Office of Environment & Heritage
NSW National Parks & Wildlife Service

Plan of Management

The Charcoal Tank Nature Reserve

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NSW National Parks and Wildlife Service

November 2012

This plan of management was adopted by the Minister for the Environment on 3rd November 2012.

Acknowledgments

This plan of management is based on a draft plan prepared by staff of the Western Rivers Region of the NSW National Parks and Wildlife Service (NPWS), part of the Office of Environment and Heritage, Department of Premier and Cabinet.

The NPWS acknowledges that The Charcoal Tank Nature Reserve is in the traditional country of the Wiradjuri people.

FRONT COVER: Bull mallee (*Eucalyptus behriana*) in The Charcoal Tank Nature Reserve. Photo: David Egan, NPWS.

For additional information or any inquiries about this park or this plan of management, contact the NPWS Griffith Area Office, 200 Yambil St, Griffith 2680 or by telephone on 02 6966 8100.

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Foreword

The Charcoal Tank Nature Reserve is 86.4 hectares in size and is located 12 kilometres south of West Wyalong in south-western New South Wales.

The Charcoal Tank Nature Reserve is one of only three reserves in New South Wales containing the critically endangered ecological community "Mallee and Mallee-Broombush dominated woodland and shrubland, lacking *Triodia,* in the NSW South Western Slopes Bioregion". It also contains two other endangered ecological communities and over 165 birds have been recorded in the reserve, including twenty-six threatened species.

The New South Wales *National Parks and Wildlife Act 1974* requires that a plan of management be prepared for each nature reserve. A draft plan of management for The Charcoal Tank Nature Reserve was placed on public exhibition from 9 December 2011 to 12 March 2012. The submissions received were carefully considered before adopting this plan.

The plan contains a number of actions to achieve the NSW 2021 goal to protect our natural environment, including monitoring of erosion and remedial works where necessary, actions to assist the recovery of threatened species, support of ongoing bird-banding activities and analysis of banding data, continued management of pest species, and investigation of appropriate fire regimes for plant communities on the reserve. It also provides for passive nature-based activities such as walking, bird banding and appropriate research and environmental educational activities on the reserve.

This plan of management establishes the scheme of operations for The Charcoal Tank Nature Reserve. In accordance with section 73B of the *National Parks and Wildlife Act 1974*, this plan of management is hereby adopted.

Robyn Parker MP
Minister for the Environment

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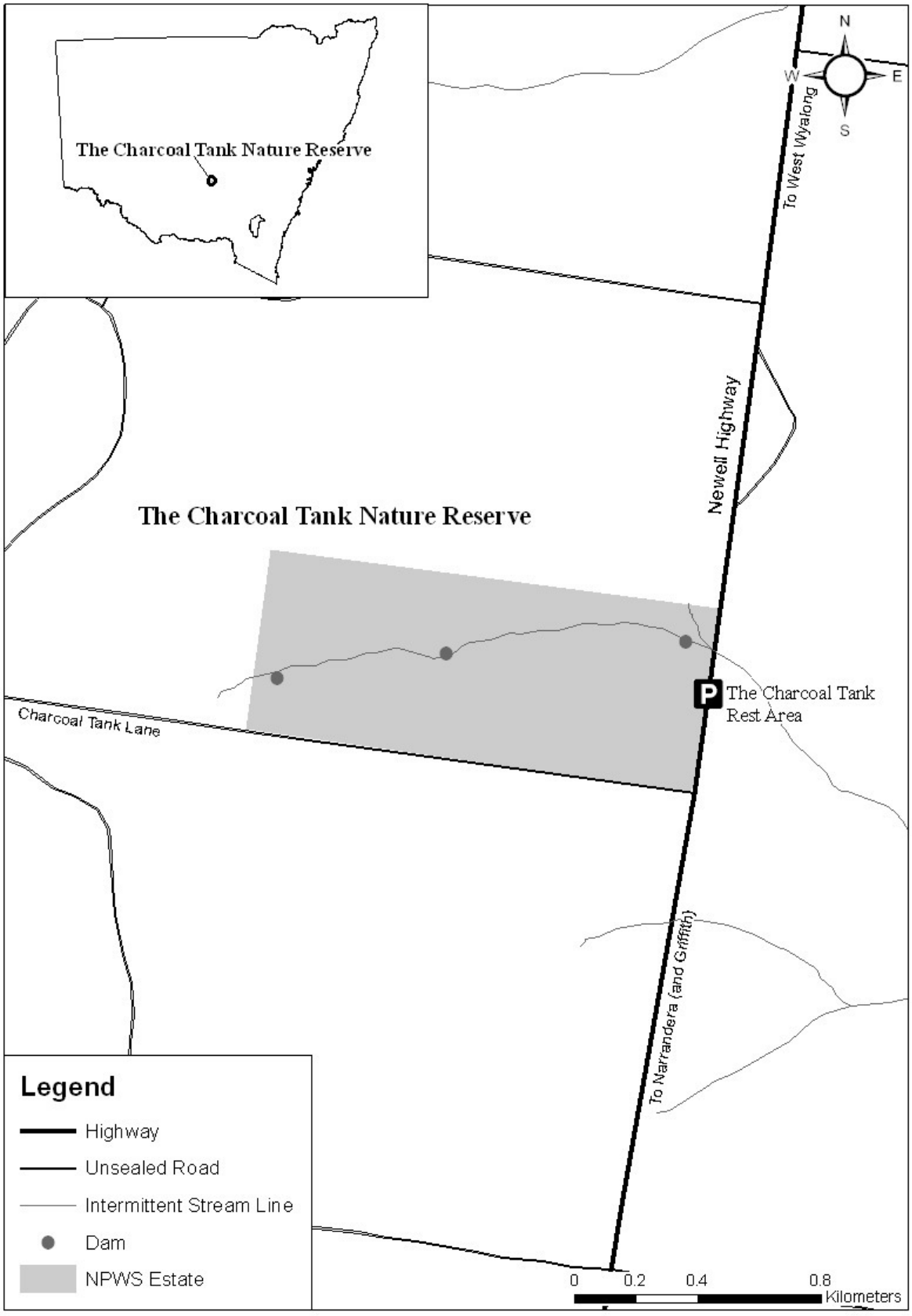
The Charcoal Tank Nature Reserve
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To West Wyalong
Newell Highway
The Charcoal Tank Nature Reserve
The Charcoal Tank
Rest Area
Charcoal Tank Lane
To Narrandera (and Griffith)
Legend
Highway
Unsealed Road
Intermittent Stream Line
Dam
NPWS Estate
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Kilometers

1. Introduction

1.1 Location, gazettal and regional setting

The Charcoal Tank Nature Reserve is located adjacent to the Newell Highway, 12 kilometres south of West Wyalong in south-western New South Wales. The reserve is 86.4 hectares in size.

Prior to becoming a nature reserve the area was notified as part of a Travelling Stock and Camping Reserve on 9 August 1911, and established as a Public Watering Place on 8 November 1911. On 9 September 1960 it was proclaimed as 'Charcoal Tank Wildlife Refuge No. 2'. The stock reserve and watering place were revoked in 1965, and the land was dedicated as 'The Charcoal Tank Nature Reserve No. 46' under section 9(1) of the *Fauna Protection Act 1948* on 6 May 1966, before being designated as a nature reserve with the proclamation of the *National Parks and Wildlife Act 1974.*

The reserve is within the Interim Biogeographic Regionalisation of Australia (IBRA) South West Slopes Bioregion. Only 1.9 percent of the Bioregion is within conservation reserves. The surrounding region has been extensively cleared for cropping and grazing, with remaining native vegetation in a highly fragmented state. Large areas of woodland remain only on hillsides and shallow gravely soils unsuitable for agriculture and most areas with stands of blue mallee *(Eucalyptus polybractea)* and broombush *(Melaleuca uncinata)* are harvested for oil production and brush fencing.

1.2 Statement of significance

The Charcoal Tank Nature Reserve is considered to be of significance for its biological values:

- It is one of only three NSW reserves containing the critically endangered ecological community "Mallee and Mallee-Broombush dominated woodland and shrubland, lacking *Triodia,* in the NSW South Western Slopes Bioregion" listed under the *Threatened Species Conservation Act 1995*.
- It is situated within a bioregion very poorly represented in conservation areas.
- Twenty-six animal species listed as endangered or vulnerable under the *Threatened Species Conservation Act 1995* have been recorded within the reserve.

2. Management Context

2.1 Legislative and policy framework

The management of The Charcoal Tank Nature Reserve in NSW is in the context of a legislative and policy framework, primarily the *National Parks and Wildlife Act 1974* (NPW Act) and Regulation, the *Threatened Species Conservation Act 1995* (TSC Act) and the policies of the National Parks and Wildlife Service (NPWS).

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

A plan of management is a statutory document under the NPW Act. Once the Minister has adopted a plan, the plan must be carried out and no operations may be undertaken in relation to the lands to which the plan relates unless the operations are in accordance with the plan. This plan will also apply to any future additions to The Charcoal Tank Nature Reserve. Should management strategies or works be proposed in future that are not consistent with this plan, an amendment to the plan will be required.

2.2 Management purposes and principles

Nature Reserves
Nature reserves are reserved under the NPW Act to protect and conserve areas containing outstanding, unique or representative ecosystems, species, communities or natural phenomena.

Under the Act (section 30J), nature reserves are managed to:

- conserve biodiversity, maintain ecosystem functions, and protect geological and geomorphological features and natural phenomena;
- conserve places, objects, features and landscapes of cultural value;
- promote public appreciation, enjoyment and understanding of the reserve's natural and cultural values; and
- provide for appropriate research and monitoring.

The primary purpose of nature reserves is to conserve nature. Nature reserves differ from national parks in that they do not have the provision of visitor use as a management purpose or principle.

2.3 Specific management directions

In addition to the general principles for the management of nature reserves (refer section 2.2), the following specific management directions apply to the management of the Charcoal Tank Nature Reserve:

- Protection of threatened species;
- Control of introduced species; and
- Reduction of impacts caused by people entering the reserve or dumping rubbish on the reserve.

3. Values

The location, landforms and plant and animal communities of an area have determined how it has been used and valued. Both Aboriginal and non-Aboriginal people place values on natural areas, including aesthetic, social, spiritual and recreational values. These values may be attached to the landscape as a whole or to individual components, for example to plant and animal species used by Aboriginal people. This plan of management aims to conserve both natural and cultural values. For reasons of clarity and document usefulness, various aspects of natural heritage, cultural heritage, threats and on-going use are dealt with individually, but their inter-relationships are recognised.

3.1 Geology, landscape and hydrology

The terrain of the reserve is generally flat with minor sand dunes and shale ridges. The geology consists of Upper Ordovician metamorphics of schists, micaceous silty sandstones and phyllites overlain by alluvial soils. The soils are hard setting red loamy clays.

A drainage line flows through the reserve, where three dams have been constructed. Gully erosion occurs on the western half of the reserve, probably initiated from the original construction of the dams and exacerbated by increased runoff from surrounding cleared paddocks. Despite past efforts to contain the erosion extent, the problem is still obvious.

3.2 Native plants

Benson (2008) recorded three vegetation communities on the reserve, based on the vegetation mapping by Fleetwood (1987):

1. 'Broombush *(Melaleuca uncinata)* – Green Mallee *(Eucalyptus viridis)* – Blue Mallee *(E. polybractea)* very tall shrubland on stony rises in the NSW Slopes Bioregion'. This dense community of broombush with scattered eucalypts is found on low ridges around West Wyalong, and occupies 42 hectares of the reserve. Other shrubs occurring in this community include dagger-leaved wattle *(Acacia rhigiophylla)* and purple kunzea *(Kunzea parvifolia).* It is estimated less than 30 percent, or 200 hectares, remains of this community, and it is considered endangered (Benson 2008). The Charcoal Tank Nature Reserve is one of only three reserves in NSW that contains this community, the others being Buddigower Nature Reserve and South West Woodland Nature Reserve. This community is part of the critically endangered ecological community "Mallee and Mallee-Broombush dominated woodland and shrubland, lacking *Triodia,* in the NSW South Western Slopes Bioregion", listed on the schedules of the TSC Act.

2. 'Mugga Ironbark *(Eucalyptus sideroxylon)* – Inland Grey Box *(E. microcarpa)* – Cypress Pine *(Callitris endlicheri)* tall woodland on footslopes of low hills in the NSW South-western Slopes Bioregion' covers approximately 44 hectares. There is a well-developed understorey with shrubs including quandong *(Santalum acuminatum),* moonah *(Melaleuca lanceolata),* hakea wattle *(Acacia hakeoides)* and cough bush *(Cassinia laevis).* Only an estimated 18 percent of the original extent of this community remains and is also regarded as endangered (Benson 2008).

3. 'Dwyer's Red Gum *(Eucalyptus dwyeri)* – Black Cypress *(Callitris endlicheri)* – Currawang *(Acacia doratoxylon)* shrubby low woodland on rocky hills mainly in the NSW south western slopes'. Two hectares of this community occurs on the reserve.

Anecdotally, the understorey of the Mugga Ironbark – Grey Box Woodland has become more sparse during the last thirty years. The degree and cause is not certain but may include factors such as prolonged reduction in rainfall and more pronounced grazing impacts.

Bull mallee *(Eucalyptus behriana)* also occurs in the reserve, and parts of the vegetation community could be recognised as Blue Mallee – Bull Mallee – Green Mallee very tall mallee shrubland. This community is also regarded as endangered, with only 13 percent of its pre-European extent remaining (ibid.).

No threatened plant species listed under the TSC Act have been recorded on the reserve. Dagger-leaved wattle (*Acacia rhygiophylla*) was identified by Briggs and Leigh (1996) as a Rare or Threatened Australian Plant (ROTAP) species, coded 3RCa (rare, geographic range greater than 100 kilometres, 1000 plants or more in conservation reserves), making it a regionally significant species.

3.3 Native animals

The fauna of The Charcoal Tank Nature Reserve is well known, having been a regular bird banding site for many years. Five amphibians, nine reptiles, approximately 165 birds, nine native and seven introduced mammals have been recorded. A high number of threatened species have been recorded in this small reserve, although the majority have been recorded as either visitors or passage migrants (in the case of the plains-wanderer, only from feathered remains probably caught by a raptor from surrounding cleared paddocks). Only the brown treecreeper, varied sittella and shy heathwren are considered to be breeding residents. The number of threatened birds reflects the high degree of vegetation clearance in the region and the vulnerability of these species to the effects of habitat loss and fragmentation (Traill & Duncan 2000). Some species such as the malleefowl, chestnut quail-thrush, Gilbert's whistler and southern scrub-robin, have become extinct from the reserve in the last thirty years (M. Clayton, pers. comm. August 2010). The frequency of visits by threatened species may be declining, however the trend for resident threatened species is not clear. Overall, bird captures for banding activities have declined over the past decade, associated with drier conditions.

Because of the small reserve size, many species would be unable to maintain viable population sizes without areas of suitable native vegetation located off-reserve. Maintaining the remaining biodiversity depends on the condition and connectivity of remnant vegetation in the region.

Threatened animal species recorded in The Charcoal Tank Nature Reserve are listed in Table 1.

Table 1. Threatened animal species recorded in The Charcoal Tank Nature Reserve.

Common name	Scientific name	Legal Status *
Malleefowl	*Leipoa ocellata*	Endangered #
Brolga	*Grus rubicundus*	Vulnerable
Plains-wanderer	*Pedionomus torquatus*	Endangered
Major Mitchell's Cockatoo	*Lophochroa leadbeateri*	Vulnerable
Glossy Black-Cockatoo	*Calyptorhynchus lathami*	Vulnerable
Swift Parrot	*Lathamus discolor*	Endangered #
Turquoise Parrot	*Neophema pulchella*	Vulnerable
Superb Parrot	*Polytelis swainsonii*	Vulnerable #
Little Lorikeet	*Glossopsitta pusilla*	Vulnerable
Barking Owl	*Ninox connivens*	Vulnerable
Spotted Harrier	*Circus assimilis*	Vulnerable
Little Eagle	*Hieraaetus morphnoides*	Vulnerable
Brown Treecreeper (eastern subspecies)	*Climacteris picumnus victoriae* [1]	Vulnerable
Shy Heathwren	*Hylacola cauta*	Vulnerable
Speckled Warbler	*Chthonicola sagittata*	Vulnerable
Painted Honeyeater	*Grantiella picta*	Vulnerable
Regent Honeyeater	*Anthochaera phrygia*	Endangered #
White-fronted Chat	*Epthianura albifrons*	Vulnerable
Varied Sittella	*Daphoenositta chrysoptera*	Vulnerable
Southern Scrub-robin	*Drymodes brunneopygia*	Vulnerable
Flame Robin	*Petroica phoenicea*	Vulnerable
Hooded Robin (south-eastern form)	*Melanodryas cucullata cucullata*	Vulnerable
Grey-crowned Babbler (eastern subspecies)	*Pomatostomus temporalis temporalis*	Vulnerable
Chestnut Quail-thrush	*Cinclosoma castanotum*	Vulnerable
Gilbert's Whistler	*Pachycephala inornata*	Vulnerable
Diamond Firetail	*Stagonopleura guttata*	Vulnerable

Information derived from the NPWS Wildllife Atlas and from information provided by Mark Clayton/Australian Bird and Bat Banding Scheme (August, 2010).

* Status under TSC Act
# Denotes species also listed as nationally threatened under the EPBC Act.
[1] The Charcoal Tank Nature Reserve falls within the intergrade zone between this subspecies and the non-threatened inland subspecies *Climacteris picumnus picumnus.* A precautionary approach has been taken to include this species.

3.4 Aboriginal heritage

The Charcoal Tank Nature Reserve lies within the traditional country of the Wiradjuri people. The land, water, plants and animals within a landscape are central to Aboriginal spirituality and contribute to Aboriginal identity. Aboriginal communities associate natural resources with the use and enjoyment of foods and medicines, caring for the land, passing on cultural knowledge, kinship

systems and strengthening social bonds. Aboriginal heritage and connection to nature are inseparable and need to be managed in an integrated manner across the landscape.

Whilst the precise history of Aboriginal use of the area is not known the area in which the reserve is located would have been used for food gathering and hunting.

The reserve is within the boundaries of the West Wyalong Local Aboriginal Land Council. While the NPWS has legal responsibility for the protection of Aboriginal sites and places under the NPW Act, it acknowledges the right of Aboriginal people to make decisions about their own heritage. It is therefore policy that Aboriginal communities be consulted and involved in the management of Aboriginal sites, places and related issues, and the promotion and presentation of Aboriginal culture and history.

No Aboriginal sites are known to occur in the reserve.

3.5 Historic heritage

Cultural heritage comprises places and items that may have historic, scientific, aesthetic and social significance to present and future generations. The NPWS conserves the significant heritage features located in NSW parks and reserves.

The landscape of the reserve has been modified since European occupation. The reserve was originally set aside as a public watering place on a travelling stock reserve. Construction of the dams along the main drainage line in the reserve probably date to this time. Harvesting of broombush and mallee occurred in the past.

3.6 Visitor use, education and research

The reserve has been used as a regular bird-banding site since 1986. Data from this ongoing study has provided valuable insights into local bird population dynamics, and been used the Handbook of Australian, New Zealand and Antarctic Birds.

The eastern side of the reserve is flanked by the Newell Highway. There is a vehicle parking bay which is maintained by Roads and Maritime Services along this boundary. Most of the parking bay is within the nature reserve and may have been constructed for access to the fauna reserve prior to management by NPWS. The parking bay has had some modifications, including gravelling and placement of rubbish bins.

The parking bay has considerable impacts on the nature reserve. It is a focal point for dumping material into the reserve, including building rubble and loose rubbish. Makeshift fireplaces, toilet sites and a number of informal tracks fan out from this site.

Adjacent to the parking bay and within the reserve was a picnic shelter. This was constructed in 1980 by the West Wyalong Apex Club with the concurrence of the NPWS. The shelter subsequently fell into disrepair and was subject to ongoing vandalism, to the extent the shelter became a public safety hazard. The shelter was removed in 2005 and only the concrete slab remains.

4. Issues

4.1 Climate change

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

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

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

Other threats are addressed in Section 5 of the plan.

5. Implementation

This plan of management establishes a scheme of operations for The Charcoal Tank Nature Reserve. Implementation of this plan will be undertaken within the annual program of the NPWS Western Rivers Region.

Identified activities for implementation are listed in Table 2. Relative priorities are allocated against each activity as follows:

- **High** priority activities are those imperative to achievement of the objectives and desired outcomes. They must be undertaken in the near future to avoid significant deterioration in natural, cultural or management resources.
- **Medium** priority activities are those that are necessary to achieve the objectives and desired outcomes but are not urgent.
- **Low** priority activities are desirable to achieve management objectives and desired outcomes but can wait until resources become available.
- **Ongoing** is for activities that are undertaken on an annual basis or statements of management intent that will direct the management response if an issue that arises.

This plan of management does not have a specific term and will stay in force until amended or replaced in accordance with the NPW Act.

Table 2: Actions

Current Situation	Desired Outcomes	Management Response	Priority*
5.1 On-Park Ecological Conservation The reserve is a valuable small remnant of vegetation communities restricted in NSW. A number of threatened bird species have been recorded on the reserve. Only the shy heathwren, varied sittella and brown treecreeper are considered resident, but the reserve has food resources useful for birds moving through the area, including threatened species (e.g. swift parrots on winter migration). Under the TSC Act, strategies for the recovery of threatened species, populations and ecological communities have been set out in a state-wide Threatened Species Priority Action Statement (PAS). Individual recovery plans may also be	Native plant and animal species and communities are conserved. Negative impacts on threatened taxa are stable or diminishing. Structural diversity and habitat values are restored in areas subject to past disturbance. Landscape and	5.1.1 Monitor the erosion in the drainage line and undertake low-impact (ecologically and aesthetically) remedial actions as required to minimise erosion. 5.1.2 Implement relevant strategies in the PAS and recovery plans for threatened species. 5.1.3 Support analysis of bird banding data for the purposes of improving the understanding of changes in bird dynamics, and to inform management actions to improve conservation outcomes (such as mitigating the adverse effects of fire, grazing, and climate change).	High/ Ongoing High

Current Situation	Desired Outcomes	Management Response	Priority*
prepared which consider management needs in more detail. There is an erosion gully cutting roughly east-west through the centre of the reserve. Erosion is most pronounced on the western half of the gully line. Climate change has been identified as a key threatening process under the TSC Act. Climate change may significantly affect biodiversity by changing the population size and distribution of species, modifying species composition, and altering the geological extent of habitats and ecosystems.	catchment values are protected. The effects of climate change on natural systems are reduced.		
5.2 Cultural Heritage No Aboriginal sites have been found on the reserve. The reserve was originally a public watering place, aided by the construction of dams along the main drainage line. The dams may be of local historical significance. There is no evidence of any buildings on the reserve other than the base of the old picnic shelter (refer sections 3.5 and 6. 7).	Aboriginal places and values are identified and protected. Aboriginal people are involved in management of the Aboriginal cultural values of the park. Negative impacts on Aboriginal and historic heritage values are stable or diminishing.	5.2.1 Consult and involve the West Wyalong Local Aboriginal Land Council and other relevant Aboriginal community organisations in the management of Aboriginal sites, places and values, including interpretation of places or values. 5.2.2 Undertake an archaeological survey and cultural assessment prior to all works with the potential to impact on Aboriginal or historic sites and places. 5.2.3 Manage the dams in the reserve with consideration of their potential historical significance. No changes to their structural attributes should be made without an assessment of their cultural value.	High High High

Current Situation	Desired Outcomes	Management Response	Priority*
5.3 Visitor Use and Services Use of the nature reserve must be carefully managed since it is a small but significant area of remnant vegetation. Public use is partly a consequence of the Rest Area beside the Newell Highway. The Rest Area is predominately located in the reserve and not on the road reserve. Existing public use of the area is unfavourable with unacceptable levels of rubbish and toilet waste impacting on the reserve. Additionally the size and layout of the Rest Area is not well suited to vehicle traffic – particularly larger vehicles. There are other potentially suitable locations to establish a Rest Area south of The Charcoal Tank NR. Some informal walking tracks fan out from the Rest Area. There are no roads or management trails within the reserve. The reserve has been used as a regular bird-banding site for many years. A small group of bird-banders use the reserve to camp during banding trips, up to three times a year, accessing the reserve off Charcoal Tank Lane. An informal camping area has developed on this site.	Visitor use is appropriate and ecologically sustainable. Negative impacts of visitors on park values are stable or diminishing. Visitor use and services encourage appreciation of the park's values.	5.3.1. Continue to liaise with Roads and Maritime Services to have the Rest Area removed from the reserve and subsequently fence and rehabilitate the site. 5.3.2. Support ongoing bird-banding activities, and appropriate research and environmental educational activities on the reserve. 5.3.3. Camping will be permitted only for research purposes. Camping in the reserve will require a written consent or a scientific permit. This consent will include conditions to minimise impacts upon natural values. 5.3.4. The impact of research and recreation activities will be monitored. Where impacts are identified (such as damage to vegetation, inappropriate campfire use or collection of firewood on reserve) reserve access and conditions of use will be revised. 5.3.5 Maintain integrity of natural values by maintaining the area free of roads and management trails. 5.3.6 Passive nature-based recreation is permitted. Cycling, horse riding and public vehicle use are not permissible due to a lack of trails.	High Ongoing Ongoing Ongoing/ Medium Ongoing/ High Ongoing
5.4 Community Programs and Education The reserve is isolated from other substantial areas of native vegetation. Long term conservation of its plant and animal species depends upon	Park neighbours support conservation of native vegetation near	5.4.1 Encourage the retention and appropriate management of key habitats and corridors adjacent to the park through appropriate liaison with CMAs and landholders.	Low

Current Situation	Desired Outcomes	Management Response	Priority*
retention of remnant vegetation on neighbouring properties and reestablishment of vegetation connectivity where possible.	the park.		
5.5 Weeds and Pest Animals Rabbits *(Oryctolagus cuniculus),* hares *(Lepus capensis),* foxes *(Vulpes vulpes),* cats *(Felis catus)* and pigs *(Sus scrofa)* have been recorded on the reserve. Numbers of most species are usually low. Weeds, especially introduced thistles are common at the eastern end of the reserve following effective cool-season rains. The Western Rivers Region Pest Management Strategy identifies the main weed and pest animal species, strategies and priorities for the Region. Control of pest animals and weeds will occur if numbers are demonstrated to be causing deleterious impacts on the ecological integrity on the reserve.	Introduced plants and animals are controlled and where possible eliminated. Negative impacts of weeds on park values are stable or diminishing. Negative impacts of pest animals on park values are stable or diminishing. Pest control programs are undertaken where appropriate in consultation with neighbours.	5.5.1 Survey the park to determine the presence and extent of introduced species in the park. 5.5.2 Manage introduced species in accordance with the Regional Pest Management Strategy. Priority will be given to rabbits and pigs if numbers increase. 5.5.3 Seek the cooperation of neighbours in implementing weed, pest and stock control programs. Undertake control in cooperation with the Southern Livestock Health and Pest Authority. 5.5.6 Monitor noxious and significant environmental weeds. Treat any new outbreaks where possible.	Ongoing High High Medium
5.6 Fire Management Fire is a natural feature of many environments but inappropriate fire regimes can lead to loss of particular plant and animal communities. High frequency fires have been listed as a key threatening process under the TSC Act. A separate Type 1 fire management strategy for the reserve was prepared in 2005. The fire	Life, property and natural and cultural values are protected from fire. Fire frequency and intensity is appropriate	5.6.1 Continue to participate in the Bland/Temora Bush Fire Management Committee. Maintain cooperative arrangements with local RFS brigades and fire control officers, other fire authorities and surrounding landowners in regard to fuel management and fire suppression. 5.6.1. Manage the reserve as Land Management Zone, with the primary objectives to conserve biodiversity and protect	Ongoing High

Current Situation	Desired Outcomes	Management Response	Priority*
strategy outlined in this section incorporates and replaces this strategy. There are no known historical records of fire in the reserve and there have been no fires since gazettal. Lightning and human causes, e.g. from the roadside, rest area and harvesting machinery in nearby paddocks, are potential sources of ignition. Fuel levels are variable, but generally low. Fire behaviour would be strongly influenced by wind speed and direction. Crowning fires are common in mallee vegetation, while woodland areas would only crown under extreme conditions. Most threatened bird species recorded prefer vegetation > 30 years after fire, assuming preferred structural attributes are maintained (e.g. dense understorey for shy heathwren). The natural fire regimes for plant communities on the reserve are poorly known, though appear to be infrequent (20-60 years) (Benson 2008). However, many key community plant species are well adapted to cope with fire, regenerating from lignotubers or seed (e.g. mallee eucalypts, broombush and acacias) and regeneration of certain plants may be promoted by fire. No hazard reduction is required to reduce fuel loads for asset protection purposes. No cultural heritage has been identified as being at risk from fire.	for conservation of native plant and animal communities. Negative impacts of fire on natural and cultural heritage values are stable or diminishing.	cultural heritage. The reserve is not adjacent to built assets which would be exposed to a high level of bushfire risk and does not have a history of bushfire ignitions. 5.6.2 Manage the reserve to protect biodiversity in accordance with the identified fire regimes/thresholds if known. 5.6.3 Investigate appropriate fire regimes for plant communities on reserve and implement prescribed burns if necessary to aid regeneration. Burning for ecological purposes may be implemented in up to 20% of the reserve to promote regeneration and increase the range of age-since-fire ages of vegetation on the reserve. 5.6.4 Because of the small size of the reserve, all unplanned fires should be contained to the smallest possible area. However, unless conditions are mild, fire suppression is best achieved utilising roads and cleared areas on the boundaries. 5.6.5 The use of heavy machinery should be avoided due to the small size and vulnerability to erosion. Any tracks should be rehabilitated as soon as fire operations cease. 5.6.7 Prepare fire control guidelines as part of the annual Regional Incident Procedures, outlining measures to control fire spread and minimise the impact of control operations.	High Medium High High High

Current Situation	Desired Outcomes	Management Response	Priority*
5.7 Infrastructure and Maintenance The boundary fences are the primary infrastructure found on the reserve. The fence is sometimes broken and domestic livestock occasionally stray into the reserve. A day-use area was located on reserve adjacent to the RTA parking area, however all except the concrete pad has been removed. There are no management trails on the reserve. A gate on the southern boundary is used by bird-banders to access the reserve during research visits (refer to section 5.3). Reserve signage is located on the boundary bordering the Newell Highway.	Management facilities and operations adequately serve management needs and have minimal impact. Infrastructure and assets are routinely maintained. No additional infrastructure including management trails will be constructed.	5.7.1 Maintain lock on gate on Charcoal Tank Lane to restrict unauthorised access. 5.7.2 Monitor and maintain boundary fences to exclude stock from the reserve. Fencing assistance may be provided in accordance with NPWS policy. 5.7.3. No additional infrastructure will be placed on the reserve. The site of the day-use area and the part of the parking bay within the nature reserve will be fenced into the nature reserve and rehabilitated (refer to section 5.3).	Ongoing High/ Ongoing High

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