Munga-Thirri National Park Management Statement 2013

Park size:	1,012,000ha
Bioregion:	Channel Country
QPWS region:	Central
Local government estate/area:	Diamantina Shire
State electorate:	Mount Isa

Legislative framework

✔	*Aboriginal Cultural Heritage Act 2003*
✔	*Environment Protection and Biodiversity Conservation Act 1999* (Cwlth)
✔	*Nature Conservation Act 1992*
✔	*Native Title Act 1993* (Cwlth)
✔	*Queensland Heritage Act 1992*

Plans and agreements

✔	Bonn Convention
✔	China–Australia Migratory Bird Agreement
✔	Japan–Australia Migratory Bird Agreement
✔	Republic of Korea–Australia Migratory Bird Agreement

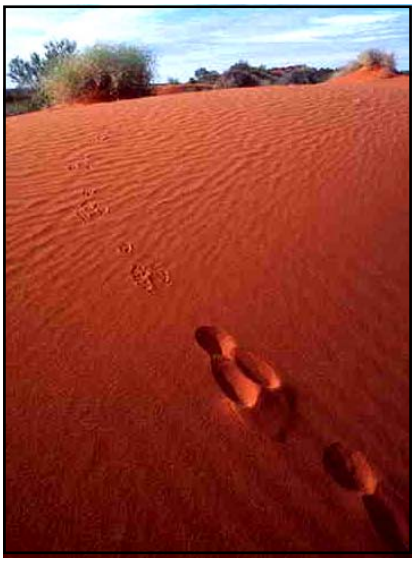
Thematic strategies

✔	Level 2 fire management strategy
✔	Level 2 pest management strategy

Vision

Munga-Thirri National Park will be managed to conserve the quality and integrity of the park's natural values including the area's desert ecosystems. Visitors will experience this remote, waterless landscape and encounter the world's longest parallel sand dunes.

Management of the park will protect and interpret the cultural values including the dreaming stories and song lines of the Wangkangurru/Yarluyandi and Wangkamadla nations.



Munga-Thirri National Park. Photo: NPRSR.

Conservation purpose

Munga-Thirri National Park, covering 505,200ha, was originally gazetted in 1967 under the *Forestry Act 1959* for its natural values. Simpson Desert National Park was re-gazetted as Munga-Thirri National Park in December 2011 acknowledging the traditional Aboriginal name of the area, meaning 'Big Sandhill Country'.

Additional land of 49,800ha was included in the national park in 1983 and a further 457,000ha added in 1991 to bring the total area to 1,012,000ha—making it Queensland's largest protected area. The park conserves one of the largest areas of longitudinal sand dune systems in Australia and conserves examples of plant communities associated with desert ecosystems.

Protecting and presenting the park's values

Landscape

At 1,012,000ha, Munga-Thirri National Park is Queensland's largest protected area. The park is located in arid central Australia in the Channel Country bioregion and has an average rainfall of less than 150mm. The national park adjoins South Australia's Simpson Desert Conservation Park and Regional Reserve and vacant crown land in the Northern Territory. The Simpson Desert covers more than 17 million hectares of central Australia.

Munga-Thirri National Park is a 'Sand Sea' dominated by parallel wind-blown sand dunes running north-north-west to south-south-east. This was the dominant wind direction when the dunes were formed during the Pleistocene epoch about 80,000 years ago.

The dunes are spaced about 1km apart, are up to 20m high and may extend for up to 200km. The red dune systems of Munga-Thirri National Park are one of its major scenic values.

Inter-dunal areas may be covered in sand plains, traversed by seasonal drainage lines, contain large saline lakes or claypans and, in the eastern areas, open Georgina gidgee woodlands.

Other major landscape features of the desert include the river systems, Hay River and Gnallan-a-gea Creek which are part of the Hay and Georgina rivers catchments.

Regional ecosystems

There are 10 regional ecosystems in Munga-Thirri National Park, none of which are of concern (Table 1). However, the park's biodiversity is considered of state significance under the Queensland's biodiversity planning assessment for the Channel Country bioregion. The park also contains special biodiversity values as it is core habitat for priority taxa, provides wildlife refugia, and contains disjunct populations and high species endemism.

Several regional ecosystems provide habitat for endangered and threatened native plant and animal species including the endangered dusky hopping-mouse *Notomys fuscus* and the vulnerable brush-tailed mulgara *Dasycercus blythi,* kowari *Dasyuroides byrnei* and yellow chat *Epthianura crocea* (Table 2).

Native plants and animals

Despite the harsh conditions, Munga-Thirri National Park conserves suitable habitat for a range of species which have adapted to the desert environment, several of which are of conservation significance (tables 2 and 3). It has a richness of arid zone endemic species and remarkable reptile diversity.

Sandhill canegrass *Zygochloa paradoxa* stabilises the loose sand on the dune crests and provides a home for the elusive Eyrean grasswren *Amytornis goyderi.* The wind-polished gibber pebbles or mineral encrusted claypans of the inter-dunal areas may support open shrublands of acacias, hakeas and grevilleas.

Georgina gidgee *Acacia georginae* is a rounded wattle tree occurring extensively in the dune swales on the Queensland side of the desert. The species, traditionally named maya-maya, is used for seeds, spears, boomerangs and shade. Regeneration of the species is occurring in some areas that have had sufficient rainfall. In other areas the trees appear to be coping adequately and the graze line previously caused by rabbits is no longer evident.

A vast number of bird species, ranging from tiny insect and seed-eating wrens to large birds of prey, occur throughout the desert and its margins.

Up until 1996 a number of raptor species including the wedge-tailed eagle *Aquila audax*, brown falcon *Falco berigora* and black kite *Milvus migrans* along with crows *Corvus spp* were sited regularly. However rabbit haemorrhagic disease has affected ecosystems including decline in the previously high populations of raptors. Following the demise of the rabbit, the numbers of wedge-tailed eagles declined almost immediately and now only the brown falcon is sighted on a regular basis.

The rabbit decline has also resulted in increased vegetation growth. Regeneration of plant species is being observed in the area of the salt lakes. Deeper rooted plants, including samphire *Tecticornia* spp. and saltbush species, are withstanding wind storms while Kerosene grass *Aristida contorta* and roly-poly *Salsola kali* are being removed by the winds.

Two small populations of *Acacia oswaldii* are known to occur in the national park. It was considered that this species may 'potentially be endangered due to camel's browsing' by Dorges and Heucke in 2003.

Aboriginal culture

Munga-Thirri National Park conserves a large number of cultural sites. Management aims to ensure the cultural sites are conserved according to best practice management. This may include the restriction of public and management access to places of particular significance to the Traditional Owners. All conservation outcomes should be to the satisfaction of the Traditional Owners (QPWS 1997).

Known occupation sites within Munga-Thirri National Park include mikiris or water wells, and a dam. Mikiris are very important as part of a chain of water points allowing people access across the desert. Cork wood trees *Hakea eyreana* are associated with mikiri sites and appear to indicate shallow water tables.

All mikiri sites have a large amount of bone material, probably associated with food sources, at them which could reveal the species used as food. Mikiris were a focus point in the landscape for ceremonies and the collection of pitjuri *Duboisia hopwoodii*. Pitjuri is a traditional chewing tobacco that was traded far and wide because of its high nicotine content.

Documented sites include Madhlu (Mudloo well), Puramuni and Yelkirri mikiris and Pitelli dam, a one-metre earth dam that was built to close off a clay-pan to increase the water holding capacity. The location of Nilijeritja mikiri has not been shared with non-Aboriginal people

Physical evidence of occupation recorded to date includes burials, artefact scatters, gunyas, camp sites, grind stones and stone axes. The recorded presence of kopi caps (worn by widows in mourning), ochre and shells suggest strong spiritual and ceremonial connections to the land as well.

The Traditional Owners maintain a strong connection with the country and maintain their knowledge as custodians of these sites.

Threats to cultural sites include man made disturbance from trampling, vehicle damage, pilfering and previous mining exploration activities. Visitor use in the form of tag along tours has increased and allows for greater access into areas previously considered too remote to travel to, including to some of the cultural sites. Natural disturbance from fire, sheet erosion, shifting sand dunes and camels also occurs but is varied in the level and extent of effect on each site.

The traditional custodians of the desert wish to ensure the stories of the Dreamtime are passed on within the Aboriginal custodial keepers to ensure the integrity and development of the culture, traditional knowledge, experience, practices and beliefs are maintained (QPWS 1997).

Munga-Thirri National Park is part of the two boys dreaming (Thutirla-Pula) story. A translation of the two boys' story has been undertaken by Hercus and Potezny. A mural has been painted in the Birdsville QPWS office by Geoff Manthey to depict the story as told by Jimmy Crombie and Don Rowlands. The story relates to the creation of the mikiris across the desert.

The Wangkangurru/Yarluyandi native title claim, federal court number SAD6016/98, covers a total of over 79,000km^2 land including much of Munga-Thirri National Park.

Shared-history culture

Munga-Thirri National Park conserves a number of non-Aboriginal heritage sites left by explorers, surveyors and the Rabbit Board.

Explorers, helped by their Aboriginal trackers, used the mikiris to cross the area. Surveyors traversing the Queensland–Northern Territory border used Madhlu mikiri for drinking water and supported the sides of the well with timber during their stay at the well. In later years, Afghan cameleers collected pitjuri from the area to trade in Marree on their return journey.

A number of explorers and surveyors crossed the area, helping to open up the arid interior to progress and development. Explorers through the area include Charles Sturt (1844), Augustus Poeppel (1880), Charles Winnecke (1883), David Lindsay (1886), Ted Colson (1936) and Cecil Madigan (1939).

Cecil Madigan named the area after Alfred Allen Simpson, the sponsor of his expedition and then president of the Royal Geographical Society of Australasia (South Australian Branch).

The Poeppel's corner area is listed on the Queensland Heritage Register under the category of Exploration/survey/early settlement. The original Poeppel's marker is housed in the State Library of South Australia's Mortlock Library. The marker is made out of waddy wood *Acacia peuce* cut in the Birdsville area.

The Rabbit Board fence has not markedly deteriorated and is still clearly evident. There are also indications of European occupation along it, including camp sites, artefacts and a water well near the fence.

Reg and Griselda Spriggs were the first to cross the Simpson Desert using motorised vehicles in 1962. This was conducted as part of a geomagnetic survey for oil (Shephard M 1992).

The French Petroleum Company constructed the French line from Purnie bore to Poeppel Corner in 1964. The QAA line was then constructed in 1979 by Delhi Petroleum and was left open at the request of locals to provide access through the desert from Birdsville to Poeppel Corner. The K1 line was then pushed through from Kuncherinna-1 well to just west of Poeppel Corner by ARCO Australia to drill Poeppel's Corner-1 well in 1984. Together, these three lines have opened up the desert country and allowed visitor use to occur.

Tourism and visitor opportunities

Munga-Thirri National Park is regarded as one of the last great wilderness areas in Australia. Visitors still see the area as one of the few remaining 'great adventures' that they can use to test their self-endurance and four-wheel driving skills. The harsh conditions and solitude attract recreational users. An increasing number of motorcyclists are taking on the crossing as a challenge both as groups and individuals. Supported cyclists and walkers are also becoming more frequent.

Munga-Thirri National Park is closed annually from 1 December to 15 March due to extreme summer temperatures above 50°C. The park is open the rest of the year; however wet weather can cause temporary closures.

Most visitors through the park visit Poeppel Corner, which was severely impacted by rabbits and the effects of drought. The site underwent a major rehabilitation program in 2004 consisting of the construction of a board walk, interpretive shelter, vehicle barriers and car park. Rehabilitation of the dune was undertaken by the placement of matting and wood chips. This has resulted in the alleviation of scouring, sand replacement and the regeneration of grass and shrub species.

There are no roads in the park. The main access track within the park is the QAA line. Actual track conditions appear to be self-repairing over the summer period. Some sand blow-outs are occurring on dune crests. There has been a large sand movement across the QAA track which is affecting its alignment. This has increased the difficulty of traversing the dunes and resulted in greater damage to the immediate areas as travellers try to negotiate by-pass tracks.

The improved access road from Birdsville to and over Big Red (sand dune) has enabled access for the inexperienced travellers.

As the global positioning system has become more readily available, travellers feel more confident about travelling in remote areas and can access areas without formed tracks. This has had dangerous consequences with miscalculations of fuel, water and food requirements becoming common place. There have been numerous vehicle breakdowns. An increasing number of motorcyclists are taking on the crossing as a challenge, both as groups and individuals. Most are properly equipped with support vehicles but some visitors are less well prepared. QPWS provides safety advice to visitors.

Due to significant hazards, the isolation and emergency recovery issues, the use of the Madigan Line has been discouraged in the past. With advances in four-wheel-drive vehicles, communications and recovery technologies, this route is now being considered for future public access.

The salt lake systems are another major feature of the desert. There have been short cuts created by visitors across salt lakes including Lake Poeppel. The lakes can appear to be dry but are often quite soft to drive on and vehicle tracks are often deep and visible for very long periods of time.

Education and science

The national park provides learning opportunities in a number of subjects including culture, geology and biology. Results from research and monitoring can benefit the area's management and educate staff and the community.

There has been much information documented regarding Aboriginal cultural heritage and high visitor interest in re-enacting explorer's routes, leading to a large amount of information available in hard copy and the internet.

The park is a valuable scientific reference area and provides opportunities for detailed research into arid ecology. Further opportunities exist to broaden our understanding of the ecosystems of Munga-Thirri National Park and the unique native animals that inhabit such a harsh landscape.

Sydney University already works in the northern Simpson Desert area on Bush Heritage Australia properties Ethabuka and Cravens Peak and may be able to collaborate on research in the park. Further research would provide improved direction on the protection of native plants and animal species and the impact of threatening processes of inappropriate fire regimes and pest animals.

Partnerships

The management of pest plants and animals and of fire is significantly enhanced by the cooperation and involvement of park neighbours and regional natural resource management groups. Such collaboration with neighbours relates particularly to activities that require broad-scale actions that extend beyond the park boundaries. Stock control is also an issue which benefits from a strong partnership approach with neighbours.

Given the proximity of the park to the state boundary, partnerships with departments from neighbouring states are important. Collaborative working arrangements between QPWS and National Parks South Australia have resulted in the erection of interpretive signs and development of a cultural display in the national park office. Additional interpretative signs were installed at Poeppel Corner in 2004 where Queensland, South Australia and Northern Territory meet.

Opportunities exist for further cooperative research and management projects with South Australia's Department of Environment and Natural Resources, Northern Territory's Department of Natural Resources, Environment, the Arts and Sport, and tertiary institutions.

Other key issues and responses

Pest management

Munga-Thirri National Park has a current Level 2 pest management strategy. The presence of foxes *Vulpes vulpes* within the Simpson Desert has recently been reported. Two foxes have been observed in the last two years in the vicinity of Poeppel Corner. Other reports were made by a tourist in September 2009 with further reports made in October 2009.

An aerial survey conducted in 1996 indicated large numbers of rabbits *Oryctolagus cuniculus* in the southern portion of the park with larger numbers in closer proximity to Eyre Creek. Rabbit haemorrhagic disease was noted in early August 1996 when huge numbers died. A further outbreak occurred after some rainfall in late August 1996 which resulted in almost total eradication of rabbits along the QAA line.

A further aerial survey in 1999 indicated very little recovery in numbers. No significant rabbit warrens have been noted for a long period of time. The decreased rabbit numbers was confirmed by on-ground monitoring conducted by QPWS and Queensland’s former Department of Natural Resources.

The removal of rabbits has allowed grass species to recover on dune and interdune areas. The dunes appeared to be in good condition up until recently, when dune movement appeared to increase. This movement has not been noted to any extent previously. Very little rabbit activity is currently observed in the area with only one or two burrows but no warrens have been formed.

Transient camels *Camelus spp.* can also cause damage to vegetation. Aerial surveys undertaken in 1996, 1999 and 2008 confirmed that the majority of camel activity was occurring around the lake systems in the west of the park. A monitoring program is also occurring with 12 belt transects established in the park along the QAA and Madigan lines. Remote cameras are also being used to monitor the influence of carcasses on other feral predators, especially foxes.

Aerial surveys in 2011 under the Australian Feral Camel Management Project estimated that there were 750,000 feral camels roaming across 3.3 million square kilometres of Western Australia, Northern Territory, South Australia and Queensland. Their destructive impact has cut a swathe through many areas of ecological and cultural significance. By sheer force of numbers, they have devastated natural waterholes, destroyed sacred Aboriginal sites, and damaged pastoral grazing lands and infrastructure.

QPWS will continue to work with the Australian Feral Camel Management Project to confine the camel population to less than 0.1 animals/km^2. QPWS will continue to monitor vegetation recovery around water bodies and established transects.

Fire management

QPWS has a statewide fire management system. QPWS is the primary agency for fire management on protected areas and State forests. Fire strategies provide the overall framework and direction for fire management and are the foundation from which planned burn programs are developed.

Munga-Thirri National Park has a Level 2 fire management strategy. Fire intensity, the timing and frequency of fires threaten priority species through loss of habitat. Fire frequency and intensity is often influenced by the presence of pest plants, and therefore fire management strategies may need to include pest plant control.

The absence of fire can allow fire-sensitive plant species to invade other vegetation types which may degrade the habitat of priority species. Fires which are too hot pose a large threat in the northern spinifex country. In 2011 a wildfire burnt two-thirds of the park.

Fire regimes that are not compatible with the fire management strategy are a major threat to brush-tailed mulgara. Wildfires lit by lightning strikes burn mulgara habitat and increase predation.

Traditional Aboriginal knowledge of fire management practices should be incorporated into prescribed burning programs where these practices are known to benefit the conservation and recovery of species of conservation significance. A tri-state agreement to manage fire in region should also be encouraged.

References

Hercus LA and Potezny V undated, Thutirla-Pula – The Two Boys.

QPWS 1997, *Simpson Desert National Park, Management Planning Discussion Papers*. Version 2, April 1997.

Management directions

Desired outcomes	Actions and guidelines
Native plants and animals Ecological knowledge of the park's native plants and animals is enhanced and used as the basis for future management decisions.	A1. Ensure management and public use of the park has minimal impact on animal species of conservation significance by identifying habitats vulnerable to human impact, fire, pest plants and animals. A2. Assess populations of *Acacia oswaldii* annually for signs of recovery or grazing damage primarily through photo points and recording damage and developing a browsing index.
Aboriginal culture Traditional Owners play an important role in natural resource management, conservation, protection and appropriate interpretation of their cultural heritage on Munga-Thirri National Park.	A3. Support the involvement of Traditional Owners in the management of the park, particularly in identifying areas, themes and cultural heritage places appropriate for interpretation.
Shared-history culture Places and items of cultural heritage significance are documented, protected and/or maintained where possible.	A4. Protect and conserve cultural material from visitor impacts and inappropriate fire regimes. A5. Investigate measures for the protective management of shared cultural heritage sites with particular focus on documenting and recording the Rabbit Board fence and its associated heritage, evidence of the early exploring heritage in the park and evidence and records of the gas and oil exploration in the park.
Tourism and visitor opportunities The park provides adventure experiences for self-reliant visitors. Visitors to the park are aware of significant threats to safety and are encouraged to plan their visits to ensure risks are minimised within reasonable or acceptable limits.	A6. Visitor access and activities are environmentally and culturally appropriate to protect Munga-Thirri National Park and are in keeping with a remote, self-reliant experience. A7. Assess requests and demand for new nature-based recreational opportunities as they arise particularly opportunities on the Madigan Line. A8. Monitor the impacts of bush camping on the park. A9. Camping will be permitted within a 500m buffer of the QAA line.
Education and science Information and safety advice is readily available to potential visitors to the park. Research will contribute to the knowledge base for improved management.	A10. Provide safety advice to visitors and commercial operators both on and off park through a range of media including the internet. A11. Explore opportunities for cooperative research with the appropriate departments within the South Australia and Northern Territory governments. A12. Encourage tertiary institutions and special interest groups to undertake surveys and scientific studies of the area. A13. Incorporate new information about threatened plants, animals or communities into management actions and strategies.
Partnerships The park is managed with the cooperation of adjoining states and landholders.	A14. Develop a cross-border management relationship with South Australia and the Northern Territory to assist in cooperative arrangements for park management issues, including fire, pest and visitor management for the region. A15. Continue to build relationships with Traditional Owners, the local community, organisations, visitors and interest groups to improve knowledge of the national park, and to highlight its significance to the region.

Desired outcomes	Actions and guidelines
Pest management An effective pest control program is implemented to contain and reduce impacts to manageable levels.	A16. Implement, review and update the pest management strategy for the management area in cooperation with adjoining landholders and other interested parties. A17. Monitor the impacts of pest plants and animals and use the information to guide management decisions and amend current and future plans and strategies. A18. QPWS will continue to work with the Australian Feral Camel Management Project to confine the camel population.
Fire management Fire is managed collaboratively with interested parties.	A19. Implement, review and update the fire management strategy for the management area to ensure the regional ecosystems are maintained and reflect the latest data, mapping and species records. A20. Monitor the impacts from fire and use the information to guide management decisions and amend current and future plans and strategies. A21. Incorporate Traditional Owner knowledge of fire management practices into prescribed burning programs where these practices are known to benefit the conservation and recovery of species of conservation significance.

Tables – Conservation values management

Table 1: Regional ecosystems*

* Note: These regional ecosystems are classified as 'no concern at present' under the Department of Science, Information Technology, Innovation and the Arts biodiversity status (Regional Ecosystem Description Database 2013). There are no endangered or of concern regional ecosystems recorded from the national park.

Regional ecosystem number	Description	Special values
5.3.8	*Eucalyptus coolabah* low open woodland with *Muehlenbeckia florulenta* on braided drainage lines	-
5.3.11	*Acacia georginae* tall shrubland with *Senna artemisioides* subsp. *oligophylla* +/- *Eremophila freelingii* on alluvium	-
5.3.16	*Eragrostis australasica* open grassland on alluvial plains on clay pans between dunes	Habitat for threatened fauna species including grey grass wren *Amytornis barbatus*. Provides wetland habitat for a flora and fauna.
5.3.21	*Atriplex* spp., *Sclerolaena* spp., species of Asteraceae and/or short grasses open herbland on alluvium	-
5.3.22	Sparse herbland on clay pans and lakes	Provides wetland habitat for a flora and fauna.
5.6.5	*Triodia basedowii* hummock grassland on sides of, or between dunes	High reptile diversity. Potential habitat for threatened fauna species including mulgara *Dasycercus cristicauda*.
5.6.7	*Triodia basedowii* hummock grassland wooded with *Eucalyptus pachyphylla* on sandplains	Habitat for small reptiles and threatened fauna species including the night parrot *Pezoporus occidentalis.*
5.6.8	*Zygochloa paradoxa* or *Crotalaria eremaea* +/- Triodia basedowii open grassland on sand dunes	Habitat for the endemic Eyrean grass wren *Amytornis goyderi* and threatened fauna species including the dusky hopping mouse *Notomys fuscus*, mulgara *Dasycercus cristicauda* and flora species including *Sclerolaena everistiana*.
5.7.7	*Acacia cambagei* tall shrubland with *Eragrostis xerophila*, *Sporobolus actinocladus* on sediments on undulating plains	-
5.9.3	*Astrebla pectinata* +/- short grasses +/- forbs on Cretaceous sediments with gibbers	-

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
Aspidites ramsayi	woma	Near threatened	-	High
Dasycercus blythi	brush-tailed mulgara	Vulnerable	Vulnerable	High
*Dasyuroides byrne*i	kowari	Vulnerable	Vulnerable	High
Epthianura crocea	yellow chat	Vulnerable	-	-
Falco hypolaucos	grey falcon	Near threatened	-	Data deficient
Melithreptus gularis laetior	golden-backed honeyeater	Near threatened	-	Low
Notomys fuscus	dusky hopping-mouse	Endangered	Vulnerable	Low
Pyrrholaemus brunneus	redthroat	Near threatened	-	Low

Table 3: Species listed in international agreements

Scientific name	Common name	Bonn	CAMBA	JAMBA	ROKAMBA
Calidris ferruginea	curlew sandpiper	✓	✓	✓	✓
Merops ornatus	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