

Palmgrove National Park (Scientific) Management Statement 2013

Park size:	25,600ha
Bioregion:	Brigalow Belt South Bioregion
QPWS region:	South West
Local government estate/area:	Duaringa
State electorate:	Callide, Fitzroy

Legislative framework

✓	<i>Aboriginal Cultural Heritage Act 2003</i>
✓	<i>Environment Protection and Biodiversity Conservation Act 1999 (Cwlth)</i>
✓	<i>Native Title Act 1993 (Cwlth)</i>
✓	<i>Nature Conservation Act 1992</i>

Plans and agreements

✓	China–Australia Migratory Bird Agreement
✓	Japan–Australia Migratory Bird Agreement
✓	Multispecies recovery plan for the cycads
✓	National recovery plan for the black-breasted button-quail <i>Turnix melanogaster</i>
✓	Republic of Korea–Australia Migratory Bird Agreement

Thematic strategies

✓	Fire management strategy
✓	Pest management strategy



Sandstone heath community. Photo: NPRSR.

Vision

Palmgrove National Park (Scientific) will be managed to preserve softwood scrub communities and the adjacent grassy woodlands through the appropriate management of fire. Management will focus on preserving the habitat of the black-breasted button quail and other conservation significant species.

Conservation purpose

Palmgrove National Park (Scientific) was originally a Flora and Fauna Reserve managed by the Department of Primary Industries. It was dedicated as a national park in June 1991, and re-gazetted under the *Nature Conservation Act 1992* as National Park (Scientific) in December 1994.

The park was set aside during the Brigalow Land Development Scheme to conserve a remnant of bonewood *Macropteranthes leichhardtii* scrub, as well as vine scrub and grassy woodlands. The bonewood scrub communities are of high conservation value due to their rarity and relatively undisturbed condition.

Palmgrove National Park (Scientific) comprises 50% of Queensland's national park (scientific) estate. The park is noted for its high diversity of invertebrates especially insects.

Protecting and presenting the park's values

Landscape

Palmgrove National Park (Scientific) is comprised of alluvial plains and watercourses, sand plains, undulating sediments, sandstone ranges, plateaus and a retreating scarp of the Bigge Range. The sheer, sandstone cliffs, of approximately 80 metres (m) in height, are a particularly scenic vista.

The park lies adjacent to two other large areas of remnant sandstone vegetation—Presho Forest Reserve 64,000 hectares (ha) and Theodore State Forest 72,000ha. It protects the headwaters of Palmgrove and Zamia Creeks which feed in to the Fitzroy Basin.

Approximately 33%, or 30 kilometres (km), of the park boundary has been cleared, with neighbouring properties using the area for grazing. The entire northern boundary borders cleared softwood scrub country which was sown to improved pasture. Buffel grass *Cenchrus ciliaris* is encroaching into the park along boundary lines but, due to the density of the softwood scrubs, is largely restricted to the immediate cleared area along the fence lines.

Regional ecosystems

Palmgrove National Park (Scientific) contains vegetation and wildlife corridors of both State and regional biodiversity significance. Fourteen regional ecosystems occur on the park of which seven are of conservation significance (Table 1).

Two endangered regional ecosystems are of particular conservation value as they both have been otherwise extensively cleared for cropping and pasture—11.9.4 semi-evergreen vine thicket on fine-grained sedimentary rocks (which is important as there is only around 12% of its original extent remaining in Queensland) and 11.9.8 *Macropteranthes leichhardtii* thicket on fine grained sedimentary rocks.

Native plants and animals

Plant surveys have recorded 406 species on the park including eight species of conservation significance. The most important species of these is the *Macrozamia platyrhachis* (endangered under the *Nature Conservation Act 1992*) which is a cycad found in only three protected areas in the state.

Around 145 animal species have been recorded on the park with four of these being of conservation significance (Table 2). The park's population of the black-breasted button-quail *Turnix melanogaster* (vulnerable under the *Nature Conservation Act 1992*) is important as it is one of only a few remnant populations left in an area where the species was once widespread. The population size is currently unknown and appropriate fire management is a critical for its long-term survival.

Some reptiles have local conservation significance due to their restricted distribution. The prickly knob-tailed gecko *Nephrurus asper* is at its southern range limit and the major skink *Bellatorias frerei* exists as an isolated population. A single scat of the northern quoll *Dasyurus hallucatus* has been recorded on the park. The escarpment country needs to be further surveyed to establish their presence.

Aboriginal culture

No Aboriginal cultural heritage sites are known to have been recorded for the park.

Shared-history culture

There is limited knowledge of the area's history prior to gazettal of the park. This information has not been formally recorded. A set of brigalow yards used by cattle duffers in 1930–50s is said to be located in the park near the boundary with Arcoona. A mailman's horse track ran through the area in the earliest days of settlement.

Education and science

General public access is inconsistent with the management principles of a national park (scientific) so there is limited recreational or educational use of the park.

The park has on-going controlled scientific research and monitoring programs related to the species of conservation significance and the endangered open forest communities. Conservation volunteers assist in these studies.

Other key issues and responses

Pest management

The entire northern boundary has cleared softwood scrub country which has been sown to buffel grass *Cenchrus ciliaris*. The buffel grass is encroaching into the park along these boundary lines sometimes up to 7km especially along Bakers Creek and Palmgrove Creek. This has major implications for fire management. Green panic *Megathyrsus maximus* var. *pubiglumis* is also a significant threat in these areas. Various methods to reduce the impact of these grass species should be considered and approved for implementation through the pest management strategy.

Cobblers pegs *Bidens pilosa* and noogoora burr *Xanthium occidentale* appear to be restricted to very small, isolated infestations along creek lines. Tree pear *Opuntia tomentosa* occurs as isolated, individual trees on the grassy woodland. The declared Harrisia cactus *Harrisia martinii* has been recorded on the boundary with Arcoona station but has been substantially controlled.

Isolated infestations of parthenium *Parthenium hysterophorus* occur on the northern boundary of the park and along 3km of Palmgrove Creek. Infested areas are sprayed intermittently and staff observed an 80% reduction of adult plants in 2003.

Pigs *Sus scrofa* are known to be in quite high numbers and cause damage in the creeks where they create pads and wallows. If not managed, populations will increase. Arcoona station used to run pig traps on the boundary with the park. Feral cattle *Bos* spp. in the grassy woodlands of the park have created pads and have altered grass composition and structure. The extent and severity of the impact caused by cats *Felis catus* and cane toads *Rhinella marina* is unknown.

Fire management

Palmgrove National Park (Scientific) is part of a Queensland Parks and Wildlife Service (QPWS) conservation project looking at evaluating and improving the ecological outcomes of fire management in sandstone ecosystems in Queensland protected areas.

An area of approximately 0.5km by 0.5km of the softwood scrub community was killed by a wildfire in 1997–8, and parts of the park were burnt by wildfire in October 2002. Another significant wildfire occurred in the park in 2009. This has resulted in a decline in Brigalow scrub communities in the western areas of the park.

It is essential to have detailed vegetation and fire mapping so that more specific fire management objectives can be defined for habitats and species, especially those which are conservation significant. This also allows opportunities for evaluating and measuring responses to planned burns.

Management directions

Desired outcomes	Actions and guidelines
<p>Ecosystem management</p> <p>The current extent and ecological integrity of brigalow/softwood communities on the park is conserved.</p>	<p>A1. Continue to implement and review the fire management strategy with particular reference to any new research identified as part of the conservation initiative project in sandstone protected areas.</p>
<p>Species of conservation significance</p> <p>Populations of conservation significant species are secured on the park.</p>	<p>A2. Undertake recovery actions in the National Multi-species Recovery Plan for the cycads where they relate to <i>Macrozamia platyrhachis</i>.</p> <p>A3. Undertake actions in the National Recovery Plan for black-breasted button-quail where they relate to the park, including assessing distribution and population size to direct better fire and habitat management.</p> <p>A4. For the reptiles of conservation significance, maintain suitable micro-habitat through mosaic fires that retain at least 50% of their habitat (e.g. logs, fallen bark, and dense leaf litter).</p>
<p>Research</p> <p>Baseline information on communities and species is improved to make better fire management decisions.</p>	<p>A5. Encourage further research on species and communities.</p> <p>A6. Undertake further animal surveys to update records for the park.</p> <p>A7. Develop a vegetation map for the park.</p>
<p>Pest management</p> <p>A reduction in the distribution of pest species is achieved and no new species are established.</p>	<p>A8. Continue to implement and review the pest management strategy.</p>

Tables – Conservation values management

Table 1: Endangered and of concern regional ecosystems

Regional ecosystem number	Description	Biodiversity status
11.3.3	Eucalyptus coolabah woodland on alluvial plains	Of concern
11.3.25	<i>Eucalyptus tereticornis</i> or <i>E. camaldulensis</i> woodland fringing drainage lines	Of concern
11.9.1	<i>Acacia harpophylla</i> - <i>Eucalyptus cambageana</i> open forest to woodland on fine-grained sedimentary rocks	Endangered
11.9.4	Semi-evergreen vine thicket on fine-grained sedimentary rocks	Endangered
11.9.5	<i>Acacia harpophylla</i> and/or <i>Casuarina cristata</i> open forest on fine-grained sedimentary rocks	Endangered
11.9.8	<i>Macropteranthes leichhardtii</i> thicket on fine grained sedimentary rocks	Endangered
11.10.8	Semi-evergreen vine thicket in sheltered habitats on medium to coarse-grained sedimentary rocks	Of concern

Table 2: Species of conservation significance

Scientific name	Common name	Nature Conservation Act 1992 status	Environment Protection and Biodiversity Conservation Act 1999 status	Back on Track status
Plants				
<i>Acacia hockingsii</i>	-	Vulnerable	-	Low
<i>Homoranthus decasetus</i>	-	Near threatened	-	Low
<i>Leucopogon grandiflorus</i>	-	Near threatened	-	Low
<i>Livistona nitida</i>	-	Near threatened	-	Low
<i>Macrozamia platyrhachis</i>	-	Endangered	Endangered	Critical
<i>Melaleuca groveana</i>	-	Near threatened	-	Medium
<i>Wahlenbergia islensis</i>	Australian bluebell	Near threatened	-	Low
<i>Zieria collina</i>	-	Vulnerable	Vulnerable	Low
Animals				
<i>Calyptorhynchus lathami</i>	glossy black-cockatoo	Vulnerable	-	-
<i>Dasyurus hallucatus</i>	northern quoll	Common	Endangered	Medium
<i>Strophurus taenicauda</i>	golden-tailed gecko	Near threatened	-	Medium
<i>Turnix melanogaster</i>	black-breasted button-quail	Vulnerable	Vulnerable	Critical

Table 3: Bird species listed in international agreements

Scientific name	Common name	Bonn	CAMBA	JAMBA	ROKAMBA
<i>Hirundapus caudacutus</i>	white-throated needletail	-	✓	✓	✓
<i>Coracina tenuirostris</i>	cicadabird	-	-	✓	-
<i>Cuculus optatus</i>	oriental cuckoo	-	✓	✓	✓
<i>Merops ornatus</i>	rainbow bee-eater	-	-	✓	-

Bonn: Bonn Convention

CAMBA: China–Australia Migratory Bird Agreement

JAMBA: Japan–Australia Migratory Bird Agreement

ROKAMBA: Republic of Korea–Australia Migratory Bird Agreement