



NSW NATIONAL PARKS & WILDLIFE SERVICE

Dowe National Park

Plan of Management



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Cover photo: A naturally occurring grassland on Central Trail in Dowe National Park. Photo: R Cass, NPWS.

This plan of management was adopted by the Minister for Energy and Environment on 22 August 2019.

Dowe National Park is in the traditional Country of the Gamilaraay (Gomerroi) Aboriginal people.

This plan of management was prepared by staff of the Northern Inlands Branch of the NSW National Parks and Wildlife Service (NPWS). For additional information or any enquiries about this plan of management or Dowe National Park, contact the NPWS Coonabarabran Area Office, 30 Timor Street (PO Box 39), Coonabarabran NSW 2357 or by telephone on (02) 6842 1311.

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Contents

1. Introduction	1
1.1 Location, reservation and regional context	1
1.2 Statement of significance	1
2. Management context.....	2
2.1 Legislative and policy framework.....	2
2.2 Management purposes and principles.....	2
2.3 Specific management directions.....	3
3. Values	4
3.1 Geology, landscape and hydrology	4
3.2 Native plants	5
3.3 Native animals	6
3.4 Aboriginal heritage	7
3.5 Historic heritage	8
3.6 Visitor use	9
4. Threats.....	10
4.1 Pests.....	10
4.2 Fire	11
4.3 Isolation and fragmentation	12
4.4 Climate change	12
5. Management operations and other uses	14
5.1 Management facilities and other uses	14
6. Implementation.....	15
References	18

List of tables

Table 1: Threatened animals recorded in Dowe National Park	6
Table 2: New England North West climate change snapshot.....	13
Table 3: List of management responses	15

Dowe National Park Plan of Management

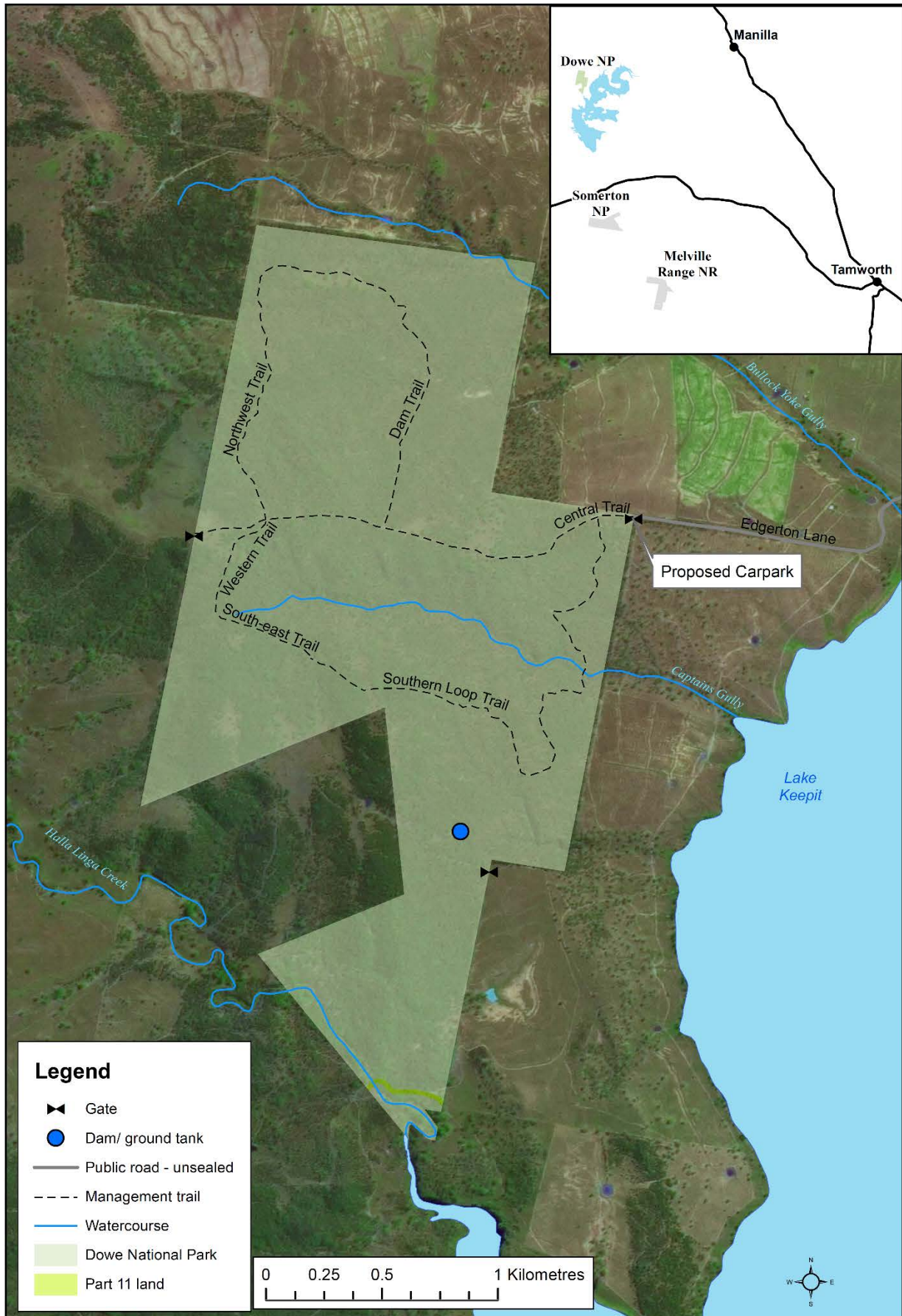


Figure 1 Map of Dowe National Park

1. Introduction

1.1 Location, reservation and regional context

Dowe National Park (also referred to in this plan as 'the park') is located approximately 21 kilometres west-south-west of Manilla. The park is 381 hectares, with a boundary 11.8 kilometres long. It forms part of the catchment for Captains Gully which flows into the Namoi River (Keepit Dam). Access to Dowe National Park is off Edgerton Lane (see Figure 1).

Apart from the reserved area of the park, there is one small section of 'Part 11 land' (see Section 2.2) which includes a road in the south of the park (see Figure 1). This land provides a connection for neighbouring landowners needing to cross the park.

Dowe National Park lies in the NSW Nandewar Bioregion (Thackway & Cresswell 1995). Prior to being reserved as a national park in December 2005 the park was managed as a commercial cypress pine forest by Forests NSW (now Forestry Corporation of NSW) and included grazing leases. The park is surrounded by private properties used for grazing and cropping.

The park lies in the Tamworth Regional Local Government Area and the Gunnedah Local Government Area. It is located in the area of the Tamworth Local Aboriginal Land Council and is within the traditional lands of the Gamilaroi (also known as Gomeroi and Gamilaraay) Aboriginal People. The park is within the area covered by the Gomeroi People's Native Title Claim (NC2011/006).

Dowe National Park is one of the parks established under the *Brigalow and Nandewar Community Conservation Area Act 2005* (BNCCA Act) and as such forms part of a chain of parks stretching the length of the Brigalow Belt South and Nandewar bioregions. It forms an important remnant of native vegetation in a highly cleared and fragmented landscape. Other parks in the area include Boonalla Aboriginal Area and Leard State Conservation Area to the west; and Somerton National Park, Lake Keepit State Park and the Melville Range Nature Reserve to the south.

1.2 Statement of significance

Dowe National Park is significant because of the following values:

Landscape and catchment: Dowe National Park is an important remnant of native vegetation within a highly fragmented landscape. It provides a stepping stone between nearby parks such as Somerton National Park, Melville Range Nature Reserve and Boonalla Aboriginal Area. This is of particular importance for the movement of woodland birds in a cleared and fragmented landscape.

Native plants: The park supports 170 vascular plant species. Two plant communities are of conservation significance as they contain components of White Box – Yellow Box – Blakely's Red Gum Grassy Woodland threatened ecological community. Yarran Woodland is also considered to be rare and unusual in the regional landscape.

Native animals: Ninety-five species of native animals have been recorded in the park, including 65 birds, 16 mammals, eight frogs and six reptiles. Nine of these birds and one mammal are threatened species.

Aboriginal heritage: The park protects eight Aboriginal sites, with potentially more sites yet to be recorded. It provides an important connection to Country for the local Aboriginal community.

2. Management context

2.1 Legislative and policy framework

The management of the community conservation area is in the context of the legislative and policy framework of the NSW National Parks and Wildlife Service (NPWS), primarily the *National Parks and Wildlife Act 1974* (NPW Act) and Regulation, the Community Conservation Area Agreement developed under the BNCCA Act, the *Biodiversity Conservation Act 2016* (BC Act) and NPWS policies.

Other legislation, strategies and international agreements may also apply to management of the park. In particular, the NSW *Environmental Planning and Assessment Act 1979* may require the assessment of environmental impact of works proposed in this plan. The NSW *Heritage Act 1977* may apply to the excavation of known archaeological sites or sites with potential to contain historical archaeological relics. The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) may apply in relation to actions that impact 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 within the park except in accordance with the plan. This plan will also apply to any future additions to the park. 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

Community conservation areas

The BNCCA Act identifies Dowe National Park as a zone 1 community conservation area. Community conservation areas are established under the BNCCA Act. This Act provides for four dedicated management zones of which zones 1, 2 and 3 relate to land reserved under the NPW Act as a national park, Aboriginal area or a state conservation area, respectively. Land in zones 1, 2 and 3 is managed consistent with the management principles set out in the NPW Act.

Zone 1 community conservation areas

Zone 1 community conservation areas are reserved as a national park 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 section 30E of the NPW Act, zone 1 community conservation areas are therefore 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 re-use) of any buildings or structures or modified natural areas having regard to conservation of natural and cultural values
- provide for appropriate research and monitoring.

The primary purpose of zone 1 community conservation areas is to conserve nature and cultural heritage. In doing so, opportunities are provided for appropriate and sustainable recreation.

Part 11 lands

Part 11 lands (i.e. unreserved lands) are lands vested in the Minister and include land that is intended to be reserved (e.g. newly acquired additions to the park estate that have not yet been formally reserved); and land that is unlikely ever to be reserved (e.g. severely modified areas, quarries, telecommunication towers, some access roads). Part 11 lands are managed in accordance with the objectives of the NPW Act, including to:

- conserve nature, including habitats, ecosystems, biodiversity, landforms, landscapes, wilderness and wild rivers
- conserve objects, places or features of cultural value
- foster public appreciation, understanding and enjoyment of natural and cultural heritage and conservation
- apply the principles of ecologically sustainable development.

2.3 Specific management directions

In addition to the general principles for the management of national parks (see Section 2.2), the following specific management directions apply to the management of Dowe National Park.

Management of Dowe National Park will focus on the protection of conservation significant vegetation communities, threatened native animals and the protection of Aboriginal heritage.

Major strategies to achieve these objectives are:

- fire management for the protection of life and property and the maintenance of natural and cultural values
- control of pest species to minimise their impact on park values
- protection of cultural heritage places with community involvement, in particular from members of the local Aboriginal community
- restricting public vehicular access to the park in order to protect park values and minimise inappropriate activities
- repair and stabilisation of the internal trail network to minimise erosion.

3. Values

This plan aims to conserve both natural and cultural values of the park. The location, landforms and plant and animal communities of an area have determined how it has been used and valued by both Aboriginal and non-Aboriginal people. 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. To make this document clear and easy to use, various aspects of natural heritage, cultural heritage, threats and ongoing use are dealt with individually but their interrelationships are recognised.

Dowe National Park is a significant park within the region as it protects a representative sample of biodiversity in an area that is now mainly cleared of its original woodlands. It therefore provides significant refuge and habitat for woodland birds and other native animals.

3.1 Geology, landscape and hydrology

Located in the western section of the Nandewar Bioregion, Dowe National Park is composed of gently rising country, draining to the south-east. Higher country in the northern end of the park rises to 460 metres above sea level.

Dowe National Park's geological framework rests upon the Rocky Creek syncline of the Tamworth Belt. The park's geology is predominantly composed of cross-bedded sandstones with minor occurrences of limestone of the Early to Mid Carboniferous Caroda Formation. These sandstones are succeeded by fine and pebbly fluvial sandstone, shales, thin coal and conglomerates of the same epoch. Underlying this are the thinly bedded mudstones and siltstones with minor conglomerates, fine sandstones and limestone of marine origin of the Namoi Formation of the Tamworth Belt (University of New England and Geological Survey of NSW 1973).

Soils are light orange brown, red brown, dark red brown or light chocolate brown in colour and of a loam, sandy loam or clay loam texture (Hunter 2009). These soils are highly susceptible to erosion where they are exposed on vehicle tracks and where groundcover is removed.

Dowe National Park forms part of the headwaters of the ephemeral Captains Gully which flows into Keepit Dam (an impoundment of the Namoi River).

Issues

- There are potential soil erosion issues along Central, Dam and Western trails. Without remedial action these management trails could be inaccessible to vehicles required for firefighting and pest operations.

Desired outcomes

- Soil erosion is minimised.
- Management trails are accessible.

Management response

- 3.1.1 Undertake all works in a manner that minimises erosion and water pollution. Assess Central, Dam and Western trails and undertake works to mitigate erosion as needed.

3.2 Native plants

A comprehensive systematic native plant survey in 2009 identified 160 vascular plant species in the park (Hunter 2009). The species are from 51 families and 125 genera. Of these, 22% are exotic species.

The four vegetation communities recorded within Dowe National Park are:

- White Cypress Pine – Silver-leaved Ironbark – White Box Grassy Woodland
- White Box – White Cypress Pine Grassy Woodland
- Yarran Woodland
- Rough Speargrass – Slender Bamboo Grass Derived Grassland.

White Cypress Pine – Silver-leaved Ironbark – White Box Grassy Woodland

This community is the most extensive community and covers over 90% of the park. It is composed of a tall tree layer of the three main tree species — white cypress (*Callitris glaucophylla*), silver-leaved ironbark (*Eucalyptus melanophloia*) and white box (*E. albens*) — as well as kurrajong (*Brachychiton populneus*), rough-barked apple (*Angophora floribunda*) and tumbledown red gum (*E. dealbata*). The community also includes climbers and a grassy and herbaceous understorey. The shrub layer is often absent. This community is found throughout the park from open depressions to upper slopes on a range of soil types.

White Box – White Cypress Pine Grassy Woodland

This open woodland community is composed of the two main tree species — white box and white cypress — as well as wilga (*Geijera parviflora*). The low shrub layer is dominated by slender rice flower (*Pimelea linifolia*) and native olive (*Notelaea microcarpa*), and the groundcover can be both herbaceous and grassy. This community is scattered throughout the park on moist soils in lower lying areas. Components of this community are recognisable as the White Box – Yellow Box – Blakely's Red Gum Grassy Woodland Endangered Ecological Community listed under the BC Act and as the critically endangered White Box – Yellow Box – Blakely's Red Gum Grassy Woodlands and Derived Native Grassland community listed under the EPBC Act. This assemblage is poorly conserved across its range.

Yarran Woodland

This is an open woodland community with yarran (*Acacia omalophylla*), white box and white cypress pine forming the tree layer. Small-leaf bluebush (*Maireana microphylla*) dominates the shrub layer, and several grasses and forbs form the groundcover. This community is only found at one locality on shallow soils in the north-west of the park. The monospecific nature of the dense stand of yarran in the park indicates this is probably a few individuals with prolific suckering, and may be indicative of a past disturbance event such as fire or clearing. This community in this density is unusual and rare in the regional landscape.

Rough Speargrass – Slender Bamboo Grass Derived Grassland

This grassland community covers approximately 13 hectares and primarily occurs on areas of dark red brown or red brown clay or clay loam soils that are moist and shallow and have previously been cleared of canopy trees. No tree or shrub layer species are evident and nearly half the species present in these areas are exotic. This community is generally well reserved across its range.

No threatened plant species have been recorded in the park. Strategies for the recovery of threatened species, populations and ecological communities have been set out in a statewide

Biodiversity Conservation Program (formerly known as the *Threatened Species Priorities Action Statement* [DECC 2007]).

Issues

- A long history of forestry and silviculture practices has resulted in significant changes to the structure, diversity and distribution of native vegetation communities. Since those practices ceased with creation of the park, thickets of cypress pine regrowth have developed.

Desired outcomes

- All native plant and animal species and communities are conserved.
- Key threatening processes are reduced.
- Structural diversity and habitat values are restored in degraded areas.

Management response

- 3.2.1 Undertake systematic biodiversity surveys to enhance the knowledge base for plants and vegetation communities in the park.
- 3.2.2 Implement relevant strategies in the *Biodiversity Conservation Program* for threatened species, populations and ecological communities in the park.

3.3 Native animals

Ninety-five species of native animals have been recorded in Dowe National Park, including 65 birds, 16 mammals, eight frogs and six reptiles (OEH 2016b).

Ten threatened species, predominantly woodland birds, have been recorded in the park as listed in Table 1. These species are likely to become endangered unless the circumstances and factors threatening their survival or evolutionary development cease to operate.

Table 1: Threatened animals recorded in Dowe National Park

Common name	Scientific name	BC Act status
Brown treecreeper (eastern subspecies)	<i>Climacteris picumnus victoriae</i>	Vulnerable
Diamond firetail	<i>Stagonopleura guttata</i>	Vulnerable
Dusky woodswallow	<i>Artamus cyanopterus cyanopterus</i>	Vulnerable
Grey-crowned babbler (eastern subsp.)	<i>Pomatostomus temporalis temporalis</i>	Vulnerable
Hooded robin (south-eastern form)	<i>Melanodryas cucullata cucullata</i>	Vulnerable
Little lorikeet	<i>Glossopsitta pusilla</i>	Vulnerable
Turquoise parrot	<i>Neophema pulchella</i>	Vulnerable
Speckled warbler	<i>Chthonicola sagittata</i>	Vulnerable
Varied sittella	<i>Daphoenositta chrysoptera</i>	Vulnerable
Yellow-bellied sheath-tail-bat	<i>Saccolaimus flaviventris</i>	Vulnerable

BC Act: NSW *Biodiversity Conservation Act 2016*
Source: NPWS Wildlife Atlas (OEH 2016b)

As for native plants, strategies for the recovery of threatened animal species and populations have been set out in a statewide *Biodiversity Conservation Program* (formerly known as the *Threatened Species Priorities Action Statement* [DECC 2007]). These actions are currently prioritised and implemented through the *Saving our Species* program which aims to maximise the number of threatened species that can be secured in the wild in New South Wales for 100 years (OEH 2013b).

Issues

- The Northern Plains Region Biodiversity Monitoring Strategy (OEH 2016a) provides a framework for monitoring.

Desired outcomes

- All native plant and animal species and communities are conserved.
- Key threatening processes are reduced.

Management response

- 3.3.1 Undertake systematic biodiversity surveys to enhance the knowledge of native animals and habitats in the park.
- 3.3.2 Implement relevant strategies in the *Biodiversity Conservation Program* for threatened animal species present in the park.

3.4 Aboriginal heritage

Dowe National Park falls within the Tamworth Local Aboriginal Land Council area and is in the Country traditionally used by the Gamilaroi (also known as Gomeroi and Gamilaraay) Aboriginal People. The park is part of the Gomeroi People Native Title Claim (NC2011/006). Gamilaraay and Gomeroi are variations in nomenclature which both refer to the same group.

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.

Aboriginal sites are places with evidence of Aboriginal occupation or that are related to other aspects of Aboriginal culture. They are important as evidence of Aboriginal history and as part of the culture of local Aboriginal people. A cultural heritage site survey was conducted in September 2008. This survey recorded 13 artefacts and eight sites in the park.

Many Aboriginal sites have been identified in surrounding areas, particularly within the Boonalla Aboriginal Area but also in the vicinity of Keepit Dam. '*Keepit*' is thought to mean 'many bends in the river' in the Gamilaraay language. Several sites, including surface artefact scatters, scarred trees, quarries and grinding grooves have been found and recorded along the upper Namoi River where it flows into Keepit Dam (Navin Officer 2007). The abundance and diversity of Aboriginal sites within the park and those of the surrounding region indicate the significance of this cultural landscape to the Gamilaraay people.

While the NSW Government 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 managing Aboriginal sites, places and related issues, and promoting and presenting Aboriginal culture and history.

Issues

- The park is likely to contain many Aboriginal sites which are as yet unrecorded.
- Contemporary Aboriginal use of the area is not known.

Desired outcomes

- Aboriginal cultural features and historic features and values are identified and protected.
- Aboriginal people are involved in management of the Aboriginal cultural values of the park.

Management response

- 3.4.1 Precede all new ground disturbance work with an assessment for Aboriginal cultural heritage.
- 3.4.2 Consult and involve the Tamworth 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.
- 3.4.3 Work cooperatively with Aboriginal people to provide for access to Country for cultural purposes such as culture camps and the sharing of traditional knowledge.

3.5 Historic heritage

Heritage places and landscapes are made up of living stories as well as connections to the past which can include natural resources, objects, customs and traditions that individuals and communities have inherited and wish to conserve for current and future generations. Cultural heritage comprises places and items that may have historic, scientific, cultural, social, archaeological, architectural, natural or aesthetic significance. NPWS conserves the significant heritage features of the parks that it manages.

The area between Manilla and Keepit was settled by squatters in the 1820s, and more permanent settlement began between the late 1830s and 1860s. Keypet Station was established by W Simms Bell in 1853 and Keepit school was established in the area in 1875 (Navin Officer 2007).

The old parish maps of the Parish of Dowe, County Darling indicate that the area of the park was gazetted as a forest reserve (FR no. 37424) in 1904. The forest reserve was formally gazetted as Dowe State Forest no. 597 on 9 November 1917 (LPMA 2010).

Evidence of former forestry practices can be found throughout the park in the form of snigging (log extraction) tracks and many cypress and ironbark tree stumps.

Issue

- No historic heritage items or sites have been identified or recorded for this park, although blazed survey trees may exist.

Desired outcome

- Historic heritage features and values are identified and protected.

Management response

- 3.5.1 Record and protect any historical heritage items or sites found in the park, including any blazed trees.

3.6 Visitor use

NPWS parks in general provide a range of visitor opportunities. NPWS aims to ensure that visitors enjoy, experience and appreciate parks at the same time as conserving and protecting park values.

Public access to Dowe National Park is from the east along Edgerton Lane, a public road. The park provides opportunities for passive, nature-based, self-reliant activities such as bushwalking, birdwatching and cycling. Public vehicle access is not permitted within the park and no visitor facilities are provided.

Since reservation, Dowe National Park has not been used for recreation or educational purposes due to the difficulty of access and the presence of alternative nearby recreation and study sites, such as Lake Keepit State Park. Access is limited to visitors on foot and recreational cyclists to reduce erosion and trail maintenance.

Unauthorised use of the park by four-wheel drive vehicles, motorcycles and pig hunters occurs from time-to-time and has a negative impact on park values. There has also been a serious issue with the dumping of car parts and other rubbish. Unauthorised access to the park is often gained by damaging neighbours fences (see Section 5.1) and via the foreshore area of Keepit Dam.

Issues

- Illegal vehicle entry and other illegal activities occur from time-to-time and have a negative impact on park values.
- Promotion of the conservation values of the park is important for educating visitors and minimising damaging activities.

Desired outcomes

- Visitor use is ecologically sustainable and does not reduce park values.
- Rubbish dumping and other unauthorised activities do not occur.
- Authorised visitors and neighbours understand the conservation values of the park.

Management response

- 3.6.1 Restrict public vehicle access to one park entry point via Edgerton Lane. Construct a carpark inside the park boundary, beyond which only pedestrian and bicycle access will be allowed. Install a locked, vehicle-proof barrier gate to prevent unauthorised vehicle access beyond this point and maintain other gates as required.
- 3.6.2 Consult with Tamworth Regional Council in relation to the maintenance of Edgerton Lane to a standard suitable for visitor access to the carpark.
- 3.6.3 Allow vehicle access into the park only with prior NPWS consent where required for group educational visits, research or cultural purposes. Consent issued under the National Parks and Wildlife Regulation may include conditions to minimise impacts to the park.

- 3.6.4 Work with Tamworth Regional Council, Gunnedah Shire Council and other stakeholders to address rubbish dumping and other illegal activities.
- 3.6.5 Organise media releases, educational material and contact with neighbours and community organisations on park management issues.

4. Threats

4.1 Pests

Pest species are plants, animals and pathogens that have negative environmental, economic and social impacts; commonly they are introduced species. Pests can have impacts across the range of park values, including impacts on biodiversity, cultural heritage, catchment and scenic values.

NPWS prepares pest management strategies which identify pest species and priorities for control, including actions listed in the *Biodiversity Conservation Program* (see Sections 3.2 and 3.3), threat abatement plans, and other strategies such as the *NSW Biodiversity Priorities for Widespread Weeds* (NSW DPI & OEH 2011) and the *NSW Biosecurity Strategy 2013–2021* (DPI 2013).

The NPWS pest management strategy (OEH 2012b) identifies pest species and priority programs for Dowe National Park. The overriding objective of the pest management strategy is to minimise adverse impacts of introduced species on biodiversity and other park and community values while complying with legislative responsibilities. The strategy also identifies where other site- or pest-specific plans or strategies need to be developed to provide a more detailed approach.

Feral pigs (*Sus scrofa*) and European red foxes (*Vulpes vulpes*) are known to occur within the park as evidenced by diggings and scats and from neighbour reports. It is likely that cats (*Felis catus*) and rabbits (*Oryctolagus cuniculus*) are also present in isolated populations. Each of these pest species is listed as a key threatening process at both state and national level (DoE 2009; TSSC 2001b; NSW SC 2004; NSW SC 1998; NSW SC 2000c; NSW SC 2002 respectively).

Common prickly pear (*Opuntia stricta*) and tiger pear (*Opuntia aurantiaca*) have been recorded in low densities throughout the park. Thistles and other weed species are present along edges of management trails, and along park boundaries and roads where the level of disturbance by vehicles and feral pest animals is greatest.

The *Biosecurity Act 2015* and regulations provide specific legal requirements for the prevention, eradication or containment of state level priority weeds. These requirements apply equally to both public and privately owned land. A regional strategic weed management plan prepared under the Biosecurity Act identifies those pest plants that are being prioritised for management action, investment and compliance effort within the North West Local Land Services region (North West LLS 2017). These priorities will be implemented via the relevant NPWS pest management strategy.

Overall, the occurrence and impacts of pest species in the park, both weeds and feral animals, is low, and there is potential for NPWS to be able to keep pests at low levels.

Desired outcomes

- The impact of introduced species on native species and neighbouring lands is minimised.

- Small and isolated pest populations are controlled.

Management response

- 4.1.1 Manage pest species in accordance with pest management strategies relevant to the park.
- 4.1.2 Monitor the park for state level and regional level priority weeds and treat any new outbreaks.
- 4.1.3 Work cooperatively with North West Local Land Services, Tamworth Regional Council, Gunnedah Shire Council and neighbours in implementing coordinated weed and pest animal control programs.

4.2 Fire

The primary objectives of NPWS fire management are to protect life, property, community assets and cultural heritage from the adverse impacts of fire, while also managing fire regimes in parks to maintain and enhance biodiversity. NPWS also assists in developing fire management practices that contribute to conserving biodiversity and cultural heritage across the landscape, and implements cooperative and coordinated fire management arrangements with other fire authorities, neighbours and the community (OEH 2013a).

Fire is a natural feature of many environments and is essential for the survival of some plant communities. However, inappropriate fire regimes can lead to loss of particular plant and animal species and communities, and high frequency fires have been listed as a key threatening process under the BC Act (NSW SC 2000b).

There have been no recorded wildfires within the park and there is little evidence of fire scars from past wildfire events.

A fire management strategy which defines the fire management approach for the park has been prepared (OEH 2012a). The fire management strategy outlines guidelines to suppress wildfires and to protect the natural and cultural values of the park. It includes fire control advantages such as management trails and water supply points. It also contains fire regime guidelines for conservation of the park's vegetation communities. The park is almost entirely vegetated by grassy woodland which is long unburnt and fire intervals are within threshold intervals. The overall fire hazard is assessed as low to moderate, but localised areas of high hazard may occur. Hazard reduction is carried out within the park in line with the strategy.

Desired outcomes

- Life, property and natural and cultural values are protected from bushfire.
- Fire regimes are appropriate for conservation of plant and animal communities.
- Stakeholders participate in fire management planning and operations.

Management response

- 4.2.1 Manage fire in accordance with the fire management strategy for the park and update this strategy to incorporate information from vegetation, animal or cultural surveys as required.
- 4.2.2 Undertake prescribed burns according to the fire management strategy.

- 4.2.3 Continue to participate in the Liverpool Range Bush Fire Management Committee. Maintain coordination and cooperation with Rural Fire Service brigades, council fire control officers and neighbours with regard to fuel management and fire suppression.

4.3 Isolation and fragmentation

The area surrounding Dowe National Park has been extensively cleared, resulting in a high loss of biodiversity and fragmentation of habitat in the region. The park is relatively small and exists as an island refuge. It is subject to edge effects making it more vulnerable to disturbances including introduced pasture species and other non-native species. Long-term conservation of biodiversity depends on the protection, enhancement and connection of remaining habitat across the landscape, incorporating vegetation remnants on both public and private lands.

Less than 35% of the park boundary has a native vegetation buffer, the remainder being cleared agricultural land. As such it is important that native vegetation buffers are preserved. Nearby vegetated areas contribute to the habitat values of the park and provide ecological corridors to other vegetated areas. Maintaining the integrity of the remaining habitat within the park and, where possible, linking this to adjacent areas of vegetation to facilitate wildlife corridors is important in ensuring long-term viability of the park's biological values.

Desired outcomes

- Connectivity between the park and other local woodland remnants is enhanced.
- A buffer of native vegetation around the park boundaries is conserved where it exists.

Management response

- 4.3.1 Work with neighbours and other land management authorities to encourage conservation of remnant native vegetation in the vicinity of the park.

4.4 Climate change

Human-induced climate change is listed as a key threatening process under the BC Act (NSW SC 2000a) and habitat loss caused by human-induced greenhouse gas emissions is listed under the EPBC Act (TSSC 2001a).

The latest information on projected changes to climate are from the NSW and ACT Regional Climate Modelling (NARClIM) Project (OEH 2014). The climate projections for 2020–39 are described as 'near future' and projections for 2060–79 are described as 'far future'. The snapshot shown in Table 2 is for the New England North West Region which includes Dowe National Park (OEH 2014).

Climate change may significantly affect biodiversity by changing the size of populations and the distribution of species, and altering the geographical extent of habitats and ecosystems. The likelihood of these changes occurring 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.

Heavily cleared and fragmented ecosystems in the New England North West Region are likely to be at greater risk than more intact ecosystems. Climate change may add yet another pressure on these already highly stressed ecosystems. Warmer conditions are likely to favour weed species which could increase in abundance and continue to alter the mix of species in understorey vegetation. More frequent fire is also possible with increasing temperatures and

may hasten the death of large, mature trees on which many native animals depend for nesting and roosting (OEH 2011).

Table 2: New England North West climate change snapshot

Projected temperature changes:	
Maximum temperatures are projected to increase in the near future by 0.4–1.0°C	Maximum temperatures are projected to increase in the far future by 1.9–2.7°C
Minimum temperatures are projected to increase in the near future by 0.5–1.0°C	Minimum temperatures are projected to increase in the far future by 1.6–2.7°C
The number of hot days (i.e. > 35°C) will increase	The number of cold nights (i.e. < 2°C) will decrease
Projected rainfall changes:	
Rainfall is projected to decrease over most of the region in winter	Rainfall is projected to increase in autumn
Projected Forest Fire Danger Index changes:	
Average fire weather is projected to increase in summer, spring and winter	Severe fire weather days are projected to increase in summer and spring

Source: OEH 2014

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.

Desired outcome

- The effects of climate change on natural systems are minimised.

Management response

- 4.4.1 Continue existing fire, pest and weed management programs and adapt them where required to increase the park’s ability to cope with future disturbances, including climate change.

5. Management operations and other uses

5.1 Management facilities and other uses

The trail network in the park is used for management operations including fire and pest operations. The trails shown on Figure 1 will be maintained for operational purposes. Several other trails in the southern section of the park which are not needed for NPWS operations are dormant but can be used as needed, for example for wildfire response.

There is one ground tank (dam) in the park but it is not suitable for firefighting.

There is one small section of Part 11 land over a road in the south of the park (see Section 2.2). This land provides a connection for neighbouring landowners needing to cross the park.

A section of the south-west boundary of the park is unfenced and adjoins an area of Water NSW land which is leased for grazing. Stock stray into the park here and in other parts of the park where boundary fencing is in poor condition.

At the time of reservation, there were three licensed apiary sites within the park. These licences have not been renewed.

Desired outcomes

- Management trails and other infrastructure are maintained to meet park management requirements.
- Livestock are excluded from the park.

Management response

- 5.1.1 Maintain all trails shown on Figure 1 and open dormant trails as needed for park management purposes.
- 5.1.2 In conjunction with neighbours, construct and maintain stock-proof boundary fencing in accordance with the NPWS Boundary Fencing Policy. Establish agreements with neighbouring landowners as required.
- 5.1.3 Establish agreements with neighbouring landholders to use nearby water points for prescribed burns and wildfire events. Update the fire management strategy to show approved water points outside the park.

6. Implementation

This plan of management establishes a scheme of operations for Dowe National Park. Identified activities for implementation are listed in Table 3. Relative priorities are allocated against each activity as follows:

- **High priority** activities are imperative to achieve the plan's 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 necessary to achieve the objectives and desired outcomes but are not urgent.
- **Low priority** activities are desirable to achieve the objectives and desired outcomes but can wait until resources become available.
- **Ongoing** activities are undertaken on an annual basis or in response to 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 3: List of management responses

Plan ref.	Management response	Priority
3.1 Geology, landscape and hydrology		
3.1.1	Undertake all works in a manner that minimises erosion and water pollution. Assess Central, Dam and Western trails and undertake works to mitigate erosion as needed.	High
3.2 Native plants		
3.2.1	Undertake systematic biodiversity surveys to enhance the knowledge base for plants and vegetation communities in the park.	Medium
3.2.2	Implement relevant strategies in the <i>Biodiversity Conservation Program</i> for threatened species, populations and ecological communities in the park.	Medium
3.3 Native animals		
3.3.1	Undertake systematic biodiversity surveys to enhance the knowledge of native animals and habitats in the park.	Medium
3.3.2	Implement relevant strategies in the <i>Biodiversity Conservation Program</i> for threatened animal species present in the park.	Medium
3.4 Aboriginal heritage		
3.4.1	Precede all new ground disturbance work with an assessment for Aboriginal cultural heritage.	High
3.4.2	Consult and involve the Tamworth 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.	Medium

Plan ref.	Management response	Priority
3.4.3	Work cooperatively with Aboriginal people to provide for access to Country for cultural purposes such as culture camps and the sharing of traditional knowledge.	Medium
3.5 Historic heritage		
3.5.1	Record and protect any historical heritage items or sites found in the park, including any blazed trees.	Medium
3.6 Visitor use		
3.6.1	Restrict public vehicle access to one park entry point via Edgerton Lane. Construct a carpark inside the park boundary, beyond which only pedestrian and bicycle access will be allowed. Install a locked vehicle-proof barrier gate to prevent unauthorised vehicle access beyond this point and maintain other gates as required.	High
3.6.2	Consult with Tamworth Regional Council in relation to the maintenance of Edgerton Lane to a standard suitable for visitor access to the carpark.	Medium
3.6.3	Allow vehicle access into the park only with prior NPWS consent where required for group educational visits, research or cultural purposes. Consent issued under the National Parks and Wildlife Regulation may include conditions to minimise impacts to the park.	Low
3.6.4	Work with Tamworth Regional Council, Gunnedah Shire Council and other stakeholders to address rubbish dumping and other illegal activities.	Low
3.6.5	Organise media releases, educational material and contact with neighbours and community organisations on park management issues.	Low
4.1 Pests		
4.1.1	Manage pest species in accordance with pest management strategies relevant to the park.	High
4.1.2	Monitor the park for state level and regional level priority weeds and treat any new outbreaks.	High
4.1.3	Work cooperatively with North West Local Land Services, Tamworth Regional Council, Gunnedah Shire Council and neighbours in implementing coordinated weed and pest animal control programs.	Medium
4.2 Fire		
4.2.1	Manage fire in accordance with the fire management strategy for the park and update this strategy to incorporate information from vegetation, animal or cultural surveys as required.	High
4.2.2	Undertake prescribed burns according to the fire management strategy.	Medium
4.2.3	Continue to participate in the Liverpool Range Bush Fire Management Committee. Maintain coordination and cooperation with Rural Fire Service brigades, council fire control officers and neighbours with regard to fuel management and fire suppression.	High

Plan ref.	Management response	Priority
4.3 Isolation and fragmentation		
4.3.1	Work with neighbours and other land management authorities to encourage conservation of remnant native vegetation in the vicinity of the park.	Low
4.4 Climate change		
4.4.1	Continue existing fire, pest and weed management programs and adapt them where required to increase the park's ability to cope with future disturbances, including climate change.	Medium
5.1 Management facilities and other uses		
5.1.1	Maintain all trails shown on Figure 1 and open dormant trails as needed for park management purposes.	High
5.1.2	In conjunction with neighbours, construct and maintain stock-proof boundary fencing in accordance with the NPWS Boundary Fencing Policy. Establish agreements with neighbouring landowners as required.	Medium
5.1.3	Establish agreements with neighbouring landholders to use nearby water points for prescribed burns and wildfire events. Update the fire management strategy to show approved water points outside the park.	High

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