

Dipperu National Park (Scientific)

Management Plan
2011



Brigalow Belt North Bioregion

Prepared by:

Planning Services Unit

Department of Environment and Resource Management

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This management plan has been prepared in accordance with the *Nature Conservation Act 1992*.

This management plan does not intend to affect, diminish or extinguish native title or associated rights.

Note that implementing some management strategies might need to be phased in according to resource availability.

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Front cover photograph: Lagoon, Dipperu National Park (Scientific). Photo: Chris Small.

Top right photograph: Dipperu National Park (Scientific). Photo: DERM.

Centre right photograph: Dragon fly. Photo: DERM.

Bottom right photograph: Water hole, Dipperu National Park (Scientific). Photo: DERM.

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Vision statement

Dipperu National Park (Scientific) will be managed to conserve the natural condition and complexity of its vegetation communities, without impacts from visitors. The park's cultural values will be managed appropriately with the Traditional Owners, and Dipperu will remain available for scientific study with priority given to studies that benefit park management.

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1. Management intent

The primary purposes of management for Dipperu National Park (Scientific) will be to:

- conserve the largest, most complex and significant example of brigalow vegetation communities remaining in the Brigalow Belt North bioregion
- protect the natural ecosystems of the park, including regional ecosystems and plant and animal species of conservation significance
- ensure the only use of the park is for controlled scientific study and monitoring natural and cultural resources
- reduce and eradicate pest plants and animals, where possible, and ensure control methods have no, or minimal, adverse impacts
- identify and protect Indigenous cultural heritage values, where appropriate, and encourage Indigenous involvement in park management and decision making
- undertake a cooperative, adaptive and collaborative approach to park management with park neighbours and other stakeholders, in particular about fire, fencing and managing feral animals
- consult and cooperate with neighbours to implement fire regimes that enhance the natural and cultural values of the park.

2. Basis for management

Dipperu National Park (Scientific) is managed according to the management principles for national parks (scientific) under the *Nature Conservation Act 1992* to:

- protect the area's exceptional scientific values
- ensure that the processes of nature continue unaffected in the area
- protect the area's biological diversity to the greatest possible extent
- allow controlled scientific study and monitoring of the area's natural resources.

The Department of Environment and Resource Management (DERM) is responsible for the day-to-day management of Dipperu National Park (Scientific). Entry is by permit only, and limited to authorised persons undertaking scientific research, monitoring or management activities. DERM has a responsibility under the *Land Protection (Pest and Stock Route Management) Act 2002* to control declared pest plants and animals on protected areas.

The park supports migratory species listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (that is, those species listed under the Bonn Convention, the China–Australia Migratory Bird Agreement, the Japan–Australia Migratory Bird Agreement) and the Republic of Korea–Australia Migratory Bird Agreement.

Indigenous people have a strong affiliation with this park and involving Traditional Owner groups will form an important part of all park management activities.

3. Location and regional context

The Dipperu National Park (Scientific) covers 10 960 ha and is located approximately 40 km south of the township of Nebo and 106 km south-west of Mackay (see Appendix A, Map 1). The park is bounded by grazing properties on all sides—Mt Flora and Waitara stations to the north-west, Valkyrie and Morpeth stations to the south, and Cockenzie and Hamilton Park stations to the east.

Areas to the north and south of the park are generally undulating plains that have been partially cleared, while Denison Creek lies to the east and the Flora Range to the west. The park lies in the Brigalow Belt North bioregion, which has been extensively cleared for cattle grazing and dryland farming—the dominant land uses surrounding the park. Dipperu National Park (Scientific) is the most complex and significant patch of remnant vegetation in the region, this being the reason for its gazettal in 1980.

Dipperu is a remote scientific national park and receives very few visitors. Entry is by permit only and there is no provision for public or recreational use of the park.

4. Protecting and presenting the park's values

4.1 Landscape

4.1.1 Geology and landform

Dipperu National Park (Scientific) consists mainly of gently undulating plains with a maximum elevation of 185 m and a minimum of 160 m. The typical geology of the park is alluvial soils, which consist of grey and brown deep-cracking clays and dark, bleached duplex soils along the drainage lines, and alkaline yellow-grey dark, bleached duplex soils over the undulating land. The park's alluvial soil deposits were laid down in the Quaternary period. Some areas feature moderate to heavy Gilgai (melon holes), where the surface undulates with mounds and depressions.

Desired outcomes 2021	Actions and guidelines
The natural landscape and geological features of the park are retained.	A1. Stabilise and revegetate eroded areas, where practical.

4.1.2 Waterways

Dipperu National Park (Scientific) is located in the Fitzroy River catchment and its major waterways are Bee Creek on the western boundary, Yard Gully and Cockenzie Gully in the centre, and a tributary of Denison Creek in the north-east. The low profile of the park makes it prone to flooding and soil erosion, especially during the summer wet season. In summer, it is possible for Bee Creek to become 16 km wide and cover about 60 per cent of the park.

Many natural lagoons along the south-west boundary of the park provide an almost permanent water source during dry times and are vital to maintaining Dipperu's diversity. An artificial waterbody (Bat Dam) exists in the middle of the park and provides water for microchiropteran bats.

Three coal mines operate upstream from Dipperu National Park (Scientific) and periodically release authorised wastewater discharges into waterways that flow through the park. The discharges have the potential to release contaminated and/or poor quality water that could impact on the park's aquatic and terrestrial environments.

A 2008 government report on water quality impacts from coal mine wastewater discharges in the Fitzroy Basin noted that aquatic ecosystems are one of the most sensitive downstream values that should be protected from mine water discharges. The water quality parameters of most concern are salinity, heavy metal ion concentrations and pH. A mine identified as posing a high risk of contributing to potential cumulative impacts is located approximately 12 km upstream from Dipperu National Park (Scientific) (DERM 2008). DERM regulates mining discharges and considers the impacts on the natural environment when determining approvals to discharge.

Incidental water quality samples taken in the park from Bee Creek in 2008 were well above the salinity levels recommended for natural aquatic ecosystems. However, there is no ambient water quality baseline for comparing the salinity results, as difficult access prevents any systematic water quality monitoring in the park. In December 2008, DERM installed an automatic water quality logger in Bee Creek, approximately 1 km upstream of the park.

Desired outcomes 2021	Actions and guidelines
Dipperu's waterways and aquatic ecosystems remain healthy and any impacts from upstream sources are minimised.	<p>A2. Periodically review the results of any water quality monitoring near the park and determine whether the results have implications for the park's aquatic and terrestrial environments.</p> <p>A3. Encourage community or industry organisations to monitor and assess the park's aquatic and terrestrial ecosystems for potential impacts from upstream sources.</p> <p>A4. Monitor erosion to determine impacts of soil movement.</p> <p>A5. Where appropriate, develop a response strategy to mitigate any identified impacts that may significantly impact on the park's aquatic or terrestrial ecosystems.</p> <p>A6. Where possible, provide input into DERM's determination of upstream wastewater discharge proposals that have the potential to impact on the park's waterways and aquatic ecosystems.</p>

Desired outcomes 2021	Actions and guidelines
	<p>A7. Work with other sections of DERM, where practical, to encourage upstream mines to understand and meet their obligations regarding water discharge.</p> <p>A8. Work with upstream neighbours, mines and catchment groups to reduce weeds and other negative impacts on waterways.</p>

4.2 Native plants and animals

Dipperu National Park (Scientific) contains the largest, least disturbed and most complex area of native vegetation of its type in the Brigalow Belt North bioregion. It is nationally significant for its disjunct vine thicket communities, extensive wetland habitats that support a range of migratory waterbirds, unusual and restricted vegetation communities and species, and for providing an excellent example of the characteristic vegetation in the bioregion.

Eleven diverse regional ecosystems occur on the park (Appendix A, Map 2 and Appendix C, Table 1), including *belah* *Casuarina cristata* dominated communities, low brigalow *Acacia harpophylla* forests and woodland, eucalypt and poplar box woodlands, and vine thicket communities with a mix of evergreen and deciduous species that are significant, disjunct remnants. Five regional ecosystems are endangered and five are of concern under DERM's biodiversity status. The *belah*, brigalow, vine thicket and riparian eucalypt communities are fire-sensitive and need protecting from fire to avoid irreversible changes to their composition and structure. In contrast, the eucalypt woodlands need fire to maintain the structure, composition and function of the ecosystem and to reduce invasion by adjacent plant communities.

Dipperu National Park (Scientific) has three plant species of conservation significance under the Nature Conservation Act: *Solanum adenophorum* (endangered), black ironbox *Eucalyptus raveretiana* (vulnerable) and *Macropteranthes leiocaulis* (near threatened). Dipperu is one of only a few protected areas in Queensland where the vulnerable black ironbox is found.

The park's intact vegetation and reliable water source provide habitat for a diverse range of wildlife, making it an important wildlife refuge in an arid and largely cleared landscape. Dipperu is part of the Carborough Range wildlife corridor and the Bee Creek riparian corridor. It forms an important connection with other remnants in the region, helping to protect biodiversity in the park and the region.

More than 120 bird species have been recorded in the park, including five species of conservation significance under the Nature Conservation Act: the vulnerable glossy black-cockatoo *Calyptorhynchus lathami* and squatter pigeon (southern subspecies) *Geophaps scripta scripta*; the near threatened black-necked stork *Ephippiorhynchus asiaticus*; and the square-tailed kite *Lophoictinia isura* and black-chinned honeyeater *Melithreptus gularis*. The park contains significant wetlands that support waterbirds, including migratory species. The red goshawk *Erythrotriorchis radiatus*, a secretive endangered species, is thought to nest in the park. Other vertebrate species recorded on the park include 19 native mammals (including a good representation of microchiropteran bats), 34 reptiles and nine amphibians (Augusteyn 2007). Other wildlife species of significance under the Nature Conservation Act recorded on the park include the vulnerable ornamental snake *Denisonia maculata*, brigalow scaly-foot *Paradelma orientalis* and the near threatened little pied bat *Chalinolobus picatus*.

Desired outcomes 2021	Actions and guidelines
Knowledge and understanding of vegetation communities and significant plant and animal species continues to increase and informs future park management decisions.	<p>A9. Encourage research on the ecology and management requirements of plant and animal species of conservation significance.</p> <p>A10. Continue to record sightings of native plants and animals on WildNet and other DERM databases.</p>
<p>The diversity and integrity of native plant species and communities on the park are protected and maintained.</p> <p>Plant and animal communities and species of conservation significance are protected and adequately managed.</p>	<p>A11. Allow any degraded or previously cleared areas to revegetate naturally, or rehabilitate with planted local native species where appropriate.</p> <p>A12. Implement any relevant recovery plans, conservation plans and regional biodiversity action plans for plant and animal species of conservation significance.</p> <p>A13. Undertake surveys of potential red goshawk nesting areas and monitor for this species' presence. If this species is confirmed on the park, ensure fire regimes are suitable for this fire-sensitive species.</p>

4.3 Indigenous culture

No Indigenous cultural heritage places have been identified on the park. However, the varied habitat and water sources may have been of important cultural value for Indigenous people.

Dipperu National Park (Scientific) is in an area subject to a native title claim (Application Name: Barada Barna People; Tribunal file number: QC08/11; Federal Court file number: QUD380/08). This plan does not affect the claim.

Barada Barna Kabalbara and Yetimarla have undertaken an initial visit to the park and expressed a strong desire to complete a cultural survey. Members of the Barada Barna Kabalbara and Yetimarla people also run the Hamilton Park Station, which shares a border with Dipperu.

Desired outcomes 2021	Actions and guidelines
The integrity of the park's Indigenous culture is preserved and respected and the park is cooperatively managed with Traditional Owners.	A14. Work with the Barada Barna Kabalbara and Yetimarla people to complete a cultural heritage survey. A15. Encourage Traditional Owner involvement in planning and management activities.

4.4 Shared-history culture

Dipperu National Park (Scientific) was listed on the Register of the National Estate by the Australian Heritage Commission in 1980 for its significant natural values as described in section 4.2. Before being declared a national park in 1969, it was leased forestry land and had a long history of cattle grazing. No significant items of shared-history cultural value have been identified on the park.

4.5 Education and science

Being a national park (scientific) with the largest and best representative example of complex remnant vegetation remaining in the northern brigalow region, Dipperu has great value in preserving the native plants and wildlife characteristic of the broader landscape before it was extensively cleared. This provides opportunities for scientific research in a variety of fields.

Any research programs conducted on park by external bodies require a scientific purposes permit. In the park's history, very little external scientific study has occurred, and analysing the permits issued since 1998 reveals no research has been conducted on the park.

Desired outcomes 2021	Actions and guidelines
The park is used as a site for research, education and to promote nature conservation.	A16. Facilitate the use of the park for suitable scientific research and education that will contribute to better understanding and management of the park's natural values and will have limited impacts on the park's natural values.

4.6 Partnerships

Dipperu National Park (Scientific) has six neighbouring properties. Cooperation with these neighbours is vital for effective and efficient management, as the natural elements do not recognise park boundaries. Shared management issues with adjacent properties include managing fire, controlling pest plants and animals, protecting water quality and maintaining boundaries.

A nature refuge agreement is proposed on the northern boundary of Dipperu National Park (Scientific) on Mount Flora. Mount Flora Nature Refuge proposal is 760 ha of endangered and of concern brigalow communities on the grazing property (Lot 36 KL11178). The Mount Flora property extends from the grandodiorite hills of the Flora range across the sedimentary basins to the east. Mount Flora Nature Refuge proposal is an extension of the values of Dipperu National Park (Scientific), which contains one of the most significant remaining areas of riparian brigalow on floodplain alluvium within the Brigalow bioregion.

Desired outcomes 2021	Actions and guidelines
Good working relations with neighbouring landholders, natural resource management groups, other government agencies and local fire authorities are maintained.	<p>A17. Implement the QPWS Good Neighbour Policy and encourage cooperative partnerships, particularly in regard to pest and fire management activities.</p> <p>A18. Provide neighbours with information about the park's management.</p> <p>A19. Ensure ongoing cooperation with the landholder of Mount Flora proposed nature refuge to encourage management actions to be coordinated across the protected area and nature refuge.</p>

5. Other key issues and responses

5.1 Pest management

Twenty-two pest plant species have been recorded in the park. Priority pest plant species targeted by management include the declared pest plants parkinsonia *Parkinsonia* sp., parthenium *Parthenium hysterophorus*, snake cactus *Harissia* sp., giant rat's tail grass *Sporobolus* sp. and lantana *Lantana camara*; and the non-declared plant buffel grass *Cenchrus* sp. Recent pest plant management programs have been successful and have reduced the extent of declared pest plants (including parkinsonia, parthenium and to a lesser extent snake cactus) through the park by at least 60 per cent.

Pest animals in the park include dogs *Canis familiaris*, cats *Felis catus*, pigs *Sus scrofa*, foxes *Vulpes vulpes*, cattle *Bos* sp. and horses *Equus caballus*. Cattle and horses still occur in considerable numbers and are the primary management challenge. They are significantly changing the vegetation understorey by decreasing ground cover (which impacts on ground-dwelling native wildlife species) and increasing erosion. Park fencing has been upgraded to reduce stock encroachment.

The removal of grazing has the potential to increase introduced grass species, such as buffel grass and guinea grass *Panicum maximum* var. *maximum*. This could alter the park's fire regimes by increasing wildfires and impact upon vegetation communities and native wildlife species and their habitat.

Feral pigs occur seasonally throughout the park. Pigs can be a significant problem as they dig up plants to eat their roots, wallow in water pools and dig up the soil in wetlands, often resulting in highly disturbed environments and reduced water quality. This, in turn, adversely impacts on native vegetation growth and habitat quality. Trespassers are known to enter the park with dogs to hunt pigs, and baiting for wild dogs occurs on neighbouring properties.

A Level Two Pest Management Strategy that includes Dipperu National Park (Scientific) is being prepared.

Desired outcomes 2021	Actions and guidelines
The impacts from pests on the park's natural values are controlled and, where possible, eradicated.	<p>A20. Maintain park boundary fencing.</p> <p>A21. Muster stock and remove unclaimed cattle and horses from the park.</p> <p>A22. Fence the artificial waterbody (Bat Dam) to prevent access by stock.</p> <p>A23. Investigate decommissioning of artificial waters (Bat Dam) and fencing all permanent natural waters to reduce the impacts of cattle on the park's natural values.</p> <p>A24. Continue the program to control pest plants, in particular priority species including parkinsonia, parthenium and harissia cactus.</p> <p>A25. Manage pests in accordance with the operational policy – Management of Pests on QPWS-managed Area, including:</p> <ul style="list-style-type: none"> • using the QPWS Pest Management System and ParkInfo to plan, manage, record and monitor all pests and pest management • where practical and appropriate, QPWS will participate cooperatively in pest management planning and implementation across the landscape with surrounding land managers, other government departments, local governments and utility providers to ensure landscape-level pest management is successful • following all pest management principles outlined in the QPWS Good Neighbour Policy

Desired outcomes 2021	Actions and guidelines
	<ul style="list-style-type: none"> ensuring any pest management does not adversely affect the natural integrity of the park and use the best available scientific and technical knowledge. <p>A26. Implement the QPWS operational policy for pest plant and pathogen spread prevention to ensure that all persons (including DERM staff, contractors, authority holders and employees and contractors of authorities or utility providers) take all reasonable steps to prevent the spread of pest plants or pathogens through the movement of vehicles, plant, equipment, boats, people, livestock and materials.</p> <p>A27. Arrange with SunWater to use their wash-down facility for park management operations.</p>

5.2 Fire management

Uncontrolled wildfires on Dipperu may pose a serious threat to the park's natural and cultural values and neighbouring properties. However, fire is a feature of the park's forest ecosystem processes and some level of fire is necessary to maintain the health of some vegetation communities.

The park has large areas of endangered regional ecosystems that are fire sensitive and others that are sustained by fire. Careful fire planning and management is required to exclude fire from fire sensitive areas while maintaining fire regimes that will help maintain the structure and function of fire dependent ecosystems.

There is little detailed fire history information for the park. In recent years, two wildfires have occurred on Dipperu: in 1998 along a section of Bee Creek, and in 2002 in the north-east section.

A Level One Fire Management Strategy exists and guides the annual burn program. A wildfire response procedure has also been developed in accordance with DERM's fire management system.

Desired outcomes 2021	Actions and guidelines
Human life, property, cultural values, and the biological diversity and integrity of the park's plant and animal communities are protected through the responsible management of fire.	<p>A28. Review the Level One Fire Management Strategy for Dipperu National Park (Scientific).</p> <p>A29. Continue to build and maintain partnerships with the Queensland Fire and Rescue Service (Rural), neighbours, Traditional Owners and other land managers regarding fire management.</p> <p>A30. Monitor the outcomes of the planned burn proposals, including impacts of fire on plant and animal populations and diversity, and review and update the fire management strategy as required.</p> <p>A31. Encourage research into fire behaviour and requirements of fire-sensitive and fire-dependent species and communities, in particular to fill knowledge gaps. Incorporate relevant research results into the fire management strategy, where possible.</p>

5.3 Infrastructure management

Being a national park (scientific), Dipperu has very little infrastructure as there is no public access and entry is restricted to authorised management and research. There are no locked gates on the three entrances to the park and illegal access does occur. Experience shows that gates are quickly vandalised.

Because it is flood prone, Dipperu has very few permanent structures, apart from fences and a 5 km power line corridor that runs through the eastern section of the park. Workers occasionally access the powerline corridor to maintain a 30 m wide clearing.

All management roads on the park are unsealed and are only suitable for four-wheel drive dry weather access. The park's soil types and regular flooding prevent access in wet weather.

Desired outcomes 2021	Actions and guidelines
Management roads are maintained to the desired DERM standards.	<p>A32. Maintain all tracks to the desired standard and manage in accordance with the standard DERM road maintenance schedules and procedures.</p> <p>A33. Do not allow access to the park in wet weather.</p>

Desired outcomes 2021	Actions and guidelines
Illegal access to the park is prevented.	A34. Investigate illegal entry and implement methods for limiting trespass.

5.4 Climate change

The likely effects of climate change that could potentially impact on the natural values of Dipperu National Park (Scientific) include lower and more varied rainfall, higher temperatures, drought and consequential changes in fire regimes, such as increased fire frequency and intensity (Australian National University 2009). Climate change is also expected to promote the spread of pest plants and change the structure and floristics of native vegetation (McFadyen 2007).

The condition of the vegetation and habitat in and between reserves is an important factor in resilience to climate change (Mansergh and Cheal 2007). A high level of natural connectedness improves the chances of species surviving by supporting large populations and a range of microhabitats (Mackey et al 2008). Habitat fragmentation and degradation present significant barriers to species that may need to move to new habitats (Taylor and Figgis 2007).

Although climate change is difficult to manage and is largely outside the scope of this plan, reducing stresses on the environment could make the park more resilient to climatic change.

Desired outcomes 2021	Actions and guidelines
<p>Potential impacts from climate change on vegetation communities and species of conservation significance are understood.</p> <p>Suitable habitats are linked to assist native species to move through the landscape and adapt to climate change impacts.</p>	<p>A35. Promote the linking of important habitats for climate change-affected species through establishing and maintaining corridors, connections and/or 'habitat stepping stones'.</p> <p>A36. Monitor the impacts of invasive species as a result of climate change and, where necessary, include actions in pest management programs to minimise identified impacts.</p>

6. References

- Augusteyn, J. (2007), *Dipperu fauna survey report*. Environmental Protection Agency, Rockhampton (unpublished).
- Department of Environment and Resource Management (2008), *A study of the cumulative impacts on water quality of mining activities in the Fitzroy River Basin*.
- Mackey, B. G. Watson, J. Hope, G. and Gilmore, S. 2008, 'Climate change, biodiversity conservation, and the role of protected areas: An Australian perspective', in *Protected Areas: Buffering nature against climate change*. (Proceedings of a WWF and IUCN World Commission on Protected Areas symposium, 18–19 June 2007, Canberra). WWF Australia, Sydney (eds Taylor, M. and Figgis, P.), pp 11–18.
- Mansergh, I. and Cheal, D. 2007, 'Protected area planning and management for eastern Australian temperate forests and woodland ecosystems under climate change – a landscape approach', in *Protected Areas: Buffering nature against climate change*. (Proceedings of a WWF and IUCN World Commission on Protected Areas symposium, 18–19 June 2007, Canberra). WWF Australia, Sydney (eds Taylor, M. and Figgis, P.), pp. 58–72.
- McFadyen, R. 2007, *Invasive Plants and Climate Change, Briefing Note*, Cooperative Research Centre for Australian Weed Management. Adelaide.
- Taylor, M. and Figgis, P. (eds) 2007, *Protected Areas: Buffering nature against climate change*. (Proceedings of a WWF and IUCN World Commission on Protected Areas symposium, 18–19 June 2007, Canberra). WWF Australia, Sydney.

7. Hyperlinks

- Biodiversity status <www.derm.qld.gov.au>
- China–Australia Migratory Bird Agreement <www.austlii.edu.au>
- DERM website <www.derm.qld.gov.au>
- Environment Protection and Biodiversity Conservation Act 1999* and Regulations 2000 <www.environment.gov.au>
- Japan–Australia Migratory Bird Agreement <www.austlii.edu.au>
- Key threatening process <www.environment.gov.au>
- Landscape Classification System for Visitor Management <www.derm.qld.gov.au>
- Nature Conservation Act 1992* <www.legislation.qld.gov.au>
- Nature Conservation (Wildlife) Regulation 2006 <www.legislation.qld.gov.au>
- Queensland Heritage Act 1992* <www.legislation.qld.gov.au>
- Regional ecosystems <www.derm.qld.gov.au>
- Republic of Korea–Australia Migratory Bird Agreement <www.austlii.edu.au>

8. Appendixes

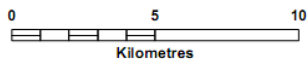
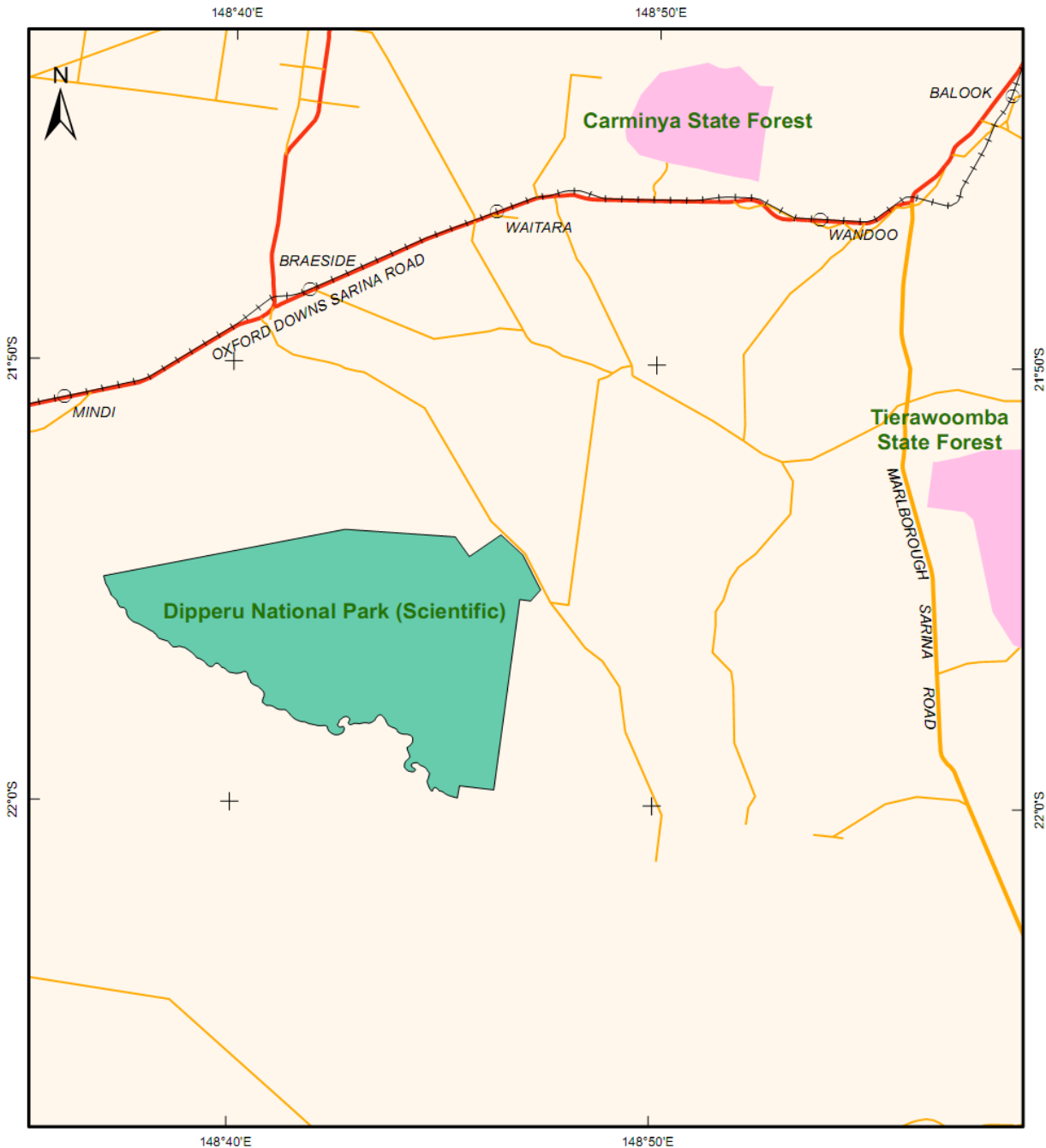
Appendix A – Maps

Appendix B – Definitions

Appendix C – Regional ecosystems

Appendix A – Maps

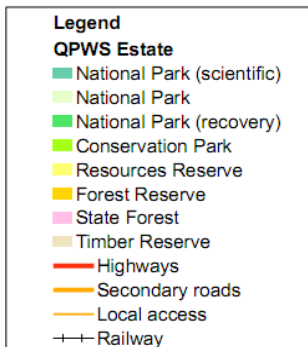
Map 1 Location



Map Projection:
 Universal Transverse Mercator (MGA) zone 55
 Horizontal Datum:
 Geocentric Datum of Australia 1994 (GDA94)
 Map Production:
 Spatial Services,
 Queensland Parks and Wildlife Service,
 Department of Environment and Resource Management,
 18 November 2010

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Accuracy statement:
 Due to varying source, accuracy or currency of data layers used in this map, the spatial locations of features may not coincide when overlaid.

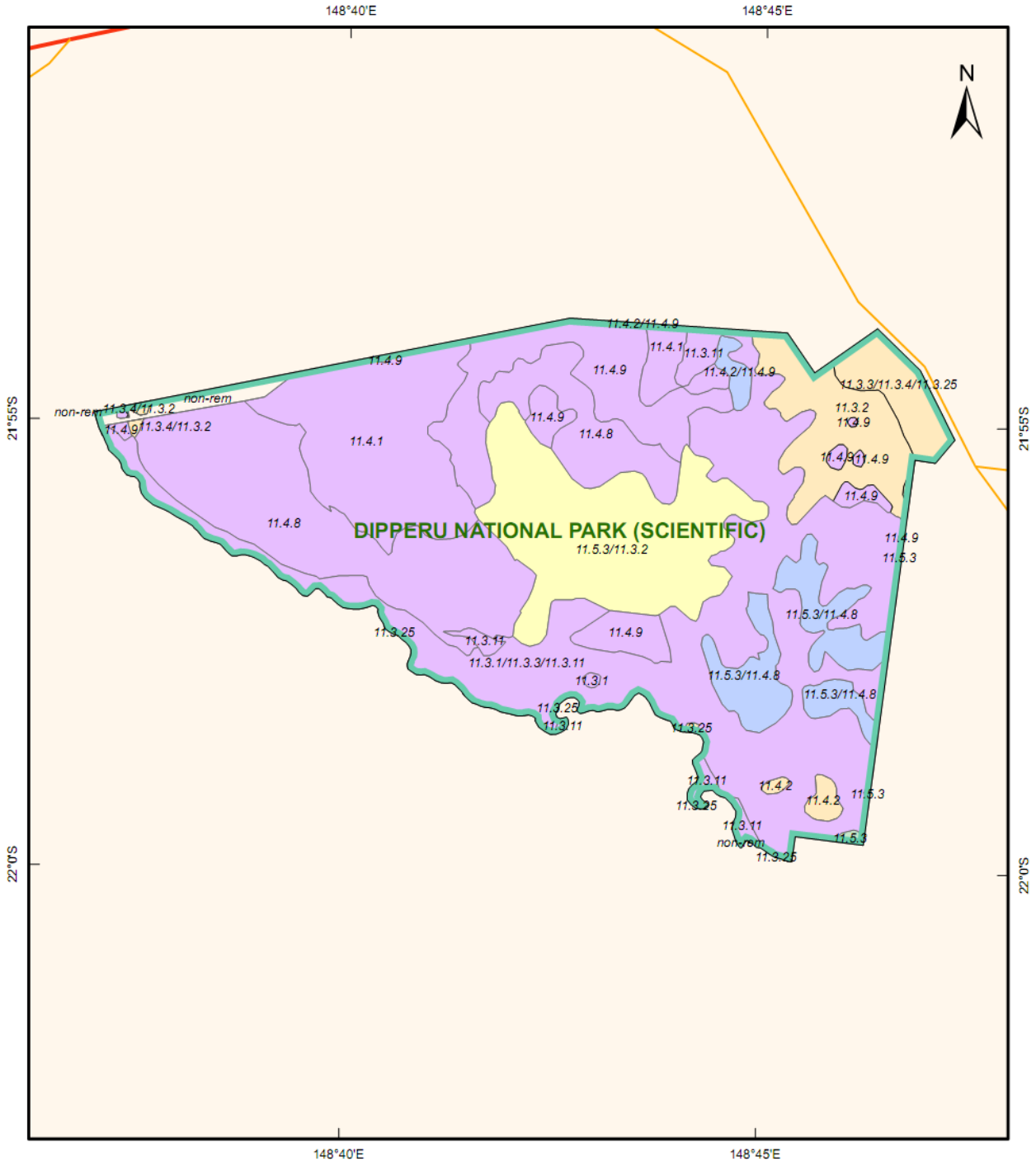


Source Material:
 • State Digital Road Network (SDRN); September 2010
 • Pitney Bowes MapInfo Australia Pty Ltd 2010
 • QPWS Estate; June 2010



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Map 2 Regional ecosystems



Map Projection:
Universal Transverse Mercator (MGA) zone 55
Horizontal Datum:
Geocentric Datum of Australia 1994 (GDA94)

Map Production:
Spatial Services,
Queensland Parks and Wildlife Service,
Department of Environment and Resource Management,
22 November 2010

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of features may not coincide when overlaid.

Legend

- | | |
|----------------------------|-------------------------|
| National Park (scientific) | Of concern dominant |
| Regional Ecosystems | Of concern sub-dominant |
| Biodiversity Status | Not of concern |
| Endangered dominant | Non remnant |
| Endangered sub-dominant | |

Source Material:
• Regional Ecosystems Remnant Vegetation
(DERM); 2009
• QPWS Estate; June 2010

Appendix B – Definitions

Biodiversity status (regional ecosystems)

The biodiversity status is based on an assessment of the condition of remnant vegetation in addition to the pre-clearing and remnant extent of a regional ecosystem. The current biodiversity status of regional ecosystems is available via the Regional Ecosystem Description Database on DERM's website along with information on the criteria used to assess each status.

Endangered (regional ecosystems)

A regional ecosystem is listed as endangered under the *Vegetation Management Act 1999* if remnant vegetation is less than 10 per cent of its pre-clearing extent across the bioregion, or 10–30 per cent of its pre-clearing extent remains and the remnant vegetation is less than 10 000 hectares.

In addition to the criteria listed for endangered regional ecosystems under the *Vegetation Management Act 1999*, for biodiversity planning purposes a regional ecosystem is listed with a DERM biodiversity status of endangered if:

- less than 10 per cent of its pre-clearing extent remains unaffected by severe degradation and/or biodiversity loss*; or
- 10–30 per cent of its pre-clearing extent remains unaffected by severe degradation and/or biodiversity loss and the remnant vegetation is less than 10 000 hectares; or
- it is a rare* regional ecosystem subject to a threatening process*.

* refer to hyperlinks – *Vegetation Management Act* status and biodiversity status for further information.

Endangered (species)

At the state level, endangered species are those species listed as endangered under schedule 2 of Queensland's Nature Conservation (Wildlife) Regulation 2006. At the national level, endangered species are those species listed as endangered under the Commonwealth's *Environment Protection and Biodiversity Conservation Act 1999*.

Management principles for national park (scientific)

Under Section 17, *Nature Conservation Act 1992*:

- (1) A national park (scientific) is to be managed to—
 - (a) provide, to the greatest possible extent, for the permanent preservation of the area's natural condition and the protection of the area's cultural resources and values
 - (b) present the area's cultural and natural resources and their values
 - (c) ensure that the only use of the area is nature-based and ecologically sustainable.
- (2) The management principle mentioned in subsection (1)(a) is the cardinal principle for the management of national park (scientific).

Near threatened (species)

Near threatened species are those species listed as near threatened under schedule 5 of Queensland's Nature Conservation (Wildlife) Regulation 2006.

Of concern (regional ecosystems)

A regional ecosystem is listed as of concern under *Vegetation Management Act 1999* if remnant vegetation is 10–30 per cent of its pre-clearing extent across the bioregion, or more than 30 per cent of its pre-clearing extent remains and the remnant extent is less than 10 000 hectares.

In addition, for biodiversity planning purposes, regional ecosystems are assigned a DERM biodiversity status of concern if 10–30 per cent of its pre-clearing extent remains unaffected by moderate degradation and/or biodiversity loss. Moderate degradation and/or biodiversity loss is defined when floristic and/or faunal diversity is greatly reduced but unlikely to recover within the next 20 years even with the removal of threatening processes; or, when soil surface is moderately degraded.

pH

A measure of acidity or alkalinity of a medium such as soil and water. pH is measured on a scale from one (extreme acidity) to 14 (extreme alkalinity). Numerically equal to the negative logarithm of the concentration of the hydrogen ion in gram atoms per litre.

Regional ecosystems

Regional ecosystems were defined by Sattler and Williams (1999) as vegetation communities in a bioregion that are consistently associated with a particular combination of geology, landform and soil. Readers should refer to this publication for background information about regional ecosystems and the bioregional planning framework used in Queensland.

Compilation of the information about regional ecosystems presented in Sattler and Williams (1999) was derived from a broad range of existing information sources including land system, vegetation and geology mapping and reports. However, the framework is dynamic and is regularly reviewed as new information becomes available. During the past few years the Queensland Herbarium has developed a program for explicitly mapping regional ecosystems across Queensland. This has resulted, and will continue to result, in updates to the descriptions and status of regional ecosystems. Therefore updated regional ecosystem descriptions in the format of Sattler and Williams (1999) are maintained in DERM's Regional Ecosystem Description Database.

Species of conservation significance

Species of conservation significance refers to those species that are threatened (that is, endangered or vulnerable species), and may also refer to other species that are subject to threats at a regional or local level.

Vulnerable (species)

At the state level, vulnerable species are those species listed as vulnerable under schedule 3 of Queensland's Nature Conservation (Wildlife) Regulation 2006. At the national level, vulnerable species are those species listed as vulnerable under the Commonwealth's *Environment Protection and Biodiversity Conservation Act 1999*.

Appendix C – Regional ecosystems

Table 1: Of concern or endangered regional ecosystems for Dipperu National Park.

Regional ecosystem number	Regional ecosystem name	DERM biodiversity status	Reason for status and the threats to ongoing sustainability
11.4.1	Semi-evergreen vine thicket ± <i>Casuarina cristata</i> on Cainozoic clay plains	Endangered	Extensively cleared or modified with <10 % of the pre-clearing area remaining. The community requires small fires throughout the year to reduce the extent of a wildfire. Risk of wildfire is increased by introduced grasses.
11.4.8	<i>Eucalyptus cambageana</i> woodland to open forest with <i>Acacia harpophylla</i> or <i>A. argyrodendron</i> on Cainozoic clay plains	Endangered	Extensively cleared or modified with <10 % of the pre-clearing area remaining. <i>Casuarina cristata</i> is fire sensitive, although germination can be good in bare areas. Brigalow is soft-seeded, so germination is not promoted by fire. High intensity fires will cause damage to overstorey. Risk of wildfire is increased by introduced grasses.
11.4.9	<i>Acacia harpophylla</i> shrubby open forest to woodland with <i>Terminalia oblongata</i> on Cainozoic clay plains	Endangered	Extensively cleared or modified with <10 % of the pre-clearing area remaining. <i>Casuarina cristata</i> is fire sensitive, although germination can be good in bare areas. Brigalow is soft-seeded, so germination is not promoted by fire. High intensity fires will cause damage to overstorey. Risk of wildfire is increased by introduced grasses.
11.3.3	<i>Eucalyptus coolabah</i> woodland on alluvial plains	Of concern	Remnant extent is >10 000 ha and with 10–30 % of the pre-clearing area remaining. This community does not need fire. High intensity and extensive fires will degrade vegetation structure and destroy animal habitat. Flood events drive recruitment of coolabah. Over grazing encourages encroachment of woody-stemmed plants such as <i>Acacia</i> and <i>Atalaya</i> .
11.3.2	Poplar box open woodland with a grassy low understorey on alluvial plains	Of concern	Remnant extent is >10 000 ha and with 10–30 % of the pre-clearing area remaining. Extensive wildfire can alter the vegetation composition, structural diversity, wildlife habitat and damage culturally significant (scar) trees.
11.4.2	<i>Eucalyptus</i> spp. and/or <i>Corymbia</i> spp. grassy or shrubby woodland.	Of concern	Remnant extent is >10 000 ha and with 10–30 % of the pre-clearing area remaining. Extensive wildfire can alter the vegetation composition, structural diversity, wildlife habitat and damage culturally significant (scar) trees.
11.3.11	Semi-evergreen vine thicket on alluvial plains	Endangered	Remnant extent is >10 000 ha and with 10–30 % of the pre-clearing area remaining. This community requires protection from wildfire. Risk of wildfire is increased by introduced grasses.
11.3.1	<i>Acacia harpophylla</i> and/or <i>Casuarina cristata</i> open forest on alluvial plains	Endangered	Extensively cleared or modified with <10 % of the pre-clearing area remaining. This community requires protection from wildfire. Risk of wildfire is increased by introduced grasses. <i>Casuarina cristata</i> is fire sensitive, although germination can be good in bare areas. Brigalow is soft-seeded, so germination is not promoted by fire. High intensity fires will cause damage to overstorey. Risk of wildfire is increased by introduced grasses.
11.3.4	<i>Eucalyptus tereticornis</i> and/or <i>Eucalyptus</i> spp. tall woodland on alluvial plains	Endangered	Remnant extent is >10 000 ha and with 10–30 % of the pre-clearing area remaining. Extensive wildfire can alter the vegetation composition, structural diversity, wildlife habitat and damage culturally significant (scar) trees.
11.3.25	<i>Eucalyptus tereticornis</i> or <i>E. camaldulensis</i> woodland fringing drainage lines	Of concern	Remnant extent is >10 000 ha and with 10–30 % of the pre-clearing area remaining. Extensive wildfire can alter the vegetation composition, structural diversity, wildlife habitat and damage culturally significant (scar) trees.

Department of Environment and Resource Management (2007). Regional Ecosystem Description Databases (REDD). Version 5.2 Updated November 2007.

Database maintained by Queensland Herbarium, Department of Environment and Resource Management, Brisbane.

