

Nangur National Park Management Statement 2013

Park size:	1813ha
Bioregion:	South Eastern Queensland
QPWS region:	Sunshine and Fraser Coast
Local government estate/area:	Gympie Regional Council
State electorate:	Callide

Legislative framework

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

Thematic strategies

✓	Level 2 fire management strategy
✓	Level 2 pest management strategy

Plans and agreements

✓	National recovery plan for the black-breasted button-quail <i>Turnix melanogaster</i>
✓	National recovery plan for the Nangur spiny skink <i>Nangura spinosa</i>

Vision

Nangur National Park will be managed to primarily protect the endangered population of the Nangur spiny skink *Nangura spinosa* and its core habitat. The park's values of high state and regional biodiversity significance, including endangered regional ecosystems and species of conservation significance, will also be conserved. There are no visitor nodes, and the park will be managed primarily for conservation through the delivery of appropriate fire and pest management strategies.

Conservation purpose

Nangur National Park—previously Nangur Forest Reserve—was gazetted on 31 March 2006, as part of the South East Queensland Forests Agreement due to its high conservation values. The national park comprises endangered and of concern regional ecosystems and provides important habitat for species of conservation significance, including the Nangur spiny skink *Nangura spinosa*, listed as endangered under the *Nature Conservation Act 1992* and critically endangered under the *Environment Protection and Biodiversity Conservation Act 1999*.

Remnant areas within the park require intensive management due to the threat of weed invasion, feral animals and fire damage on margins.

Protecting and presenting the park's values

Landscape

Nangur National Park consists of two recognised land zones described as a mixture of hills with shallow soils of low soil fertility, and cones and plains on Cainozoic volcanics. It supports the larger catchment area for Barambah Creek.

The park terrain is hilly and bisected by creeks and gullies. There is a gazetted road running through the park; however it is not a visitor destination or site in itself and tracks can be difficult to traverse in wet conditions.

Adjoining land uses include cropping and grazing. Boundaries are fenced but stock encroachment occurs occasionally. The national park, which is north of Murgon, functions as an island of forested country in a heavily grazed area of the region.

Regional ecosystems

Six regional ecosystems are represented on the park, two of which are endangered (12.12.17 and 12.8.21), and three are of concern (Table 1). The two endangered regional ecosystems are types of semi-evergreen vine thicket and are referred to in the national recovery plan for the Nangur spiny skink as important habitat for the skink requiring careful and complementary management to facilitate its recovery.

Native plants and animals

The two main vegetation types which occur at Nangur National Park are open dry sclerophyll forest of ironbark *Eucalyptus crebra* and spotted gum *E. maculata* and vine scrub with hoop pine *Araucaria cunninghamii* emergents. The dry rainforest areas of the endangered vine scrub are particularly susceptible to degradation by weed infestation, particularly if damaged by wildfire on the margins.

Nangur National Park has over 200 recorded flora species and over 100 recorded species of fauna, including 77 species of birds, 14 species of mammals and 19 species of reptiles. Three species of conservation significance have been recorded for the park (Table 2).

In spite of significant survey effort, there are only two known populations of *N. spinosa*—one within the Nangur National Park, the other approximately 36km away within Oakview National Park and Oakview State Forest (Borsboom et al 2010). Recent genetic work demonstrates that the two populations were isolated from each other well before European settlement (Borsboom et al 2012). The Nangur spiny skink has declined in numbers with surveys suggesting a population of less than 35 adults remains in Nangur National Park (Borsboom et al 2010).

The initial primary cause of decline in the Nangur spiny skink numbers believed to be loss, fragmentation and disturbance of habitat, including hoop pine plantation establishment at Oakview (Department of Environment and Resource Management 2010; Borsboom 2012). Feral animals have been identified as potential threats including cane toads *Rhinella marina*, foxes *Vulpes vulpes*, feral cats *Felis catus* and feral pigs *Sus scrofa* (Borsboom, Smyth & Rider 2005). Illegal collection has been known to occur and is still suspected to be a threat. Population sites are not publicised in order to protect burrows from illegal collectors with locked gates installed to manage access to the Oakview site (Department of Environment and Resource Management 2010; Borsboom 2012).

The vulnerable black-breasted button-quail *Turnix melanogaster* has been recorded on park. The button-quail has been given critical status under the Back on Track Species Prioritisation Framework and is also the subject of a national recovery plan. Habitat loss has been the most significant contributor to the reduction in button-quail numbers. The impacts of predation by feral animals on this species are not known, but they are considered likely. Pest plants are known to degrade the vine scrub, reducing foraging opportunities.

A change in the environment is identified as a potential threat to the black-breasted button-quail in the national recovery plan. Prolonged drought can cause a decline in habitat quality and the disappearance of the species from the scrub.

Aboriginal culture

The extent of occupation and the degree of its cultural significance to Traditional Owners remains largely unknown to QPWS. The Sunshine Coast–Burnett area holds high importance to Aboriginal people and there are many sites of Aboriginal cultural importance across the region. None have yet been recorded on the park as it has not been surveyed formally for such purposes.

Opportunities exist to improve relationships between QPWS and local Traditional Owner groups and to involve them in park management.

Shared-history culture

The post-settlement history of the local area, including Nangur National Park, involves timber harvesting and grazing. Many hectares of native forests were cleared to make way for pastures and grazing livestock and later for timber production.

Tourism and visitor opportunities

The park has gazetted road access. Tracks within the park are potentially difficult to traverse in wet conditions. Public use of the reserve is presently limited and there are no visitor facilities or infrastructure located on the park.

Education and science

The Nangur skink was discovered in 1992 and since then has been the subject of much research. It may continue to attract academic interest, given the isolation of the population to only two locations within Queensland's protected area estate. On-going monitoring will be required to track the Nangur skink and the black-breasted button-quail against their respective recovery plans.

Partnerships

QPWS liaises with neighbouring properties and the Queensland Rural Fire Service to deliver the fire management strategy and with park neighbours to deliver the pest management strategy.

Other key issues and responses

Pest management

Lantana *Lantana camara* occurs at Nangur National Park and according to the national recovery plan could potentially impact on the quality of the Nangur spiny skink habitat. Lantana is also a threat as it can facilitate fire spreading into vine scrub. Coral berry is another pest plant that occurs in the park. There are concerns that it may significantly change cover at ground level where the skink occurs (Borsboom 2013).

Feral animals, including pigs, cats, foxes and cane toads are known to occur in the vicinity of known Nangur spiny skink burrows. Predation from these feral animals has the potential to significantly reduce numbers of the skink. Cane toads may also compete for food (Borsboom 2012).

The pest management strategy instructs a fire and herbicide approach to management of pest plants, including lantana, and indicates urgent monitoring is required to establish feral animal population sizes and potential impacts on the park's wildlife.

The pest management strategy pre-dates the Nangur spiny skink national recovery plan and may not reflect all the recommended actions in the recovery plan.

Fire management

Nangur National Park comprises a number of plant communities—some that need fire and others from which fire must be excluded. The semi-evergreen vine thicket is fire resistant but repeated scorching of the margins can cause damage. By contrast the dry sclerophyll open forest and moist sclerophyll open forest require periodic burns. A more complete description is provided in the statement of fire management intent.

Other management issues

Nangur National Park has 12 authorised apiary sites available none of which are currently occupied under permit.

References

Borsboom A C Smyth G and Rider E 2005. *The rare Queensland skink Nangura spinosa: Surveys, distribution, habitat, threats, management and conservation status*. Internal report, Environmental Protection Agency, Brisbane.

Borsboom AC Couper PJ Amey A and Hoskin CJ 2010, Distribution and population genetic structure of critically endangered skink *Nangura spinosa* and the implications for management. *Australian Journal of Zoology* 58. 369–375.

Borsboom a 2012 Nangur spiny skink *Nangura spinosa* pp 237–8 in *Queensland's threatened animals*, edited by Curtis LK et al Commonwealth Scientific and Industrial Research Organisation publishing, Collingwood, Victoria.

Borsboom AC 2013, *Nangura spinosa* survey, establishment of weed control assessment plots and feral animal assessment in Nangur National Park. Internal report, Department of Science, Information Technology, Innovation and the Arts, Brisbane.

Management directions

Desired outcomes	Actions and guidelines
<p>Landscape</p> <p>Knowledge of the landscapes and ecological processes is increased and used for future management decision making.</p>	<p>A1. Ground truth (from existing mapping) regional ecosystems to ensure fire and pest management strategies are tailored to the regional ecosystems present.</p>
<p>Native plants and animals</p> <p>The distribution of native plant and animal species on the park are recorded.</p>	<p>A2. Conduct native plant and animal surveys to establish population sizes and community health in order to establish baselines to monitor ecological trends and to inform management.</p>
<p>Aboriginal culture</p> <p>Aboriginal cultural values of the park are identified and protected where appropriate.</p>	<p>A3. Encourage and support Traditional Owners to conduct a comprehensive cultural heritage survey of the park including recording stories, language names and cultural heritage places.</p>
<p>Pest management</p> <p>Pest management improves the integrity of communities and species.</p>	<p>A4. Review the pest management strategy to take into account relevant recommendations in the national recovery plans for the Nangur spiny skink and the black-breasted button-quail.</p>
<p>Fire management</p> <p>Fire is managed to protect natural and biodiversity values of the park.</p>	<p>A5. Review the statement of fire management intent and implement appropriate fire regimes, including fire exclusion to protect conservation significant species such as the Nangur spiny skink and the black-breasted button-quail.</p>

Tables – Conservation values management

Table 1: Endangered and of concern regional ecosystems

Regional ecosystem number	Description	Biodiversity status
12.12.17	Semi-evergreen vine thicket on Mesozoic to Proterozoic igneous rocks; usually in southern half of bioregion	Endangered
12.8.13	Araucarian complex microphyll vine forest on Cainozoic igneous rocks	Of concern
12.8.21	Semi-evergreen vine thicket with <i>Brachychiton rupestris</i> on Cainozoic igneous rocks. Usually southern half of bioregion	Endangered
12.12.24	<i>Angophora leiocarpa</i> , <i>Eucalyptus crebra</i> woodland on Mesozoic to Proterozoic igneous rocks	Of concern
12.12.8	<i>Eucalyptus melanophloia</i> woodland on Mesozoic to Proterozoic igneous rocks	Of concern

Table 2: Species of conservation significance

Scientific name	Common name	<i>Nature Conservation Act 1992</i> status	<i>Environment Protection and Biodiversity Conservation Act 1999</i> status	Back on Track status
<i>Nangura spinosa</i>	Nangur spiny skink	Endangered	Critically endangered	Medium
<i>Phascolarctos cinereus</i>	koala	Vulnerable (SEQ)	-	Low
<i>Turnix melanogaster</i>	black-breasted button-quail	Vulnerable	Vulnerable	Critical