

# Mount Coolum National Park



**Resource Information**  
2019

Prepared by: **Queensland Parks & Wildlife Service (QPWS) and Partnerships, Department of Environment and Science**

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RI206. November 2019

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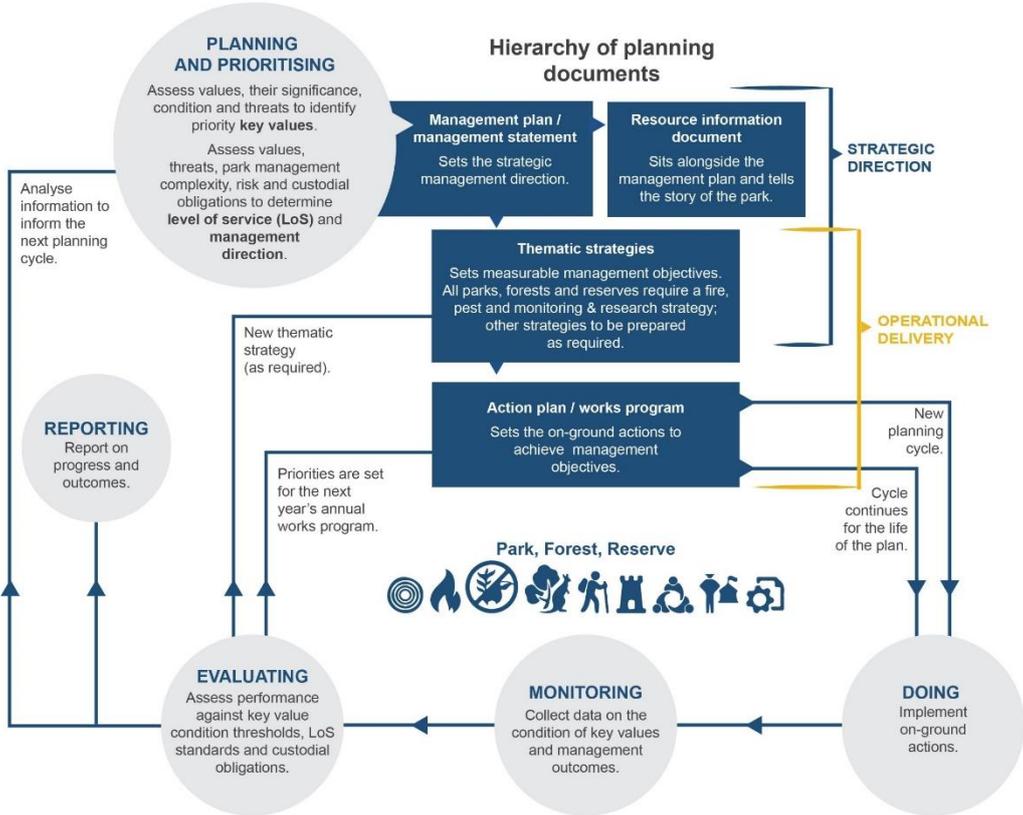
# 1. Introduction

The QPWS & Partnership’s (QPWS&P) management planning process aligns with the values-based management framework (VBMF), an adaptive management cycle that incorporates planning, prioritising, doing, monitoring, evaluating and reporting into all areas of our business (Figure 1). Management plans and statements set the strategic management direction, guiding the next tier of planning and the development of thematic strategies, which in turn inform and prioritise our on-ground operations.

Resource information is a compendium of park information and a supporting document for management plans and management statements. It contains background information about a park’s purpose, values, resources and legal and administrative framework.

Information about QPWS&P’s values-based management framework is available on the Department of Environment and Science (DES) website at [www.des.qld.gov.au](http://www.des.qld.gov.au).

**Figure 1. Phases of the values-based management framework cycle for planning and the hierarchy of planning documents.**



## 2. Mount Coolum National Park

Mount Coolum National Park is located in southeast Queensland, about 140km north of Brisbane. The park protects a wide range of plant communities that have largely disappeared from the Sunshine Coast lowlands, and contains a wide representation of species from the coastal areas of southeast Queensland. It is one of the few remaining places where montane and coastal heath ecosystems grow. Special emphasis will be given to conserving plant and animal species of conservation significance in the coastal heath and open forest communities, including the ground parrot *Pezoporus wallicus wallicus* and acid frogs.

Mount Coolum lies within the lands of the Kabi Kabi First Nation. It is an important place to Aboriginal people and many of the wider community; it is a very powerful place within the SEQ songlines network.

At a height of 208m, Mount Coolum itself is a prominent local landmark rising above the surrounding flat coastal plains. The summit provides 360-degree views of the coastal area, including Moreton Island and the Glass House Mountains to the south, the Blackall Ranges to the west, and the Cooloola sand mass to the north. The walking tracks in the Mount Coolum Section of the park allow visitors to experience nature-based recreation opportunities that are different from those along the flatter coastal areas.

The park was originally declared on 17 November 1990 following formal recognition by the community of its significant values. The Maroola Section of the park was added in

2001, bringing the total area to 367.24ha and further enhancing conservation of the rapidly disappearing coastal and open forest communities of the Sunshine Coast.

The park is located within the Sunshine Coast local government area, a popular tourist destination and one of the fastest-growing regions in Australia. The park's values are under increasing threat from rapid population growth and associated degradation of natural systems and fragmentation of habitat. The park lies within the Maroochy River catchment and contributes to maintaining water quality.

Mount Coolum National Park is divided into several isolated sections for management purposes. Each section has varying degrees of urban interface; these interfaces include bushland, cane fields, housing estates, industrial estates, the Sunshine Coast airport and the Sunshine Motorway.

Mount Coolum National Park occurs in the Southeast Queensland bioregion and supports 10 regional ecosystems, of which eight are deemed significant. Half of these ecosystems are considered to be 'of concern'.

The legislative framework for managing the park, designations over the park and management obligations are outlined further in Appendix 1.

A summary of the park details is provided below.

<b>Bioregion</b>	Southeast Queensland bioregion		
<b>Area</b>	367.24ha		
<b>Local Government Area</b>	Sunshine Coast Council	<b>State electorate</b>	Maroochydore
<b>Management obligations</b>	<i>Nature Conservation Act 1992</i> <i>Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)</i> <i>Aboriginal Cultural Heritage Act 2003</i>		

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## 2.1 Ecosystems and biodiversity

### 2.1.1 Significant regional ecosystems

Mount Coolum National Park lies within the southeast Queensland bioregion and contains eight significant regional ecosystems, listed in Appendix 2. Of note are the montane heath and eucalypt forest and woodland communities. The latter protects the endangered Mount Emu she-oak *Allocasuarina emuina*, near-threatened durringtonia *Durringtonia paludosa* and the endangered swamp stringybark *Eucalyptus conglomerata*.

Map 1 illustrates the vegetation communities of Mount Coolum National Park. Further information on the southeast Queensland bioregion and a copy of the biodiversity planning assessment for the southeast Queensland bioregion can be found on the Department's website at [www.des.qld.gov.au](http://www.des.qld.gov.au).

#### Montane Heath

Heath communities growing on rock pavements of Cainozoic igneous rocks, predominantly on Mount Coolum's rhyolite areas, cover 34 per cent of the Mount Coolum Section. These communities, including the *montane heath community* (RE 12.8.19), are listed as 'of concern' biodiversity status and are significant for conservation.

A large number of endemic plant species are only found within this community. These include *Leptospermum oreophilum* (vulnerable), *Allocasuarina thalassoscopica* (endangered) and *Bertya sharpeana* (near threatened). Due to the harsh conditions they grow in—high winds, exposure to sun, infertile substrates and high evaporation rates—these plants are dwarfed and rarely reach heights of 2m. Thus, montane heath communities exhibit a high level of species endemism.

Mount Coolum receives about 240,000 visitors annually, with the majority of visitors climbing to the summit. Due to the low vegetation type, visitors frequently wander off the tracks and, in the process, trample and damage plants species. Over time, bare patches form, resulting in a loss of habitat and accelerating erosion and species

loss. The summit exhibits signs of extensive degradation.

This is also the nesting site of a pair of peregrine falcons *Falco peregrinus*, one of 25 to 35 pairs remaining in southeast Queensland. Rock climbing is restricted to the special activity area due to the presence of these falcons and the fragile vegetation communities.

### 2.1.2 Nationally important wetlands

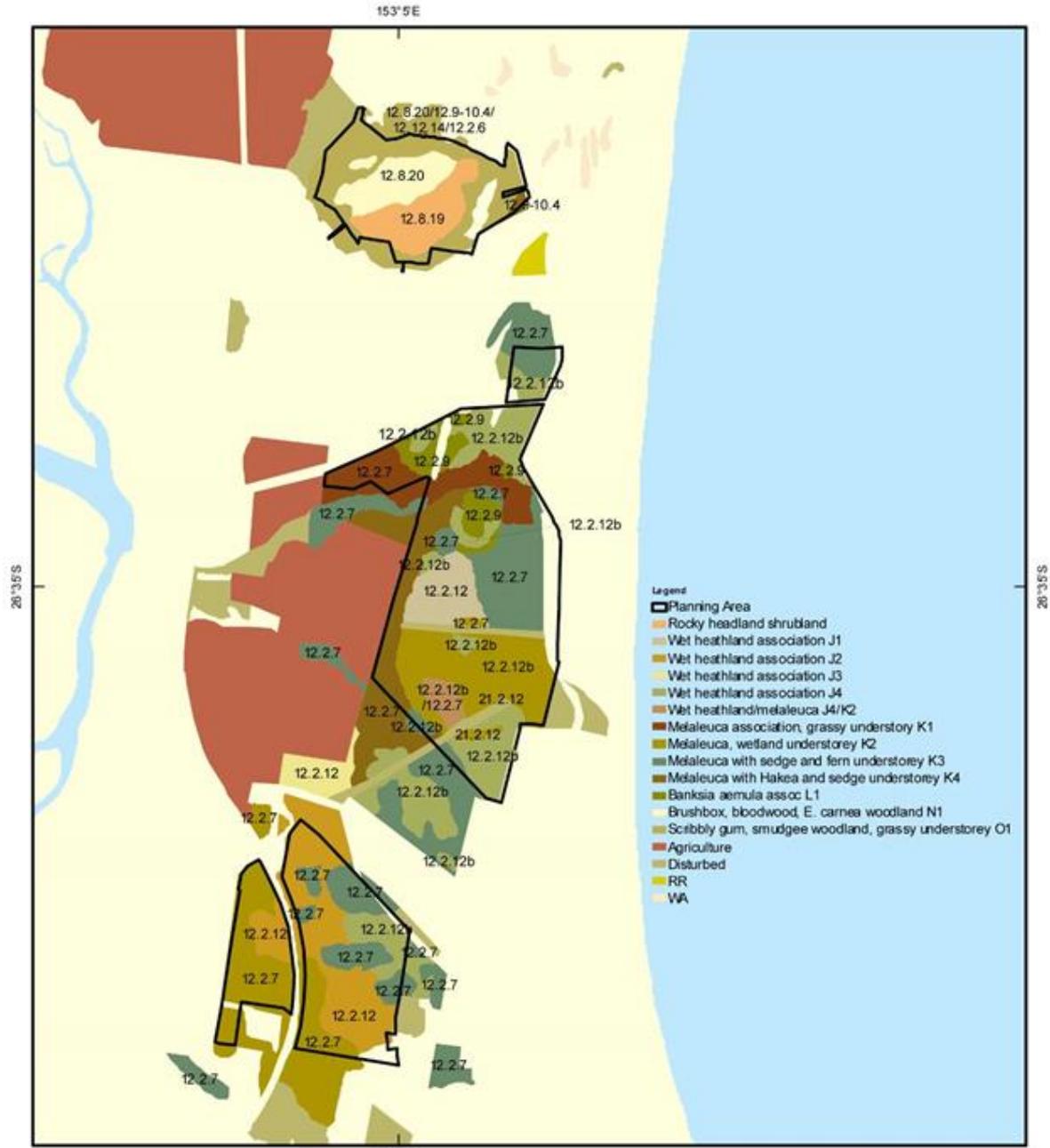
The restricted wet heathland associations described as *closed heath on seasonally closed waterlogged sand plains* (RE 12.2.12) are particularly significant for conservation. This ecosystem is one of few remaining coastal areas supporting the vulnerable ground parrot *Pezoporus wallicus* and several wallum frogs, including the vulnerable wallum froglet *Crinia tinnula*, wallum sedgefrog *Litoria olongburensis* and the wallum rocketfrog *Litoria freycineti*. A population of the endangered Mount Emu she-oak *Allocasuarina emuina* is located in the Maroola Section.

Mount Coolum National Park (Maroola Section) is located in the Maroochy River Catchment and contributes to water quality by removing nutrient loads, retaining floodwaters and maintaining local flows before flowing directly into the sea. The Maroola Section forms part of the Coolum Creek and Lower Maroochy River, a nationally significant wetland system listed in the Directory of Important Wetlands in Australia. The section is part of a sinuous and fragmented aggregation of wetlands comprised of marshes, swamps, estuary and sub-coastal tributaries.

The Maroola Section is predominately waterlogged or inundated, with depths in the swamp usually less than 1m. These wetland systems are significant for their representativeness, their high value to wildlife and ecosystems, provision of refuge habitat, and very high values for education. They provide critical habitat for species to breed (such as acid frogs) and feed.

The wetland areas of the Sunshine Coast have suffered major and cumulative disturbances, including wildfire, extensive clearing, drainage of swamps and widespread development for housing, roads and canals. These activities have altered water tables and released pollutants and soil acids into these highly adapted ecosystems (Department of Water, the Environment, Heritage and the Arts, Australian Government, 2010).

# Map 1: Mount Coolum National Park vegetation map



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

Map Production:  
 Spatial Services,  
 Queensland Parks and Wildlife Service,  
 Department of Environment and Resource Management.  
 <dd> <Month> 2010

Disclaimer:  
 This map has been produced for the purposes of discussion and comment. While the map has been prepared with care, neither the Queensland Government nor the Department of Environment and Resource Management accepts any liability for any decisions or actions taken by individuals or organisations on the basis of this map.

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.

Source Material:  
 Vegetation, DERM 2009



Department of Environment and Resource Management 2010



## 2.1.3 Terrestrial corridor

### Maroochy River to Elliott Heads

The corridor extends north along the coast from the Maroochy River mouth to Elliott Heads (via Maroochy River Conservation Park, Mount Coolum National Park, Noosa National Park, the Great Sandy National Park, Tuan State Forest, Poona National Park, Vernon State Forest and the Burrum Coast National Park). The corridor:

- intersects with four state and three regionally significant terrestrial corridors
- links vegetation tracts along the coast
- incorporates climatic gradient
- intersect several riparian bioregional corridors
- links protected area estates.

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## 2.2 Species

### 2.2.1 Native plants

Mount Coolum National Park contains an unusual diversity of plants in a relatively confined area due to the varied physical environment, ranging from the low-lying, poorly drained coastal sand plains of the Maroola Section to the rocky volcanic dome of the Mount Coolum Section. Therefore, the park protects a large range of vegetation types, some of which, for example the summit heath of Mount Coolum, are of restricted coastal occurrence and contain rare and threatened species.

Of all plant species that occur on the Sunshine Coast, about 50 per cent can be found on Mount Coolum. Furthermore, the park supports 40 per cent of fern families, 32 species of mosses, 34 species of liverworts and 33 species of lichens. In total, the park supports habitat for 316 flora species (Batianoff et al. 1985).

The distribution of plant communities in the park is predominately influenced by topography, hydrology and soils, exposure to coastal influences (wind shear and salt spray), and disturbances from neighbouring land use. Mount Coolum National Park contains highly localised montane taxa and several species that occur at the limits of their range (Batianoff et al. 1985). Plant communities in the Mount Coolum Section are valued for their distinctive structural formations and concentric distribution. Open forests, woodlands and small

rainforest pockets ring the lower slopes, while open shrubland and low woodland communities occur on the upper slopes. The summit contains 'of concern' montane heath, a community that comprises 34 per cent of the total area of the Mount Coolum Section (EPA 2005).

Seven plant species of conservation significance occur in the park. Of particular interest are the 'near threatened' Mount Coolum Bertya *Bertya sharpeana*, and the 'endangered' Mount Coolum she-oak *Allocasuarina thalassoscopica*. The Mount Coolum she-oak is found exclusively in the Mount Coolum Section and has a known population of 21,000 individuals. This species forms a low, dense, closed heath. It is closely related to the 'endangered' Mount Emu she-oak *Allocasuarina emuina*, found in the Maroola Section. Impacts from sightseeing and recreational walking (namely trampling), vehicular traffic, drainage alterations, altered fire regimes, increased storm water run-off and the establishment of exotic species threaten these species (EPA 2007).

An undescribed sedge, genus *Lepidosperma*, found on the western, northern and eastern slopes of Mount Coolum, is currently the only known record of this species. A similar sedge, *Lepidosperma quadrangulatum*, is found at the north-eastern base of Mount Coolum, just south of the car park, and in the Emu Mountain Section of Noosa National Park. These populations are found in isolated pockets, with the next closest populations found in northern New South Wales. A monitoring program is being undertaken for this species at the Mount Coolum site. Other species of conservation concern are the 'vulnerable' *Leptospermum oreophilum*, 'endangered' swamp stringybark *Eucalyptus conglomerate*, and the 'near threatened' *Durringtonia paludosa*. Potential threats to these plants include destruction of habitat due to clearing, altered drainage patterns and inappropriate fire regimes.

A list of species of conservation significance recorded in Mount Coolum National Park is provided in Appendix 3, and species listed in international agreements in Appendix 4.

### 2.2.2 Native animals

Mount Coolum National Park plays an important role in providing habitat in a highly modified and urbanised landscape and supports a diversity of animal species, including 106 bird species. A number of locally and internationally threatened species are dependent on the park for habitat.

Four significant species that depend on, or are associated with, the wetlands in the Maroola Section are the 'vulnerable' wallum froglet *Crinia tinnula*, wallum sedge frog *Litoria olongburensis*, wallum rocketfrog *Litoria freycineti* and 'vulnerable' ground parrot *Pezoporus wallicus wallicus* (Department of Water, the Environment, Heritage and the Arts 2010). Here the coastal swampland conditions are nutrient poor (oligotrophic) and acidic (pH <6.0). The acid frogs have specialised breeding requirements and are particularly susceptible to changes in water chemistry. Road construction and changes to burning practices have led to changes in hydrology and water chemistry, impacting upon the frogs' breeding success. Damage to microhabitats (reed beds and sedges) by too-frequent fire, human trampling and recreation activities has also been identified as detrimental. While various other potential sources of impact have been identified (for example, the use of chemicals to control mosquitoes and weeds), their effects are poorly studied. Habitat loss and fragmentation due to urban development remains one of the main threats to wallum frog species, particularly in coastal southeast Queensland (EPA 2006a).

The ground parrot was once distributed from Hervey Bay to the northern suburbs of Brisbane. Populations are now restricted to highly fragmented, isolated patches of heathland; Mount Coolum National Park is one of the few protected areas that contains a small population of this species. The ground parrots also use the heathland in the Maroochy Airport land adjacent to the park. Major threats to ground parrot populations include habitat destruction, predation by cats, foxes and dogs, inappropriate fire regimes and urbanisation of surrounding areas, which affects drainage and nutrient loading (Queensland Parks and Wildlife Service 2007).

Bird records for the nationally significant Coolum Creek and Lower Maroochy River wetland system include 45 migratory species protected under international treaties. Thirty-nine of these are waders or sea birds that use the wetlands as a stopover during migratory flights. Further research is needed on the numbers and distribution of migratory species for the Maroola Section, which forms part of these significant wetlands. Suitable habitat for these species is greatly affected by human disturbance, especially from illegal motorised activity within the park (Department of Water, the Environment, Heritage and the Arts 2010).

The cliffs of the Mount Coolum Section provide habitat for a pair of nesting peregrine falcons *Falco peregrinus* that is of conservation significance in Australia. This pair of falcons is one of 25 to 35 remaining pairs in southeast

Queensland. The eastern grass owl *Tyto longimembris* has also been observed breeding in the heathland of the Maroola Section.

Results of a 1991 survey of ground mammals in the park included the echidna *Tachyglossus aculeatus*, yellow-footed antechinus *Antechinus flavipes*, grassland melomys *Melomys burtoni*, northern brown bandicoot *Isodon macrourus*, and the grey-headed flying fox *Pteropus poliocephalus*, which is 'vulnerable' under the *Environment Protection and Biodiversity Conservation Act 1999*. Grey-headed flying foxes are affected by a number of threatening processes, the most serious of which is loss of foraging and roosting habitat.

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## 2.3 Geophysical features

### 2.3.1 Geology

Mount Coolum was created about 26 million years ago. It is one of several isolated volcanic domes found on the Sunshine Coast, the other prominent ones forming the Glass House Mountains. Mount Coolum was formed when an intrusion of viscous magma forced its way into the Myrtle Creek sandstone. The surrounding softer sandstone eroded away, leaving Mount Coolum and creating the surrounding coastal lowland landforms such as those represented in the Maroola Section of the national park. Several incised gullies have since formed ephemeral waterfalls on the summit (Willmott 2004). During rain periods, these gullies become attractive waterfalls, which are clearly visible from surrounding areas.

The Maroola Section contains acid sulphate soils. These soils, when exposed to air after being disturbed, contain iron sulphides that produce sulphuric acid and often release toxic quantities of iron, aluminium and heavy metals. This can acidify poorly buffered soils (such as those dominated by sand), can restrict growth and kill intolerant native plants and animals, resulting in habitat degradation and poor plant productivity. Potential disturbances to acid sulphate soils in the park include altering drainage patterns and management activities for developing infrastructure and tracks (DERM 2010).

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## 2.4 Recreation

The Mount Coolum Section is one of the most prominent landmarks on the Sunshine Coast and receives about 240,000 visitors per year. Visitors from beyond the local area are attracted to the scenery and the extensive views from the summit.

The mountain provides scope for activities that are different from the usual type of nature-based recreation associated with low-lying coastal areas. These include steeper walks and climbs normally found further away from the coast. No other recreational activities are provided in the park due to the significant conservation values, topography and unsuitable landform types. However, many other locations nearby provide a diverse range of recreational opportunities.

The Summit track was not designed to support the increasing foot traffic it now receives; consequently, the track surface and surrounding landforms are degrading. Accelerated erosion has resulted in loss of vegetation cover, creating hazards for walkers, and many informal tracks have been created by visitors leaving the main track. These informal tracks often traverse sensitive vegetation types, like montane heath, damaging these fragile ecosystems.

Although the Marcoola Section is zoned for conservation purposes only—due to its waterlogged nature and significant species found within—illegal access by vehicles occurs. This is extremely detrimental to the sensitive vegetation, habitats and animals within this section.

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## 2.5 Partnerships

Mount Coolum National Park contributes to water quality, provides habitat for local wildlife and is of scenic beauty for local residents and visitors. Visitors provide trade for local businesses.

The park receives strong support from local community groups, especially Coolum and North Shore Coast Care members, who volunteer their time to remove pest plants and help keep areas of the park healthy. Such groups provide an important service to Mount Coolum National Park and other local protected areas, supporting the work carried out by park management.

QPWS&P works closely with the Kabi Kabi people to undertake natural resource management within the park. The Jones family members have played a significant role in the success of the fox den monitoring, trapping and pest plant management occurring at Mount Coolum NP .

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## 2.6 Scientific research

The park is close to major transport links on the Sunshine Coast and offers examples of natural processes that have shaped the mountain and surrounding low-lying coastal plains. Three monitoring programs are being undertaken in the park. These focus on *Allocaeusuarina emuina*, ground parrots and acid frogs. Up-to-date information is required to make informed management decisions about how to manage these small isolated pockets of remnant vegetation, the impacts from changes in the surrounding areas and the significant impact climate change will have in the future.

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## 2.7 Education

Mount Coolum is a useful educational resource for schools and colleges. While school groups are not required to apply for a commercial or group activity permit, QPWS&P requires their registration of intent to climb the Mount Coolum summit track as well as details of the date, time, number of students and teachers, and a simple emergency response plan.

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## 4. Appendices

### Appendix 1. Legal, policy and management commitments

#### Gazettal and tenure information

Mount Coolum National Park was gazetted in 1990, with the Marcoola Section added in 2001.

#### Sunshine Coast Airport Expansion

Sunshine Coast Council is negotiating with the department to undertake flood mitigation works to the eastern boundary of the Marcoola Section of the park, to protect the Marcoola community from flooding. This would require works on an existing constructed bund and drain adjacent to David Low Way, which was built before the national park was declared. Any agreement is likely to require the addition of new land with conservation values to the national park's western boundary, in return for the corridor area of works being revoked from the park.

#### Applicable Acts and statutory powers

- Queensland *Nature Conservation Act 1992* (NC Act)
- Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)

#### Recovery plans and guides

- National recovery plan for the wallum sedge and other wallum-dependent frogs
- National recovery plan for Mount Emu she-oak

#### Other management commitments

- BONN – Bonn Convention
- CAMBA – China–Australia Migratory Bird Agreement
- JAMBA – Japan–Australia Migratory Bird Agreement

## Appendix 2. Regional ecosystems of significance

Regional ecosystem	Description	Biodiversity status
12.2.12 12.2.12b	Closed heath on seasonally waterlogged sand plains	No concern at present (considered as locally endangered)
12.8.20	Shrubby woodland with <i>Eucalyptus racemosa</i> or <i>E. dura</i> on Cainozoic igneous rocks	Of concern
12.8.19	Montane shrubland on Cainozoic igneous rocks	Of concern
12.9-10.7 12.9-10.7a	<i>Eucalyptus tereticornis</i> , <i>E. siderophloia</i> and/or <i>E. crebra</i> , <i>Corymbia intermedia</i> and <i>Lophostemon suaveolens</i> woodland on Cainozoic and Mesozoic sediments	Of concern
12.2.7	<i>Melaleuca quinquenervia</i> or <i>M. viridiflora</i> open forest to woodland on sand plains	Of concern
12.2.15	Swamps with <i>Baumea</i> spp., <i>Juncus</i> spp. and <i>Lepironia articulata</i>	No concern at present (considered as locally endangered)
12.2.9	<i>Banksia aemula</i> woodland on dunes and sand plains. Usually deeply leached soils	No concern at present (considered locally endangered)
12.12.14	Shrubby woodland usually of rocky near coastal areas on Mesozoic to Proterozoic igneous rocks	Of concern

## Appendix 3. Species of conservation significance

Scientific name	Common name	NC Act status	EPBC Act status
<b>Plants</b>			
<i>Acacia baueri</i> subsp. <i>baueri</i>	tiny wattle	Vulnerable	
<i>Allocasuarina emuina</i>	Mount Emu she-oak	Endangered	Endangered
<i>Allocasuarina thalassoscopica</i>	Mount Coolum she-oak	Endangered	Endangered
<i>Bertya sharpeana</i>	Mount Coolum bertya	Near threatened	
<i>Durringtonia paludosa</i>	durringtonia	Near threatened	
<i>Eucalyptus conglomerata</i>	swamp stringybark	Endangered	Endangered
<i>Leptospermum oreophilum</i>		Vulnerable	
<b>Animals</b>			
<i>Litoria olongburensis</i>	wallum sedgefrog	Vulnerable	
<i>Litoria freycineti</i>	wallum rocketfrog	Vulnerable	
<i>Crinia tinnula</i>	wallum froglet	Vulnerable	
<i>Lophoictinia isura</i>	square-tailed kite	Near threatened	
<i>Pezoporus wallicus wallicus</i>	ground parrot	Vulnerable	
<i>Falco peregrinus</i>	peregrine falcon	Least concern	
<i>Pteropus poliocephalus</i>	grey-headed flying-fox	Vulnerable	Vulnerable

## Appendix 4. Species listed in international agreements

Scientific name	Common name	BONN	JAMBA	CAMBA
<i>Anas platyrhynchos</i>	mallard	✓		
<i>Apus pacificus</i>	fork-tailed swift		✓	✓
<i>Ardea alba</i>	great egret		✓	✓
<i>Ardea ibis</i>	cattle egret		✓	✓
<i>Falco cenchroides</i>	nankeen kestrel	✓		
<i>Falco longipennis</i>	Australian hobby	✓		
<i>Gallinago hardwickii</i>	Latham's snipe		✓	✓
<i>Haliaeetus leucogaster</i>	white-bellied sea-eagle			✓
<i>Hirundapus caudacutus</i>	white-throated needletail		✓	✓
<i>Merops ornatus</i>	rainbow bee-eater		✓	

Notes:

This list includes local and migratory birds that regularly use the park for either feeding, nesting and/or breeding. Species that visit from time to time but are not regular users have not been included in the table.

*BONN* – Bonn Convention

*CAMBA* – China–Australia Migratory Bird Agreement

*JAMBA* – Japan–Australia Migratory Bird Agreement