Tamborine National Park and Tamborine Forest Reserve Management Statement 2013

Park size: Tamborine National Park Tamborine Forest Reserve	2,080 hectares (ha) 12ha
Bioregion:	South Eastern Queensland
QPWS region:	South East
Local government estate/area:	Scenic Rim Regional Council Gold Coast City Council
State electorate:	Albert Beaudesert Gaven



Land mullet Egernia major. Photo: NPRSR

Legislative framework

	J
~	Aboriginal Cultural Heritage Act 2003
>	Environment Protection and Biodiversity Conservation Act 1999 (Cwlth)
~	Forestry Act 1958
~	Native Title Act 1993 (Cwlth)
~	Nature Conservation Act 1992

Plans and agreements

~	Bonn Convention
>	Border Ranges Rainforest Biodiversity Management Plan NSW & Queensland
>	China–Australia Migratory Bird Agreement
>	Japan–Australia Migratory Bird Agreement
>	National recovery plan for the black-breasted button- quail <i>Turnix melanogaster</i>
>	Recovery plan for stream frogs of south-east Queensland 2001-2005
>	Republic of Korea–Australia Migratory Bird Agreement
>	South East Queensland Horse Riding Trail Network Management Plan 2011
~	Southern macadamia species recovery plan

Thematic strategies

I	~	Level 1 Fire Management Strategy
	~	Level 2 Pest Management Strategy

Vision

Tamborine National Park and Tamborine Forest Reserve (both referred to as Tamborine herein), will be managed to protect its high biodiversity values, exceptional scenic and natural features, and varied recreational and tourism opportunities. The park will continue to protect and present the rich Aboriginal and shared-history cultural values, including the early conservation efforts associated with Queensland's first national park.



Conservation purpose

A small section of the now Tamborine National Park was originally gazetted in 1908 as Witches Falls National Park under the *State Forest and National Parks Act of 1906,* making it Queensland's first national park. Since then many additions have been gazetted and the total area of Tamborine National Park is 2,080 ha.

Tamborine Forest Reserve is a network of trails that have been maintained as forest reserve tenure within the national park to cater for the South East Queensland Horse Riding Trail Network.

Tamborine offers many tourism and visitor opportunities and conserves regionally significant forests of high biodiversity that provide habitat for several threatened species and high scenic values.

Protecting and presenting the park's values

Landscape

The Tamborine park estate is comprised of 15 sections throughout the Tamborine escarpment, many of which are separated from each other and interspersed with residential land and farms. The sections include Corbould, Cedar Creek, Sandy Creek, Joalah, Pirralilla, MacDonald, North Tamborine, Witches Falls, Palm Grove, Panorama Point, Guanaba, Zamia Grove, The Knoll, Tamborine Mountain and Tamborine Forest Reserve.

Tamborine's basalt columns, cliffs, rocky outcrops and waterfalls are a lasting legacy of volcanic eruptions 23 million years ago. It is the most northerly remnant of the flows from a shield volcano centered on Mount Warning.

At close to 600 metres (m) above sea level, Tamborine has high scenic values with diverse subtropical and dry rainforests and wet and dry sclerophyll forests, dotted with waterfalls and rock pools. The 'Forests of East Australia', of which Tamborine is part, are classified as one of the world's biodiversity hotspots.

Tamborine is part of the Albert River catchment. All sewerage systems on the mountain are septic and pose minimal impact to water quality. However, a number of the creeks throughout the park rise outside the park boundary and are affected by upstream activities that include the use of pesticides, fungicides, herbicides and fertilisers as well as removal of water for stock, irrigation, and industry usage. Surrounding land use is dominated by residential development and farmland.

Regional ecosystems

Tamborine conserves a large diversity of remnant habitat sub-tropical rainforests, wet sclerophyll forest, dry open forest and open forest/woodland. Out of the 22 types of ecosystems within the parks, one is endangered and five are of concern (Table 1), with 10 of these regional ecosystems providing habitat for threatened or endemic species.

The endangered regional ecosystem 12.8.24 *Corymbia citriodora* open forest on Cainozoic igneous rocks especially trachyte is also found in Mount Barney, Mount Binga, and Moogerah Peaks National Parks as well as Flinders Peak Conservation Park. The of concern regional ecosystem 12.3.11 *Eucalyptus tereticornis, Eucalyptus siderophloia, Corymbia intermedia* open-forest on alluvial plains provides habitat for threatened animal species including the black-breasted button-quail *Turnix melanogaster*.

The other four of concern regional ecosystems include 12.8.16—*Eucalyptus crebra, E. tereticornis* woodland on Cainozoic igneous rocks, 12.8.8—*Eucalyptus saligna* or *E. grandis* tall open-forest on Cainozoic igneous (mostly restricted to southern border parts of bioregion and Mount Tamborine), 12.8.9—*Lophostemon confertus* open-forest on Cainozoic igneous rocks, often with vine forest understorey (wet sclerophyll) and 12.12.14—shrubby woodland. Canopy species include *Eucalyptus racemosa* subsp. *racemosa, Corymbia trachyphloia, E. carnea, E. tindaliae, E. exserta, Angophora woodsiana, E. resinifera* and *E. microcorys.*

Native plants and animals

Tamborine is rich in biodiversity, with 300 animal and over 400 plant species recorded in the park. The endangered Fleay's barred frog *Mixophyes fleayi* and giant barred frog *Mixophyes iteratus* both occur in the park alongside 20 other animal species of conservation significance (tables 2 and 3). The Tamborine escarpment hosts 85% of all animal species and 65% of all plant species found in the Gold Coast City area (Chenoweth 2001).

The vulnerable Tamborine ziera *Zieria collina* is restricted to the Tamborine escarpment and is only known from 10 sites. It occurs in the transition zone between wet open forest and rainforest and is susceptible to changes in fire regimes and weed invasion, primarily lantana *Lantana camara*. Tamborine protects the vulnerable orchid *Sarcochilus hartmannii* which has a critical Back on Track status (Table 2). It is susceptible to illegal collecting and invasion of introduced pest plants such as crofton weed *Ageratina adenophora* and mistflower *Ageratina riparia*.

There are five frogs of conservation significance found in Tamborine (Table 2). Three stream dwelling frogs are found in the park, the endangered Fleay's barred frog and giant barred frog and the vulnerable cascade tree frog *Litoria pearsoniana*. All three species have declined in South East Queensland during the last 25 years. Threats to stream dwelling frogs include changes in environmental conditions, the chytrid fungus, introduced fish, tourism, hydrological changes and pest plants. Crofton weed and mist flower are highly invasive weeds along wet forest steams and need to be monitored for any detrimental impact on frog habitat.

Nine threatened bird species are recorded in the park. The Albert's lyrebird *Menura alberti* descends from ancient lineages linking back to Gondwana and is an example of a highly specialised primitive perching bird. Albert's lyrebird surveys have been conducted regularly at Tamborine, and continue to be undertaken by the local community. The vulnerable black-breasted button-quail *Turnix melanogaster* numbers have declined since the 1800s and have a critical Back on Track status (Table 2). Albert's lyrebird and black-breasted button-quail are both threatened by habitat degradation, predation by feral animals and wildfire.

The vulnerable Richmond bird-wing butterfly *Ornithoptera richmondia* depends on the near threatened vine *Pararistolochia praevenosa* which is found throughout a number of sections of the park. In the past, captive bred caterpillars have been released into the park as part of their recovery strategy. Tamborine could potentially be a site used for both the collection source and release of the caterpillars as part of the recovery program. The introduced vine Dutchman's pipe *Aristolochia elegans* which threatens the butterfly is also found in the park, but is not widespread.

There are a number of species expected to be affected by changes in environmental conditions that need to be identified and monitored for substantial changes—such as significant frog species that are sensitive to temperature and moisture regimes. It is believed that these changes (together with the chytrid fungus disease) have contributed to the decline of the endangered Fleay's barred frog and giant barred frog and will increase their vulnerability to the pathogen *Batrachochytridium dendrobatidis* that causes the chytrid disease. Other stream dwelling frogs such as the vulnerable cascade tree frog may also be vulnerable to these impacts. Frog species that depend on pools of water or swamps such as the near threatened whirring treefrog *L. revelata* and vulnerable tusked frog *Adelotus brevis* may be susceptible to drought events.

Aboriginal culture

The Traditional Owners, the Yugambeh, have strong connections to the Tamborine escarpment. The name Tamborine is from the local Yugambeh language meaning 'wild lime', referring to the finger lime trees *Microcitrus australasica* that grow wild on the mountain. Wonglepong is another Yugambeh name for Tamborine meaning 'hearing wrong way' describing the reverberation of sound as it echoes around the mountain.

The Yugambeh people valued Tamborine's rainforest plants for food and resources. Piccabeen fronds *Achontophoenix cunninghamiana* made excellent baskets for carrying water, food or honey. The lawyer-cane vine, also known as wait-a-while *Calamus muelleri* was used for basket-making after the spikes had been removed. An annual pilgrimage, the Drumley Walk, takes bushwalkers from Beaudesert to Southport via Tamborine, through scenic rainforests, rolling plains and open woodlands. The walk is in honor of Billy Drumley, an Aboriginal man from the Yugambeh region, and encourages a better understanding of the environment and Aboriginal heritage.

Aboriginal culture is not well documented on park. Physical evidence of Aboriginal occupation of Tamborine Mountain existing in the area includes a bora ring, occupational caves and stone artefacts. Scar trees have been found within the park.

There is a native title claim over the area encompassing Tamborine National Park and Forest Reserve by the Gold Coast Native Title Group (QUD346/06, QC06/10).

Shared-history culture

Tamborine Mountain has a history of timber production, grazing, banana plantations, farming and quarrying. This resulted in considerable clearing following European settlement. Concern about the level of clearing prompted Tamborine shire councillors, Sydney Curtis and Joseph Delpratt, to put forward a motion at a council meeting in June 1907 for the Department of Public Lands to preserve some portions of land as 'national park for the preservation of the flora and fauna'. This resulted in Witches Falls being declared as Queensland's first national park under the *State Forest and National Parks Act of 1906* on the 28 March 1908. The Witches Chase Falls Shelter Shed was built in 1958 to commemorate the 50th anniversary of the park's proclamation. A plaque and stone, which commemorate the 100th anniversary is located in the Witches Falls Day Use Area.

Logging and forestry is an important part of Tamborine's past and remaining historic infrastructure is significant, including the Forestry camp and 1950s forestry stone and timber sign at Palm Grove. Such early infrastructure found within the park needs to be considered in park management. There is anecdotal evidence of a time capsule in a wall at Joalah and another at Curtis Falls. To date, these have not been found.

Tourism and visitor opportunities

Tamborine is a popular tourist destination due to its proximity to Brisbane and the Gold Coast, temperatures of $3-5^{\circ}$ C cooler than the adjacent lowland, and scenic rainforests. Tamborine Mountain has over a million visitors each year, with the national park a major destination. South East Queensland is one of the fastest growing regions in Australia, with tourism and park use expected to increase.

Tamborine National Park provides a range of opportunities for outdoor, nature-based recreation and is a major drawcard for the area's tourist industry. The Tamborine National Park Infrastructure and Recreation Plan was developed in 2006 in preparation for the national park centenary. There are over 20 kilometres (km) of easy to moderate walking tracks throughout the park, at the MacDonald, Witches Falls, Cedar Creek, Palm Grove, The Knoll and Joalah sections.

While camping is not provided for in the Tamborine National Park, there are many day-use areas which complement the diversity of accommodation opportunities provided off-park on the mountain.

Tamborine Forest Reserve is part of the South East Queensland Forest Trails Network providing over 13km of horse riding trails. Management and use is guided by the South East Queensland Horse Riding Trail Network Management Plan.

Anti-social and illegal behaviour within the Cedar Creek section has increased over the years and control measures have been put into place to reduce the number of incidents. The Cedar Creek working group was established to address these issues resulting in the Cedar Creek section compliance strategy, which outlines opening times, signs and security. It also sets out the frequency of compliance patrols over summer. Rubbish left by visitors is an ongoing management issue at the rock pools.

There are a number of commercial tour operators offering day trips and glow worm tours. Glow worm caves located at nearby Springbrook National Park and on private property have reduced some of the pressure on the glow worms at Tamborine National Park.

Education and science

Tamborine is part of the Connect with Nature school program with activities occurring at the Knoll and other sections of the park.

Partnerships

Tamborine's community has considerable knowledge and interest in local environmental issues. Cooperative partnerships with neighbours, local community groups, Gold Coast City Council, Scenic Rim Regional Council and State agencies such as the Queensland Police Service, Queensland Fire and Rescue Service, Department of Defence help ensure the protection of the park and its values.

Since 1988, the Tamborine Bush Volunteers, a volunteer group has supported park managers with restoration of degraded areas in the national park. This longstanding partnership has greatly assisted in revegetation and pest plant management.

Rangers maintain a close working relationship with the Queensland Police Service, particularly assisting in compliance duties at Cedar Creek section.

Other key issues and responses

Pest management

There are over 40 non-native plants recorded in the park, with 13 of them declared as Class 2 or 3 pest plants. Pest plant management is a significant issue and the majority of significant conservation species in Tamborine are threatened by pest plant. A Level 2 pest management strategy completed in 2010 identifies six priority pests and details control measures. Targeted species to be controlled include Class 3 pest plants, Madeira vine *Anredera cordifolia* and lantana *Lantana camara;* Class 2 pest plant groundsel bush *Baccharis halimifolia;* and blue morning glory *Ipomoea indica* and silver leaf desmodium *Desmodium uncinatum.* The strategy also targets wild dogs *Canis lupus familiaris.* Pest plant management is undertaken, with some work carried out by Tamborine Bush Volunteers.

Myrtle Rust has been recorded on one revegetation site within the park.

The Scenic Rim Regional Council and Gold Coast City Council manage wild dog populations on Tamborine, which helps keep wild dog numbers down within the park and complements Queensland Parks and Wildlife Services (QPWS) control measures within the park.

Fire management

A Level 1 fire management strategy for Tamborine National Park and Tamborine Forest Reserve was prepared in 2007. Fire management on the Tamborine escarpment is conducted in cooperation with Queensland Fire and Rescue Service and the Department of Defence, Canungra. Fire access tracks are regularly maintained to provide safe access during planned burning and wildfire response. Wildfire response is undertaken by the Department of National Parks, Recreation, Sport and Racing (NPRSR) with the support of local Rural Fire Brigades and the community.

Prescribed burning has occurred on Mount Tamborine escarpment since the 1960s and is important in reducing potential hazards from wildfires and in maintaining the diversity of healthy ecosystems. Wildfires are more likely to occur in late winter, throughout spring and early summer. Fire management is important to maintain the open forest and eco-tones alongside the rainforest and important for significant species such as the Tamborine zieria and black-breasted button-quail habitat. There is a special conservation zone at Zamia Grove to help protect the cycad population.

References

Chenoweth Environmental Planning and Landscape Architecture 2001, *Tamborine Mountain Escarpment Flora and Fauna Report*, prepared for the Steering Committee of the Tamborine Mountain Escarpment Management Project

Management directions

Desired outcomes	Actions and guidelines		
Fire management Fire Management balances protecting life and property with biodiversity conservation.	A1. Implement the Tamborine National park and Tamborine Forest Reserve Fire Strategy.		
Tourism and visitor opportunities Visitors enjoy a range of settings and opportunities for safe outdoor recreation.	 A2. Continue to provide a range of visitor opportunities that are safe by maintaining the existing infrastructure in good condition including walking tracks and day-use areas and enforcing the Cedar Creek section compliance strategy. A3. Implement and revise the Tamborine National Park Infrastructure and Recreation Plan 2006. 		
Native plants The park's significant plant species, communities and regional ecosystems are protected and appropriately managed.	 A4. Record observations of species of conservation significance to help inform fire and pest management programs. A5. Protect <i>Zieria collina</i> by identifying and mapping areas of <i>Zieria collina</i> prior to prescribe burning. A6. Protect <i>Sarcochilus hartmannii</i> by identifying and monitoring populations and keeping locations confidential to reduce illegal collecting. A7. Implement actions from recovery plans or approved conservation advice (as under the <i>Environmental Protection and Biodiversity Cconservation Act 1999</i>) for species of conservation significance, where feasible. 		
Native animals The park's significant animal species and their habitats are protected and appropriately managed	 A8. Protect stream dwelling frogs and their habitat by monitoring numbers of <i>Mixophyes fleayi</i>, <i>Mixophyes iterates</i> and <i>Litoria pearsoniana</i>. Control crofton weed and mist flower along wet forest streams and monitor and report incidents of chytrid fungus. A9. Implement actions from recovery plans or approved conservation advice (as under the EPBC) for species of conservation significance, where feasible. 		

Pest management The impact of pest plants and animals on conservation values is minimised.	 A10.Revise and expand the current Level 2 pest strategy with emphasis on controlling lantana, especially in known <i>Zieria collina</i> habitat; monitoring and controlling crofton weed and mist flower along wet forest streams and in Hartman's sarcochilus habitat. Identify and remove infestations of Dutchman's pipe to support Richmond birdwing butterfly recovery. Work with local councils in controlling wild dogs. A11. Work with local council to complete remedial works at the Knoll Road Waste Transfer Station to reduce pest plant infestations in and around the national park. A12.Monitor in and around Tamborine, including revegetation plots for signs of myrtle rust and if found, map the infestation and seek expert advice on management.
Partnerships Partnerships produce positive outcomes for park management. Cooperation with neighbours contributes to improved management outcomes.	 A13.Continue to support the Tamborine Mountain Bush Volunteers and other volunteer groups through providing essential resources and holding regular meetings. A14.Establish and maintain communication and supportive relationships with park neighbours to enhance cooperative management, particularly in relation to fire, pest and visitor management.
Water quality Water quality is maintained.	A15.Establish a water quality monitoring program at high use day use areas.
Cultural heritage Cultural heritage values are documented and protected.	 A16.Work cooperatively with the Yugambeh people to recognise, protect and present indigenous cultural heritage values where appropriate. A17.Develop a cultural heritage plan for the protected areas. A18.Ensure shared-historic cultural values are managed and protected and presented.

Tables – Conservation values management

Table 1: Endangered and of concern regional ecosystems

Regional ecosystem number	Description	Biodiversity status
12.3.11	Open-forest to woodland of <i>Eucalyptus tereticornis</i> , <i>E. siderophloia</i> and <i>Corymbia intermedia</i> . <i>Corymbia tessellaris</i> , <i>Lophostemon suaveolens</i> and <i>Melaleuca quinquenervia</i> frequently occur and often form a low tree layer	Of concern
12.8.8	<i>Eucalyptus saligna</i> or <i>E. grandis</i> tall open-forest often with vine forest understorey ('wet sclerophyll'). Other species include <i>Eucalyptus microcorys</i> , <i>E. acmenoides</i> , <i>Lophostemon confertus</i> , <i>Syncarpia glomulifera</i> subsp. <i>glomulifera</i>	Of concern
12.8.9	Lophostemon confertus open-forest often with vine forest understorey ('wet sclerophyll')	Of concern
12.8.16	Eucalyptus crebra, generally with E. tereticornis and E. melliodora +/- E. albens grassy woodland	Of concern
12.8.24	Corymbia citriodora, Eucalyptus crebra +/- E. moluccana open-forest	Endangered
12.12.14	Shrubby woodland. Canopy species include <i>Eucalyptus racemosa</i> subsp. racemosa, Corymbia trachyphloia, <i>E. carnea</i> , <i>E. tindaliae</i> , <i>E. exserta</i> , Angophora woodsiana, <i>E. resinifera</i> and <i>E. microcorys</i>	Of concern

Table 2: Species of	conservation significance
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Scientific name	Common name	Nature Conservation Act 1992 status	Environment Protection and Biodiversity Conservation Act 1999 status	Back on Track status
Plants				
Acacia orites	mountain wattle	Near threatened	-	Low
Ardisia bakeri	ardisia	Near threatened	-	Low
Austrobuxus swainii	pink cherry	Near threatened	-	Low
Baloghia marmorata	jointed baloghia	Vulnerable	Vulnerable	Medium
Cupaniopsis newmanii	long-leaved tuckeroo	Near threatened	-	Medium
Cyperus semifertilis	-	Vulnerable	Vulnerable	Low
Helicia ferruginea	rusty oak	Vulnerable	-	Low
Helmholtzia glaberrima	stream lilly	Near threatened	-	Low
Lepiderema pulchella	fine-leaved tuckeroo	Vulnerable	-	Low
Macadamia tetraphylla	rough-shelled bush nut	Vulnerable	Vulnerable	Medium
Niemeyera whitei	plum boxwood	Vulnerable	-	Low
Pararistolochia praevenosa	-	Near threatened	-	High
Sarcochilus hartmannii	Hartman's sarcochilus	Vulnerable	Vulnerable	Critical
Symplocos baeuerlenii	small-leaved hazelwood	Vulnerable	Vulnerable	Low
Syzygium hodgkinsoniae	red lilly pilly	Vulnerable	Vulnerable	Low
Tinospora tinosporoides	arrow head vine	Vulnerable	Vulnerable	Medium
Westringia rupicola	-	Vulnerable	Vulnerable	Low
Zieria collina	Tamborine zieria	Vulnerable	Vulnerable	Low
Animals				
Acanthophis antarcticus	common death adder	Near threatened	-	Medium
Accipiter novaehollandiae	grey goshawk	Near threatened	-	Low
Adelotus brevis	tusked frog	Vulnerable	-	Medium
Calyptorhynchus lathami	glossy black-cockatoo	Vulnerable	-	High
Climacteris erythrops	red-browed treecreeper	Near threatened	-	Low
Coeranoscincus reticulatus	three-toed snake-tooth skink	Near threatened	Vulnerable	Medium

Scientific name	Common name	Nature Conservation Act 1992 status	Environment Protection and Biodiversity Conservation Act 1999 status	Back on Track status
Dasyurus maculatus maculatus	spotted-tailed quoll (southern subspecies)	Vulnerable	Endangered	High
Lewinia pectoralis	Lewin's rail	Near threatened	-	Low
Litoria pearsoniana	cascade treefrog	Vulnerable	-	Low
Litoria revelata	whirring treefrog	Near threatened	-	Low
Menura alberti	Albert's lyrebird	Near threatened	-	Low
Mixophyes fleayi	Fleay's barred frog	Endangered	Endangered	Low
Mixophyes iteratus	giant barred frog	Endangered	Endangered	Medium
Ninox strenua	powerful owl	Vulnerable	-	Medium
Ornithoptera richmondia	Richmond birdwing butterfly	Vulnerable	-	Critical
Phascolarctos cinereus (South East Queensland bioregion)	koala (South East Queensland Bioregion)	Vulnerable	Vulnerable	Low
Podargus ocellatus plumiferus	plumed frogmouth	Vulnerable	-	Low
Potorous tridactylus tridactylus	long-nosed potoroo	Vulnerable	Vulnerable	Medium
Pteropus poliocephalus	grey-headed flying-fox	Common	Vulnerable	Critical
Saproscincus spectabilis	-	Near threatened	-	Low
Turnix melanogaster	black-breasted button- quail	Vulnerable	Vulnerable	Critical
Tyto tenebricosa tenebricosa	sooty owl	Near threatened	-	Low

Table 3: Bird species listed in international agreements

Scientific name	Common name	BONN	САМВА	JAMBA	ROKAMBA
Ardea ibis	cattle egret	-	\checkmark	\checkmark	-
Coracina tenuirostris	cicadabird	-	-	\checkmark	-
Haliaeetus leucogaster	white-bellied sea-eagle	-	\checkmark	-	-
Hirundapus caudacutus	white-throated needletail	-	\checkmark	\checkmark	\checkmark
Merops ornatus	rainbow bee-eater	-	-	\checkmark	-
Monarcha melanopsis	black-faced monarch	\checkmark	-	-	-

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Scientific name	Common name	BONN	САМВА	JAMBA	ROKAMBA
Rhipidura rufifrons	rufous fantail	\checkmark	-	-	-
Symposiarchus trivirgatus	spectacled monarch	\checkmark	-	-	-

BONN: Bonn Convention

CAMBA: China-Australia Migratory Bird Agreement

JAMBA: Japan–Australia Migratory Bird Agreement

ROKAMBA: Republic of Korea–Australia Migratory Bird Agreement