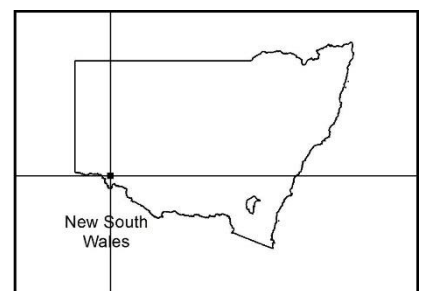


Mallee Cliffs National Park Plan of Management



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The first plan of management for Mallee Cliffs was adopted in 1998. This plan of management is the replacement for that plan.

Front cover image: Malleefowls on nest in Mallee Cliffs National Park. Photo credit: OEH.

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How to use this plan

This plan of management directs the management of Mallee Cliffs National Park. This plan includes a scheme of operations prepared consistent with Part 5 Section 72 of the *National Parks and Wildlife Act 1974*. Once the plan is adopted, no management operations can be undertaken that are not consistent with the plan and its scheme of operations. The plan is therefore for use by park managers in developing and monitoring park management priorities. This plan also serves to inform communities about the values of their parks and what the NSW National Parks and Wildlife Service (NPWS) is doing to care for them.

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 in accordance with section 73B of the National Parks and Wildlife Act will be required.

The National Parks and Wildlife Act sets out the matters that need to be considered when preparing a plan of management. These are presented separately in *Mallee Cliffs National Park Planning considerations*.

In 2017, the *Reintroduction of Locally Extinct Mammals* project under the *Saving our Species* program commenced in the park. The project will be implemented under contract to the Australian Wildlife Conservancy for an initial period of 10 years. This plan of management provides for the project and associated infrastructure, in addition to research, monitoring, visitation and park management activities.

This plan of management was adopted by the Minister for the Environment on 18 December 2017.

Acknowledgments

NPWS acknowledges the Mallee Cliffs National Park is in the traditional Country of the Barkandji People.

This plan of management was prepared by staff of NPWS, part of the Office of Environment and Heritage.

Contacting NPWS

For more information or any inquiries about this plan of management or Mallee Cliffs National Park, contact the NPWS Office at the corner of Sturt Highway and Melaleuca Street, Buronga; or by mail to PO Box 318, Buronga NSW 2739; or by telephone (03) 5021 8900.

Contents

Our vision for the park	1
1 Landscape setting and context	3
2 Protecting the natural environment.....	3
3 Looking after our culture and heritage	5
4 Public use of the park.....	5
5 Park infrastructure	5
Scheme of operations	7
Figures	
Figure 1 Map of Mallee Cliffs National Park.....	2

Our vision for the park

Mallee Cliffs conserves a regionally significant sample of mallee dune and sandplain vegetation and associated ecosystems of the semi-arid zone in the Murray Darling Depression Bioregion.

The park contributes to the recovery of threatened species including the endangered malleefowl.



Mallee woodland with spinifex understorey. Photo credit: M Billington, OEH



Figure 1. Mallee Cliffs National Park

1 Landscape setting and context

Mallee Cliffs National Park is located in the south-west corner of New South Wales, 20 kilometres north-east of Buronga.

The park is 57,969 hectares and was reserved in March 1977 for the purpose of protecting mallee land systems following the purchase of Mallee Cliffs Station. The park protects extensive areas of flat to undulating red sandy plains and sand dunes and is significant for protecting mallee and other semi-arid ecosystems of southern Australia which are poorly represented in the reserve system.

The park is in the Murray Darling Depression Bioregion which experiences a moderately harsh semi-arid climate, with an annual mean rainfall of only 290 millimetres.

Mallee Cliffs is part of an important network of parks which protects native ecosystems that are greatly diminished in extent or degraded by grazing and other landuses in the broader landscape. The other parks include Mutawintji, Sturt, Mungo, Kinchega, Paroo-Darling and Toorale national parks, and Nocolche and Tarawi nature reserves.

2 Protecting the natural environment

Mallee Cliffs is characterised by a low-relief landscape composed of aeolian sand dunes and sand plains. There are no streams, natural water bodies or rock outcrops in the park.

The native vegetation of Mallee Cliffs is typical of the semi-arid environment of south-west New South Wales. The park supports 11 native plant communities and over 293 native plant species, including two threatened plants listed under the *Biodiversity Conservation Act 2016*. Mallee communities are the dominant vegetation type, comprising 76% of the park and providing habitat for the endangered malleefowl. The other vegetation types include derived grassland, belah–rosewood woodland and small patches of mulga and bluebush shrubland.

All vegetation types in the park have been impacted by over 100 years of sheep grazing before the park was created. The main impacts of sheep grazing evident in the park are changed vegetation structure, changed plant and animal species composition and weed infestation. NPWS management efforts to restore vegetation and native animal habitat values in the park include decommissioning of artificial water points, monitoring and control of herbivores, weed control and fire management. NPWS has also carried out a grazing trial using fenced enclosures in different vegetation communities to monitor the effect of excluding native and non-native herbivores.

Mallee ecosystems are fire-prone and fire in this landscape is a key driver of ecological change. Many of the plants and animals in these ecosystems have evolved to cope with fire and rely on fire occurring at different stages of their life cycle. However, some semi-arid vegetation communities, such as chenopod shrublands, do not require fire to maintain ecological processes and fire can be detrimental to them. NPWS manages fire in Mallee Cliffs under a research-based fire management strategy which is based on fire history and the ecology of individual native plant communities. The overall objective in mallee-dominated vegetation communities is to provide patchiness and multiple age classes while maximising the amount of older mallee which has optimum habitat features.

Mallee Cliffs provides valuable habitat for a diverse range of animals, especially mallee-dwelling animals. Native animals recorded in the park include: 129 birds, 50 reptiles and 18 mammals. Patches of old-age mallee (over 50 years old) form the richest habitat in the park in terms of the diversity of animal species found there. The presence of spinifex in

the park is also important for spinifex specialists, such as the southern ningau. Important habitat features in the park include:

- a plentiful layer of ground litter needed by malleefowl to build mounded ground nests
- stripping bark for use by birds and mammals as nesting materials
- old-age trees which contain cracks, spouts and hollows for use by bats and other arboreal mammals
- hollow logs in the belah woodland for use by reptiles
- mixed-age, patchy spinifex hummocks which provide ground cover needed by reptiles and ground mammals.

Twenty seven threatened animals listed under the Biodiversity Conservation Act 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*). 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.

Mallee Cliffs lies in the centre of the identified stronghold for the endangered malleefowl and park management effort has focussed on the protection and conservation of this ground-dwelling species. The malleefowl population in the park is of regional if not national significance as this species has become severely depleted in New South Wales as a result of land clearing and fox predation. Malleefowl are managed in accordance with a national recovery plan.

In 2017, the *Reintroduction of Locally Extinct Mammals* project under the *Saving our Species* program commenced in the park. In addition to reintroducing small mammals which were once present in the western New South Wales landscape and which act as ecosystem engineers, the project is expected to benefit all biodiversity in the park through intensified pest control. The project will be implemented under contract to the Australian Wildlife Conservancy for an initial period of 10 years. An area of approximately 9700 hectares has been identified in the south-west quarter of the park for the project (see Figure 1 for an indicative location). A predator-proof fenced enclosure will be constructed in this area, together with accommodation and service infrastructure needed to support on-site operations.

Control of introduced pest animals is also a key management focus in the park, particularly the control of introduced predators such as foxes and cats which threaten malleefowl and which have played a significant role in the loss of mammals in the arid and semi-arid zones. Other pests in Mallee Cliffs include goats and rabbits. Pest plants and animals are managed in accordance with a regional pest management strategy which identifies priority pest programs. The overriding objective of the pest management strategy is to minimise adverse impacts of introduced pest species on biodiversity and other park values. Many impacts of introduced animal pests are designated as key threatening processes under the Biodiversity Conservation Act and some, such as foxes, are addressed under a threat abatement plan.

A network of 18 ground tanks was in place on Mallee Cliffs Station at the time of acquisition. In the semi-arid landscape of the park, artificial sources of water are undesirable because they support populations of introduced pest animals and distort the population dynamics of native animals. All but one of these ground tanks have been decommissioned and the remaining tank has been securely fenced. This has improved pest management efforts in the park.

In addition to establishing and managing viable populations of locally extinct species in the project area, the Australian Wildlife Conservancy project contract includes the delivery of

park management activities such as pest and weed control, asset maintenance and future visitor management across the whole park. At the end of the 10-year period the outcomes of the project will be assessed. This review will help to determine the next steps for the project, which may involve extension of the Conservancy's service arrangements.

What is already a harsh, hot climate in western New South Wales is expected to become even hotter under climate change. Under hotter conditions, arid areas with little or no vegetation will increase in extent and the impact of water scarcity will become more acute. Animal species which are unable to cope with the intensification of extreme temperatures will decline throughout the region. This could impact species with small populations or specialised habitat requirements such as malleefowl, which require sufficient rainfall at the right time of year to be able to build their nests.

3 Looking after our culture and heritage

The park is part of Country for the Barkandji People. Only one Aboriginal site, a hearth, has been recorded within the park. With no permanent water and no source of rock, it is possible that the mallee sandridge country was visited less frequently by Aboriginal people in the past, when compared with the resource-rich Murray River corridor further to the south.

The Barkandji Traditional Owners lodged a native title claim over a large area of western New South Wales that included Mallee Cliffs National Park and other NPWS-managed lands. A determination was issued in favour of the Barkandji Traditional Owners on 16 June 2015, but it excluded all NPWS-managed lands. NPWS is, however, committed to negotiating an indigenous land use agreement (ILUA) with the Barkandji native title holders which will address how the Barkandji People will be involved in managing the parks within the native title area.

The park also bears evidence of the history of pastoral use in the form of altered vegetation and decommissioned ground tanks. The homestead and majority of outbuildings associated with the former Mallee Cliffs Station have been demolished.

4 Public use of the park

Until 2017 Mallee Cliffs has been managed with an emphasis on the restoration of mallee ecosystems including malleefowl and other threatened species. The primary purpose of the park has been nature conservation and access by the public has been limited mostly to researchers and bird watching groups who visit a few times a year.

Since reservation, recreation has been excluded from Mallee Cliffs as access to the park is via private roads over adjoining private land.

The *Reintroduction of Locally Extinct Mammals* project commenced in 2017 and will include managed public access. A visitor strategy will be developed as part of the project and is expected to provide special opportunities for visitors to observe threatened species in the reintroduction area.

5 Park infrastructure

Existing infrastructure in the park is minimal and includes a network of management trails, boundary fencing, one ground tank, a sealed water tank for fire management purposes, and several small fenced exclosures used for grazing trials.

New infrastructure will be developed in the park to establish and support the *Reintroduction of Locally Extinct Mammals* project, including predator-proof fencing, office space, workshop and accommodation for staff and authorised visitors.

The final location and layout of this infrastructure will be determined through a detailed environmental impact assessment. This assessment will consider factors such as the need to:

- minimise the footprint of environmental disturbance
- avoid malleefowl habitat and habitat needed by other threatened species
- capture a diversity of habitats within the fenced enclosure
- ensure effective asset protection
- consider the location of existing management trails.

Scheme of operations

Notes on implementation

The implementation of actions, and achievement of performance measures set out below may be subject to environmental assessments and approvals as required by NSW and Commonwealth legislation. Further community consultation on the proposed actions may be undertaken as part of these processes.

Notes on the table

Actions in the scheme of operations below are numbered 1, 2, 3 etc.

Performance measures attached to each of these actions are numbered 1a, 1b and 2a, 2b etc.

A **Priority** has been assigned to each performance measure to guide the allocation of resources and timely delivery of actions. Some measures require ongoing effort. The indicative timeframes for achievement of the performance measures as indicated in the table of actions are:

- Priority 1 – within 3 years
- Priority 2 – within 5 years
- Priority 3 – within 10 years
- Ongoing (O)

Actions (1, 2, 3 etc.)	Priority
Performance measures (1a, 1b, 2a, 2b etc.)	
Landscape setting and context	
Objective: The park retains an important place in the network of conserved lands in western New South Wales	
1. Ensure the park is managed to maximise its contribution to the conservation of mallee land systems in New South Wales.	
1a) Existing mallee land systems in the park are protected and their condition improved.	O
1b) NPWS supports neighbouring landowners in managing for mallee conservation reserves.	O
Protecting the natural environment	
Objective: The environment of the park is protected and where necessary restored to be a healthy, stable, representative sample of mallee and belah ecosystems of south-west New South Wales	
Geology, landform and soils	
2. Protect landscape values and where necessary rehabilitate erosion.	
2a) Management trails are monitored for erosion, particularly after rain events.	O
2b) All works carried out in the park are designed and constructed to minimise ground disturbance and erosion.	O
Native plants	
Objective: Native plant communities are protected and where necessary restored	
Objective: Threatened and rare plant communities and species are protected	

Actions (1, 2, 3 etc.)	Priority
Performance measures (1a, 1b, 2a, 2b etc.)	
Objective: Understanding of the ecology, distribution, threats and management needs of native plant communities is added to and applied in the park	
3. Monitor the health and distribution of significant native plant communities and threatened plant species.	
3a) Significant plant communities are visited and assessed regularly as part of ongoing park management activities.	0
3b) Recovery actions in the <i>Biodiversity Conservation Program</i> and recovery plans for threatened plant species, populations and communities occurring in the park are implemented.	1
3c) Biodiversity surveys are supported.	0
3d) Results of surveys are added to <i>BioNet</i> for threatened plant species and otherwise as appropriate.	0
3e) The results of ongoing and new research are applied to park management activities, programs and strategies.	0
4. Undertake weed control in accordance with the regional pest management strategy and ongoing monitoring of emerging weed species.	
4a) Weed species occurring within the park are monitored regularly, particularly along management trails, park boundaries and around former ground tanks.	0
4b) Weed species within the park are controlled using methods appropriate to the level of threat, their ecology and distribution.	0
4c) Park management operations minimise ground disturbance.	0
5. Monitor populations of red kangaroos, western grey kangaroos and eastern grey kangaroos to establish their impact on park values.	
5a) Occasional surveys of kangaroo numbers are carried out, particularly following wet conditions.	0
5b) When necessary, kangaroo numbers are reduced.	0
6. Work with relevant stakeholders to control state priority and regional priority weeds and environmental weeds occurring in the broader landscape.	
6a) Invasion and growth of state level and regional level weeds from outside the park is monitored regularly, particularly in periods following rainfall.	0
6b) Weed control programs are carried out in conjunction with adjoining landholders and the Local Land Services where appropriate.	2
Fire	
Objective: Fire in the park is managed to conserve and maintain semi-arid ecosystems while also protecting park management infrastructure	
Objective: The fire regime applied in the park maintains populations of all native plants and animals, particularly malleefowl and other threatened species	
7. Implement the fire management strategy for the park.	
7a) The fire management strategy is regularly reviewed and updated to take account of fire history and new information.	1
7b) Wildfire is suppressed as effectively as possible to avoid impacts on neighbouring landholdings.	0
7c) Where appropriate fire is managed to benefit mallee vegetation communities/ecosystems within the park.	0

Actions (1, 2, 3 etc.)	Priority
Performance measures (1a, 1b, 2a, 2b etc.)	
7d) All plant communities are monitored after fire to assess ability to recover and contribute to habitat diversity.	0
7e) Populations of malleefowl and other threatened animals are monitored after fire.	0
7f) Hazard reduction works are carried out in accordance with the fire management strategy and annual fire programs.	0
7g) Asset protection zones are established and maintained around all new infrastructure including infrastructure for the <i>Reintroduction of Locally Extinct Mammals</i> project.	1
7h) NPWS and other land managers support and where possible participate in research into fire in mallee ecosystems.	0
8. Create and maintain a range of fire age classes in mallee plant communities.	
8a) More than 50% of mallee vegetation is retained as old-age mallee.	0
8b) A mixed age mosaic is maintained in the mallee plant communities.	0
9. Participate in strategic fire planning for the region through the Lower Western Zone Bush Fire Management Committee.	
9a) Meetings are attended and regular liaison with other fire authorities occurs.	0
Native animals	
Objective: Native animal populations are protected and maintained	
Objective: Populations of malleefowl and other rare, threatened or isolated animal species are protected and maintained	
Objective: The <i>Reintroduction of Locally Extinct Mammals</i> project is implemented in the park	
10. Implement relevant recovery actions in the <i>Biodiversity Conservation Program</i> and recovery plan for malleefowl and other threatened species	
10a) Recovery actions are implemented.	0
11. Facilitate implementation of the <i>Reintroduction of Locally Extinct Mammals</i> project under the <i>Saving our Species</i> program.	
11a) Information about past park management is provided by NPWS to the project partner, Australian Wildlife Conservancy.	1
11b) NPWS and Australian Wildlife Conservancy continue to liaise on park values and other relevant issues throughout the project.	0
11c) Recovery actions identified for malleefowl and other threatened species are integrated into the <i>Reintroduction of Locally Extinct Mammals</i> project.	1
12. Conduct and support native animal surveys.	
12a) Meaningful data for native animals and their habitat continues to be collected and used to inform park management.	0
Pest animals	
Objective: Pest animals are controlled and where possible eliminated from the park	
Objective: Negative impacts of pest animals on park values are minimised	
13. Manage and monitor pest species in accordance with the priorities identified in the regional pest management strategy.	
13a) Populations of pest animals are significantly reduced.	1

Actions (1, 2, 3 etc.)	Priority
Performance measures (1a, 1b, 2a, 2b etc.)	
13b) The occurrence, distribution and density of introduced pest animals is regularly monitored and recorded.	0
13c) Emerging pest animals such as pigs are monitored and controlled as necessary.	0
13d) New research including effective control of feral cats is integrated into ongoing pest control programs.	1
13e) A variety of control methods including biological controls are effectively employed to reduce populations of animal pests.	0
14. Work with stakeholders outside the park to support coordinated pest animal control across park boundaries.	
14a) Reinfestation of the park by mobile pest animals is effectively controlled.	0
Climate change	
Objective: The resilience of the park to the impacts of climate change is enhanced	
Objective: Understanding the impacts of climate change is enhanced and informs management of the park	
15. Continue existing fire, pest and weed management programs to increase the park's capacity to cope with climate change	
15a) Park programs for fire, pest and weed management continue and are modified as needed to address the effects of climate change.	0
16. Support or undertake research relevant to semi-arid landscape processes and ecosystems which will assist in managing the park at a landscape scale.	
16a) Indicators are developed and applied for monitoring the specific effects of climate change on the values of the park.	3
17. Support the conservation and protection of native vegetation adjoining the park and in the surrounding area such as the Southern Mallee Private Reserves which may help to buffer the park against the effects of climate change.	
17a) Where practical, assistance is provided to manage Southern Mallee Private Reserves adjoining the park.	0
Research into natural values	
Objective: Research improves understanding of semi-arid ecosystems including the populations of native plants and animals they support	
18. Encourage and where appropriate participate in research initiatives with the broader scientific community into semi-arid ecosystems including plants, animals and vegetation communities, the role played by fire, and malleefowl.	
18a) The park is made available for research by research institutions, and in-kind support is provided, where possible, for research initiatives.	0
18b) Research findings generated by the <i>Reintroduction of Locally Extinct Mammals</i> project are applied to park management.	3
Looking after our culture and heritage	
Objective: Aboriginal and shared histories are protected	
Objective: Aboriginal people continue to enjoy connection to Country and are encouraged to participate in park management	
19. Protect Aboriginal cultural heritage from disturbance.	

Actions (1, 2, 3 etc.)	Priority
Performance measures (1a, 1b, 2a, 2b etc.)	
19a) Due diligence is applied to ensure appropriate protection of Aboriginal cultural heritage including an appropriate level of cultural impact assessment and consultation prior to any works.	0
20. Support the negotiation of an indigenous land use agreement (ILUA) with the Barkandji native title holders that includes the park. This agreement will address how and to what extent Aboriginal people will be involved in managing the park.	
20a) Mallee Cliffs is incorporated into any ILUA which is established for NPWS-managed lands within the Barkandji native title claim area.	3
21. Assess shared cultural heritage values prior to carrying out works and/or installation of infrastructure in the park.	
21a) Potential impacts on shared cultural heritage are assessed.	0
21b) Where necessary, protective measures are applied to protect shared cultural heritage items in accordance with their significance.	0
Public use of the park	
Objective: Public access will continue to be limited to natural and cultural resource conservation activities, environmental education and research	
Objective: Visitor safety is maintained for all authorised users of the park	
22. Establish secure, legal, practical access to the park.	
22a) Secure, legal, practical access is provided to the park.	1
23. Support educational, guided visitor experiences as part of the <i>Reintroduction of Locally Extinct Mammals</i> project.	
23a) A visitor strategy is prepared to guide visitor access to the park.	1
23b) Pre-visit information and signage which includes safety messaging is provided for authorised visitors.	1
23c) Low-key visitor accommodation and support services are provided for authorised visitors.	1
24. Visitor numbers and usage of the park is monitored.	
24a) Visitors to the park do not cause negative impacts on the park and its values.	0
Park infrastructure	
Objective: All infrastructure needed to manage the park is sited, constructed and maintained to adequately service management needs and have minimal environmental impacts	
Objective: Non-NPWS uses and activities have minimal impact on park values	
Objective: Infrastructure is constructed in the park to support the <i>Reintroduction of Locally Extinct Mammals</i> project	
25. Maintain NPWS infrastructure on the park including the network of management trails as shown on Figure 1, fire management water supply and boundary fencing.	
25a) NPWS infrastructure is maintained for park management purposes and upgraded as needed.	0
26. The design and construction of fenced enclosures and associated infrastructure for the <i>Reintroduction of Locally Extinct Mammals</i> project is in accordance with approvals and relevant standards and consistent with the outcomes of environmental and cultural impact assessments.	
26a) Infrastructure construction and ongoing maintenance minimises ground disturbance.	1

Actions (1, 2, 3 etc.)	Priority
Performance measures (1a, 1b, 2a, 2b etc.)	
26b) Impacts on significant native plant communities are minimised from infrastructure construction and ongoing maintenance.	1
26c) Infrastructure construction and ongoing maintenance have minimal impact on cultural heritage values of the park.	1