Deer Reserve National Park and Deer Reserve State Forest Management Statement 2013

Park size:	
Deer Reserve National Park	3,228ha
Deer Reserve State Forest	2,894ha
Bioregion:	South Eastern Queensland
QPWS region:	South East
Local government estate/area:	Somerset
State electorate:	Nanango

Legislative framework

✔	*Aboriginal Cultural Heritage Act 2003*
✔	*Environment Protection Biodiversity Conservation Act 1999* (Cwlth)
✔	*Forestry Act 1959*
	Native Title Act 1993 (Cwlth)
✔	*Nature Conservation Act 1992*

Plans and agreements

✔	Bonn Convention
✔	Japan–Australia Migratory Bird Agreement

Thematic strategies

✔	Level 2 Pest Management Strategy

Vision

Deer Reserve is an isolated and elevated area of high biodiversity value where self-reliant recreation occurs in a relatively undisturbed and natural setting.

Conservation purpose

Deer Reserve was originally set aside as a Timber Reserve in 1912. It was called Deer Reserve to commemorate the release of several red deer in the forest at Cressbrook Station. The deer were part of a gift from Queen Victoria to the State of Queensland.

Deer Reserve National Park was gazetted in 2006 to protect species of conservation significance and their habitats. It is managed as a remote-natural area with restricted access, in recognition of its high biodiversity values and limited access. Three endangered regional ecosystems occur on Deer Reserve State Forest.

Protecting and presenting the park's values

Landscape

Deer Reserve is centred on Mount Brisbane, a prominent peak of igneous origin, which forms a scenic backdrop to the township of Somerset. The reserve protects sections of the catchments of the Stanley and Brisbane rivers which supply water to Somerset and Wivenhoe dams. The eastern boundary of Deer Reserve adjoins part of the Somerset–Wivenhoe Dam Nature Refuge beside Somerset Dam. Areas of unallocated State land (USL) also are located nearby and provide additional habitat for threatened species including the brush-tailed rock-wallaby *Petrogale penicillata* and koala *Phascolarctos cinereus*.

Three freehold blocks are located close to the summit of Mount Brisbane, inside the national park boundary. These blocks were previously partially cleared of native forest, and forest clearing also encroached into the former Timber Reserve along the western boundary, including areas of the of concern regional ecosystem 12.12.12 *Eucalyptus tereticornis, E. crebra* or *E. siderophloia, Lophostemon suaveolens* open forest on granite.

Plantations of hoop pine *Araucaria cunninghamiana* have been planted on about 20 per cent of Deer Reserve State Forest.

Roads in the reserve are formed from natural earth and are subject to erosion, especially on steep sections which are prevalent. Vehicle access needs to be restricted, especially in wet weather in order to reduce damage and subsequent maintenance.

Regional ecosystems

Three endangered regional ecosystems occur in Deer Reserve State Forest (Table 1). The hoop pine plantations in Deer Reserve State Forest were established on areas of the endangered regional ecosystems 12.9–10.15 and 12.12.13 Araucarian complex microphyll to notophyll vine forest on Mesozoic to Proterozoic igneous rocks.

The of concern regional ecosystem 12.12.12 occurs on the lower western slopes of Deer Reserve National Park. Some clearing of this regional ecosystem has occurred in the past and restoration of these areas within the park is warranted.

Large areas of both the national park and State forest comprise open forest and rainforest communities consisting of regional ecosystems that are of no concern. These forests have conservation significance as they provide habitat for many of the species of conservation significance listed in Table 2.

Native plants and animals

Deer Reserve provides protected habitat for at least 13 species of conservation significance (Table 2) and a further four species listed under international agreements (Table 3). Of particular interest are the brush-tailed rock-wallaby, koala, glossy black-cockatoo *Calyptorhynchus lathami*, black-breasted button-quail *Turnix melanogaster* and giant ironwood *Choricarpia subargentea*. Each of these species has very specific habitat requirements.

The brush-tailed rock-wallaby also occurs on several neighbouring properties including the Somerset–Wivenhoe Dam Nature Refuge (managed by SEQ Water) and parcels of USL. Coordinated management of the rock-wallaby population and its habitats by all interested landholders will improve conservation outcomes and should be encouraged.

The vulnerable plant *Plectranthus leiperi* has a limited distribution that is confined to the area between Deer Reserve and northern D'Aguilar Range. This species is widely scattered over rhyolite rock outcrops and pavements in association with little other vegetation and shares this habitat with the brush-tailed rock-wallaby.

Other prominent animals include the wedge-tailed eagle *Aquila audax* and the peregrine falcon *Falco peregrinus* which can often be seen soaring above the rocky mountain slopes. The brush-tailed phascogale *Phascogale tapoatafa* is also known from the park.

Despite the presence of several species of conservation significance, the natural values of Deer Reserve are not well documented with only 103 species of native plants and animals (mostly plants) recorded. The distribution and local population status of the species of conservation significance are also not well known.

Aboriginal culture

Deer Reserve is included within the Jinibara native title claim area (QC98/045 Federal Court no. QUD 6128/98) for which an Indigenous Land Use Agreement is being prepared.

Mount Goonneringerringgi was named by surveyor Robert Austin in 1868, using an Aboriginal word of presumably Waka language, Dungidau dialect, from gooner-gooner-gerringi, indicating a hollow place. Other place names such as Mount Boorran and Cooeeimbardi Creek also suggest indigenous origins.

There are unconfirmed reports of indigenous artefact scatters.

Shared-history culture

Mount Brisbane was named by Major Edmund Lockyer (1784–1860) soldier and landowner in 1825, after Sir Thomas Makdougall Brisbane (1773–1860), Governor of New South Wales from 1821 to 1825.

The remains of the KCB Tree—a grey ironbark—are located in Deer Reserve State Forest. The KCB Tree is a survey mark on the boundary between the three early pastoral runs of Kilcoy, Cressbrook and Mount Brisbane. It formed part of the Cressbrook survey conducted by Robert Austin in 1868.

The remains of a bullock dray, traces of a timber chute and the forestry barracks are reminders of the timber harvesting history of the reserve.

Tourism and visitor opportunities

Access to the national park currently requires permission from neighbours to traverse their property. Three freehold blocks are located inside the national park boundary and create ambiguity in relation to tenure and access opportunities. There are no facilities or visitor infrastructure in the national park. Opportunities for self-reliant bush walking and nature observation will require access arrangements to be negotiated before they can be promoted.

The reserve contains many steep cliffs which pose a safety hazard and are also the preferred habitat of the brush-tailed rock-wallaby.

Access to the State forest is via a locked gate. Limited opportunities exist for motorised recreation on formed roads within the State forest. Four-wheel-drive clubs that are affiliated with the Queensland four-wheel-drive association have access to the State forest on a rotational basis.

Education and science

A seismic activity recorder is located in the State forest.

Research on habitat selection by the brush-tailed rock-wallaby was recently conducted by the University of Queensland.

The forestry barracks in Deer Reserve State Forest are leased by the Edmund Rice Outdoor Learning Centre, through Nudgee Junior College, for outdoor education.

The Somerset Dam Environmental Education Centre also occasionally uses the reserve for their programs.

Partnerships

Road access and maintenance agreements with neighbours need to be formalised to provide for access to the national park and tenure-locked neighbours.

Timber harvesting from native hardwood forests and hoop pine plantations in the State forest is proceeding. Agreements on road maintenance, pest plant control, fire management, signage and forest restoration need to be developed both with Hancock Queensland Plantations and Department of Agriculture, Fisheries and Forestry.

Other key issues and responses

Pest management

Deer Reserve is the location where red deer *Cervus elaphus* were first released in Queensland and still occur there. Red deer are now listed as a Class 3 declared pest animal. Feral pigs *Sus scrofa* (a Class 2 declared pest animal) are also present. The populations and impacts of these pest animals in the reserve are not well understood. Control of wild dogs *Canis lupus familiaris* is undertaken in conjunction with neighbouring landholders. Research suggests that dingos *Canis lupus dingo* may provide a level of control against feral pigs, feral deer, red foxes *Vulpes vulpes* and feral cats *Felis catus* on park (Ritchie et al. 2012). Passive activity index monitoring (Mitchell and Balogh 2007) should be conducted to assess the presence and abundance of pest animals and dingos.

Lantana *Lantana camara* is well established in the moister parts of the national park including the habitat of the giant ironwood and in the State forest where calico flower *Aristolochia elegans* is also a problem. Both of these pest species are listed as Class 3 declared pest plants and threaten the re-establishment of native plant species following disturbance. Pest plant species such as siratro *Macroptilium atropurpureum*, leucaena *Leucaena lucocephala*, vasey grass *Paspalum urvillii*, rhodes grass *Chloris gayana*, white passion flower *Passiflora*

subpeltata, easter cassia *Senna pendula* var. *glabrata*, jacaranda *Jacaranda mimosifolia*, groundsel bush *Baccharis halimifolia* are present on the roads and have the potential to spread into the park. Giant rat's tail grass *Sporobolus pyramidalis* and parthenium weed *Parthenium hysterophorus* are Class 2 pest plants that are known to occur in parts on Somerset region. Both species are readily spread by seed especially on vehicles that have driven through infested areas. Monitoring the extent of these weeds and observing good vehicle hygiene will be important elements of pest management. Three species of exotic peppercress have been recorded from Deer Reserve State Forest—common peppercress *Lepidium africanum*, Argentine peppercress *L. bonariense* and Virginian peppercress *L. virginicum*. These exotic species could threaten the native peppercress *Lepidium peregrinum* (listed as endangered under the *Environment Protection Biodiversity Conservation Act 1999*) through competition for space and resources. The golden rain tree *Koelreuteria elegans* subsp. *formosana* has been recorded from the national park. This exotic species is capable of spreading rapidly from seed and early intervention is required to prevent it from becoming widely established.

A Level 2 pest management strategy for the North D'Aguilar management unit includes Deer Reserve. The Operational Policy – Pest plant and pathogen spread prevention, is being implemented to reduce the risk of introducing and spreading pest plants from neighbouring properties. This document should be distributed to all contractors working in the reserve and at the communication towers.

Fire management

Deer Reserve has a history of fires escaping from neighbouring grazing properties. Cooperative fire management with neighbours is currently being implemented. A Level 2 fire management strategy is being developed to maintain healthy open forest ecosystems, assist with pest plant management and reduce the risk and impacts of wildfire. Planned burning of open forests helps to protect fire sensitive ecosystems such as rainforests and riparian areas by reducing the occurrence and intensity of wildfires.

The effectiveness of planned burns and the impacts of wildfire need to be assessed to provide for adaptive management. The response to fire of endangered and of concern regional ecosystems and of threatened plants and animals should be included in this assessment.

Aerial ignition of planned burns is ideally suited to Deer Reserve because of its steep terrain and limited vehicle access. Aerial ignition also helps to create a mosaic burning pattern and improve the coverage of planned burns in rugged and remote parts of the reserve. Wildfire response and fire mapping would also benefit from access to aerial support.

Fire access tracks, both on the park and on neighbouring properties need to be regularly maintained to provide for safe access during planned burning and wildfire response.

Other management issues

There are three apiary sites in the national park. They are not currently in use as there is no dedicated access through neighbouring properties.

An emergency services communication tower is located in the national park on the summit of Mount Brisbane. Another communication tower, shared by SEQ Water and Energex is located near the eastern boundary of the park. Both towers require dedicated road access for maintenance purposes. Section 35 agreements for the communication towers are being developed.

References

Mitchell B and Balogh S, 2007, *Monitoring techniques for vertebrate pests – Wild Dogs,* New South Wales Department of Primary Industries, Orange.

Ritchie EG, Elmhagen B, Glen AS, Letnic M, Ludwig G and McDonald RA 2012, Ecosystem restoration with teeth: what role for predators? *Trends in Ecology and Evolution*, 27, pp. 265–71.

Management directions

Desired outcomes	Actions and guidelines
Fire management Fire is managed to protect life and property and conserve biodiversity values.	A1. Develop and implement a Level 2 fire management strategy and include the State forest.
Pest management The impact of pest plants and animals is minimised.	A2. Implement the Level 2 pest management strategy and include the State forest.
Native plants and animals Biodiversity values are better understood and applied to adaptive management practices.	A3. Conduct plant and animal surveys to increase knowledge of biodiversity values. A4. Liaise with neighbours to coordinate the management of fire, pests and key native species such as the brush-tailed rock-wallaby. A5. Apply knowledge of plant and animal species to the adaptive management of fire and pests.
Landscape Natural integrity is enhanced across the landscape.	A6. Investigate opportunities for strategic land acquisition and cooperative land management. Acquisition of the adjacent USL is highly desirable for rock-wallaby and koala habitat protection and improved access. A7. Restore cleared areas of national park through natural regeneration and rehabilitate logged areas of State forest. A8. Record visitor use and land management activities over time to enable appropriate resource allocation.
Access Access for park managers, neighbours, service providers and the public are formally determined.	A9. Develop road access and maintenance agreements with neighbours, communication tower users and service providers as a high priority. A10. Identify opportunities for public access to the national park and State forest.
Cultural heritage Cultural heritage values are documented and protected.	A11. Work cooperatively with the Jinibara people to recognise and protect Aboriginal cultural heritage values. A12. Gather shared history information and protect known historical values.

Tables – Conservation values management

Table 1: Endangered and of concern regional ecosystems

Regional ecosystem number	Description	Biodiversity status
12.3.1	Gallery rainforest (notophyll vine forest) on alluvial plains (in Deer Reserve State Forest).	Endangered
12.3.3	*Eucalyptus tereticornis* woodland to open forest on alluvial plains	Endangered
12.9–10.15	Low microphyll vine forest with *Araucaria cunninghamii* and semi-evergreen vine thicket on sedimentary rocks (in Deer Reserve State Forest).	Endangered
12.12.12	*Eucalyptus tereticornis, E. crebra* or *E. siderophloia, Lophostemon suaveolens* open forest on granite.	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				
Bosistoa transversa	three-leaved bosistoa	Common	Vulnerable	NA
Choricarpia subargentea	giant ironwood	Near threatened	-	Low
Haloragis exalata subsp. *velutina*	-	Vulnerable	Vulnerable	Low
Hernandia bivalvis	cudgerie	Near threatened	-	Low
Lepidium peregrinum	-	Common	Endangered	Low
Marsdenia hemiptera	rusty vine	Near threatened	-	Low
Notelaea lloydii	Lloyd's native olive	Vulnerable	Vulnerable	Low
Plectranthus leiperi	-	Vulnerable	Vulnerable	Low
Animals				
Accipiter novaehollandiae	grey goshawk	Near threatened	-	Low
Calyptorhynchus lathami	glossy black-cockatoo	Vulnerable	-	High
Petrogale penicillata	brush-tailed rock-wallaby	Vulnerable	Vulnerable	High

Scientific name	Common name	*Nature Conservation Act 1992* status	*Environment Protection and Biodiversity Conservation Act 1999* status	Back on Track status
Phascolarctos cinereus (South East Queensland bioregion)	koala (South East Queensland bioregion)	Vulnerable	-	-
Turnix melanogaster	black-breasted button-quail	Vulnerable	Vulnerable	Critical

Table 3: Bird species listed in international agreements

Scientific name	Common name	BONN	CAMBA	JAMBA	ROKAMBA
Merops ornatus	rainbow bee-eater	-	-	✓	-
Symposiarchus trivirgatus	spectacled monarch	✓	-	-	-
Pandion cristatus	eastern osprey	✓	-	-	-
Haliaeetus leucogaster	white-bellied sea-eagle	✓	-	-	-

BONN – Bonn Convention

CAMBA – China–Australia Migratory Bird Agreement

JAMBA – Japan–Australia Migratory Bird Agreement

ROKAMBA – Republic of Korea–Australia Migratory Bird Agreement