

# Triunia National Park

Management Plan

2011





## South East Queensland Bioregion

Prepared by:

Planning Services Unit, Department of Environment and Science (DES)

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The Triunia National Park Management Plan 2011 has been extended in 2023 in line with the Queensland *Nature Conservation Act 1992* (s120G). Minor amendments have been made. There has been no change to the plan's original management intent and direction.

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Front cover photograph: *Choricarpia subargentea* Giant Ironwood buttress. Photo: DES.

Top right photograph: *Adelotus brevis* tusked frog. Photo: DES.

Centre right photograph: *Gossia inophloia*. Photo: DES.

Bottom right photograph: *Planchonella eerwah* fruit. Photo: DES.

## Vision statement

Triunia National Park will continue to be an important place for the preservation of plants and animals of high conservation significance. These include the endangered and recently rediscovered rainforest shrub *Triunia robusta*, after which the park is named and *Zieria bifida*, a small plant found only in the local area. The park will continue to provide a critical resource for the scientific and educational programs that are crucial to the survival of these important species.

The park will conserve a representative example of the richness of ecosystems and species that existed across the Sunshine Coast Hinterland in the past in an increasingly developed environment.

The ongoing implementation of appropriate pest and fire management programs will continue to improve the quality and resilience of ecosystems and enhance regeneration of disturbed areas of the park.

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# 1. Management intent

Triunia National Park will be managed with the following intent:

- The open forest communities and lowland subtropical rainforest on the park will be protected from the effects of the clearing of nearby land for expanding urban and rural development, threats from inappropriate fire regimes and damage from pests.
- The high conservation values and biological diversity of ecosystems will be protected to the greatest possible extent.
- Natural processes will continue unaffected on the park and its exceptional scientific values will be protected.
- Cultural heritage sites and values will be identified and protected.
- Involving Traditional Owner groups will form an important part of all management activities.
- The park will be managed to protect its conservation and scientific values by excluding visitor infrastructure development.
- The educational and scientific research potential of the park will be fully supported and encouraged by management actions. Research information will be used to inform management decisions and redress information shortfalls.
- Park neighbours, shared-history interest groups, local government and other land and water management bodies will be engaged in formal and informal consultation forums about effective management of the park's natural integrity.
- Opportunities to protect additional tracts of remnant bushland near the park will be pursued in partnership with landholders to improve habitat connectivity with the park.

# 2. Basis for management

Queensland Parks and Wildlife Service (QPWS) is responsible for the day-to-day management of Triunia National Park in accordance with the *Nature Conservation Act 1992* and regulations. Section 17 of the *Nature Conservation Act* specifies the management principles for national parks.

The provisions of the *Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth) and regulations apply to the national park.

Endangered and of-concern regional ecosystems are described under the DES biodiversity status. Endangered, vulnerable and near threatened species are listed under the *Nature Conservation (Wildlife) Regulation 2006*. QPWS has a responsibility under the *Land Protection (Pest and Stock Route Management) Act 2002* to control declared pest plants and animals in protected areas.

While Triunia National Park is not subject to a Native Title claim, Indigenous people have affinities with this park and involving Traditional Owner groups forms an important management component. This plan is not intended to erode or extinguish any Native Title rights. Cultural heritage places in the park are legislatively managed under the *Aboriginal Cultural Heritage Act 2003* and the *Queensland Heritage Act 1992*.

The park's main purpose is to protect the area's exceptional scientific values, particularly its vegetation that includes 12 plant species of conservation significance. Triunia National Park was named after the small tree, *Triunia robusta*, which was presumed extinct until collected there in 1989.

# 3. Location and regional context

First established in 1994, Triunia National Park covers 33.99 ha and is located in the South East Queensland bioregion in the Sunshine Coast hinterland. It is situated about 6 km west of Woombye on the Woombye–Dulong Road and about 20 km due west of Maroochydore (Appendix A, Map 1). The towns of Montville and Mapleton are within a short travelling distance of the park.

Triunia National Park is located in an area that has been extensively cleared for agricultural purposes, including orchards and grazing. Sunshine Coast Regional Council manages a 20 ha conservation area adjacent to the eastern and southern side of the park called Triunia (Scientific) Conservation Area, and the Dulong Road Bush Conservation Reserve to the west of the park. These areas have consolidated wildlife habitat in the immediate vicinity of the park, and share threats from fire and pests with Triunia National Park.

The park has minimal recreational significance to local residents. It has been managed to preserve its conservation and scientific values through minimal disturbance and careful application of pest control measures that do not compromise the natural integrity of the park's native plants and wildlife. Several parks and forest reserves that cater for campers and day-visitors are located close by, including the popular Kondalilla National Park and Mapleton Falls National Park.

## 4. Protecting and presenting the park's values

### 4.1 Landscape

The soils and geology of the park determine the type and distribution of its plant and animal communities. Triunia National Park contains ridges and lowlands on granitic rocks and the soil is typically of low to moderate fertility. The park provides minor landscape relief from surrounding agricultural land and improves connectivity between the plateau and lowlands adjacent to the park. This is important for the survival of many species and the primary landscape function is to provide a suitable habitat for the plant species of conservation significance that grow on the park. Lowland subtropical rainforest covers most of the park and extends into the deep gullies, while open forest species grow along the ridges. In 2009, the addition of a tract of land adjacent to the northern boundary doubled the size of the park area and further consolidated connectivity with nearby habitats. The park does not have any service roads or formed tracks.

Desired outcomes 2021	Actions and guidelines
The park is managed to protect its natural bushland and preserve current landscape values.	A1. Continue to manage with minimal disturbance to the natural state of the park and exclude infrastructure in keeping with the natural setting.

### 4.2 Native plants and animals

#### 4.2.1 Native plants

Vegetation is a mix of open forest communities and lowland subtropical rainforest. Brush box *Lophostemon confertus* grows in the tall open forest along the ridges and is part of the regional ecosystem 12.12.1 that is of concern. Other prominent canopy species, grey gum *Eucalyptus propinqua*, tallowwood *E. microcorys* and pink bloodwood *Corymbia intermedia* also grow along these ridges. Lowland subtropical rainforest (complex notophyll vine forest) with an uneven canopy to about 40 m extends into the steep gullies, covering 75 per cent of the park. Lower altitude rainforest of this type has been extensively cleared on the Sunshine Coast, and less than 10 per cent of its original extent in the South East Queensland bioregion is left. Regarded as the plant community most at risk on the south-east Queensland coast, this vegetation exists on the Sunshine Coast only as remnant patches.

Triunia National Park contains one of the few remaining rainforest patches of this type on the Sunshine Coast and it has extremely high conservation values and high species richness, with about 300 recorded plant species. The park hosts 13 plant species of conservation significance, four of which are endangered, six are vulnerable and three are near threatened (Appendix C).

The endangered plant species *Zieria bifida* is endemic to Queensland and is found in only three locations, one of which is Triunia National Park. *Triunia robusta*, after which the park was named, is also endangered (until recently thought to be extinct) and found on the park. Protection and sensitive management of these plants are critical to their long-term survival in the wild. The vulnerable plant species, macadamia nut *Macadamia integrifolia*, grows on the park and is one of the species covered by the Southern Macadamia Species Recovery Plan. Although it is also grown commercially, its genetic integrity is threatened in wild populations.

*Z. bifida* grows in the fire-adapted tall open forest and requires specific fire management, while the other three endangered species, reticulated holly *Graptophyllum reticulatum*, shiny-leaved coonoo *Planchonella eerwah* and *T. robusta*, are located in the fire-sensitive lowland subtropical rainforest section. Pest plants, especially lantana *Lantana camara* and glycine *Neonotonia wightii*, pose a risk to all the plant species of conservation significance on the park, but particularly *Z. bifida*. Illegal harvesting of *T. robusta* fruits from trees outside the park poses a threat to the ability of this plant to reproduce naturally within the park as it impacts on seed set and pollination processes.

Desired outcomes 2021	Actions and guidelines
Integrity of ecosystems and plant species is protected from disturbance from recreational activities, pests, management activities and fire.	<p>A2. Continue to monitor visitor impacts and any illegal removal of native plants including developing a partnership with neighbours in the reporting of plants being removed illegally.</p> <p>A3. Continue monitoring of plant species of conservation significance and implement recovery plans.</p>

### 4.2.2 Native animals

The main native animal species living on the park are amphibians and birds. Surveys in 1999 and 2000 identified the vulnerable tusked frog *Adelotus brevis* and koala *Phascolarctos cinereus* (South East Queensland bioregion) as the only animal species of conservation significance found on the park. A protected landscape is critical to the survival of the tusked frog *Adelotus brevis*, which relies on water bodies and drainage lines for its habitat. Seven other frog species have been recorded and their continued survival is threatened by inappropriate catchment management, the use of herbicides and insecticides on nearby properties, excessive nutrient build-up, degraded water quality, and habitat modification. Koala numbers have markedly decreased throughout Australia due to habitat loss from fire, weed effects and clearing, and many populations are now living in isolated patches of habitat like Triunia National Park. This isolation puts them at great risk of localised extinction. The notophyll vine forest is a popular habitat for the many species of birds that live on the park. Further threats to all animal species on the park include dogs, cats, foxes and toads.

Desired outcomes 2021	Actions and guidelines
Populations of animals of conservation significance are conserved, and habitat diversity is protected and maintained.	<p>A4. Identify the specific threats to all significant animal species, particularly the timing, intensity and frequency of planned burning regimes and threats from pest species, visitor impacts and management actions.</p> <p>A5. Conduct stream frog monitoring, monitor population levels and distribution of all species of conservation significance, and update relevant DES data sources.</p> <p>A6. Continue to identify and implement recovery or conservation plans for threatened species.</p>

### 4.3 Indigenous culture

The Sunshine Coast region holds major cultural heritage significance for Traditional Owners. Bora rings, shell middens, scarred trees and stone tools are found in many locations on the Sunshine Coast, but it is not known if the park contains any cultural heritage sites. Other culturally significant sites in the area include those of Indigenous belief, religion and spirituality, and these are not always obvious to the casual observer. Continuation of the current very low level of visitors will diminish threats to any cultural heritage sites that might exist on the park, as will the continued implementation of appropriate fire and pest management regimes.

Desired outcomes 2021	Actions and guidelines
Values, sites and remnants of cultural significance are identified and protected from natural degradation, visitor impacts and management actions.	<p>A7. Encourage and support a cultural heritage survey of the park in consultation with Traditional Owners.</p> <p>A8. Consult with Traditional Owners on a regular basis about managing the cultural heritage values of the park.</p>

### 4.4 Shared-history culture

No sites of shared-history cultural heritage value are known to exist on the park, although the Sunshine Coast region has a rich history of early European settlement. Settlers grew fruit and vegetables in the area close to the park, and the nearby town of Woombye once served as a staging depot for Cobb & Co coach services between Brisbane and the Gympie goldfields. The town was surveyed in 1890 and became an important rail centre for district farmers transporting their fruit and produce to market. A sawmill was built in 1895 to mill timber for a thriving timber harvesting industry on the Sunshine Coast. The park was first gazetted in 1994 with an original area of 17.97 ha on land that had been bequeathed to the Maroochy Shire Council by Mr W.H. (Bill) Park and subsequently passed to the Queensland Government in 1991. Mr Park was very active in the Scout movement on the Sunshine Coast and the land was originally named Brolga Park after his scouting name of 'Brolga'.



## 4.5 Tourism and visitor opportunities

Triunia National Park has been managed to retain its natural state because of its very high conservation and scientific values. The landscape is assessed as being very natural using the Landscape Classification System (LCS). Visitor levels are very low and recreation activities are not suitable or catered for so that threatened plant species are protected and natural ecological processes and habitats are maintained. There are no tables, shelters, toilets, walking tracks or vehicle access, and overnight bush camping is not permitted.

Visitors to the park must be self-reliant. The protection of the important scientific values of the park will be secured by continuing to manage the park in this way and limiting the size of visitor groups.

Desired outcomes 2021	Actions and guidelines
Triunia National Park is managed to retain its very high scientific values.	A9. Exclude visitor and management infrastructure from the park and limit group sizes to 12 plus two group leaders.

## 4.6 Education and science

### 4.6.1 Education

Triunia National Park is not suitable as an outdoor classroom for large groups due to a lack of visitor infrastructure, including suitable road access. The need to minimise disturbance and damage to native plants and wildlife is also inconsistent with any medium to large scale educational visitation program. There is scope, however, to allow small groups to conduct educational activities that have minimal impact.

Desired outcomes 2021	Actions and guidelines
The park provides opportunities for small-scale educational activities.	A10. Ensure any use of the park for educational purposes is undertaken in a way which doesn't impact on natural values.

### 4.6.2 Science

Triunia National Park has exceptional scientific values. The endangered plant species *Zieria bifida* and *Triunia robusta*, as well as the endangered reticulated holly and vulnerable romnald *Romnald strobilacea*, have been the subject of scientific surveys and research. Protection and sensitive management of these plants are critical to their long-term survival in the wild. The vulnerable plant species, bopple nut, is also of interest to researchers.

The presence of these plants, seven other plant species of conservation significance, and two vulnerable animal species, supports the continued high value placed on the park as a very important site for scientific purposes.

Desired outcomes 2021	Actions and guidelines
The scientific values of the park are preserved.	A11. Continue to encourage scientific research, and encourage researchers to make findings readily available to park management staff and the public.

## 4.7 Partnerships

Sunshine Coast Regional Council shares natural resource management issues with QPWS in its management of the Triunia (Scientific) Conservation Area, a 20 ha conservation area adjacent to the eastern and southern sides of the park. The Council also manages the Dulong Road Bush Conservation Reserve to the west of the park. Such shared issues include pest and fire management and site rehabilitation. Consultation with neighbours on a range of natural resource management issues occurs informally. Negotiations with the northern boundary neighbour led to the purchase of the 16.02 ha added to the park in early 2009.

Desired outcomes 2021	Actions and guidelines
Regular liaison continues with Sunshine Coast Regional Council about shared natural resource issues.	A12. Establish formal liaison mechanisms with Sunshine Coast Regional Council on shared issues, such as: <ul style="list-style-type: none"> <li>• habitat regeneration along common boundaries</li> <li>• pest and fire management initiatives</li> <li>• collaborative scientific research and monitoring programs</li> </ul>

Desired outcomes 2021	Actions and guidelines
	<ul style="list-style-type: none"> <li>conservation of remnant sites in the Paynter and Petrie Creek catchments</li> <li>seeking opportunities to extend protection to nearby remnant bushland and improve connectivity of the park to other natural habitats.</li> </ul>
Regular liaison continues with neighbours and other stakeholders on fire and pest management issues impacting on the park.	A13. Consult with and inform neighbours and other stakeholders about effective fire and pest management actions, and native plant and wildlife protection.

## 5. Other key issues and responses

### 5.1 Pest management

Among pest plants, lantana *Lantana camara* poses the greatest threat to the sensitive plant communities on the park by damaging habitat, raising the fire fuel load, and competing for nutrients. Other species present include green panic *Panicum maximum* var. *trichoglume*, which spreads from nearby road edges in clumps and is controlled by spraying, and glycine *Neonotonia wightii*, which is 95 per cent contained through spraying and hand removal. Chemical control measures are applied with caution to avoid collateral damage to species of conservation significance.

A replanting project was commenced in 1999 for a small area on the western side of the park as part of a pest plant control plan. In 2004, a three-year rehabilitation plan for the western creek and ridgeline area commenced as part of the state pest initiative. This project included a replanting component, monitoring of the weed control measures used in protecting plants of conservation significance, and assessing the effectiveness of natural regeneration. This initiative has been successful in controlling the impacts of pest plants and its continuation and expansion is a key priority. Pest plant infestations on neighbouring properties, including conserved areas, pose a threat to park habitat making pest management in collaboration with neighbours highly desirable (see section 4.7).

There are no known pest animals living on the park although it is likely cane toads are present, and there is always a threat of wild dogs, foxes and feral cats entering from outside. Current impacts from pest animal species are unknown.

Desired outcomes 2021	Actions and guidelines
An effective pest control program is developed and implemented to contain impacts to manageable levels without compromising the scientific values of the park.	<p>A14. Extend the rehabilitation program for the western creek and ridgeline to the remainder of the park.</p> <p>A15. Investigate the ecology of pest plant and animal species, and implement the most effective and environmentally safe management option available.</p> <p>A16. Manage pest plants and animals in accordance with the QPWS Pest Management System, including:</p> <ul style="list-style-type: none"> <li>monitoring of pest plant and animal populations and implementing preventative and control measures that have minimal impact on the natural values</li> <li>close liaison with neighbours and other land management agencies to develop complementary control strategies.</li> </ul>

### 5.2 Fire management

Protecting sensitive plant communities from fire impacts is a high priority for park managers. QPWS has undertaken measures to learn more about the fire ecology of the plant communities of conservation significance on the park. This includes experimental burning conducted in 2004 in part of the *Z. bifida* habitat in the open forest. Six years of post-fire monitoring results are being used to guide fire management of this species and ensures management actions address what is known about the fire ecology of the vegetation structure and composition and have been used to guide the development of a Fire Strategy for the park. All other vegetation species of conservation significance found on the park are located in fire-sensitive closed forest types and no planned burning is proposed in these areas. Post-fire monitoring is expanding the knowledge base, and this information will continue to be used to fine-tune fire management strategies.

The further development of partnerships with neighbours will help mitigate the threat of fire entering the park from other properties.

Desired outcomes 2021	Actions and guidelines
Life, property and national park neighbours are protected from the impacts of fire.	A17. Manage fire impacts according to the principles and guidelines of the QPWS Fire Management System. A18. Engage neighbours and other land and fire managers in developing effective fire response strategies.
Fire is managed to protect the biological diversity and integrity of native plant and animal species, particularly endangered, vulnerable and other species of high scientific and conservation value.	A19. Manage fire in a way consistent with the ecology of endangered and vulnerable species and other plant communities that may be severely affected by inappropriate fire regimes or uncontrolled wildfires.

### 5.3 Climate change

Climate change presents the threats of increasing temperatures and reduced rainfall that will harm the type of rainforest system present on the park, and may also affect flowering and fruiting patterns. Less moisture will increase threats from fire and weeds.

Climate change is expected to favour invasive plants over native vegetation. Pest plant species currently restricted to lowlands can also be expected to move into higher altitude areas (McFadyen 2007). The condition of the vegetation and habitat within and between reserves is an important factor in resilience to climate change (Mansergh and Cheal, 2007).

Reducing stresses on the park's natural systems will make them more resistant to climatic change. Climate refugia allow species to persist in the face of climatic stress. Additional protection should be given to these areas, where possible (Dunlop and Brown 2008).

Desired outcomes 2021	Actions and guidelines
The impacts of threatening processes, such as invasive species, will be managed to maintain or restore habitat condition and increase resilience to climate change.	A20. Implement the fire management actions in section 5.2 that target protecting significant species and communities that may be susceptible to altered fire regimes. A21. Monitor and manage invasive species, especially invasions associated with climate change.
Climate refugia are identified and protected from the impacts of climate change, such as changed fire regimes and invasive species.	A22. Identify and provide additional protection for climate refuges, where possible.
Potential impacts from climate change, particularly on species of conservation significance, are understood.	A23. Encourage research projects to improve knowledge of plant and animal ecology in relation to climate change, and monitor species and populations as indicators of change to habitat condition and natural integrity due to climate change.
Suitable habitats are linked to help native species move through the landscape and adapt to climate change impacts.	A24. Seek opportunities to add to areas of conservation value to the park. Priority would be given to securing linking areas of native vegetation with existing protected area estate. A25. Consult with adjacent landholders who have areas of high conservation value regarding the establishment of possible nature refuge agreements.

## 6. References

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- McFadyen, R. 2007. *Invasive Plants and Climate Change, Briefing Note*, Cooperative Research Centre for Australian Weed Management. Adelaide.
- 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.
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- Sattler, P. and Williams, R. (eds) 1999, *The conservation status of Queensland's bioregional ecosystems*. Environmental Protection Agency, Queensland Government, Brisbane.
- Southern Macadamia Species Recovery Plan. Prepared by Glenn Costello, Michael Gregory and Paul Donatiu for Horticulture Australia Ltd and the Australian Macadamia Society.
- State of Queensland. 1992, *Nature Conservation Act 1992*, Office of the Queensland Parliamentary Counsel, Brisbane.

## 7. Hyperlinks

- Aboriginal Cultural Heritage Act 2003* <[www.legislation.qld.gov.au](http://www.legislation.qld.gov.au)>
- Biodiversity status <[www.des.qld.gov.au](http://www.des.qld.gov.au)>
- Bonn Convention <[www.cms.int](http://www.cms.int)>
- China–Australia Migratory Bird Agreement <[www.austlii.edu.au](http://www.austlii.edu.au)>
- DES website <[www.des.qld.gov.au](http://www.des.qld.gov.au)>
- Environment Protection and Biodiversity Conservation Act 1999* and Regulations 2000 <[www.environment.gov.au](http://www.environment.gov.au)>
- Japan–Australia Migratory Bird Agreement <[www.austlii.edu.au](http://www.austlii.edu.au)>
- Land Protection (Pest and Stock Route Management) Act 2002* <[www.legislation.qld.gov.au](http://www.legislation.qld.gov.au)>
- Landscape Classification System for Visitor Management <[www.des.qld.gov.au](http://www.des.qld.gov.au)>
- Nature Conservation Act 1992* <[www.legislation.qld.gov.au](http://www.legislation.qld.gov.au)>
- Nature Conservation (Protected Areas) Regulation 1994 <[www.legislation.qld.gov.au](http://www.legislation.qld.gov.au)>
- Nature Conservation (Wildlife Management) Regulation 2006 <[www.legislation.qld.gov.au](http://www.legislation.qld.gov.au)>
- Queensland Heritage Act 1992* <[www.legislation.qld.gov.au](http://www.legislation.qld.gov.au)>
- Regional ecosystems <[www.des.qld.gov.au](http://www.des.qld.gov.au)>
- Republic of Korea–Australia Migratory Bird Agreement <[www.austlii.edu.au](http://www.austlii.edu.au)>
- Torres Strait Islander Cultural Heritage Act 2003* <[www.legislation.qld.gov.au](http://www.legislation.qld.gov.au)>
- Vegetation Management Act 1999* <[www.legislation.qld.gov.au](http://www.legislation.qld.gov.au)>

## **8. Appendixes**

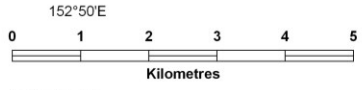
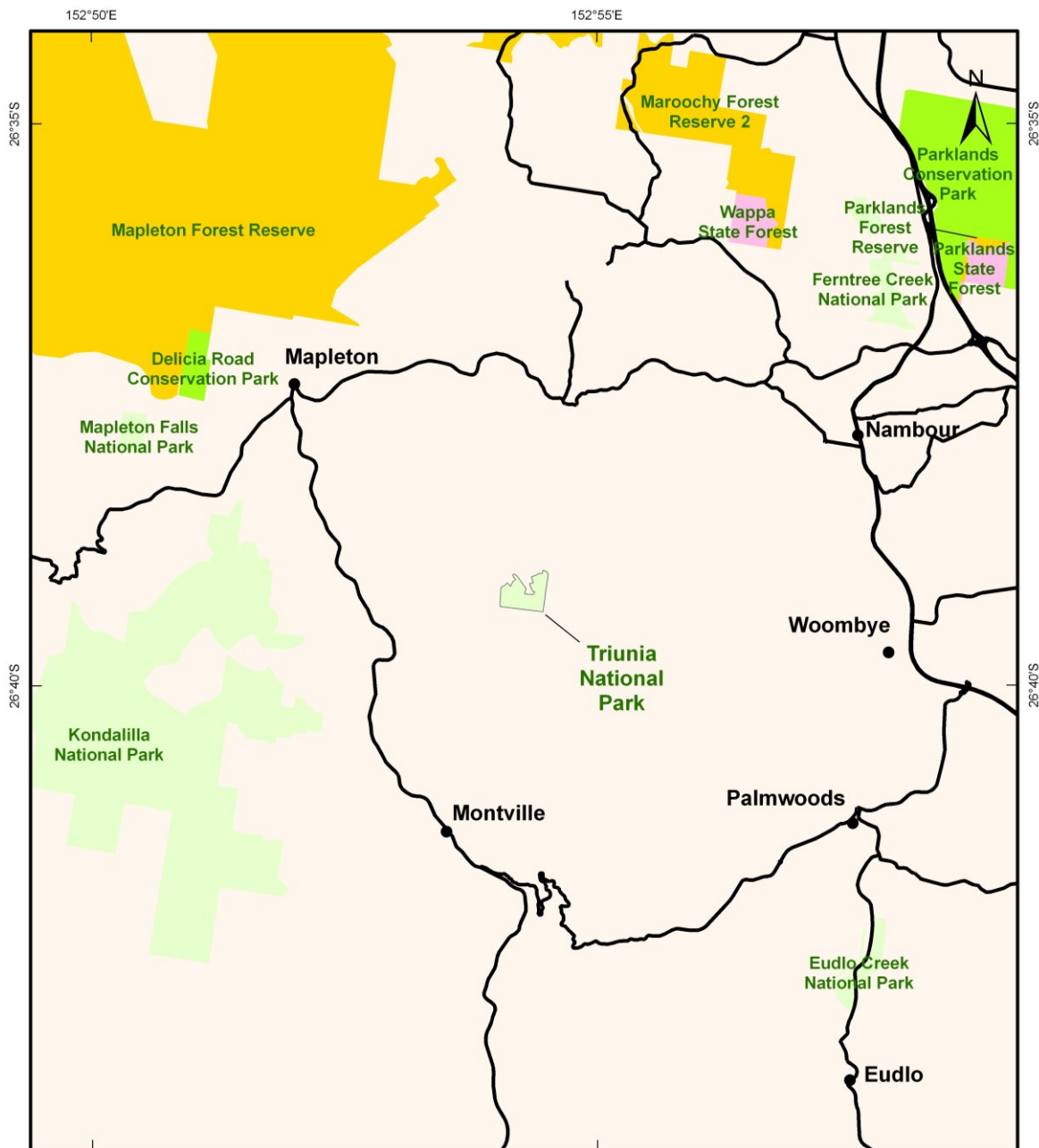
**Appendix A – Maps**

**Appendix B – Definitions**

**Appendix C – Plants of conservation significance**

## Appendix A – Maps

### Map 1 Location



Map Projection:  
 Universal Transverse Mercator (MGA) zone 56  
 Horizontal Datum:  
 Geocentric Datum of Australia 1994 (GDA94)

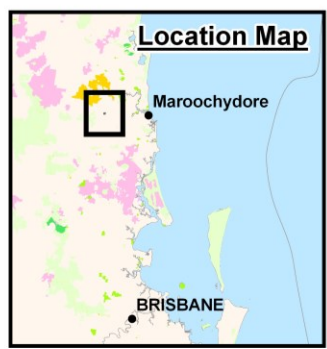
Map Production:  
 Spatial Services - Brisbane,  
 Queensland Parks and Wildlife Service,  
 Department of Environment and Resource Management.  
 31 May 2011

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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.

- Legend**
- Towns
  - Major Roads
  - DERM Estate**
  - National Park
  - Conservation Park
  - Forest Reserve
  - State Forest

Source Material:  
 ● Protected Areas of Queensland, DERM; March 2011  
 ● State Digital Road Network (SDRN); September 2010  
 © Pitney Bowes Business Insight 2010



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## 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 given on the Regional Ecosystem Description Database. See hyperlink – biodiversity status for further information, including the specific criteria used to assess the biodiversity status.

### **Biological diversity**

- 1) The natural diversity of native wildlife, together with the environmental conditions necessary for their survival, and includes:
  - (a) regional diversity, that is, the diversity of the landscape components of a region, and the functional relationships that affect environmental conditions in ecosystems
  - (b) ecosystem diversity, that is, the diversity of the different types of communities formed by living organisms and the relations between them
  - (c) species diversity, that is, the diversity of species
  - (d) genetic diversity, that is, the diversity of genes in each species.
- 2) In subsection (1) (a), landscape components includes landforms, soils, water, climate, wildlife and land uses.

### **Climate change**

Change of climate that is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and that is in addition to natural climate variability observed over comparable time periods (United Nations Framework Convention on Climate Change Article 1).

### **Climate refugia**

Climate refugia allow species to persist in the face of climatic stress. It is an area where certain types or suites of organisms are able to persist during a period in which most of the original geographic range becomes uninhabitable because of climatic change.

They are micro-habitats that retain the species necessary niche and habitat requirements during periods of climate change (Mackay et al 2007).

### **Cultural heritage significance**

Cultural heritage significance is defined by the *Queensland Heritage Act 1992*.

### **Ecosystem**

A dynamic complex of plant, animal, fungal, and micro-organism communities and the associated non-living environment interacting as an ecological unit.

### **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*.

### **Fire Management System**

The Fire Management System (Edition 3) is the standard fire management system adopted by QPWS that provides processes, guidelines and templates to facilitate the planning and implementation of fire management on QPWS managed areas in a professional, accountable, coordinated and ecologically sound manner.

### **Indigenous cultural heritage**

Aboriginal cultural heritage is defined by the *Aboriginal Cultural Heritage Act 2003*. Torres Strait Islander culture is defined by the *Torres Strait Islander Cultural Heritage Act 2003*.

## **Landscape Classification System**

The Landscape Classification System (LCS) is a standard classification system for characterising the biophysical, social and management attributes of sites and areas within QPWS-managed areas, from a visitor management perspective.

The LCS framework for assessing a site or area systematically describes settings on the basis of biophysical, social and managerial features.

The LCS is a tool for assessing the naturalness of landscape settings from a visitor use and management perspective. Naturalness is expressed on a range from completely untouched, wild, natural or remote to completely modified, built or developed depending on the proportion of natural and human-modified elements (post-1788) in the landscape. However, naturalness is not an absolute condition. The naturalness of a particular site or area can vary over time and natural events do not change the degree of naturalness although they may change the natural look of an area.

See QPWS Operational Policy – Landscape Classification System for Visitor Management.

## **Management principles for national parks**

Under Section 17, *Nature Conservation Act 1992*:

(1) A national park 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 parks.

## **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 the *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 DES 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 as 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 soil surface is moderately degraded.

## **QPWS Pest Management System**

The QPWS Pest Management System has been adopted as the QPWS statewide standard the system is a collection of two types of documents allowing QPWS to meet legislative obligations and achieve conservation outcomes:

- planning documents to facilitate pest management planning
- operational documents to guide on-ground pest management.

## **Pest plants and animals**

Any species, strain or biotype of plant, animal or pathogenic agent injurious to endemic biota or ecosystems.

## **Protected area**

An area of land or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means.



## **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 the Regional Ecosystem Description Database.

## **Species of conservation significance**

Species of conservation significance are those plant and animal species listed:

- as near threatened, vulnerable or endangered under schedules 5, 3 and 2 of the Nature Conservation (Wildlife) Regulation
- as endangered or vulnerable under the Commonwealth's *Environmental Protection and Biodiversity Conservation Act 1999*
- under the Bonn Convention, China–Australia Migratory Bird Agreement, Japan–Australia Migratory Bird Agreement or Republic of Korea–Australia Migratory Bird Agreement.

## **Threatened species**

Threatened species generally refers to those species that are endangered or vulnerable species. The term may also refer to other species of conservation significance that are subject to substantial 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 – Plants of conservation significance

**Table 1: Vulnerable, endangered or near threatened native plants for Triunia National Park.**

Family	Scientific name	Common name	Status under the <i>Nature Conservation Act 1992</i>	Status under the <i>Environment Protection and Biodiversity Conservation Act 1999</i>
Acanthaceae	<i>Graptophyllum reticulatum</i>	reticulated holly	Endangered	Endangered
Proteaceae	<i>Triunia robusta</i>	–	Endangered	Endangered
Rutaceae	<i>Zieria bifida</i>	–	Endangered	Endangered
Sapotaceae	<i>Planchonella eerwah</i>	shiny-leaved coondoo	Endangered	Endangered
Apocynaceae	<i>Marsdenia coronata</i>	slender milkvine	Vulnerable	Vulnerable
Corynocarpaceae	<i>Corynocarpus rupestris</i> <i>subsp. arborescens</i>	southern corynocarpus	Vulnerable	–
Laxmanniaceae	<i>Romnaldia strobilacea</i>	romnaldia	Vulnerable	Vulnerable
Proteaceae	<i>Floydia praealta</i>	ball nut	Vulnerable	Vulnerable
Proteaceae	<i>Macadamia integrifolia</i>	macadamia nut	Vulnerable	Vulnerable
Proteaceae	<i>Macadamia ternifolia</i>	bopple nut	Vulnerable	Vulnerable
Cucurbitaceae	<i>Nothoalsomitra suberosa</i>	corky cucumber	Near threatened	–
Myrtaceae	<i>Choricarpia subargentea</i>	giant ironwood	Near threatened	–
Myrtaceae	<i>Gossia inophloia</i>	thready-bark myrtle	Near threatened	–

