

# **NANGAR NATIONAL PARK**

## **PLAN OF MANAGEMENT**

**NSW National Parks and Wildlife Service**

**Part of the Department of Environment and Conservation (NSW)**

**May 2004**

**This plan of management was adopted by the Minister for the Environment on 31 May 2004.**

### **Acknowledgments**

This plan of management is based on a draft plan prepared by staff of Central West Region and the Head Office Conservation Management Unit.

Valuable information and comments were provided by members of the public, the Regional Advisory Committee and a number of Service specialists.

The planning process leading to the development of this plan has involved the collection and use of a large amount of information, which for reasons of document size has not been included in the plan. For additional information or enquiries about any aspect of the plan, contact the Service's Lachlan Area Office at 83 Lachlan Street, Forbes or by phone on (02) 6851 4429.

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## FOREWORD

Nangar National Park is located on the central western slopes of NSW, 70 km south west of Orange, 40 km east of Forbes and approximately 350 km west of Sydney.

Nangar National Park protects an area of remnant woodland on a range of low to rolling hills. The park has value as a scientific reference area because it protects a sample of the original plant and animal communities of the Central West region. It contains a range of native plant communities, including at least 4 plant species that are restricted to the central west of NSW, and a diverse vertebrate fauna of 189 identified species, including 147 bird species. Three animal species found on the park are listed under the *Threatened Species Conservation Act 1995*, and there are a large number of fauna species at or near the limits of their known distribution.

The cliff line of red siltstone is a prominent landscape feature in the district and of cultural value to the local Aboriginal community. In addition the park contains buildings and other features remaining from European agricultural activities and evidence of Chinese mining activities from the early 1900s.

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

A draft plan of management for Nangar National Park was placed on public exhibition from 6 September until 9 December 2002. The exhibition of the plan of management attracted 6 submissions that raised 6 issues. All submissions received were carefully considered before adopting this plan of management.

The primary emphasis of this plan is to manage the park so as to maintain its important remnant woodland communities and associated fauna species. Significant landscape and cultural values will also be protected. Visitor opportunities will be concentrated in the central western part of the park and will be kept low key to minimise impacts and encourage interaction with the natural environment. Facilities will progressively be constructed at Dripping Rock Homestead, the Dripping Rock Falls area, Mount Nangar lookout, Terrarra Creek (camping area) and Murga Mountain (walking track). Access will continue to be provided for vehicles, including four wheel drive access to Mt Nangar, horses, bicycles and walkers.

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

**BOB DEBUS**

**Minister for the Environment**

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## 1. INTRODUCTION

### 1.1 LOCATION, GAZETTAL AND REGIONAL SETTING

Nangar National Park is located on the central western slopes of NSW, 70 km south west of Orange, 40 km east of Forbes and approximately 350 km west of Sydney. The maps (centre pages) illustrate the location and extent of the park. The park is named after the prominent peak of Mount Nangar located on the northern boundary.

When the park was first reserved in 1983 it consisted of 1,550 ha. Subsequent additions, including that of Nangar State Forest in 1994, have brought the area to 9,196 ha.

Nangar National Park protects an area of remnant woodland on a range of low to rolling hills. It is one of four national parks in the region, the others being Weddin Mountains, Conimbla and Goobang National Park.

The surrounding area is primarily used for grazing and cropping. Nangar National Park is close to Forbes, Parkes, Orange and Cowra, and several smaller towns. The four parks contribute significantly to the tourism value of the region.

The park falls within the local government area of Cabonne Shire.

### 1.2 STATEMENT OF SIGNIFICANCE

Nangar National Park is significant as part of a system of conservation reserves in the Central West of NSW and in its own right due to its biodiversity, landscape, cultural and recreational values.

**Key natural values** include:

- high significance for biodiversity conservation as one of only a small number of conservation reserves that protect samples of the original plant and animal communities of the Central West region;
- high value as a scientific reference area;
- major contribution to regional vegetation cover and habitat as part of a mosaic of vegetation remnants across the landscape;
- a range of native plant communities, including 4 of conservation concern;
- 116 recorded plant species;
- at least 4 plant species that are restricted to the central west of NSW;
- two threatened plant species predicted to occur in the park;
- a diverse vertebrate fauna of 189 identified species, including 147 bird species;
- three threatened fauna species listed in schedule 2 (vulnerable species) of the *Threatened Species Conservation Act 1995*;
- a further 36 threatened fauna species may occur;
- a large number of fauna species at or near the limits of their known distribution;
- provision of shelter, breeding sites and food for local fauna species.

Significant **landscape values** of the park include:

- a prominent range and landscape feature in the district;
- a spectacular cliff line of red siltstone on the northern boundary;
- panoramic views from Mount Nangar across farmland dotted with small remnants of uncleared rocky outcrops;
- attractive rocky slopes along the Terarra Creek valley;
- spring flower displays in patches of heath on Mount Nangar.

The key **cultural heritage values** of the park comprise:

- several archaeological sites that add to knowledge about Aboriginal use of the region;
- cultural value to the local Aboriginal community;
- buildings and other features remaining from European agricultural activities;
- evidence of Chinese mining activities during the 1900's.

Major **recreation and tourism values** include:

- one of the few large remaining natural areas in the region;
- a sense of enclosure by timbered hills, and escape from civilisation;
- spectacular scenery and views in the Mount Nangar area;
- opportunity to drive through the centre of the park and visit interesting natural and cultural features;
- a variety of areas for walking, both on tracks and self-reliant walking;
- opportunities to view wildlife, with a varied bird population throughout most of the year and easily seen macropods.

## 2. MANAGEMENT CONTEXT

### 2.1 LEGISLATIVE AND POLICY FRAMEWORK

The management of national parks in NSW is in the context of the legislative and policy framework, primarily the *National Parks and Wildlife Act 1974*, the *Threatened Species Conservation Act 1995*, the National Parks and Wildlife Regulation, and the policies of the National Parks and Wildlife Service. The policies arise from the legislative background, the corporate goals of the Service and internationally accepted principles of park management. They relate to nature conservation, Aboriginal and historic heritage conservation, recreation, commercial use, research and communication.

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

Where management strategies are not specifically mentioned in this plan of management, Nangar National Park will be managed in accordance with the legislative framework, the Regulation and the policies of the National Parks and Wildlife Service.

### 2.2 NATIONAL PARKS IN NEW SOUTH WALES

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

Under the Act, national parks are managed to:

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

## **2.3 MANAGEMENT OBJECTIVES**

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

- protection and preservation of natural landform values, including significant geological and geomorphological features;
- conservation of wildlife, including maintenance of biodiversity, populations of threatened species and critical habitat;
- maintenance of natural processes;
- preservation of catchment values and protection of water quality;
- preservation of Aboriginal sites in consultation with the Aboriginal community;
- conservation of historic structures and objects;
- protection of scenic values;
- provision of opportunities for appropriate use, understanding and enjoyment by the public; and
- encouragement of scientific and educational enquiry into environmental features and processes, cultural features and use patterns.



### 3. MANAGEMENT DIRECTIONS

The park will be managed primarily to maintain its important remnant woodland communities and associated fauna species. Significant landscape and cultural values will also be protected and appropriate visitor opportunities will be provided that are consistent with conservation. Major management programs will include:

- control of introduced species in accordance with the Central West Region Pest Management Plan and an introduced species control plan to be prepared for the park, with priority to noxious weeds, goats, rabbits and foxes;
- protection and rehabilitation as needed of areas affected by erosion or past clearing;
- management of fire in accordance with a fire management plan for the park to protect life and property and maintain plant and animal communities;
- encouragement, in conjunction with Landcare groups, of protection and expansion of vegetation remnants on surrounding land, with the aim of reconnecting the park with other remnants;
- further survey for significant plant and animal species;
- management of Aboriginal cultural values in partnership with the Cowra Lands Council and other relevant Aboriginal community organisations;
- recording of all historic features, maintenance and on-going use where appropriate of historic buildings and protection of other features from damage by visitors;
- provision of a small number of facilities designed to cater for visitors in a manner that protects the natural and cultural landscape; and
- monitoring to check the status and condition of significant natural and cultural features, visitor numbers and impacts of visitor use.

Visitor opportunities will be concentrated in the central western part of the park and will be kept low key to minimise impacts and encourage interaction with the natural environment. Facilities will progressively be constructed at Dripping Rock Homestead, the Dripping Rock Falls area, Mount Nangar lookout, Terrarra Creek (camping area) and Murga Mountain (walking track).

Other parts of the park, particularly the southern section, will not be developed but will be available for self-reliant walking.

Vehicle access will be limited to the existing trail system through the central part of the park. The main visitor entry point will be from the west along Dripping Rock Trail.

Promotional programs will be undertaken to increase community awareness of the park, its conservation values and its visitor opportunities, through media releases, liaison with neighbours and preparation of brochures and information sheets. Information displays will be installed at the main visitor destinations interpreting the natural and cultural heritage of the park and promoting minimal impact recreation use.

## 4. CONSERVATION OF NATURAL AND CULTURAL HERITAGE

### 4.1 GEOLOGY AND LANDFORM

Nangar National Park samples part of the Lachlan Fold Belt, along with Conimbla, Weddin Mountains and Goobang National Parks and several other small to moderately sized conservation reserves on the central and southwest slopes of NSW.

The park lies on a range of low to rolling hills. Upper Devonian Mandagery sandstone forms the main bulk of the Nangar Range, with a mixture of red shale and siltstone making up the remainder. At the western extremity of the park (Mount Taylor), is an area of Eugowra granite.

The landscape can be divided into two units based on relief. The northern section is relatively rugged, with cliffs, ridges and narrow valleys. The principal feature is a long cliff line of red siltstone on the northern boundary, around Nangar Valley. The cliff line rises to 770 metres at Mount Nangar, which provides extensive views across the surrounding park and farmland. The main watercourse in this area is Terarra Creek which flows westwards into Mandagery Creek, then southwest to join the Lachlan River. The western part of the Terarra Creek valley within the park is relatively open, with wide creek flats and gentle slopes. There are also several natural springs located in the upper tributaries of Mogong Creek.

The southern sector of the park comprises undulating hills of the Mandagery syncline and generally has lower local relief and mild gradients. This area drains southwards via several small creeks and thence Belubula Creek to the Lachlan.

The spectacular scenery of the cliff line and Mount Nangar are the principal scenic features of the park and surrounding areas. The park boundary follows the top of the Nangar cliff line so that the cliffs and vegetated slopes below are in private property. Any clearing or other disturbance would detract from the views from Mount Nangar and the scenic value of the area, as well as affecting nesting birds and other natural values (see section 4.2).

#### **Desired Outcomes**

- Significant geological and geomorphological features and land-forming processes are protected.
- The scenic values of the park and in particular of the Mount Nangar area and cliff line are protected.

#### **Strategies**

- Locate and design management and visitor facilities to minimise their visual impact from public access roads, lookouts and other vantage points.

- Liaise with neighbours and land use authorities as necessary to encourage protection of the Nangar cliff line and adjacent vegetated slopes.

## 4.2 NATIVE PLANTS AND ANIMALS

### Vegetation communities

The park's vegetation is related to that in the nearby national parks of Goobang, Weddin Mountains and Conimbla, although there are variations between each park. Some of the vegetation communities and plant and animal species are more commonly found on or east of the Great Dividing Range, and a smaller number are from the western area of NSW. Some vegetation communities are at or near the western extent of their distribution in the park.

A vegetation survey undertaken in Nangar in 1996 identified six woodland communities - Grey Box, White Box, Blakely's Red Gum/White Cypress Pine, Red Stringy Bark/Scribbly Gum, Mugga Ironbark/Red Stringy Bark, and Tumbledown Gum Woodland.

The most common community is Red Stringy Bark/Scribbly Gum Woodland, which covers nearly 80% of the park. It occurs on lower dry slopes and creek flats. The main species are Red Stringybark (*Eucalyptus macrorhyncha*) and Scribbly Gum (*E. rossii*), while associated species include Black Cypress Pine (*Callitris endlicheri*), Mugga Ironbark (*E. sideroxylon*) and Long-leaved Box (*E. goniocalyx*), plus Red Box (*E. polyanthemos*) on sandy alluvial flats. Common shrubs include *Leucopogon attenuatus*, *Melichrus urceolaris* and *Monotoca scoparia*, and the ground cover consists mainly of several grass species.

Mugga Ironbark/Red Stringy Bark Woodland occurs as open forest or woodland on more sheltered slopes, dominated by Mugga Ironbark and Red Stringybark. Past logging operations have disturbed these areas, possibly reflecting their higher productivity than sites supporting Red Stringybark/Scribbly Gum Woodlands. Associated trees include Red Box, White Box (*E. albens*) and Black Cypress Pine. The community has a low to medium density shrub and grass layer.

Tumbledown Gum Woodland occurs on exposed rocky slopes and is dominated by Tumbledown Gum (*E. dealbata*) and Currawang (*Acacia doratoxylon*). Both woodland and low woodland forms are found within the park. Areas on Nangar Mountain support a moderately dense shrub layer but other areas have been affected by past grazing and have a grassy ground cover.

White Box Woodland is found in low to moderately sloped sheltered sites. Only small areas occur in the park. The main tree species are White Box, Mugga Ironbark, Black Cypress Pine and Tumbledown Gum. In gullies with alluvial deposits, Long-leaved Box, Blakely's Red Gum (*E. blakelyi*) and Red Box also occur. The ground cover is grassy, with few shrubs.

Blakely's Red Gum/White Cypress Pine Woodland is found on sheltered aspects and gullies on granite-derived soils. It is dominated by Blakely's Red Gum and White

Cypress Pine (*Callitris glaucophylla*). Other trees include Red Stringybark and Kurrajong (*Brachychiton populneus*). Tumbledown Gum is found in rocky shallow areas. The ground cover is grassy, with scattered shrubs of *Acacia doratoxylon*, *A. buxifolia*, *A. paradoxa* and *Dampiera lanceolata*. Only a small area of this community occurs within the park.

A small area of Grey Box Woodland dominated by Grey Box (*E. microcarpa*) occurs on a northerly aspect on granite geology in the north-western part of the park. Grey Box is associated with Blakely's Red Gum and White Cypress pine. The shrub layer is sparse and includes *Acacia buxifolia* and *A. deanei*.

Further survey is needed to comprehensively sample the vegetation communities and check for significant species. In particular, patches of heath on Mount Nangar were not well sampled.

As stated in section 2.2.2, four of the park's six vegetation communities are of conservation significance (ERM Mitchell McCotter, 1996). Their protection within the park is therefore a major objective of management:

- Grey Box Woodland and Blakely's Gum/White Cypress Pine Woodland are considered vulnerable and likely to become endangered within a few decades in NSW;
- White Box Woodland and Mugga Ironbark/Red Stringybark Woodland are inadequately conserved and vulnerable.

In addition, Tumbledown Gum Woodland is inadequately conserved but not threatened in the foreseeable future.

The park's vegetation and landscape have been affected by past agricultural and forestry activities. The valley floor and adjacent lower slopes around the Dripping Rock Homestead, Dripping Rock Falls and a farm ruin on Licking Hole Creek have been almost completely cleared of trees and shrubs. Grazing and selective logging have affected tree and shrub density and species composition in other areas of gentle to moderate slope. Small patches of old growth are found in the steeper and more inaccessible locations. Little old growth of mugga ironbark and white cypress pine remains because of past logging and clearing. The park's vegetation communities will gradually recover from these impacts through natural regeneration.

### **Native animals**

A fauna survey was conducted in the park during autumn 1997. The survey identified 189 species of vertebrate native animals comprising 147 birds, 19 mammals, 18 reptiles and 5 amphibians. Most of the species recorded are normally associated with the East Coast and Great Dividing Range but there are also a number of inland species. No information is available on the diversity or distribution of invertebrates within the park.

The park has abundant birds, both sedentary and migratory. Many species winter in the park including the Jacky Winter (*Microeca leucophaea*), Red-capped Robin (*Petroica goodenovii*) and Woodswallow (*Artamus spp.*) to name a few. Other commonly seen birds include the White Winged Chough (*Corocrax*

*melanorhamphos*), Crested Pigeon (*Ocyphaps lophotes*), Apostle Bird (*Stuthidea cinerea*), Red Rumped Parrot (*Psephotus haematonotus*) and Eastern Rosella (*Platycercus eximius*).

Birds of prey such as the Peregrine Falcon (*Falco peregrinus*), Wedge-tailed Eagle (*Aquila audax*) and Brown Falcon (*Falco berigora*), along with some species of Owls, utilise the cliff face along the northern boundary for nesting and perching. These birds are relatively common within the park and adjacent lands.

The Eastern Grey Kangaroo (*Macropus giganteus*), Common Wallaroo (*M. robustus*), Red-necked Wallaby (*M. rufogriseus*) and Swamp Wallaby (*Wallabia bicolor*) can be seen throughout the park grazing in open forests and along creeks. Small mammals recorded are the Yellow-footed Antechinus (*Antechinus flavipes*) and Common Dunnart (*Sminthopsis murina*). Seven species of bat have been observed in the park including the Little Mastiff-bat (*Mormopterus planiceps*) and Chocolate Wattled Bat (*Chalinolobus morio*).

Reptiles and amphibians recorded in the park include the Nobbi (*Amphibolurus nobbi*), Spotted Black Snake (*Pseudechis guttatus*), Southern Rainbow Skink (*Carlia tetradactyla*), Eastern Long-necked Tortoise (*Chelodina longicollis*), Broad-palmed Frog (*Litoria latopalmata*) and Spotted Grass Frog (*Limnodynastes tasmaniensi*).

All records of native animals (and plants) are collected and stored on the NSW Wildlife Atlas, a statewide database established by the Service. Information is built up about locality, habitat and breeding records and used to assist management of native wildlife.

### **Significant species**

As stated in section 2.2.2, two threatened plant species are predicted to occur in the park and 4 species restricted to the region have been recorded. The threatened species are *Lepidium hyssopifolium* and *Swainsona recta* while the regionally significant species are *Macrozamia secunda*, *Allocasuarina diminuta subsp. diminuta*, *Baeckea cunninghamii* and *Melichrus erubescens*. These latter species are reasonably common within the park.

The park provides habitat for the threatened Greater Long-eared Bat (*Nyctophilus timoriensis*), Turquoise Parrot (*Neophema pulchella*), Barking Owl (*Ninox scutulata*) and possibly a number of other threatened species (Faulkner *et al* 1997). Further fauna survey is needed to determine whether threatened species predicted to occur in the park are present.

Under the Threatened Species Conservation Act a recovery plan must be prepared for endangered (Schedule 1) and vulnerable (Schedule 2) flora and fauna. The purpose of a recovery plan is to promote the recovery of a threatened species, population or ecological community to a position of viability in nature. Recovery plans for species found in the park will be implemented when they have been prepared.

Fifteen woodland bird species recorded in the park have been identified as experiencing declining populations across the Sheep-Wheat Belt (Reid, 1999). Large vegetation remnants such as Nangar, along with smaller remaining patches of habitat, are critical for the survival of these species.

### Declining woodland birds

<b>Scientific name</b>	<b>Common name</b>
<i>Dromaius novaehollandiae</i>	<i>Emu</i>
<i>Turnix varia</i>	<i>Painted Button-quail</i>
<i>Climacteris picumnus</i>	<i>Brown Treecreeper</i>
<i>Chthonicola sagittata</i>	<i>Speckled Warbler</i>
<i>Acanthiza uropygialis</i>	<i>Chestnut-rumped Thornbill</i>
<i>Aphelocephala leucopsis</i>	<i>Southern Whiteface</i>
<i>Microeca fascinans</i>	<i>Jacky Winter</i>
<i>Petroica goodenovii</i>	<i>Red-capped Robin</i>
<i>Pomatostomus temporalis</i>	<i>Grey-crowned Babbler</i>
<i>Pomatostomus superciliosus</i>	<i>White-browed Babbler</i>
<i>Oreoica gutturalis</i>	<i>Crested Bellbird</i>
<i>Pachycephala fufiventris</i>	<i>Rufous Whistler</i>
<i>Myiagra inquieta</i>	<i>Restless Flycatcher</i>
<i>Artamus superciliosus</i>	<i>White-browed Woodswallow</i>
<i>A. cyanopterus</i>	<i>Dusky Woodswallow</i>
<i>Stagonopleura guttata</i>	<i>Diamond Firetail</i>

Porteners 1997 found many plant species in Goobang National Park to be at their eastern or western limits and a number of these occur in Nangar.

A large number of fauna species are also at or near the limits of their distribution in Nangar and Goobang National Parks. A total of 45 species are at their western limits, 23 at their eastern limits and 4 at their southern limits (Faulkner et al, 1997). Species at the edge of their range need particular management consideration, as they could become locally extinct or isolated from other populations.

### Connections with other naturally vegetated lands

Nangar, Goobang, Conimbla and Weddin Mountains National Parks conserve the largest vegetation remnants in the region. The once heavily timbered surrounding lands were cleared for agricultural purposes in the late 1800's and early 1900's as a result of Land Grants offered during this period. Conservation reserves, combined with smaller remnant areas in other tenures, assist in the preservation of the region's plant communities. Nangar National Park is not sufficiently large in itself to ensure long-term retention of all its plant and animal species. Conservation of the region's biodiversity relies also on maintenance of smaller patches of native vegetation on adjacent and nearby lands. It is important to manage the remaining vegetation across the whole landscape, to maximise biodiversity and viability and because small remnants assist movement of wildlife, particularly migratory birds, between larger areas.

## Desired Outcomes

- The full range of native plant and animal species found in the park is conserved.
- Vegetation structural diversity and habitat values are conserved, and are restored where subject to past logging and clearing.
- The significant and restricted Grey Box, White Box, Blakely's Red Gum/White Cypress Pine and Mugga Ironbark/Red Stringybark woodlands are conserved.
- The habitat and populations of all significant plant species and threatened fauna are protected.
- Park neighbours support conservation of remaining areas of privately owned native vegetation near the park.

## Strategies

- *Ensure that management and visitor facilities are not located in areas of significant plant species or important habitats for threatened animal species.*
- *Minimise disturbance to the restricted plant communities and the summit of Mount Nangar.*
- *Allow natural regeneration of past cleared and logged areas, apart from maintenance of a small cleared area around Dripping Rock Homestead, the Chinese garden area and visitor facilities*
- *Implement recovery plans for threatened species when they have been prepared.*
- *Undertake additional plant and animal surveys, in particular to cover the heathy woodland on Mount Nangar and check for additional significant species.*
- *Introduce a program to monitor the status of the significant woodland communities, threatened plant and animal species and declining woodland birds, natural regeneration of disturbed areas, and to evaluate the success of management programs.*
- *Liaise with neighbours, Landcare, vegetation management committees and land use authorities to encourage retention, and if possible expansion, of areas of native vegetation close to the park.*

## 4.3 ABORIGINAL HERITAGE

Nangar National Park lies within the lands of the Wiradjuri Aboriginal people. The Wiradjuri country covers a vast area of the central west of NSW, extending from the Talbraggar River near Coolah, south to Albury, east to the Blue Mountains and west to Willandra.

No Aboriginal cultural heritage assessment has been undertaken for the park but a study for Goobang National Park suggests that the Nangar Range is likely to have been an important landmark in Aboriginal culture and to have been occupied for

extended periods. Within the park there may be individual places that are significant to the Wiradjuri people. These may include archaeological sites and other types of sites such as mythological sites, ceremonial sites and contact sites.

The only recorded Aboriginal sites in the park are a half dozen scarred trees and some scattered stone artefacts. The park has the potential, however, to contain many more sites. It is reported that a quarry was located on adjacent private land. Surveys at Cocoparra and Goobang National Parks indicate that most sites will be along creek flats and ridges.

While the Service presently 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 and how Aboriginal culture and history will be promoted and presented. The park is within the area of the Cowra Local Aboriginal Lands Council. There may also be other Aboriginal community organisations and individuals with an interest in use and management of the park.

### **Desired Outcomes**

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

### **Strategies**

- *Consult and actively involve the Cowra Local Aboriginal Land Council and other relevant Aboriginal community organisations in the management of Aboriginal sites and values in the park.*
- *Ensure that visitor facilities are not located close to any significant Aboriginal sites.*
- *Undertake an archaeological survey and cultural assessment prior to all works with the potential to impact on Aboriginal sites.*
- *Do not publicise the location of Aboriginal sites except where:*
  - *the agreement of the Cowra Local Aboriginal Land Council and other relevant Aboriginal community organisations has been obtained;*
  - *a conservation study has been prepared and any management works necessary to protect the site from damage have been implemented; and*
  - *the site will be interpreted to promote public knowledge and appreciation of Aboriginal culture.*

## **4.4 HISTORIC PLACES**

There is limited knowledge about the early interaction between Aboriginal people and Europeans in the district, or about post-contact Aboriginal use of the area. Early



European explorers and pastoralists first had contact with the Aboriginal inhabitants in the early 1800's. The nearby Eugowra area was settled by pastoralists in the 1830's. Government grants promoted land clearing and the area was developed for cattle grazing and later for cultivation of crops. It is probable that Aboriginal people were employed as stockmen and in other positions. There are anecdotal reports that Mount Taylor was named after a stockman from the nearby Goimbla station, who eloped with an Aboriginal woman and was speared to death on the hill (Niven, 1999).

It is reported that in the mid 1800s the park area was used by apiarists due to the presence of suitable flowering plants ideal for good honey production. It is probable that there continued to be some use of the area by apiarists and there is a current beekeeping licence in the park (see section 8).

Gold was discovered around Eugowra in the 1860's, resulting in significant population growth in the area. It also encouraged bushranger activity. The Gardener and Ben Hall gangs operated adjacent to and within the park. Escort Rock between Eugowra and the park is a significant part of local Bushranger history, where there was a two-day hold up of a stage carrying gold and bank notes in 1862.

Chinese miners resided in the park area prospecting for copper during the early 1900s. Mine diggings, a fenced garden area beside Terarra Creek and a small weir can still be seen today. A well is located close to the garden but has partly collapsed and become overgrown. It is reported that the garden was originally fenced with timber slabs and small timber (Niven, 1999) but this was later replaced with chicken wire. Part of the fence still exists.

The park area was formerly vacant crown land, crown lease land, state forest and freehold. The freehold section, known as Dripping Rock, was settled in 1928. This is now in the western part of the park along Terarra Creek. The flats and lower slopes were cleared and used to run sheep. Some parts were improved for dairying and cropping and the relatively fertile soils of the area ensured good yields, although water supply was always a problem.

A house, shearing shed, hay shed, piggery, two storage sheds, yards and fences stand in the park. The first house built was replaced by the current homestead in the 1930s. The original house became a school to educate the children of the owners and workers, and subsequently was used also as the shearing shed. The current homestead is of weatherboard and fibro construction, with two covered verandahs, bay windows and two fireplaces.

All the buildings are in reasonable condition, although repair is needed to some features including the shearing shed steps, homestead verandahs and one of the hay shed supports. There are a number of fruit trees in the yard around the homestead and some other exotic trees nearby. These will be retained but new seedlings will be removed.

On-going use of the homestead and possibly some of the other outbuildings is desirable to ensure their maintenance and protection. The Dripping Rock Conservation Management Plan, (Higgins 2002), details the maintenance and repairs

that would need to be undertaken to restore the homestead to a habitable condition and discusses possible future uses of the area.

Possible future uses of the area include:

- construction of picnic facilities in the homestead precinct,
- occupation of the homestead by Service staff,
- leasing of the homestead for short term holiday accommodation, such as a Bed and Breakfast or group accommodation, or for education or research purposes.

Whether or not funding is available to restore the homestead and other buildings, and regardless of future use, some interpretation will be needed to explain their value to visitors (see section 6).

As part of the history of the area, the homestead is of interest to park visitors and if possible, any future uses of the buildings should include arrangements that allow the public to view them at least externally. Whether or not the buildings are re-used, some interpretation will be needed to explain their value to visitors (see section 6).

Several other structures also remain in the park from past agricultural activities and other uses. These include:

- several farm dams;
- fences;
- a collapsed cottage at the base of Mount Taylor, constructed partly of pise, possibly originally for a farm employee, later used by squatters;
- a small shelter, probably used for machinery storage, near the collapsed cottage;
- a hut ruin in the central part of the park, possibly used by sleeper cutters;
- a relatively recent single room log cabin in the central part of the park, believed to have been built by a squatter; and
- a small collapsed building on cleared flats near the southern boundary with associated sheds, yards and fruit trees, reported to have been a piggery.

The piggery ruin was constructed of a combination of timber and tin panelling. A red brick chimney is partly standing and there appears to have been an oven of earth and river stone. The yards and tin sheds have also collapsed.

Other features have been reported including a former hut adjacent to Terarra Creek in the central part of the park, a hillside cellar in the northern part and a grave near the Chinese garden.

Based on current information, these features are considered to be of local historical interest as part of the history of the park and district.

Some of the dams have value as sources of water for fire fighting and will be maintained as needed.

The collapsed cottage on the Mount Taylor Trail is a safety hazard and it will be necessary to remove most of the material. The nearby shelter will be maintained.

The log cabin is of recent origin and not culturally significant. It will be removed.

A large section of the park was formerly managed by State Forests of NSW as Nangar State Forest, until reservation as National Park in 1994. Timber harvesting was selective and had a minor impact on the park's landscape except in some of the lower, more productive areas. There are no known structures remaining from past forestry activities, apart from the possible sleeper-cutters hut.

### **Desired Outcomes**

- All significant historic features are appropriately conserved and information about others is recorded.

### **Strategies**

- *Conserve the historic places of the park in accordance with the Burra Charter (ICOMOS, 1988).*
- *Implement the Dripping Rock Conservation Management Plan which covers options for future use, maintenance needs and interpretation.*
- *If it is decided to lease the homestead and/or associated buildings for short term holiday accommodation, education or research purposes, the lease should include provision for ongoing repair and maintenance and preferably public access at least around the yards and inside the shearing shed.*
- *Keep the Chinese garden clear of tree and shrub growth and maintain remaining parts of the fence.*
- *Record the collapsed cottage on the Mount Taylor Trail. Remove all material apart from the stumps. Maintain the nearby shelter.*
- *Record and remove the log cabin.*
- *Record all other historic places.*
- *Remove seedlings of exotics such as pepper trees in the homestead area.*
- *Retain fence posts and strainers but remove wire except from fences around the Dripping Rock Homestead and Chinese garden.*
- *Make safe the old copper mine entrance.*

## 5. PARK PROTECTION

### 5.1 SOIL EROSION

The park has two main soil landscapes, the Nangar and Mandagery soil landscapes. The Nangar soils occur on lower gradients on slopes between 12% and 20%. The upper and mid slopes form non-calcic brown soil and extend to drainage lines of yellow and brown solodic soils. The Mandagery soils are more widespread and are found on the steeper slopes and escarpments between 25% and 50%. These soils are shallow skeletal sands and loams. Small areas of granite soils are found in gullies in the western part of the park.

The soils are erodable if vegetation cover is removed and there are some small eroded gullies along Terarra Creek in cleared areas.

#### Desired Outcomes

- Human induced soil erosion in the park is minimised.

#### Strategies

- *Design and undertake all works in a manner that minimises soil erosion.*
- *Monitor areas of erosion and treat if found to be extending.*

### 5.2 WATER QUALITY

Water quality in the park is generally good since most of the streams begin within the park.

The *Catchment Management Act 1989* provides an umbrella framework to aim for, amongst other matters, cleaner water, less soil erosion, improved vegetation cover, the maintenance of ecological processes and a balanced and healthier environment. It also provides a focus to balance conservation needs and development pressures and encourages a more aware and involved community. An important means of achieving these aims is the formation and support of catchment management boards at a local level. The park is within the area of the Lachlan Catchment Management Board.

#### Desired Outcomes

- The park's catchment values and the water quality and health of park streams are maintained.

#### Strategies

- *Design and undertake all works in a manner that minimises water pollution.*

- *Liaise with local government and other authorities as needed to maintain the water quality of the park's catchments.*
- *Continue to participate as a member of the Lachlan Catchment Management Board.*

### 5.3 INTRODUCED SPECIES

An introduced species is defined in this plan as any plant or animal species not native to the park. Introduced species within Nangar National Park and on adjoining land are of concern because they have the potential to have detrimental effects on ecological values and can spread to and from neighbouring land. In addition, the *Noxious Weeds Act 1993* places an obligation upon public authorities to control noxious weeds on land that they occupy to the extent necessary to prevent such weeds spreading to adjoining lands.

Introduced plants in Nangar consist mainly of species associated with former agricultural activities along Terarra Creek. The primary concerns are St Johns Wort (*Hypericum perforatum*), Blackberry (*Rubus fruticosus*), Tree of Heaven (*Ailanthus altissima*), Bathurst Burr (*Aanthium spinosum*), Prickly Pear (*Opuntia* spp.), Horehound (*Marrubium vulgare*) and Serrated Tussock (*Nassella trichotoma*).

The Draft Central West Region Pest Management Plan sets out the overall directions and priorities for dealing with pest species in the area. Control of introduced plants in the park will be an ongoing management concern. Wherever possible integrated control programs are adopted using a range of methods. Small weed populations and those of low impact on the environment will be controlled by promoting natural regeneration and natural competition to replace weeds with native species, or by herbicide application. Noxious weeds and those species classified with high environmental priorities are controlled by the use of registered herbicides. On-going community liaison and cooperative control programs will be important as improved agricultural lands adjoin the park.

The Nangar fauna survey identified thirteen introduced species within the park including the European Red Fox (*Vulpes vulpes*), Pig (*Sus scrofa*), Feral Goat (*Capra hircus*), European Rabbit (*Oryctolagus cuniculus*), Feral Cat (*Felis catus*), Feral Cattle (*Bos taurus*), Feral Sheep (*Ovis aries*), Brown Hare (*Lepus capensis*), House Mouse (*Mus musculus*), Black Rat (*Rattus rattus*), House Sparrow (*Passer domesticus*) and Common Starling (*Sturnus vulgaris*).

Goats, foxes and rabbits are of particular concern because of their significant impact on native flora and fauna. Foxes prey on small birds, lizards and small mammals while goats and rabbits feed on and damage native vegetation. The two introduced bird species compete with native fauna for nest sites in hollows that could otherwise house threatened species.

Goats are found throughout the park and control programs are undertaken twice yearly. Goats are likely to be an on-going problem, however, as there are goat farms

nearby. Rabbits occur mainly on the creek flats and numbers are low. Control programs are undertaken as needed. Fox control in the park will not be effective unless undertaken cooperatively over a much larger area. Introduced animals will continue to be controlled and where possible eradicated, with priority to goats, rabbits, foxes and other species as prescribed in the Central West Region Pest Management Plan or the introduced species control plan to be prepared for the park.

The Idle Valley inholding is only partly fenced and stock sometimes enter the park. Other boundary fences are generally in good condition.

### **Desired Outcomes**

- Introduced species are eliminated or kept to levels that have minimal impact on native plants and animals.

### **Strategies**

- *Control and if possible eradicate introduced plant species. Give priority for treatment to those which:*
  - *have been prioritised in the Pest Management Plan;*
  - *have been declared noxious;*
  - *threaten the integrity of native communities;*
  - *may affect neighbouring lands;*
  - *have a high capacity for dispersal; and/or*
  - *are new isolated occurrences.*
- *Control introduced animals where they have a significant impact on native species or adjoining land. Give priority to those identified in the Pest Management Plan.*
- *Undertaken control programs for St Johns Wort, Blackberry, Tree of Heaven, Bathurst Burr, Prickly Pear, Horehound, foxes, goats and rabbits, and other species as identified in the pest management plans.*
- *Design control programs to avoid impact on non-target species*
- *Seek the cooperation of other authorities and park neighbours in implementing weed and pest animal control programs. Undertaken pest animal control in cooperation with the Molong Rural Lands Protection Board.*
- *Encourage maintenance of effective fencing of boundaries with grazing properties to prevent domestic stock from entering into the park. Provide fencing assistance where possible.*
- *Finalise the Regional Pest Management Strategy and review it annually. In addition, prepare an introduced species control plan specific to the park, setting out techniques and programs, including monitoring of effectiveness.*

## **5.4 FIRE MANAGEMENT**

Fire is a natural feature of the environment and is essential to the survival of some plant and animal communities. Inappropriate fire, however, can damage natural and cultural heritage and endanger park visitors and neighbours. Management of bushfire in the park is a complex issue. Management must aim to achieve both long-term conservation of native plant and animal communities and ongoing protection of life and property within and adjacent to the park.

### **Ecological requirements**

Bushfire regimes are a major determinant of the distribution and abundance of plants and animals in the park. They also affect nutrient cycles, erosion patterns and hydrological regimes. Ecological research suggests the following requirements for biodiversity conservation:

- variability of fire intervals and area burnt is important to conserve floristic diversity and provide diversity of habitat for animals; fire at regular intervals will lead to loss of species;
- most plant species and communities require infrequent fires of moderate to high intensity to achieve regeneration but patchy burns are better for fauna as they retain shelter and food refuges;
- fires during the breeding season are the most damaging to fauna communities because of direct killing of young and increased exposure;
- a fire frequency of between 5 and 30 years is generally appropriate for the park's vegetation communities; species decline is predicted if successive fires occur less than 5 years apart or there are no fires for more than 30 years.

Fire can also damage some types of Aboriginal sites and historic places. Features such as scarred trees, old buildings and farming implements can be permanently damaged or lost by wildfire. Other sites can be damaged by use of heavy machinery for fire suppression activities.

### **Fire history**

There is only limited information about the park's fire history. Ten bushfires have been recorded in the park area since recording began in 1958. Major fires occurred in 1958 and in January 1987 when a total of 385 hectares was burnt. The smaller fires covered 10 to 80 hectares.

The fire history indicates that most ignitions in the area are the result of lightning strikes or accidental ignition by adjoining landholders.

### **Strategies and cooperative arrangements**

Under the *Rural Fires Act 1997* the Service is a fire authority and is responsible for controlling fires on the national park and ensuring that they do not cause damage to other land or property. An important part of the Service's fire management is participation in local co-operative fire management arrangements, including

implementation of Bush Fire Risk Management Plans developed by District Bush Fire Management Committees. The Service is a member of the Canobolas Zone Bushfire Management Committee.

A revised Fire Management Plan for the park is currently in preparation. This will identify the bushfire threat, requirements for the conservation of native plants and animals and community protection measures in areas where it is identified that fire is a threat to property. In particular, fire management guidelines are set out for threatened fauna species recorded or predicted to occur in the park. These mainly involve protection of potential nesting sites and keeping fire out of the canopy.

Management will aim to maintain biodiversity by restricting fires to only part of the distribution of a vegetation community at any one time and ensuring that the fire thresholds are not exceeded.

The park has been divided into several fire management zones based on environmental and social characteristics. These are:

- Asset Protection Zones, designed to reduce the intensity of wildfires for the protection of life and property.
- Strategic Wildfire Advantage Zones, where ecological fire regimes and hazard reduction objectives are reconciled.
- Land Management Zone, where conservation of natural and cultural heritage is the main objective.

These zones are consistent with the Conobolas Zone Bush Fire Risk Management Plan.

A variety of fire management strategies have been developed including hazard reduction burning, a fire trail network, detection and cooperative arrangements. Some, or at times all, of these will be applied where appropriate to best protect life, property and natural and cultural assets. Close to boundary areas hazard reduction programs and fire trail maintenance will be designed and implemented in cooperation with neighbours.

### **Desired Outcomes**

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



## Strategies

- *Use prescribed fire to achieve a variety of fire regimes that maintain fire thresholds for each vegetation community in accordance with the Fire Management Plan.*
- *Limit the extent of all wild fires.*
- *Seek to avoid use of heavy machinery for fire suppression in areas of rare plants, Aboriginal sites and historic places.*
- *Rehabilitate areas disturbed by fire suppression operations as soon as practical after the fire.*
- *Maintain records and maps of fires as they occur.*
- *Encourage research into the ecological effects of fire in the park, particularly the fire response of significant plant species and the fire requirements of the White Box, Grey Box, Blakely's Gum/White Cypress Pine and Mugga Ironbark/Red Stringybark woodlands.*
- *Continue to actively participate in the Canobolas Zone Bushfire Management Committee. Maintain close liaison with Zone Rural Fire Service officers and volunteer bush fire brigades.*
- *Where appropriate, carry out fuel management in co-operation with neighbours for mutual protection.*
- *Close the park to public use during periods of extreme fire danger.*
- *Finalise the revised Fire Management Plan. Place the plan on exhibition for public comment prior to adoption by the Service.*
- *Undertake fuel reduction programs, trail maintenance, research and monitoring programs in accordance with the policies outlined above and the Fire Management Plan.*

## 6. VISITOR OPPORTUNITIES AND EDUCATION

### 6.1 INFORMATION PROVISION

As one of the few remaining large natural areas in the Central West the park is of interest to locals for landscape protection, recreation and educational purposes and is an important part of the tourism attractions of the region. The park is also a significant resource for promoting the value of natural areas and the importance of conservation to the regional community.

Local communities promote the four national parks of the area to visitors. Promotion and use must be balanced against the need to protect the parks' important plant and animal communities and cultural heritage, and their special character and recreation values. It is intended that promotion of use will concentrate on Weddin Mountains and Goobang National Parks because of their established use and variety of attractions. Visitor opportunities in Nangar and Conimbla National Parks will be more low key.

Features of particular interest to visitors in Nangar National Park are the views from Mount Nangar, the cliffs, Dripping Rock Falls, Dripping Rock Homestead, the Chinese vegetable garden and the easily visible wildlife. These features, along with the park's conservation values, will be promoted and interpreted to visitors in a manner that protects them and encourages appropriate and minimal impact use. Provision of facilities such as picnic areas, camping areas and walking tracks is discussed in section 4.3.2 while this section discusses information provision.

Provision of information about Nangar will involve three levels:

- promotion to increase community awareness of the existence of the park, its conservation importance and visitor opportunities;
- orientation to enable visitors to find their way around the park and to introduce them to its landscape; and
- interpretation of individual components of the park's environment in order to increase visitor understanding of the park's values and of the environment in general.

Promotion of the park is undertaken through such means as media releases, distribution of brochures, liaison with park neighbours and talks to community organisations.

A brochure has been prepared outlining the area's values and visitor opportunities and will be distributed to NPWS offices, tourist information centres and other appropriate locations. This will be updated as visitor facilities are constructed.

The park's entrances and roads are signposted. It is intended to arrange directional signs from nearby towns or road intersections and to place information and interpretive signs at features of interest as set out below.

## Desired Outcomes

- There is widespread community understanding and appreciation of the park's natural and cultural values.
- Visitors are aware of the park's recreation opportunities and can easily find their way to park facilities.
- The park is a useful educational resource for local schools and community organisations.

## Strategies

- *Produce media releases and attend meetings with neighbours and community organisations to promote community understanding of park values and management strategies.*
- *Emphasise the following themes in promotion and interpretation programs:*
  - *the importance of conserving remnant vegetation in the Central West region;*
  - *the conservation value of the park's restricted woodland communities and the park's habitat value for threatened and declining native fauna;*
  - *the diversity of birds that can be seen in the park;*
  - *the Aboriginal cultural values of the park;*
  - *past European land uses such as agriculture, forestry, mining and bushrangers, and the story of places such as Dripping Rock Homestead and the Chinese garden;*
  - *geology and landscape features, particularly, the Nangar range, the cliff face and Dripping Rock Falls.*
- *Distribute the park brochure to tourist information centres and other appropriate locations, and update the brochure as needed.*
- *Arrange directional signposting to the park from nearby road intersections.*
- *Provide additional directional signposting within the park as facilities are provided.*
- *Place orientation/interpretive signs at the following locations - Dripping Rock Homestead (general visitor information and interpretation of homestead area), Dripping Rock Falls carpark area, Chinese garden and Nangar Lookout. Provide additional small signs for individual features such as the homestead buildings if in line with the conservation plan, future uses and protection needs.*
- *Support and assist educational use of the park by schools, community groups and individuals through provision of information and programs such as walks and talks.*

## 6.2 RECREATION OPPORTUNITIES

Nangar National Park has a pattern of existing recreation use but no developed facilities. Dripping Rock Homestead, the Nangar Mountain summit and Dripping Rock Falls, all in the central part of the park, are the three main areas currently

visited. Some informal picnicking and camping occurs at these and other locations along the roads and at the southern boundary. Other uses include walking, horse riding and trail bike riding.

The park's scenic views and its expansive undeveloped nature are considered to be its primary recreational attractions, along with individual features such as the homestead and waterfall. These attractions will be retained by ensuring that facilities are located to minimise visual impact and are relatively small and basic. Only recreational uses that are ecologically sustainable and contribute to the visitor's enjoyment, understanding and appreciation of the park will be provided for.

Visitor numbers are relatively low to the four Central West parks compared to the large high profile parks in adjacent regions such as the Blue Mountains and Warrumbungles. However, it is expected that as Nangar National Park becomes more widely known and facilities are provided, visitor numbers will increase.

Facilities will be provided at the main destinations as set out below. As stated in section 3, the southern part of the park will not be developed in order to maintain a relatively undisturbed area for continuation of natural processes and self-reliant recreational uses such as walking.

### **Access**

There are two main entrances to the park. Access into the western side of the park is from the Escort Way, (the Eugowra – Orange Road); the turn off into Dripping Rock Trail is 10 kilometres north-east of Eugowra. Access into the eastern side of the park is via Longs Corner Road; the turn off is 10 kilometres north of Canowindra.

The status of trails in and around Nangar National Park (see map) is as follows:

Crown Roads: Glen Echo Trail (section adjacent to portion 164)

Public Roads (Council Roads): Dripping Rock Trail, Glen Echo Trail (southern part), and Nanami Lane.

Crown Land (Roads): Mogong Creek Trail.

Park Roads: Terarra Creek Trail, Goanna Trail, and Nangar Trail.

Management Trails: Gum Creek Trail, Splitstaff Creek Trail, Murga Mountain Trail, Licking Hole Creek Trail, Mt Taylor Trail, and trail from Splitstaff Creek Trail to park boundary (Sugarloaf Creek Trail).

Private Roads: Terarra Creek Trail (section on portion 164).

Vehicle access into the park is problematic in wet weather due to the granitic and solodic soils present in some locations. During wet weather trail conditions will be monitored and signs erected to notify the public of conditions and temporary closures.

The road in from the west, from the Escort Way, to Dripping Rock Falls will be maintained to 2WD standard but the rest of the road system will only be 4WD standard because of the steep and rocky terrain. Visitors will be directed to the western entrance. The eastern entrance will be available for use but will not be promoted.

## **Day-use**

Dripping Rock Falls flows only after rain but is an attractive location at any time. This will be the main day-use area in the park. At present the area available for facility development and the scenic value are limited by location of the road next to the falls. The road will be closed approximately 150m north of the falls and a carpark provided. 4WD vehicles will be diverted around the hill to the north using an existing alternative track. A picnic area will be constructed adjacent to the carpark and walking access provided to the falls.

The Mount Nangar summit is a popular day use destination but can only be accessed by 4WD vehicles. A lookout barrier has been provided at the edge of the cliff face. This over-looks the valley below and provides expansive views of the district. There is limited room at the summit and the surface is very rocky. Car parking will be set back from the summit to avoid impacts.

Future public use of the homestead area will be subject to evaluation and implementation of the options contained within the Conservation Management Plan. The chosen option may limit day visitor access to the homestead precinct, but in any case, the homestead is an interesting feature that can be interpreted from the road. A carpark and signs will be provided.

## **Camping**

A number of park visitors currently camp around the Dripping Rock Homestead, and also use small sites along the Terarra Creek Trail and Mogong Creek Trail. Vehicle-based camping will be restricted to designated areas to prevent environmental degradation.

Only one camping area is considered necessary at present given the small size of the park and low visitor numbers. An area on a bend of Terarra Creek near the Chinese garden has been chosen for development. This site is very attractive and screened from the road. There is room for approximately 6 campsites.

An additional site near the park boundary will be available for horse and other groups camping by permit.

Pack camping will be permitted throughout the park away from roads and visitor facilities.

## **Walking tracks**

A low level of bushwalking occurs in the park, there are currently no formal walking tracks. Small informal groups occasionally trek through the bush from the Escort Way near Murga up the western rim of the Nangar Cliffs to Mount Nangar (lookout) and may return down the Nangar Ridge to the east. Some walkers, (possibly without 4WD's), drive in the Mogong Creek Trail to the start of Nangar Trail (a rough 2WD track), park and walk up the to Nangar Mountain lookout.

The Dripping Rock Homestead and surrounds are an interesting place for visitors to wander around and this will be facilitated as far as possible within the constraints of the Conservation Management Plan and any lease arrangements arising from its implementation.

The Service will construct a walking track from the Terarra Creek Camping Ground around to Dripping Rock Falls. A walking track will be constructed then from the Dripping Rock Falls (Day Use Area) up to Mount Nangar (lookout). The walking track will be extended from Mount Nangar across to Murga Mountain. From Murga Mountain the walking track will link up with Murga Mountain Trail (Murga Mountain Trail is a vehicular trail but it will be closed to all but management vehicles at the Terarra Creek Trail end). This will result in a 13km walking track loop which will provide spectacular views and will traverse a variety of vegetation types. The location of the proposed walking tracks is shown on the map (centre pages).

Many areas of the park are suitable for self-reliant walking, for both day walks and overnight pack camping.

### **Horse riding**

Individuals and small groups and individuals have occasionally used the park for horse riding. Horse riding has mainly been on the roads and trails and the cleared, former farming country, along Terarra Creek where there is water. Horse camping has occurred at several locations but mainly at the homestead.

Horse riding will continue to be allowed in the park but will be controlled through a permit system to minimise impacts. Permits will need to be applied for in writing (letter, fax or e-mail) and will specify the areas/trails to be used, numbers of horses and any other conditions. Use will be monitored and conditions may be imposed, including limits placed on the location, scale or frequency of riding in the park if warranted.

The homestead yard cannot continue to be used for horse yarding / camping due to the damage being caused to the trees in the yard. Another area near the park entrance possessing shade and water has been identified and will be made available for horse yarding / camping.

### **Bicycle riding**

Bicycle riding is an appropriate activity in national parks when undertaken on suitable trails. There is little current cycling use in the park but cycling is increasing in popularity. It will be permitted on public vehicle and management trails but not on walking tracks because of safety risks.

### **Desired Outcomes**

- A variety of low key visitor opportunities are available that encourage appreciation of the natural environment.
- Facilities are designed and managed to provide a satisfying visitor experience and minimise impacts.

- Visitor use is compatible with the purposes of national parks and is ecologically sustainable.

### **Strategies**

- *Allow public vehicle use only on public roads (Dripping Rock Trail and Mogong Creek Trail) and the Terarra Creek Trail, Goanna Trail and Nangar Trail as shown on the map (centre pages).*
- *Provide 2WD access from the western boundary to Dripping Rock Falls car park and 4WD access on other trails. Improve creek crossings where necessary.*
- *Progressively develop facilities at existing visitor destinations in the northern part of the park to provide a range of low key recreation and tourism opportunities as follows:*
  - *Dripping Rock Falls – 2WD access to a car park set back approximately 150m from the falls, small picnic area with toilet adjacent to car park, walking tracks to the falls and to Mount Nangar, existing road past falls closed and vehicles diverted onto alternative trail to north;*
  - *Dripping Rock Homestead – 2WD access, walk to Murga Mountain;*
  - *Mount Nangar – 4WD access to a car park near the summit, lookout barrier and picnic table;*
  - *Terarra Creek Camping Area – 2WD access, car park, adjacent area for walk-in tent camping and small area for campervans/camper-trailers, toilet, small number of barbecues.*
- *Mark a walking route to Mount Nangar from Dripping Rock Falls as described above.*
- *Signpost disused vehicle tracks north east of Dripping Rock Homestead to form a walking track to Murga Mountain.*
- *Provide no facilities in the southern part of the park in order to minimise disturbance and provide an undeveloped area for walking.*
- *Allow pack camping throughout the park at locations more than 500m from roads, but don't promote this activity. Place further restrictions on pack camping if needed to minimise impacts.*
- *Encourage visitors to use fuel stoves or bring their own firewood into the park. Limit the number of barbecues provided at visitor facilities.*
- *Allow cycling on roads and management trails.*
- *Allow horse riding under permit in the park. Subject to the conditions of the permit, riding may be permitted for individuals and groups of up to 15 horses to use some*

*or all of the following roads / trails / areas: Dripping Rock Trail, Terarra Creek Trail, Goanna Trail, Nangar Trail (up to the carpark), Splitstaff Creek Trail, Glen Echo Trail, Mogong Creek Trail and the cleared former farming country. Require adherence to the "Australian Alps National Parks Horse Riding Code".*

- *Allow camping by horse and other groups, subject to permit, just off the Dripping Rock Trail, 1km from the park entrance. Fence an area to contain the horses.*
- *Encourage use of minimum impact recreation practices, including minimum impacts on other park users, through information signs and other means.*
- *Permit commercial and community group tours and activities subject to the following:*
  - *limits on group sizes and frequency of use if necessary to minimise environmental impacts and conflicts with other park users;*
  - *prior permission for groups of more than 12; and*
  - *a licence for commercial use.*
- *Monitor car numbers within the park by counters placed strategically on trails. Make spot checks to record numbers of visitors using picnic and camping areas. Monitor the condition of popular visitor areas. Monitor impacts of activities such as horse riding, camping and cycling.*
- *If the Idle Valley inholding is acquired, the Goanna Trail will be closed and revegetated and access provided to Mt Nangar along the original route along the valley.*



## 7. RESEARCH AND MONITORING

Scientific study improves understanding of the park's natural and cultural resources and the processes that affect them. Research also establishes the requirements for management of particular species. As mentioned previously, plant and animal surveys have been undertaken but further study is needed to fill in information gaps.

Research by other organisations and students may provide valuable information for management. CSIRO is currently using the park to study rising water tables in woodland areas, and insects on Kurrajong trees in cultivated and uncultivated areas. A prospectus will be prepared to encourage involvement of other organisations in priority research areas.

Bird watchers occasionally visit the park and, along with other interested visitors, can provide valuable information about the park's resources. They will be encouraged to pass their observations on to NPWS staff.

In addition to research, previous sections of this plan provide for the following monitoring programs:

- the status of the significant woodland communities and threatened plant and animal species;
- the effectiveness of introduced species control programs;
- the impacts of prevailing fire regimes;
- the condition of the Dripping Rock Homestead;
- numbers of vehicles and walkers using roads and trails, numbers of visitors using picnic and camping areas; and
- the condition of popular visitor areas.

Information from monitoring will be used to design and adjust management programs and to review the plan of management.

### **Desired Outcomes**

- Research is undertaken that enhances the information base and assists management of the park.
- Research causes minimal environmental damage.
- Monitoring programs are in place to detect any changes in the status of park resources.

### **Strategies**

- *Undertake research to provide information about the park's natural and cultural heritage and human use in order to facilitate management.*
- *Permit appropriate research by other organisations and individuals and promote research that is directly useful for management purposes.*

- *Require research structures and long term markers to be placed in locations that will minimise their visual impact and require their removal upon completion of the research.*
- *Maintain on-going liaison with the CSIRO and any other organisations with research projects in the park.*
- *Prepare a prospectus as a guide to preferred research projects in the park. Preferred topics will be those of direct relevance to management and will include:*
  - *plant and animal survey, particularly survey for threatened and biogeographically significant species;*
  - *Aboriginal site survey and assessment of Aboriginal cultural values;*
  - *research into the history of use of the area; and*
  - *the fire response of the parks plant communities and significant species.*
- *Encourage bird watchers or similar groups to pass on information gathered in the park, where the Service is aware of their visits.*

## 8. COMMERCIAL AND OTHER USES

A commercial beekeeping operation is located in the south-eastern part of the park under a licence issued before gazettal of the park. This will be permitted to continue operating in accordance with Service policy.

There are currently no commercial tour or activity operators using Nangar National Park. As discussed in section 4.4, the homestead and/or associated buildings may be leased for adaptive reuse. Applications to conduct natural or cultural tours or activities in the park will be considered on merit.

A trigonometrical station is located on the summit of Mount Nangar. Access for maintenance is via the Nangar Trail.

### Desired Outcomes

- Commercial and other non-park uses have minimal environmental impact.

### Strategies

- *Continue to permit the commercial beekeeping operation in accordance with Service policy and licence conditions that specify hive numbers and access arrangements.*
- *Investigate leasing of the homestead and/or associated buildings for short term holiday accommodation, education or research purposes.*
- *Consider applications to conduct commercial natural and/or cultural tours and activities in the park on merit. Licence if appropriate.*
- *Continue to permit maintenance access to the Mount Nangar trig.*

## 9. MANAGEMENT FACILITIES AND OPERATIONS

As part of fire management planning for the park, national park roads and management trails as shown on the map (centre pages), and described in the section on Access, will be classified and maintained to at least the standards set out in the Bush Fire Coordinating Committee's Policy No. 01/03 for fire access. These trails are also used for weed spraying access, pest animal control, emergency operations, scientific research and monitoring.

As set out in earlier sections of the plan, management strategies such as pest control and hazard reduction burning will be carried out cooperatively with park neighbours and other authorities. This is particularly important with regard to the "Idle Valley" and "Niven's" inholdings.

The park access system crosses private property (portion 164) east of the Dripping Rock Homestead. There is not a public or crown road reserve across this block and if offered for sale the Service will seek to purchase this allotment. Alternatively, the Service will work toward securing legal access across this block for park management and visitor use access purposes. If this can not be achieved the Service may consider alternative access options around this allotment.

For fire, pest, management access and visitor management purposes, it would be desirable to acquire portions 62 and 21 and incorporate these blocks into the park. If offered for sale, the Service will seek to purchase these allotments.

### **Desired Outcomes**

- Management facilities adequately serve the needs of park management and have acceptable environmental impact.
- A good relationship is maintained with park neighbours.

### **Strategies**

- *Maintain park roads and trails to required standards.*
- *If offered for sale, the Service should seek to purchase portion 164, "Niven's", or, alternatively, seek to arrange legal access across portion 164 or construct access around this allotment.*
- *If offered for sale, the Service should seek to purchase portions 62 and 21, "Idle Valley".*
- *Maintain close liaison with park neighbours, including the owners of portions 164, 62 and 21, to deal with matters of mutual concern.*

## 10. PLAN IMPLEMENTATION

This plan of management is part of a system of management developed by the National Parks and Wildlife Service. The system includes the National Parks and Wildlife Act, management policies, established conservation and recreation philosophies, and strategic planning at corporate, directorate and regional levels. The latter may include development of related plans such as regional recreation plans, species recovery plans, fire management plans and conservation plans.

Section 81 of the Act requires that this plan of management shall be carried out and given effect to and that no operations shall be undertaken in relation to Nangar National Park unless they are in accordance with the plan.

Implementation of this plan will be undertaken within the annual programs of the Service's Central West Region. The actions identified in the plan are those to which priority will be given in the foreseeable future. Other management actions may be developed consistent with the plan objectives and strategies.

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

The environmental impact of proposed activities will be assessed at all stages in accordance with established environmental assessment procedures. Where impacts are found to be unacceptable, activities will be modified in accordance with the plan policies.

This plan of management does not have a specific term and will stay in force until amended or replaced in accordance with section 75(7) of the Act. The implementation of the plan will be monitored and its success in achieving the identified objectives will be assessed.

### **Strategies**

- *Undertake an annual review of progress in implementing this plan of management.*
- *Undertake an assessment after 5 years of the effectiveness of managing the park in accordance with this plan and of the degree of success in achieving the plan's objectives and desired outcomes. Base the evaluation on the monitoring programs set out in this plan and any others that may be developed.*

### Implementation Table

Priority	Activity	Plan reference
High	Undertake additional vegetation survey in the Mount Nangar heathlands and throughout the park to check for significant species	4.2
	Undertake survey for threatened fauna species	4.2
	Implement the Dripping Rock Conservation Management Plan	4.3
	Make safe the old copper mine entrance	4.3
	Undertake control programs for St Johns wort, blackberry, tree of heaven, Bathurst burr, prickly pear, horehound, foxes, goats and rabbits	5.3
	Finalise and implement fire management plan	5.4
	Participate in the Canobolas Zone Bush Fire Committee	5.4
	Distribute park brochure and update as needed	6.1
	Provide information sign adjacent Dripping Rock Homestead	6.1
	Finish upgrading creek crossings on road to falls	6.2
	Construct Terarra Creek camping area	6.2
	Maintain liaison with park neighbours	9
Medium	Implement recovery plans for threatened species	4.2
	Monitor condition/status of significant woodland communities, threatened species, declining woodland birds and regeneration of cleared areas	4.2
	Encourage retention and expansion of natural vegetation on adjacent lands	4.2
	Record and remove log cabin	4.4
	Evaluate and pursue options for future use of the homestead and the homestead precinct	4.4, 8
	Keep Chinese garden clear of trees and shrubs, maintain fence	4.4
	Record collapsed cottage and remove (apart from stumps)	4.4
	Record other historic places	4.4
	Prepare introduced species pest control plan	5.3
	Undertake fuel reduction and monitoring	5.4
	Arrange directional signposting to the park	6.1
	Provide directional signposting to new facilities	6.1
	Provide interpretive sign at Chinese garden	6.1
	Construct carpark, picnic area, interpretive signs, walking track at Dripping Rock Falls, redirect road to Mount Nangar	6.1, 6.2
	Provide carpark set back from summit, benches and interpretive sign on Mount Nangar	6.1, 6.2
	Provide area for horse camping	6.2
	Encourage minimal impact recreation practices	6.2
	Monitor environmental impacts of horse riding, camping and cycling activities	6.2
	Maintain vehicle trails	9

Low	Remove wire from paddock fences except at Dripping Rock Homestead	4.4
	Remove exotic seedlings around homestead	4.4
	Monitor erosion and treat if needed	5.1
	Monitor car and walker numbers	6.2
	Continue to participate in Lachlan CMB	5.4
	Encourage research into ecological effects of fire	5.4
	Organise media releases and meetings to promote community understanding of park	6.1
	Mark walking route from Dripping Rock Falls to Mt Nangar	6.2
	Signpost walk to Murga Mountain	6.2
	Monitor visitor use	6.2
	Prepare and distribute research prospectus	7
	If offered for sale seek acquisition of Portion 164 or establish legal access across portion 164 or construct access around this allotment	9
	If offered for sale seek acquisition of Portions 62 and 21 ("Idle Valley")	9

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