maintenance of natural processes as far as is possible;
- The recognition and conservation of cultural values;
- The provision of appropriate recreation opportunities; and
- The encouragement of scientific and educational inquiry into environmental features and processes, prehistoric and historic features and park use patterns.

4.2 SPECIFIC MANAGEMENT OBJECTIVES

In addition to the general management objectives listed above, the specific management objectives for Tooloom National Park appear before the management strategies in section 5 of the plan . The management strategies serve to achieve the specific and general objectives.

The objectives and strategies are presented in three management categories, namely:

- Natural and cultural heritage management;
- Management of park use; and,
- Management operations.

5. STRATEGIES AND FRAMEWORK FOR MANAGEMENT

5.1 NATURAL AND CULTURAL HERITAGE MANAGEMENT

5.1.1 Geology, topography and soils

The Park is located on the Koreelah Range which is one of a number of ranges in the Focal Peak system. The physical attributes of the Park are described in section 3.2.1 and includes geology, topography, soils, climate and runoff.

Erosion occurs at natural levels within the Park except where there is localised disturbance, such as along the Wallaby Creek Fire Trail. The Park contains the headwaters of Wallaby, Rockhill and Five Mile Creek and protects their upper catchments.

The vegetated ridgelines and creek catchments within the Park show little impact from human disturbance and are the principle aesthetic features of the Park. The Park has an important landscape value because of its dominant position in the regional landscape.

Management objectives

- To protect water quality by maintaining stable soil conditions.
- To protect the Park's natural landscape values.

Strategies

i. Ensure management roads, fire trails and walking tracks are designed and maintained to NPWS standard to minimise soil erosion.

ii. Manage fire to maintain adequate vegetation to prevent, as far as is possible, accelerated erosion.

iii. Rehabilitate sites disturbed through management operations as soon as possible after use to minimise erosion.

iv. In all management operations, consider the impact on landscape values and act to minimise that impact as far as possible.

5.1.2 Native flora and fauna

The Park is an important part of a system of forested ranges extending south from Queensland and is unique for its gradations of dry sclerophyll and rainforest plant communities. To maintain this diversity, viable populations or particular habitat values, some vegetation associations may require active manipulation. Wet sclerophyll forest and grasslands are examples of this situation. Both will succeed to a different forest type in the absence of fire.

Other forest types may require a level of protection against disturbance in order to preserve their type within the Park. For example, isolated pockets of yellow carabeen rainforest would be threatened by wildfire under dry conditions. Fire should be managed accordingly.

Old growth forest is valuable for the maintenance of existing processes and natural ecosystems, habitat for species not found in regrowth forests and as a benchmark for scientific research (SFNSW 1995). Old growth forest therefore warrants individual attention when managing fire.

Specific relationships between flora and fauna in the Park are generally not well known, however, some species have been studied over a number of years including macropods and the satin bowerbird. Obtaining park specific information on species relationships is important in conserving a diversity of species, ecosystems and natural processes.

The CERRA property which includes part of the Park is significant for its outstanding examples of the earth's evolutionary history, for its representations of biological processes and for its provision of habitat for threatened species of plant and animals. These values apply to the entire Park, however the current World Heritage listing applies to only parts of the Tooloom Scrub.

World Heritage listing drives best practice management, however, the management of the biological features of the Park which are recognised as World Heritage values in most cases will differ little to the regular management of flora and fauna and natural processes which aims to maintain those features in a natural state. Management acknowledges the role of the Park as part of the larger CERRA property.

Management objectives

- To determine what species, populations and communities of flora and fauna occur in the Park.

- To conserve the internationally recognised World Heritage values of the Park.

- To ensure there is no decline in the natural diversity of flora and fauna species, populations and communities within the Park.

- To maintain natural ecosystems and processes in the Park.

Strategies

i. Where necessary, research the relationships between flora and fauna in the Park to establish specific management requirements. Investigate and plan for the appropriate use of fire to maintain the range of flora and fauna communities.

ii. Manage vegetation, which may involve the manipulation of plant communities, to:
- Maintain flora, fauna and natural processes which are part of the World Heritage values of the Park;
- Protect the Park from unnatural and unnecessary disturbance;
- Maintain floristic and structural diversity;
- Protect old growth forests;
- Conserve threatened or uncommon communities and species;
- Encourage regeneration of previously cleared or grazed land; and
- Maximise habitat values for native animal species, especially relict or threatened species.

iii. Undertake further research into what threatened species occur in the Park and, where appropriate, implement recovery plans for threatened species as these plans become available.

iv. Monitor the effects of park use and management on flora and fauna communities.

v. Update NPWS databases of flora and fauna species in the Park as further survey information becomes available.

vi. Liaise with neighbours and land use authorities to encourage a cooperative approach to flora and fauna conservation, especially with respect to the coordinated management of the World Heritage listed Tooloom Scrub Flora Reserve in Beaury State Forest adjoining the Park.

vii. Seek the inclusion of the whole Park on the World Heritage list.

viii. Monitor the health of World Heritage values.

5.1.3 Introduced plants and animals

An introduced species is defined as any plant or animal species not native to the Park. Introduced animals may impact on native fauna populations through predation or competition for food or shelter. Introduced or feral animals have not been surveyed in the Park. The Park has not been specifically surveyed for introduced or feral animals but other surveys have recorded feral animals in the area (Floyd, 1979). Those expected to occur include feral cats, dogs, foxes and stray cattle. Foxes could become better established if there is an intensification of dingo control, potentially leading to the loss of bettongs, potoroos and bandicoots (P. Jarman, pers. comm).

Several apiary sites are located in the Park. European honey bees potentially may compete with native bees and birds for nectar and pollen. Feral bee populations may also inhabit tree hollows which could otherwise be occupied by native species.

Weed species often compete with native plants and can be aggressive invaders of natural habitats rendering them unsuitable for fauna. The *Noxious Weeds Act, 1993,* places an obligation upon public authorities to control declared noxious weeds on land they occupy in order to prevent weeds spreading to adjoining lands. The NPWS also has a priority to control environmental weeds (not necessarily declared noxious) which threaten natural habitats. Although the extent of the weed problem in the Park has not been fully mapped, weed species known from the Park include lantana (*Lantana camara*), crofton weed*, (*Ageratina adenophora*), giant Parramatta grass* (*Sporobolus indicus var. major*), Japanese knot weed (*Persicaria capitata.*), Noogoora burr* (*Xanthium spp*), mist flower* (*Ageratina riparia*) and groundsel bush* (*Baccharis halimifolia*). (* = declared noxious weed under the *Noxious Weeds Act*).

Infestations of weeds in the Park generally occur in sites which have experienced disturbance such as logging, grazing or fire. There are extensive tracts of dense lantana invading dry sclerophyll forest. Infestations of weeds also occur where there is relatively minor but continuous disturbance, as is experienced on the road side. Giant Parramatta grass and crofton weed are common in this situation.

Fauna studies and NPWS observations have indicated that previously logged sclerophyll forests invaded by lantana and cleared areas colonised by native and exotic grasses provide habitat for threatened fauna including the black-breasted button-quail and black-striped wallaby. This dependency of native fauna on weed species must be considered within the context of weed management in the Park.

Management objectives

- To ensure the adverse impacts of introduced species of plants and animals on native flora and fauna, Aboriginal and historic sites, and landscapes in the Park are prevented or minimised.

- To meet obligations for weed control under the *Noxious Weeds Act, 1993.*

Strategies

i. Prepare a pest management plan for the Park and establish priorities in accordance with the criteria in the NPWS Lismore District Pest Management Strategy. The plan will target introduced plant and animal species which:
   - Have been declared noxious;
   - Threaten the integrity of significant native communities, communities of limited extent, communities which are not well represented or which contain threatened species and World Heritage values;
   - May affect neighbouring lands;
   - Have a high capacity for dispersal;
   - Are new isolated occurrences; and
   - May detrimentally affect Aboriginal or historic sites and landscapes.

ii. Seek the cooperation of other authorities and park neighbours in implementing pest species control programs.

iii. Investigate the relationship between certain fauna and their use of or dependency on disturbed habitats and implications for management of those relationships in the Park.

iv. Prohibit domestic animals entering the Park through appropriate fencing, consistent with NPWS policy on boundary fencing, and the provision of advisory signs at strategic locations.

v. Ensure an adequate level of fencing is provided to restrain cattle from entering the Park.

vi. Horse riding is not permitted in the Park except for authorised management purposes.

vii. Observe current policy with regard to European honey bee hives in the Park and investigate the locations of sites and their impacts and negotiate relocation where necessary. Vehicular access for apiarists will only be permitted during dry weather to avoid damage to management tracks within the Park. The possibility of relocating apiary sites to more readily accessible locations will be discussed with licensed apiarists.

5.1.4 Fire management

The pre-European fire history of the Park is not known and the traditional fire practices of Aborigines in NSW are generally poorly understood. Aborigines are likely to have had burning regimes which promoted new growth for grazing mammals and kept corridors open for travel. From research conducted elsewhere it appears that the present day frequency and intensity of fire may be different from traditional Aboriginal burning practices. In the past 20 years, only small instances of wildfire have occurred in three separate sites on the south-east boundary of the Park (SFNSW 1995).

Management of fire in the Park is an important and complex issue. Under *the Rural Fires Act, 1997* the NPWS is a fire authority and is responsible for containing fires in national parks. The NPWS aims to ensure fire does not escape from NPWS estate and cause damage to other land or property. The NPWS may also assist with the control and suppression of fire adjacent to NPWS estate.

The NPWS regards fire as a natural process, one of the abiotic factors of the Australian environment to which native plant and animal communities have adapted. The NPWS also has a responsibility to manage fire for the conservation of natural and cultural heritage under the *National Parks and Wildlife Act* and the *Threatened Species Conservation Act*. Generally a diversity of fire regimes is needed to maintain species diversity. The Park may require the use of fire to contain rainforest and maintain dry sclerophyll forest types. Some areas will require protection from fire (including old growth forest and World Heritage rainforest).

The NPWS will prepare a draft fire management plan for the Park. The fire management plan will adopt a zoning approach to provide for the appropriate protection of life, property and conservation values within and adjacent to the Park. The Fire Management Plan will examine existing access points and management trails and determine their suitability for fire management purposes and requirements for upgrading. The fire management plan will specify the fire regimes which are appropriate for each of the vegetation communities found in the Park and detail fuel management and prescribed burning requirements.

Management objectives

- To minimise the risk of bushfire damage to life and property both within and immediately adjacent to the Park.

- To ensure bushfires do not threaten the protection and conservation of natural and cultural heritage values in the Park.

- To encourage effective and cooperative working relationships with neighbours and other relevant fire management agencies.

Strategies

i. Prepare a fire management plan for the Park which will detail life, property and natural and cultural resource protection principles, fire management zones, strategies and programs, cooperative arrangements and fire trail network requirements.

ii. Manage fire in accordance with the plan to ensure the:
- Protection of human life and property within and adjacent to the Park;
- Conservation of rare, endangered and biogeographically significant plant and animal species and communities;
- Maintenance of plant and animal species and communities through the provision of fire regimes compatible with their conservation; and,
- Protection of Aboriginal sites, historic places, visitor facilities and management structures.

iii. Consult the local Aboriginal community in relevant aspects of fire management planning.

iv. Encourage research into the ecological effects of fire in the Park, particularly the fire response of rare and threatened flora and fauna species, rainforest and wet sclerophyll forest and grasslands which support macropods, bristlebirds and other species, and the impacts of fire on items of cultural heritage. Incorporate findings into the fire management plan and any fuel reduction programs.

v. Maintain close contact and cooperation with volunteer rural fire brigades, Council fire officers and State Forests of NSW in the suppression of wildfires and continue to actively participate in the Tenterfield District Bush Fire Management Committee.

vi. Develop and implement a public liaison and neighbour education program to foster awareness of the NPWS objectives and management with respect to fire in the Park.

vii. Co-operate, as far as possible, with neighbours in fuel reduction activities for mutual protection. Encourage neighbours, land use planning authorities and private developers to incorporate boundary fire breaks and other fuel reduction measures where necessary on lands adjacent to the Park.

viii. Rehabilitate areas disturbed by fire suppression operations as soon as practical after the fire.

ix. Maintain records and update NPWS databases and maps for all fire events.

x. Undertake an on-going review of the impact of prescribed burning on vegetation composition and structure.

xi. Modify programs to minimise adverse impacts where appropriate.

5.1.5 Culturally significant sites and places

Cultural heritage covers all aspects of indigenous and non-indigenous histories. It comprises important components of the environment that may have historic and social significance to present and future generations and include sites, landscapes and natural heritage. Archaeological sites are important to Aboriginal communities as they are a testament to their culture's great antiquity. Aboriginal people may also have traditional spiritual links with a landscape and the natural heritage of an area and hold knowledge which is important for nature conservation.

While the NPWS has legal responsibility for the protection of Aboriginal sites it acknowledges the right of Aboriginal people to make decisions about their own heritage. It is therefore policy that Aboriginal communities be consulted about decisions regarding the management of Aboriginal sites and related issues in NPWS estate and how the Aboriginal culture and history of an area controlled by the NPWS will be promoted and presented.

Management objectives

- To conserve Aboriginal sites and culturally significant landscapes and natural heritage features through cooperation with the local Aboriginal community.

- To support the ongoing survey and recording of archaeological sites, landscapes and natural heritage features which are culturally significant.

Strategies

i. Develop a collaborative relationship between the NPWS and the local Aboriginal community with regards to the management of Aboriginal heritage and interpretation of Aboriginal sites and other cultural values in the Park.

ii. Review interpretative programs in collaboration with the local Aboriginal community and provide the community the right to alter elements of such work if aspects are found to be culturally inappropriate.

iii. Liaise with the local Aboriginal people concerning the maintenance of traditional links with the land.

iv. In consultation with the local Aboriginal community determine and provide for the appropriate protection of sites which may be involved in traditional use.

v. Precede all management operations which involve soil disturbance in previously undisturbed areas with an assessment of potential impacts on cultural values in consultation with the local Aboriginal community.

vi. Where necessary develop conservation plans for sites and relicts of high significance in consultation with the local Aboriginal community.

vii. Information concerning the location of Aboriginal sites will be restricted except where the agreement of the Local Aboriginal Land Council and other relevant Aboriginal community organisations has been obtained.

viii. Undertake further archaeological and historical surveys in the Park and record in an appropriate manner additional sites or places identified. Encourage the research of anthropological and oral histories.

ix. Where necessary, develop conservation plans for sites of high historical significance.

5.2 MANAGEMENT OF PARK USE

Certain public uses are appropriate in the NPWS estate provided they do not conflict with the primary purpose of conservation and are consistent with the objectives and strategies of this plan of management. The major categories of use that are appropriate in this instance are:

- environmental education and promotion of natural and cultural heritage conservation;
- involvement of the public in aspects of management;
- passive recreation in designated natural settings;
- research; and
- management operations by the Service and other authorities with statutory responsibilities in the area.

Visitation is low and is expected to remain so for the life of this plan. Current visitor facilities adequately cater for the present visitor numbers.

5.2.1 Promotion and Interpretation

Interpretation and environmental education programmes are an important responsibility of the NPWS and assist in the protection of natural and cultural features on NPWS estate.

Promoting public awareness of NPWS conservation responsibilities, the values of an area and recreational opportunities is a major aspect of visitor management within a park. It assists in ensuring appropriate behaviour and increases the enjoyment and satisfaction of visitors.

The promotion of the Park and interpretation of it's values can assist in increasing awareness and appreciation of heritage values in other parks. Other parks which may benefit from the promotion of natural and cultural values and conservation responsibilities in the Park include Boonoo Boonoo, Bald Rock, Richmond Range and Toonumbar national parks, Mount Barney National Park in Queensland and World Heritage listed State Forest Flora Reserves.

The World Heritage listing of Tooloom Scrub is an important aspect of visitor education in the Park. The promotion of Tooloom Scrub provides an important opportunity for the interpretation of World Heritage values and may assist in raising awareness of the

importance of this and nearby World Heritage areas to visitors. An existing circular walking track through the rainforest affords an excellent opportunity for interpretation.

At present, promotional material concerning Tooloom National Park is limited to a park brochure and off-park interpretative displays. These displays are located at the villages of Urbenville and Woodenbong. The promotional value of the off-park interpretation will be complimented by on-park interpretation.

Promotion of the Park also includes raising the awareness of the local community, neighbours, Council and other government authorities about park management programs.

Management objectives

- To raise public awareness and appreciation of the Park's natural and cultural values, including World Heritage values.
- To raise public awareness of appropriate uses and management of the Park.
- To promote the cultural heritage values of the Park in a way which is culturally acceptable and in consultation with the local Aboriginal community.
- To provide interpretative materials in keeping with the conservation objectives of the Park.

Strategies

i. Provide an interpretive display as part of the Tooloom Picnic Area. Interpretative signs will be provided along the rainforest circuit walk to enhance visitor appreciation of the diversity and evolution of the rainforest.

ii. Liaise with park neighbours and other relevant community groups regarding management of the Park.

iii. Utilise appropriate opportunities for Park promotion, including the media and newsletters.

iv. Interpretive signage and other promotions will be used to enhance the understanding of the World Heritage status and significance of Tooloom Scrub.

5.2.2 Recreation Opportunities

The upper north east New South Wales national parks are recognised as an important part of the tourism potential of the area. Inland parks, such as Tooloom National Park, in particular offer a visitor experience alternative to mainstream beach related activities (NOREDO 1995). A network of rural roads make the Park accessible from a number of towns including regional centres in Queensland, however, given the relatively remote location of the Park visitation is low.

The Park provides opportunities for bushwalking, bird-watching, photography, picnicking and nature study. These activities when properly managed are consistent with the primary objective of conservation of the Park's significant World Heritage natural values and cultural values. This opportunity for passive recreation compliments more active types of recreational opportunities available in other national parks, State forests and private lands of the area.

Vehicle access to the Park is via the Urbenville to Legume Road, which is a sealed road. Picnic facilities, a lookout and walking tracks are provided at the Tooloom picnic area. At the picnic area pit toilets, a shelter and barbecues are provided. The lookout walking track is 200m in length while the rainforest circuit track is 500m in length. Both tracks commence from the Tooloom picnic area.

Tuckerbox Road provides access to the pine plantations east of Tooloom picnic area, but provides little in the way of worthwhile 4wd opportunities. The northern section of the road is within the Park while the southern section forms a corridor of State forest linking the pine plantations to the Urbenville to Legume Road.

The section of Tuckerbox Road in State forest is particularly hazardous to 4wd users when wet and has the potential to cause environmental degradation through erosion. It may be environmentally beneficial to allow State forests of NSW to access the plantation through the Park in preference to the southern section of Tuckerbox Road. NPWS will need to enter into negotiations with State Forests of NSW to provide a locked gate at the southern end of Tuckerbox Road. NPWS will gate that section of the road within the Park.

There is legal access to the Park from Koreelah Mountain Road, however, the track is only suitable for 4wd vehicles and the adjoining landholder has a locked gate on the Mt Lindesay Highway frontage.

Bush camping is permitted in the Park, however, campers are not permitted to camp in the picnic area. Bush camping is required to be of minimal impact, out of view and to have no open fires.

As stated in section 5.1.3 horse riding is not permitted in the Park except for authorised management purposes, such as removing stray stock. Recreational horse riding will not be permitted.

The NPWS is currently undertaking a recreation strategy for all protected areas in the Northern Region. A series of maps showing Recreation Management Zones has only recently been produced, but with the recent additions to the Service estate in the area surrounding Tooloom NP, the opportunities for recreation will need to be re-examined. The provision of camping facilities in the Park is not considered appropriate during this planning period, however, the provision of relatively low key camping facilities somewhere on Service estate in the western section of the Kyogle Management Area may be appropriate.

Management objective

- To provide for public enjoyment of the Park which is consistent with the protection and conservation of natural and cultural heritage values and World Heritage values.

Strategies

i. Confine the picnic area and carpark at Tooloom Picnic Area to the existing cleared site. Within this area additional picnic facilities may be provided. Carparking capacity will remain unchanged.

ii. Construct a public viewing area at Tooloom Lookout with access to the picnic area via the existing walking track.

iii. Maintain the existing rainforest loop walk at Tooloom Picnic Area to a minimum of the NPWS class 2 track standard.

iv. Bush camping is permitted anywhere in the Park except within, or in the sight of, Tooloom Picnic Area, the rainforest circuit track, Tooloom Lookout and public roads.

v. Garbage bins will not be provided. Signs will be erected at Tooloom Picnic Area advising visitors to remove their rubbish from the Park.

vi. Open fires are only permitted in fireplaces provided at Tooloom Picnic Area. Open fires are prohibited throughout the remainder of the Park. Fire places will be serviced with timber by NPWS.

vii. Public vehicular use of Wallaby Creek Fire trail is prohibited because of the damage that a small amount of traffic can cause to the trail surface, especially when wet.

viii. The NPWS will gate that section of Tuckerbox Road within the Park and enter into negotiations with State Forests of NSW to gate that section within State Forest. As part of these negotiations access may be provided through that section of Tuckerbox Road within the Park to access the pine plantation with the objective of minimising environmental damage.

ix. A locked gate will be placed on the Wallaby Creek fire trail at the Park boundary. Walkers can proceed beyond the gate to see the views and rainforest. No visitor facilities will be provided at this site.

5.2.3 Research and Monitoring

The scientific and natural values of much of the Park were recognised from 1937 when the Tooloom Scrub Flora Reserve was gazetted. Between 1983 and 1994 the NPWS identified a number of rainforest and other forest areas in upper north east New South Wales as having particular scientific value. Recently the State Government's forestry reforms package established Tooloom National Park. This was primarily to preserve its scientific, natural and cultural values for future generations.

The Park has a history of scientific use and is well regarded for bird and mammal studies. Scientific investigations undertaken in the Park prior to it's dedication are detailed in Appendix C.

Scientific study provides an opportunity to improve understanding of natural and cultural values and the processes which affect them. Data generated from research may establish requirements for conservation management.

Potential research topics which will provide information useful to the Park's management include:
- Updated baseline assessments of flora and fauna;
- Fire regimes and habitat and fire response of plant and animal communities.;
- Impact of fire management operations on plant communities and fauna populations;
- Examination of the effects of fire on Aboriginal sites and values;
- Potential for habitat enhancement;
- Status and impact of introduced plants and animals on natural heritage values;
- Monitoring of pest species control programs;
- Archaeological survey of areas previously unsurveyed;
- Oral histories and anthropological studies;
- Dependency of native fauna on introduced plant species, specifically lantana thickets; and,
- Monitoring of management impacts on natural and cultural heritage values.

Management objectives

- To encourage appropriate scientific research which will assist in the management of natural and cultural heritage values.

- To monitor Park use and management and its impacts on the scientific, natural and cultural values of the Park.

Strategies

i. Prepare and distribute a prospectus of priority research topics to relevant tertiary institutions.

ii. Ensure all research undertaken in the Park complies with NPWS policies.

iii. Promote community involvement in research.

iv. Develop and implement a monitoring program which examines the impacts and effectiveness of key management activities (eg. fire and pest species management, threatening processes, threatened species conservation, and visitor use).

v. Vehicular access on the management track system within the Park may be permitted for appropriate research activities. Access will only be permitted when the tracks are dry and not liable to damage or erosion.

5.3 MANAGEMENT OPERATIONS

The Kyogle Area office and workshop provide for the day to day administration of park management operations and community information.

Facilities required for NPWS management of the Park already exist and are a legacy of former State Forests of New South Wales management. These facilities include Tuckerbox Road, Wallaby Creek Fire Trail, Tooloom Lookout, Tooloom Picnic Area and walking tracks. Some internal and boundary fencing exists.

Existing facility type and location is generally adequate to manage the Park and it's heritage values and provide for visitor needs. However, some upgrading to NPWS standard and minor redevelopment is required.

The eastern half of Tuckerbox Road and the trail leading into the SFNSW pine plantation enclave are excluded from the Park (refer to figure 2). The western section of Tuckerbox Road is within the Park. The NPWS made an informal undertaking to SFNSW upon dedication of the Park to maintain the western half of Tuckerbox Road as an alternative wet weather access to the plantation. Tuckerbox Road has a natural earth surface which is prone to damage during wet weather.

No rubbish bins will be provided at the Tooloom Picnic area and lookout. Visitors are responsible for removing their own rubbish from the Park. Firewood for the barbecues will be provided.

Management objectives

- To provide park infrastructure which facilitates the management of the Park.

- To undertake management operations necessary to protect the park's natural and cultural values.

Strategies

i. Maintain Wallaby Creek Fire Trail for NPWS management operations, upgrading trails to NPWS standard where necessary.

ii. Maintain locked gates at each end of the Wallaby Creek Fire Trail on the park boundary to prevent unauthorised use. Only NPWS and emergency service vehicles will be permitted.

iii. Maintain Tuckerbox Road under a joint arrangement with SFNSW as access to the pine plantation. Install locked gates at points of access from Legume Road to prevent unauthorised use.

iv. Only allow the construction of additional management trails in the following situations for the:

-protection of life and property, such as during emergency operations;

-realignment of an existing track to a more environmentally acceptable location; any such works will be subject to necessary environmental and archaeological assessment and planning approvals;
-protection of specific natural and cultural resources.

v. Close and rehabilitate management trails constructed for emergency purposes as soon as possible after use.

vi. Issue keys for locked gates to authorised users and relevant emergency services.

vii. Signpost fire trails and management roads.

viii. Continue to advise visitors, through appropriate signage and interpretation, to remove their rubbish from the Park.

ix. Erect advisory signs concerning park regulations in appropriate locations.

x. Encourage and, where necessary, facilitate the erection of boundary fencing as necessary in consultation with park neighbours.

PART D: PLAN IMPLEMENTATION

This Plan is part of a system of management developed by the NPWS. The system includes the NP&W Act, the NPWS Corporate Plan, field management policies, established conservation and recreation policies, and strategic planning at corporate, Regional and District levels.

The implementation of this plan of management will be undertaken within the annual programs of the NPWS Lismore District. Priorities are subject to ongoing review within which works and other activities carried out in Tooloom National Park are evaluated in relation to Regional and District priorities, specific requirements of the Minister for the Environment or Director-General NPWS and the objectives set out in this Plan.

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

In accordance with section 81 of the NPW Act, this Plan shall be implemented by the Director-General and operations which do not comply with the Plan will not be permitted in the Reserve. This Plan can be amended in accordance with Section 75 of the Act.

As a guide to the implementation of this Plan, priorities for identified strategies are provided below. Priorities are based on:

High Those strategies which are imperative to the achievement of the management objectives set out in this Plan and/or which need to be implemented in the near future on the basis that to not undertake the work will result in:

- unacceptable degradation of the natural and cultural values or physical resources of the planning area;
- contribute significant additional cost associated with rehabilitation at a later date, or
- present an unacceptable risk to public safety.

Medium Those strategies that are necessary to achieve the management objectives set out in this Plan, but will be undertaken as resources become available since the time frame for their implementation is not so critical.

Low Those strategies which are desirable to achieving the management objectives set out in this Plan, but can wait until resources are available.

The implementation of this plan will be undertaken within the NPWS Lismore District annual programs. The undertaking of prioritised activities is subject to the availability of necessary staff and funds and to any special requirements of the Director-General or Minister.

The strategies are consistent with resources anticipated to be available to the NPWS over the next five to ten years. Activities which entail a significant financial cost will be included in financial development plans for the Kyogle Area commencing from the 1999/2000 financial year. Other activities will be implemented as soon as practicable.

Implementation of Management Strategies in Tooloom National Park

Strategy	Plan Reference
HIGH PRIORITY	
Ensure management roads, fire trails and walking tracks are designed and maintained to NPWS standard to minimise soil erosion.	**5.1.1**
Manage fire to maintain adequate vegetation to prevent, as far as is possible, accelerated erosion.	**5.1.1**
Rehabilitate sites disturbed through management operations as soon as possible after use to minimise erosion.	**5.1.1**
In all management operations, consider the impact on landscape values and act to minimise that impact as far as possible.	**5.1.1**
Undertake further research into what threatened species occur in the Park and, where appropriate, implement recovery plans for threatened species as these plans become available.	**5.1.2**
Liaise with neighbours and land use authorities to encourage a cooperative approach to flora and fauna conservation, especially with respect to the coordinated management of the World Heritage listed Tooloom Scrub Flora Reserve in Beaury State Forest adjoining the Park.	**5.1.2**
Prepare a pest management plan for the Park and establish priorities in accordance with the criteria in the NPWS Lismore District Pest Management Strategy.	**5.1.3**
Investigate the relationship between certain fauna and their use of or dependency on disturbed habitats and implications for management of those relationships in the Park.	**5.1.3**
Seek the cooperation of other authorities and park neighbours in implementing pest species control programs.	**5.1.3**
Prohibit domestic animals entering the Park through appropriate fencing, consistent with NPWS policy on boundary fencing, and the provision of advisory signs at strategic locations.	**5.1.3**
Prepare a fire management plan for the Park which will detail life, property and natural and cultural resource protection principles, fire management zones, strategies and programs, cooperative arrangements and fire trail network requirements.	**5.1.4**
Manage fire in accordance with the plan to ensure the: ⇒ protection of human life and property within and adjacent to the Park; ⇒ conservation of rare, endangered and biogeographically significant plant and animal species and communities; ⇒ maintenance of plant and animal species and communities through the provision of fire regimes compatible with their conservation; and ⇒ protection of Aboriginal sites, historic places, visitor facilities and management structures.	**5.1.4**
Consult the local Aboriginal community in relevant aspects of fire management planning.	**5.1.4**
Maintain close contact and cooperation with volunteer rural fire brigades, Council fire officers and State Forests of NSW in the suppression of wildfires and continue to actively participate in the Tenterfield District Bush Fire Management Committee.	**5.1.4**
Develop and implement a public liaison and neighbour education program to foster awareness of the NPWS objectives and management with respect to fire in the Park.	**5.1.4**
Co-operate, as far as possible, with neighbours in fuel reduction activities for mutual protection. Encourage land use planning authorities and private developers to incorporate boundary fire breaks and other fuel reduction measures in any development adjacent to, or in proximity of, the Park.	**5.1.4**
Modify programs to minimise adverse impacts where appropriate.	**5.1.4**
Review interpretative programs in collaboration with the local Aboriginal community and provide the community the right to alter elements of such work if aspects are found to be culturally inappropriate.	**5.1.5**
In consultation with the local Aboriginal community determine and provide for the appropriate protection of sites which may be involved in traditional use.	**5.1.5**

Strategy	Plan Reference
Precede all management operations which involve soil disturbance in previously undisturbed areas with an assessment of potential impacts on cultural values in consultation with the local Aboriginal community.	**5.1.5**
Information concerning the location of Aboriginal sites will be restricted except where the agreement of the Local Aboriginal Land Council and other relevant Aboriginal community organisations has been obtained.	**5.1.5**
Provide an interpretive display as part of the Tooloom Picnic Area. Interpretative signs will be provided along the rainforest circuit walk to enhance visitor appreciation of the diversity and evolution of the rainforest.	**5.2.1**
Maintain the existing rainforest loop walk at Tooloom Picnic Area to NPWS standard.	**5.2.2**
Bush camping is permitted anywhere in the Park except within, or in the sight of, Tooloom Picnic Area, the rainforest circuit track, Tooloom Lookout and public roads.	**5.2.2**
Garbage bins will not be provided. Signs will be erected at Tooloom Picnic Area advising visitors to remove their rubbish from the Park.	**5.2.2**
Open fires are only permitted in fireplaces provided at Tooloom Picnic Area. Open fires are prohibited throughout the remainder of the Park. Fire places will be serviced with timber by NPWS.	**5.2.2**
Public vehicular use of Wallaby Creek Fire trail is prohibited because of the damage that a small amount of traffic can cause to the trail surface, especially when wet.	**5.2.2**
Ensure all research undertaken in the Park complies with NPWS policies.	**5.2.3**
Maintain Wallaby Creek Fire Trail for management operations, upgrading trails to NPWS standard in appropriate sections.	**5.3**
Maintain locked gates at each end of the Wallaby Creek Fire Trail on the park boundary to prevent unauthorised use.	**5.3**
Maintain Tuckerbox Road under a joint arrangement with SFNSW as access to the pine plantation. Install locked gates at points of access from Legume Road to prevent unauthorised use.	**5.3**
Close and rehabilitate management trails constructed for emergency purposes as soon as possible after use.	**5.3**
Issue keys for locked gates to authorised users and relevant emergency services.	**5.3**
Continue to advise visitors, through appropriate signage and interpretation, to remove their rubbish from the Park.	**5.3**
MEDIUM PRIORITY	
Where necessary, research the relationships between flora and fauna in the Park to establish specific management requirements. Investigate and plan for the appropriate use of fire to maintain the range of flora and fauna communities.	**5.1.2**
Manage vegetation, which may involve the manipulation of plant communities	**5.1.2**
Monitor the effects of park use and management on flora and fauna communities.	**5.1.2**
Monitor the health of World Heritage values.	**5.1.2**
Ensure an adequate level of fencing is provided to restrain cattle from entering the Park.	**5.1.3**
Horse riding is not permitted in the Park except for authorised management purposes.	**5.1.3**
Observe current policy with regard to European honey bee hives in the Park and investigate the locations of sites and their impacts and negotiate relocation where necessary.	**5.1.3**
Encourage research into the ecological effects of fire in the Park, particularly the fire response of rare and threatened flora and fauna species, rainforest and wet sclerophyll forest and grasslands which support macropods, bristlebirds and other species, and the impacts of fire on items of cultural heritage. Incorporate findings into the fire management plan and any fuel reduction programs.	**5.1.4**
Rehabilitate areas disturbed by fire suppression operations as soon as practical after the fire.	**5.1.4**

Strategy	Plan Reference
Maintain records and update NPWS databases and maps for all fire events.	**5.1.4**
Undertake an on-going review of the impact of prescribed burning on vegetation composition and structure.	**5.1.4**
Develop a collaborative relationship between the NPWS and the local Aboriginal community with regards to the management of Aboriginal heritage and interpretation of Aboriginal sites and other cultural values in the Park.	**5.1.5**
Liaise with the local Aboriginal people concerning the maintenance of traditional links with the land.	**5.1.5**
Where necessary develop conservation plans for sites and relicts of high significance in consultation with the local Aboriginal community.	**5.1.5**
Where necessary, develop conservation plans for sites of high historical significance.	**5.1.5**
Interpretive signage and other promotions will be used to enhance the understanding of the World Heritage status and significance of Tooloom Scrub.	**5.2.1**
Utilise appropriate opportunities for Park promotion, including the media and newsletters.	**5.2.1**
Confine picnic area and carpark at Tooloom Picnic Area to the existing cleared site. Within this area additional picnic facilities may be provided. Carparking capacity will remain unchanged.	**5.2.2**
Construct a public viewing area at Tooloom Lookout with access to picnic area via existing walking track.	**5.2.2**
Maintain the existing rainforest loop walk at Tooloom Picnic Area to NPWS standard.	**5.2.2**
A locked gate will be placed on the Wallaby Creek fire trail at the Park boundary. Walkers can proceed beyond the gate to see the views and rainforest. No visitor facilities will be provided at this site.	**5.2.2**
The NPWS will gate that section of Tuckerbox Road within the Park and enter into negotiations with State Forests of NSW to gate that section within State Forest. As part of these negotiations access may be provided through that section of Tuckerbox Road within the Park to access the pine plantation with the objective of minimising environmental damage.	**5.2.2**
Prepare and distribute a prospectus of priority research topics to relevant tertiary institutions.	**5.2.3**
Develop and implement a monitoring program which examines the impacts and effectiveness of key management activities (eg. fire and pest species management, threatening processes, threatened species conservation, and visitor use).	**5.2.3**
Vehicular access on the management track system within the Park may be permitted for appropriate research activities. Access will only be permitted when the tracks are dry and not liable to damage or erosion.	**5.2.3**
Only allow the construction of additional management trails in the following situations: ⇒ for the protection of life and property, such as during emergency operations; ⇒ the realignment of an existing track to a more environmentally acceptable location; Any such works will be subject to necessary environmental and archaeological assessment and planning approvals. ⇒ the protection of specific natural and cultural resources. ⇒ with all necessary planning and approvals.	**5.3**
Signpost fire trails and management roads.	**5.3**
Erect advisory signs concerning park regulations in appropriate locations.	**5.3**
Encourage and, where necessary, facilitate the erection of boundary fencing as necessary in consultation with park neighbours.	**5.3**
Promote community involvement in research.	**5.2.3**
LOW PRIORITY	
Monitor the effects of park use and management on flora and fauna communities.	**5.1.2**
Update NPWS databases of flora and fauna species in the Park as further survey information becomes available.	**5.1.2**
Seek the inclusion of the whole Park on the World Heritage list.	**5.1.2**

Strategy	Plan Reference
Where necessary develop conservation plans for sites and relicts of high significance in consultation with the local Aboriginal community.	**5.1.5**
Undertake further archaeological and historical surveys in the Park and record in an appropriate manner additional sites or places identified. Encourage the research of anthropological and oral histories.	**5.1.5**
Liaise with park neighbours and other relevant community groups regarding management of the Park.	**5.2.1**
Utilise appropriate opportunities for Park promotion, including the media and newsletters.	**5.2.1**

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APPENDIX A

Table 1: Threatened amphibians and reptiles occurring in Tooloom National Park

Species	Common name	*TSC* status	Significance
Philoria kundagungan	yellow - bellied mountain frog	V	Endemic Restricted distribution
Coeranoscincus reticulatus	a skink	V	Endemic Restricted distribution
Hoplocephalus stephensii	Stephen's banded snake	V	Population stronghold

Source: Smith & Hines (1988), Pugh (1982 and 1986), NPWS ERMS and Wildlife Atlas database and NPWS (1994)

Key to *TSC Act*
E - Endangered (Schedule 1)
V - Vulnerable (Schedule 2)

Table 2: Threatened birds occurring in Tooloom National Park

Species	Common name	*TSC* status	Significance
Psittaculirostris diophthalma coxeni	double-eyed (Coxen's) fig-parrot	E	Endemic 3 sightings in 30 years - last sightings 1962 and 1993
Atrichornis rufescens	rufous scrub-bird	V	Endemic Scattered Phylogenetically archaic (Also, near north western limit of range in the Park)
Ptilinopus regina	rose-crowned fruit-dove	V	Endemic (Also, scarce statewide and near south western limit of range in the Park)
Ptilinopus magnificus	wompoo fruit-dove	V	Population stronghold
Ptilinopus superbus	superb fruit-dove	V	
Calyptorhyncus lathami	glossy black-cockatoo	V	Population stronghold
Tyto tenebricosa	sooty owl	V	Population stronghold
Menura alberti	Albert's lyrebird	V	Endemic phylogenetically archaic (also, near north western limit of range in the Park)
Ninox strenua	powerful owl	V	1 record
Tyto novaehollandiae	masked owl	V	
Erythrotriorchis radiatus	red goshawk	E	
Podargus ocellatus	marbled frogmouth	V	Endemic restricted distribution
Turnix melanogaster	black-breasted button-quail	E	Endemic Phylogenetically archaic

Source: NPWS files, Smith & Hines (1988), Pugh (1982, 1986), NPWS ERMS and Wildlife Atlas databases and NPWS (1994)

Key to *TSC Act*
E - Endangered (Schedule 1)
V - Vulnerable (Schedule 2)

Table 3: Threatened mammals occurring in Tooloom National Park

Species	Common name	*TSC* status	Significance
Kerivoula papuensis	golden-tipped bat	V	Population stronghold
Miniopterus australis	little bent-wing bat	V	
Miniopterus schreibersii	common bent-wing bat	V	
Dasyurus maculatus	tiger quoll	V	Population stronghold Distributional retreat
Macropus parma	parma wallaby	V	Endemic Distributional retreat
Macropus doralis	black-striped wallaby	E	Significant colony
Potorous tridactylus	long nosed potoroo	V	Significant colony
Aeprymnus rufescens	rufous bettong	V	Distributional retreat
Phascogale tapoatafa	brush-tailed phascogale	V	
Thylogale stigmatica	red-legged pademelon	V	Population stronghold
Petaurus norfolkensis	squirrel glider	V	Population stronghold
Petaurus australis	yellow-bellied glider	V	
Phascolarctos cinereus	koala	V	Population stronghold Distributional retreat

Source: NPWS (1995), Smith & Hines (1988), Pugh (1982, 1986), NPWS ERMS and Wildlife Atlas databases and NPWS (1994)

Key to *TSC Act*
E - Endangered (Schedule 1)
V - Vulnerable (Schedule 2)

APPENDIX B

Research projects undertaken prior to the dedication of Tooloom National Park

Year	Study and Author
1928	Entomological collection Legume Road Reserve. *(Prof. Dumigan)*
1928 -	Observations of mammals. *(EJ Hayes, resident)*
1946 -	Observations of mammals. *(M Trudgeon, resident)*
1958 - 1962	Part of study of mammals of upper Clarence *(JH Calaby, CSIRO)*
1974 - 1976	Mammal surveys *(J Mc Cann, forester)*
1976	Fauna collection. *(Broadbent, Australian Museum)*
1978 - 1979	Ecology of Bowerbirds and catbird, Legume Road Reserve. *(DR Donaghy, Monash University)*
1979	Rainforest and vegetation mapping. *(AG Floyd, FCNSW on secondment to NPWS)*
1980	Ecology of Bowerbirds. *(G. Borgia, University of Maryland, USA)*
1980 - 1988	Macropod studies *(Prof. Jarman et al. University of New England, Armidale)*
1987 - 1981	Orchid species collection. *(D. Binns, SFNSW).*
1993	Aboriginal archaeological assessment *(Smith for SFNSW, 1995)*
1993	Historical archaeological assessment *(Godden Mackay, for SFNSW,1995)*
1994	Fauna investigation *(Austeco and Andrews et al.,for SFNSW, 1995)*
1995	Flora survey *(Binns, for SFNSW, 1995)*
1995	Fauna Impact Statement *(Australian Museum Business Services for SFNSW, 1995)*
1995 -1997	Population dynamics of Bowerbirds. *(A. Uy, University of Maryland, USA)*