



Environment,  
Climate Change & Water  
National Parks & Wildlife Service



# Merriangaah, Quidong and Meringo Nature Reserves

## Plan of Management





**MERRIANGAAH, QUIDONG AND MERINGO  
NATURE RESERVES**

**PLAN OF MANAGEMENT**

**NSW National Parks and Wildlife Service**

**Part of the Department of Environment, Climate Change and Water**

**May 2010**

**This plan of management was adopted by the Minister for Climate Change and the Environment on 25<sup>th</sup> May 2010.**

### **ACKNOWLEDGMENTS**

The NPWS acknowledges that these reserves lie within the traditional country of the Ngarigo people.

This plan of management is based on a draft plan prepared by staff of the Snowy Mountains Region of NPWS.

Cover photograph of a spotted-tailed quoll (*Dasyurus maculates*) by Andrew Claridge (DECCW). Spotted-tailed quolls have been recorded in Merriangaah Nature Reserve.

Inquiries about these reserves or this plan of management should be directed to the Snowy River Area Manager at the NPWS Regional Office, Jindabyne or by telephone on (02) 6450 5555.

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## FOREWORD

Merriangaah, Quidong and Meringo Nature Reserves are located west and north-west of the town of Bombala on the Monaro plateau in the south-east of NSW. They were established in 2001 as part of the Southern Regional Forest Agreement.

The reserves have a combined area of 6,468 hectares and conserve areas of ridge and hilltop woodland surrounded by natural grasslands. Six species of native animals listed under the NSW *Threatened Species Conservation Act 1995* have been identified on the reserves.

Evidence of Aboriginal use has been found across the reserves. In addition, a number of old mine shafts remain in the reserves from gold, copper, nickel and tin mining in the area in the late 1800s.

The New South Wales *National Parks and Wildlife Act 1974* requires that a plan of management be prepared for each nature reserve. A plan of management is a legal document that outlines how an area will be managed in the years ahead.

A draft plan of management for Merriangaah, Quidong and Meringo Nature Reserves was placed on public exhibition from 25<sup>th</sup> January until 28<sup>th</sup> April 2008. The submissions received were carefully considered before adopting this plan.

The plan contains a number of actions to achieve the State Plan priority to “Protect our native vegetation, biodiversity, land, rivers and coastal waterways”, including working with neighbours to encourage conservation of remnant native vegetation in the vicinity of the reserves, the control of introduced plant and animal species, and the implementation of a monitoring program to measure the effectiveness of control programs for introduced plants.

This plan of management establishes the scheme of operations for Merriangaah, Quidong and Meringo Nature Reserves. In accordance with Section 73B of the *National Parks and Wildlife Act 1974*, this plan of management is hereby adopted.

A handwritten signature in black ink, appearing to read 'Frank Sartor', written in a cursive style.

**Frank Sartor MP**  
**Minister for Climate Change and the Environment**



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## 1. THE MERRIANGAAH GROUP OF NATURE RESERVES

Merriangaah, Quidong and Meringo Nature Reserves (referred herein as “the reserves”) are located in close proximity to each other, approximately 20 kilometres west to north-west of the town of Bombala (refer Map 1). The reserves are located within the southern end of the area known geographically as “The Monaro”, an elevated plateau in the south-east of NSW between the Australian Alps and the coastal escarpment.

The reserves have a combined area of 6,468 hectares and conserve areas of ridge and hilltop woodland surrounded by natural grasslands. As tree covered islands in an undulating grassland, they are important reserves from a habitat and landscape perspective (Dearling, 2003).

Merriangaah Nature Reserve, which is the largest of the reserves at 5,669 hectares, is located within the Parishes of Wallangellic, Bungarby, Camberlong, Merriangaah and Peters, all of which are in the County of Wellesley. The reserve consists of three distinct sections (refer Map 2):

- Northern Section – this section is divided into two parts, which are located on opposite sides of the MacLaughlin River. The eastern side comprises Portion 126, Parish of Wangelllic. The western side comprises Portion 187, Parish of Bungarby.
- Southern Section – this section forms the bulk of the reserve and is spread across three parishes, namely Camberlong, Peters and Merriangaah.
- Western Section – this section is a small isolated part of the nature reserve and is located beside the Snowy River. The section comprises Portion 53, Parish of Peters.

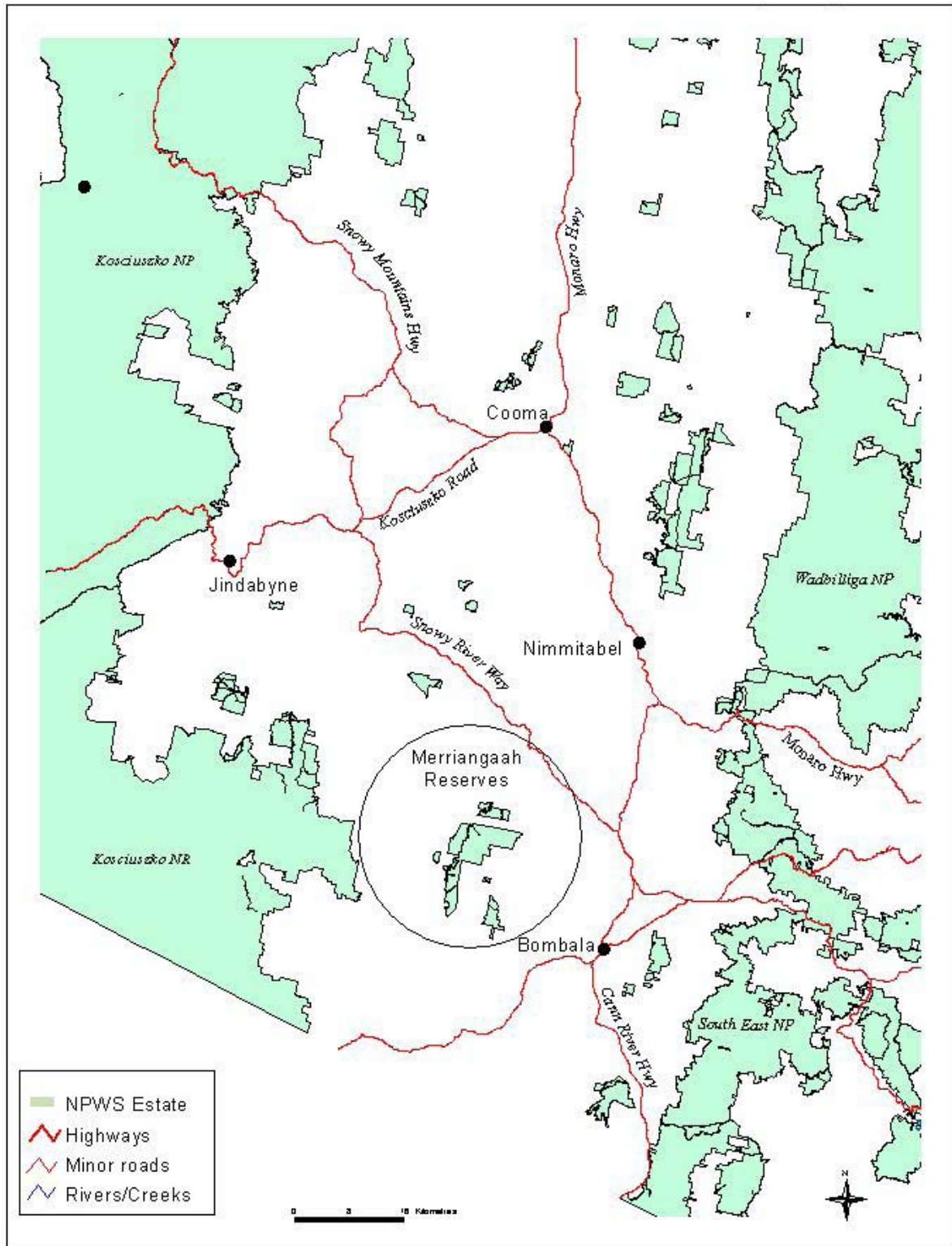
Quidong Nature Reserve (750 hectares) is located within the Parish of Meringo, County of Wellesley, close to the junction of the Delegate and Bombala Rivers. Meringo Nature Reserve (49 hectares) is located in the Parish of Meringo, County of Wellesley and occupies Portions 99, 110 and 112 within the parish. This reserve is located on Slaughterhouse Creek, a major tributary to the Delegate River. Palarang Road runs along a road reserve through Meringo Nature Reserve ending at Slaughterhouse Creek.

All three reserves were established on 1<sup>st</sup> January 2001 under the *National Parks Estate (Southern Region Reservations) Act 2000* (NPE Act) as part of the Southern Region Forest Agreement (RFA). The RFA provided for major additions to the reserve system, including the establishment of these reserves, following assessment of the natural, cultural, economic and social values of forests.

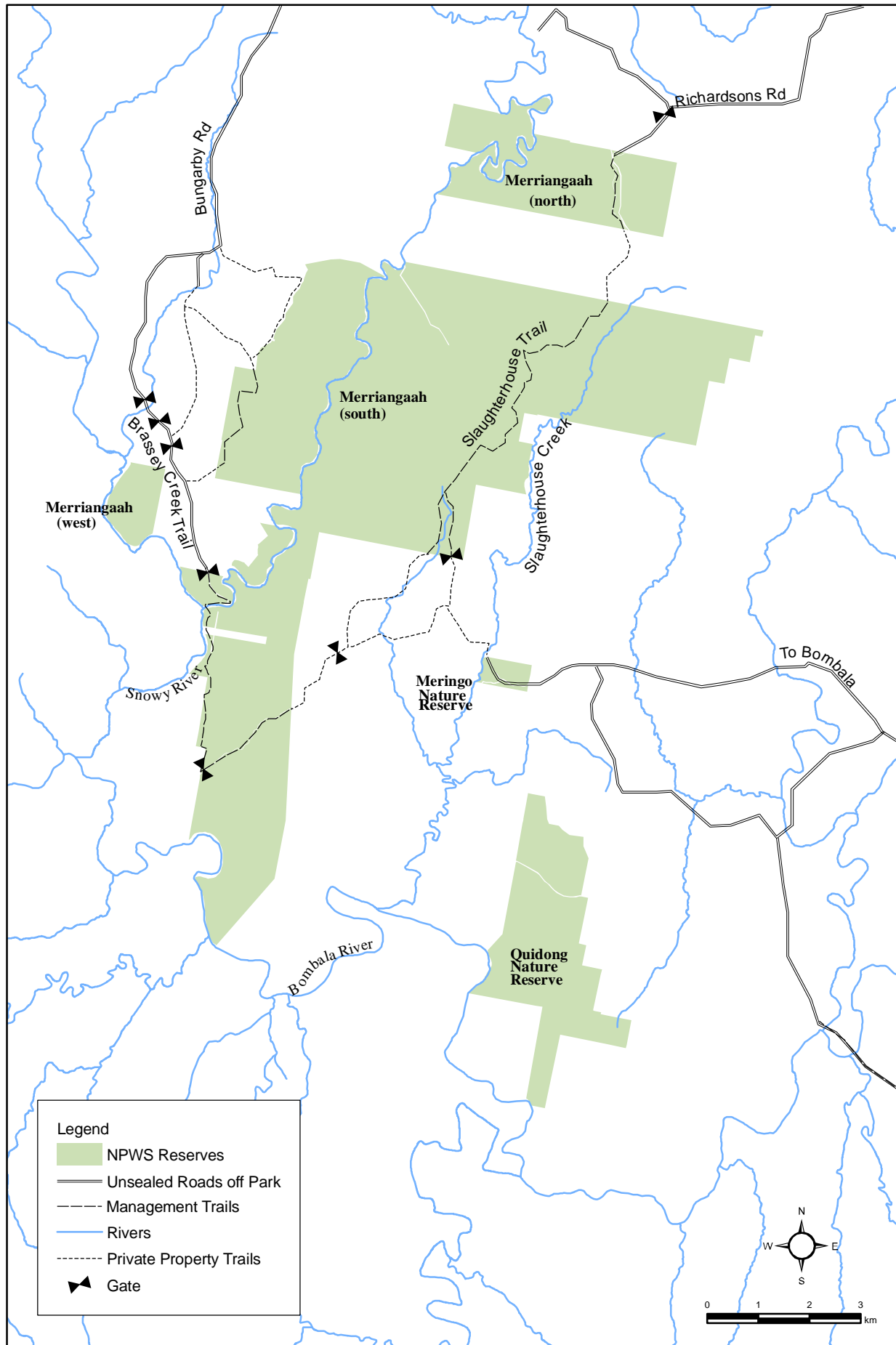
Included in the reserves are several roads that are vested in the Minister on behalf of the Crown for the purposes of Part 11 of the NPW Act. These roads do not currently form part of the gazetted area of the reserves. They were created by the NPE Act to ensure that essential access arrangements which existed immediately prior to gazettal could continue. Whilst Part 11 roads do not form part of the gazetted reserve area, the management of these roads is subject to the provisions of this plan, the NPW Regulations and the requirements of the EPA Act.

Merriangaah, Quidong and Meringo Nature Reserves form part of the Snowy River catchment and lie predominantly within the Bombala local government area (LGA) and the Eden Local Aboriginal Land Council (LALC) area.

## Locality map



# Reserve map



## 2. MANAGEMENT CONTEXT

### 2.1 Legislative and Policy Framework

The management of nature reserves in NSW is in the context of a legislative and policy framework, primarily the *National Parks and Wildlife Act 1974* (NPW Act), the NPW Regulation, the *Threatened Species Conservation Act 1995* (TSC Act) and the policies of the National Parks and Wildlife Service (NPWS). Section 72AA of the NPW Act lists the matters to be considered in the preparation of a plan of management. The policies arise from the legislative background and internationally accepted principles of park management. They relate to nature conservation, Aboriginal and historic heritage conservation, recreation, commercial use, research and communication.

Other legislation, international agreements and charters may also apply to management of the area. In particular, the *Environmental Planning and Assessment Act 1979* (EPA Act) may require the assessment and mitigation of the environmental impacts of works proposed in this plan.

A plan of management is a statutory document under the NPW Act. Once the Minister has adopted a plan, no operations may be undertaken within the reserves except in accordance with the plan. This plan will also apply to any future additions to these reserves. Where management strategies or works are proposed for these reserves or any additions that are not consistent with the plan, an amendment to the plan will be required.

### 2.2 Management Purposes and Principles

Nature reserves are reserved under the NPW Act to protect and conserve areas containing outstanding, unique or representative ecosystems, species, communities or natural phenomena.

Under the Act (Section 30J), nature reserves are managed to:

- conserve biodiversity, maintain ecosystem functions, and protect geological and geomorphological features and natural phenomena;
- conserve places, objects, features and landscapes of cultural value;
- promote public appreciation, enjoyment and understanding of the reserve's natural and cultural values; and
- provide for appropriate research and monitoring.

Nature reserves differ from national parks in that they do not have as a management principle to provide for visitor use.

### **3. VALUES OF THE RESERVES**

The location, landforms and plant and animal communities of an area have determined how it has been used and valued. Both Aboriginal and non-Aboriginal people place values on natural areas, including aesthetic, social, spiritual and recreational values. These values may be attached to the landscape as a whole or to individual components, for example to plant and animal species used by Aboriginal people. This plan of management aims to conserve both natural and cultural values. For reasons of clarity and document usefulness, natural heritage, cultural heritage, threats and on-going use are dealt with individually, but their inter-relationships are recognised.

#### **3.1 Landforms, Geology and Soils**

Elevation within Merriangaah Nature Reserve ranges from 600 metres above sea level (ASL) on the MacLaughlin River to 950 metres along the major ridges. There are steep gradients along the escarpment fringing the eastern side of the MacLaughlin River. The central part of Merriangaah Nature Reserve features an undulating plateau between the MacLaughlin River and the less steep-sided Slaughterhouse Creek.

Quidong Nature Reserve also features a deeply dissected ridge running north from the Delegate River and ranges from 600–860 metres ASL. Meringo Nature Reserve forms part of the southern extremity of an undulating ridgeline that runs north-south on the eastern side of Slaughterhouse Creek.

The reserves are located in an area that is identified geologically as “The Monaro Volcanics”, dominated by rock of volcanic origin, mostly intrusive granite overlying earlier deposits of sedimentary basalt with some overlying basalt (Dearling, 2003). The geological structure is complex, ranging from biotite adamellite (part of the southern extension of the Berridale Batholith west of the MacLaughlin River), through undifferentiated Cambrian and early Silurian sediments. Sandstone, mudstone and shales are evident in the central part of Merriangaah Nature Reserve. The eastern edge of the Merriangaah Nature Reserve features Merriangaah and Gunningraah siltstone, calcareous shales and black shales. The northern part of the reserve features a southern extension of undifferentiated siltstone, limestone and calcareous shales. Meringo and Quidong are predominantly made up of undifferentiated siltstone (DMR 1995).

All of the reserves have soils derived from earlier sedimentary bedrock associated with the Bombala River, with areas of volcanic soils in the northern section of Merriangaah. Soils on all of the reserves are skeletal with sandy loam/clay soils restricted to small patches along major drainage lines.

#### **3.2 Native Plants**

Ten discrete forest ecosystem (FE) types have been identified within Merriangaah, Meringo and Quidong Nature Reserves (Ngh Environmental, 2005).

These are:

- Lower Snowy Rainshadow Woodland/Shrubland, dominated by currawang (*Acacia doratoxylon*) / black cyprus (*Callitris endlicheri*) / *Philothea trachyphylla* (FE41);
- Tableland Dry Shrub/Grass Forest, dominated by snow gum (*Eucalyptus pauciflora*) / ribbon gum (*E. viminalis*) / silver wattle (*Acacia dealbata*) (FE73);
- South Eastern Tablelands Dry Shrub / Grass/ Herb Forest, dominated by apple box (*E. bridgesiana*) / snow gum (*E. pauciflora*) / candlebark (*E. rubida*) / *Acaena novae-zelandiae* (FE74);
- Tablelands Shrub/Tussock Grass Forest, dominated by broad-leaved peppermint (*E. dives*) / *Joycea pallida* (FE75);
- Lower Snowy Dry Shrub/Tussock Grass Forest, dominated by bundy (*E. goniacalyx*) / *Joycea pallida* (FE77);
- Lower Snowy White Box Dry Shrub/ Herb Woodland, dominated by white box (*E. albens*) / white cypress (*Callitris glaucophylla*) / green wattle (*Acacia deanei*) (FE78)
- South East Tablelands Dry Shrub/Tussock Grass Forest, dominated by scribbly gum (*E. rossii*) / brittle gum (*E. mannifera*) / *Pultenaea procumbens* / *Joycea pallida* (FE115); and
- Monaro Dry Grassland, dominated by *Austrostipa spp* / *Austrodanthonia spp* (FE158).
- Dry Ridge Forest dominated by silver-top ash (*E. sieberi*) (FE112)
- Riparian Scrub Complex

Merriangaah Nature Reserve features a vegetation pattern dominated by dry peppermint (*E. dives*) forest (FE75) on the ridges with some inclusion of various box species. These communities intergrade with dry shrub forest (FE115) on upper slopes and areas with drier northerly and westerly aspects. Silver-top ash (*E. sieberi*) dominated community (FE 112) is found on the highest ridge crests. Larger gullies and sheltered slopes are dominated by the slightly moister dry shrub/grass/herb forests (FE73 or FE74). Most of the length of the Delegate River in the south and the Snowy River in the east contains riparian scrub complex and extensive stands of the Lower Snowy shrubland (often called wattle scrub) (FE41). FE41 also appears on the steep northern and western-facing valley slopes and along some dry gullies.

Quidong Nature Reserve is similar to the southern part of Merriangaah and contains dry peppermint forest (FE75) as the dominant forest type, although dry shrub forest (FE77) appears in patches, mainly in the north. The gullies are dry shrub/grass forest (either FE73 or FE74) and wattle scrub (FE41) is absent.

Meringo Nature Reserve, being between Merriangaah and Quidong, contains a mix of the principal dry and gully forest types found in the two larger reserves. In the absence of major drainage, there are no scrub communities.

Eight native plant species listed under the NSW *Threatened Species Conservation Act 1995* and/or as a Rare or Threatened Australian Plants (ROTAP) (Briggs and Leigh, 1995) have been identified on the reserves and are listed in Table 1.

**Table 1. Plant species of Merriangaah, Quidong and Meringo Nature Reserves listed under the Threatened Species Conservation Act and ROTAP**

Scientific Name	Common Name	Legal Status*	ROTAP Class <sup>#</sup>	Merriangaah	Quidong	Meringo
<i>Pilularia novae-hollandiae</i>	Austral pillwort	E		✓	✓	✓
<i>Eucalyptus pulverulenta</i>	Silver-leaved gum	V	3V	✓	✓	✓
<i>Pomaderris parrisiae</i>		V	2VC	✓	✓	✓
<i>Euphrasia scabra</i>		E	3KC	✓	✓	✓
<i>Calotis glandulosa</i>		V	3VC		✓	
<i>Gentiana baeuerlenii</i>		E	2EC		✓	
<i>Eucalyptus parvula</i>	Small-leaved gum	V	2VC	✓	✓	
<i>Diuris pedunculata</i>	Small snake orchid	E	2E	✓		

\* Legal Status Codes under the *Threatened Species Conservation Act 1995* - E = Endangered; V = Vulnerable  
<sup>#</sup> ROTAP classification - E = Endangered; V = Vulnerable; K = Poorly known species; C = Species known to be represented on protected lands; 2 = Species with a very restricted distribution; 3 = Species with a range of over 100 km but occurring in small populations

### 3.3 Native Animals

Four mammal species, 149 species of birds, and 3 reptile species have been recorded within the reserves (see Appendix 2) although no systematic fauna surveying has been carried out.

The only mammals recorded for the reserves are the eastern grey kangaroo (*Macropus giganteus*), platypus (*Ornithorhynchus anatinus*), common wombat (*Vombatus ursinus*), and the threatened spotted-tailed quoll (*Dasyurus maculatus*), however the CRA process predicted that other species are likely to occur, such as the swamp wallaby (*Wallabia bicolor*) and echidna (*Tachyglossus aculeatus*). Although only recorded to date in Merriangaah Nature Reserve, there is also suitable habitat for the spotted-tailed quoll within Quidong Nature Reserve.

Common bird species seen throughout the reserves include the crimson rosella (*Platycercus elegans*), sulphur-crested cockatoo (*Cacatua galerita*), azure kingfisher (*Alcedo azurea*), red wattle-bird (*Anthochaera carunculata*) and yellow-faced honeyeater (*Lichenostomus chrysops*).

A relatively high diversity of raptors are present on the reserves including the brown goshawk (*Accipiter fasciatus*), wedge-tailed eagle (*Aquila audax*), swamp harrier (*Circus approximans*), black-shouldered kite (*Elanus axillaris*), brown falcon (*Falco berigora*), nankeen kestrel (*Falco cenchroides*), white-bellied sea-eagle (*Haliaeetus leucogaster*), little eagle (*Haliaeetus morphnoides*) and one owl species, the southern boobook (*Ninox boobook*).

Six species of native animals listed under the NSW *Threatened Species Conservation Act 1995* have been identified on the reserves and are listed in Table 2.

**Table 2. Vertebrate fauna species of Merriangaah, Quidong and Meringo Nature Reserves listed under the Threatened Species Conservation Act**

Scientific Name	Common Name	Legal Status*	Merriangaah	Quidong	Meringo
<i>Callocephalon fimbriatum</i>	Gang-gang Cockatoo	V	✓	✓	
<i>Calyptorhynchus lathamii</i>	Glossy Black Cockatoo	V			✓
<i>Climacteris picumnus</i>	Brown Treecreeper	V	✓		✓
<i>Melanodryas cucullata</i>	Hooded Robin	V	✓	✓	✓
<i>Pyrrholaemus sagittatus</i>	Speckled Warbler	V	✓		✓
<i>Stagonopleura guttata</i>	Diamond Firetail	V	✓		✓
<i>Thinornis rubricollis</i>	Hooded Plover	E	✓	✓	✓
<i>Dasyurus maculatus</i>	Spotted-tailed Quoll	V	✓		

\* Legal Status Codes under the Threatened Species Conservation Act 1995 - E = Endangered, V = Vulnerable

### 3.4 Cultural Heritage

Aboriginal communities have an association and connection to the land. The land and water within a landscape are central to Aboriginal spirituality and contribute to Aboriginal identity. Aboriginal communities associate natural resources with the use and enjoyment of foods and medicines, caring for the land, passing on cultural knowledge, kinship systems and strengthening social bonds. Aboriginal heritage and connection to nature are inseparable from each other and need to be managed in an integrated manner across the landscape.

A preliminary Aboriginal cultural heritage study of the reserves was carried out in 2002 (Dearling, 2003). The study found that each of the reserves exhibit signs of Aboriginal use and visitation, but it is unlikely that they were sites of long term habitation. Aboriginal artefacts were found across all reserves with the greatest density close to water courses, especially at the confluence of major streams and rivers. Of particular interest was the presence of large silcrete nodules in and adjacent to Quidong Nature Reserve. It is possible that these nodules may be one of the sources of silcrete used for stone tool making in other areas of the Monaro. No other sites of significance were found during the study.

Areas within Merriangaah and Meringo Nature Reserves were subject to moderate, periodic grazing in the past, and a number of old “cockatoo” fences (rough fences made from logs and branches) remain from this use. Quidong Nature Reserve was a site of geological interest dating back to mid 1800s and gold, copper, nickel and tin were mined in the area in the late 1800s. A number of old mine shafts remain from this use.

### 3.5 Public Use

There is limited public access to the reserves. Palarang Road provides access to Meringo Nature Reserve. Quidong and Merriangaah Nature Reserves do not have any formed public access. No visitor facilities are provided in the reserves and there is little public use.



## 4. THREATS TO THE RESERVES

### 4.1 Soil and Vegetation Disturbance

The only evidence of any soil disturbance on the reserves occurs where access roads and management (fire) trails, internal fences or boundary fences have been constructed. There is potential for soil erosion and sedimentation associated with maintenance of trails within the reserves.

### 4.2 Introduced Plants and Animals

Eighteen introduced plant species have been found on the reserves (see Table 3), with the most significant weed infestation being St. John's wort (*Hypericum perforatum*) associated with track disturbance (Ngh Environmental, 2005). Serrated tussock (*Nassella trichotoma*) is present, predominantly on the western side of Merriangaah Nature Reserve in association with agricultural land. An intensive annual spring/summer weed control program for serrated tussock has been ongoing since 2001 in the reserves. These programs have been supported by weed control works carried out on neighbouring properties.

**Table 3. Introduced Plants found on Merriangaah, Quidong and Meringo Nature Reserves.**

Scientific Name	Common Name	Status*	Merriangaah	Quidong	Meringo
<i>Acetosella vulgaris</i>			✓	✓	✓
<i>Aira sp.</i>			✓	✓	✓
<i>Carduus pycnocephalus</i>	Slender thistle				
<i>Cerastium glomeratum</i>	Mouse-eared chickweed		✓	✓	✓
<i>Cirsium vulgare</i>	Spear thistle		✓		✓
<i>Conium maculatum</i>	Hemlock	Noxious	✓		
<i>Eragrostis curvula</i>	African love-grass	Noxious	✓		✓
<i>Galium murale</i>			✓		✓
<i>Hypericum perforatum</i>	St. John's wort	Noxious	✓	✓	✓
<i>Hypochoeris radicata</i>	Flatweed				✓
<i>Myosotis discolor</i>	Forget-me-not		✓		
<i>Nassella trichotoma</i>	Serrated tussock	Noxious	✓	✓	
<i>Petrorhagia nanteuillii</i>			✓		
<i>Rosa rubiginosa</i>	Sweet briar	Noxious	✓	✓	
<i>Stellaria media</i>	Chickweed		✓	✓	✓
<i>Taraxacum officinale</i>	Dandelion		✓	✓	✓
<i>Trifolium arvense</i>	Clover		✓	✓	✓
<i>Trifolium dubium</i>	Clover		✓		✓

\* Noxious weeds listed under the *Noxious Weeds Act 1993* for the Bombala LGA

Introduced animals found in the reserves include foxes, rabbits, hares, pigs, deer, goats and wild dogs. A regular control program is undertaken for goats in the reserves, and wild dog and fox control programs have been carried out on Merriangaah Nature Reserve since 2004 to complement the Kosciuszko National Park wild dog control program. Other introduced animals are controlled as necessary. Wild dog and fox control work done on the reserves is directed by the *2 Year Wild dog/Fox Plan for Corrowong Tombong/Merriangaah and Byadbo Wilderness Area – Kosciuszko National Park*.

### 4.3 Fire

Fire is a natural feature of many environments and is essential for the survival of some plant communities. However, inappropriate fire regimes can lead to loss of particular plant and animal species and communities, and high frequency fires have been listed as a key threatening process under the TSC Act. Fire can also damage cultural heritage, recreation and management facilities, and can threaten visitors and neighbouring land.

A combination of low rainfall (generally below 600mm per year), dry forest types, open woodland and grasslands means that fire can occur in the Monaro region throughout much of the year. Landscape scale fires (greater than 100,000 hectares) do occur in the region, generally involving the more remote terrain within the snowy mountains. Fires of such size tend to occur on a frequency of between 25–50 years. Smaller fires, less than 50,000 hectares, are more common with a frequency of less than 20 years. With much of the Monaro comprised of grassland and open woodlands, and with better access, fire size is generally smaller with most fires contained at less than 10,000 hectares.

While arson does occur in some areas, it is considered minimal with the majority of wildfires in the region caused by accidental fire escape, for example escaped campfires and ignition from farm machinery or lightning. The fires of 2003 which covered a wide area within southern NSW impacted on some areas of the Monaro, including the eastern fall of the Snowy Mountains, but did not reach these reserves.

The primary fire management objectives of the NPWS are to protect life and property and community assets from the adverse impacts of fire, whilst managing fire regimes to maintain and protect biodiversity and cultural heritage. The NPWS uses a zoning system for bushfire management which is compatible with the zoning used by the Rural Fire Service in its bushfire risk management plans. The policies and methodology used for preparing fire management strategies are in the NPWS Fire Management Manual which may be viewed on the website: [www.environment.nsw.gov.au](http://www.environment.nsw.gov.au).

NPWS has assessed the reserves for fire management planning and has zoned Quidong and Meringo Nature Reserves as Heritage Management Zones (HMZ). Apart from the over-riding legislative objective of protecting life and property, the primary fire management objectives for a HMZ are to conserve biodiversity and protect cultural heritage. Merriangaah Nature Reserve has been zoned as a HMZ in the northern and southern sections, and as a Strategic Fire Advantage Zone (SFAZ) in the central section. A SFAZ is managed to give strategic advantage to fire fighters and protection of on-park and off-park assets (reduced fire intensity and spotting behaviour).

Fire Management Strategies, in map form, have been prepared for the reserves. Apart from showing the fire zoning, the strategies describe the likely and desired fire regimes for the major vegetation community types found within the reserves. Fire is likely to be an infrequent event in forest types such as Tablelands Ribbon Gum-Candlebark-Snow Gum Forest (FE73) because of the generally sparse understorey, except for occasional patches of dense dogwood (*Cassinia longifolia*). Frequent fire in forest community such as Apple Box-Candlebark Woodland (FE74) would tend to exaggerate the dogwood component of the understorey as these short-lived shrubs recruit prolifically after disturbance but tend to die out within a decade or two (Ngh environmental 2005).

Species decline is expected to occur if fire is not managed within the prescriptions outlined in Table 4.

**Table 4. Fire Regimes for Vegetation Communities found on Merriangaah, Meringo and Quidong Nature Reserves**

Vegetation Community Type	Prescription
Acacia Scrub	Fire should not occur at less than 7 years and not more than 30 years.
Dry Forest	Fire should not occur less than 22 years and not more than 50 years
Woodland	Fire should not occur less than 16 years and not more than 50 years
Grasslands	Fire should occur not less than 2 years

Source: Bradstock *et al.* (2003). \* intervals given are tentative due to insufficient data.

Merriangaah, Meringo and Quidong Nature Reserves fall within the area administered by the Bombala Bush Fire Management Committee (BFMC). Under the *Rural Fires Act 1997* this committee is responsible for developing Bush Fire Operations Plans and Bush Fire Risk Management Plans for its area. NPWS is represented on the Bombala BFMC and has participated in developing all plans.

#### 4.4 Climate Change

Climate change has been listed as a key threatening process under the *Threatened Species Conservation Act 1995*. Projections of future changes in climate for NSW include higher temperatures, increasing sea levels and water temperatures, elevated CO<sub>2</sub>, more intense but possibly reduced annual average rainfall, increased temperature extremes and higher evaporative demand. These changes are likely to lead to greater intensity and frequency of fires, more severe droughts, reduced river runoff and water availability, regional flooding, increased erosion and ocean acidification.

Climate change may significantly affect biodiversity by changing population size and distribution of species, modifying species composition, and altering the geographical extent of habitats and ecosystems. The potential impact of climate change is difficult to assess since it depends on the compounding effects of other pressures, particularly barriers to migration. Species most at risk are those unable to migrate or adapt, particularly those with small population sizes or with slow growth rates.

Suggested actions to mitigate the impacts of climate change include:

- Continuing and enhancing existing fire, pest and weed management programs to increase the ability of native flora and fauna to cope with future disturbances.
- Liaison with neighbours, local Landcare groups, catchment management authorities, and other agencies to encourage retention, and if possible expansion, of areas of native vegetation close to the reserves to create wildlife corridors.

## 5. MANAGEMENT ISSUES AND STRATEGIES

Issues	Desired Outcomes	Management Responses	Priority
<p><b>Soil and water conservation</b></p> <p>Soil erosion within the reserves is associated with past disturbances, e.g. road and fence line construction and fires. Erosion potential is moderate due to the shale, clay and basaltic soils of these reserves.</p> <p>Merriangaah NR is downstream of agricultural lands.</p>	<p>Soil erosion is minimised.</p> <p>Water quality and health of reserve streams is improved.</p>	<p>Undertake all works in a manner that minimises erosion and water pollution.</p> <p>Undertake remedial actions as necessary to ameliorate human-induced erosion.</p> <p>Monitor erosion associated with past disturbances and post fire.</p> <p>Liaise with local authorities to maintain and improve water quality in the reserves' catchments.</p>	<p>High</p> <p>High</p> <p>Medium</p> <p>Low</p>
<p><b>Native plant and animal conservation</b></p> <p>All of the reserves contain plant and animal species that are threatened or under-represented in the region.</p> <p>There have been limited surveys and other threatened species may be present in the reserves.</p> <p>A priorities action statement has been prepared that details actions to conserve threatened species.</p> <p>The value of the reserves for conservation would be enhanced by links to other areas of native vegetation.</p> <p>It is thought that the native vegetation communities within Merriangaah and Meringo NRs have been modified as a result of past grazing and fire regimes.</p>	<p>All native plant and animal species and communities are conserved.</p> <p>Structural diversity and habitat values are restored in areas subject to past grazing.</p>	<p>Undertake surveys for threatened plant and animal species.</p> <p>Implement relevant actions included in the priorities action statement for threatened species present in the reserves.</p> <p>Monitor vegetation recovery in all reserves after any fires. Incorporate information gained into future reviews of the reserves' fire management strategies.</p> <p>Work with neighbours and vegetation management committees to encourage conservation of remnant native vegetation in the vicinity of the reserves.</p> <p>Allow areas affected by past clearing to regenerate</p>	<p>Medium</p> <p>Medium</p> <p>Medium</p> <p>Medium</p> <p>Medium</p>
<p><b>Introduced species</b></p> <p>Foxes, rabbits, hares, pigs, deer, goats and wild dogs have been recorded in the reserves.</p> <p>All the reserves have low to moderate infestations of weeds. Sections of Merriangaah NR have dense infestations of serrated tussock, especially areas close to the Snowy and MacLaughlin Rivers.</p>	<p>The impact of introduced species on the reserves and on neighbouring lands is minimised.</p>	<p>Control and where possible eradicate pest animals. Priority will be given to wild dogs, foxes and goats.</p> <p>Control and where possible, eradicate introduced plants. Priority will be given to species listed as noxious and referred to in the Snowy Mountains Region Pest Management Strategy eg serrated tussock, African love grass, blackberry, St John's wort and Paterson's curse. Priority will also be given to environmental weeds not identified as noxious.</p> <p>Monitor reserves for any new outbreaks.</p> <p>Seek the cooperation of other authorities and neighbours in implementing weed control and fox control programs.</p> <p>Implement a monitoring and mapping program to measure the effectiveness of control programs for introduced plants. Use information gained from monitoring to modify future control programs.</p>	<p>High</p> <p>High</p> <p>High</p> <p>High</p> <p>High</p>

Issues	Desired Outcomes	Management Responses	Priority
<p><b>Fire management</b></p> <p>There is little evidence of periodic natural fire on any of the reserves.</p> <p>Lightning is expected to be the dominant form of unplanned burning on the reserves, but arson may occur.</p> <p>Fire management strategies have been prepared for all reserves. These identify the fire management zones and the desired fire regimes to maintain biodiversity.</p> <p>Fire trails are constructed to a standard set by the NSW Bush Fire Coordinating Committee. These standards will apply to management trails within Merriangaah NR.</p> <p>The Fire Management Strategies should be reviewed every 5 years.</p>	<p>Life, property and natural and cultural values are protected from bushfire.</p> <p>Fire regimes are appropriate for conservation of plant and animal communities.</p> <p>Cultural features are protected from damage by fire.</p>	<p>Maintain cooperative arrangements with surrounding landowners, Rural Fire Service brigades and Fire Control Officers and be actively involved in the Cooma-Monaro and Bombala District Bush Fire Management Committees. Cooperative arrangements include approaches to fuel management, fire suppression, support for neighbours' fire management efforts and information sharing.</p> <p>Suppress all unplanned fires in the reserves as soon as possible.</p> <p>Use prescribed fire on the reserves to achieve property protection, maintenance of, or an increase in biodiversity within the reserves in accordance with the Fire Management Strategies.</p> <p>Review current Fire Management Strategies in 2010 and then every 5 years.</p> <p>Maintain fire trails regularly to prevent erosion and ensure continued use for management purposes including fire management.</p> <p>Encourage further research into the ecological effects of fire in the reserves.</p>	<p>High</p> <p>High</p> <p>High</p> <p>High</p> <p>Medium</p> <p>Low</p>
<p><b>Cultural heritage</b></p> <p>All the reserves contain signs of Aboriginal use and visitation, but it is unlikely that there were sites of long term habitation.</p> <p>There are old mine sites in Quidong NR and cockatoo fences in Merriangaah and Meringo NRs. There may be other sites of historic significance in the reserves.</p>	<p>Aboriginal and historic features and values are identified and protected.</p> <p>Aboriginal people are involved in management of the Aboriginal cultural values of the reserves.</p> <p>Understanding of the cultural significance of the reserves is improved.</p>	<p>Consult and involve the Eden Local Aboriginal Land Council and other relevant Aboriginal community members in the management of the Aboriginal heritage of the reserves.</p> <p>Precede all new ground disturbance work by an assessment for cultural features. Assess the significance of any newly found cultural heritage sites and prepare management strategies if necessary.</p> <p>Encourage further research and surveys into the Aboriginal and historic heritage values of the reserves in close consultation with the Eden Local Aboriginal Land Council and local community members.</p> <p>Fences with historic value will be left in situ and protected where possible from fire.</p> <p>A risk assessment will be undertaken on mine sites and associated historic artefact material, but will be left in situ unless protection or risk mitigation is required.</p>	<p>High</p> <p>High</p> <p>Medium</p> <p>Medium</p> <p>Medium</p>

<b>Issues</b>	<b>Desired Outcomes</b>	<b>Management Responses</b>	<b>Priority</b>
<p><b>Visitor use</b></p> <p>Public access is available to parts of the boundaries of Merriangaah and Meringo NRs. There is no formed public access to Quidong NR.</p> <p>Visitor use of the reserves is very low and no visitor facilities are provided. Some illegal collection of firewood occurs on the reserves.</p> <p>Use of the reserves must be carefully managed since they are relatively small and contain areas of significant remnant native vegetation.</p> <p>Promotion of community understanding and appreciation of the conservation values of the reserves will be important for minimising damage.</p>	<p>The local community is aware of the significance of the area and of management programs.</p> <p>Visitor use is ecologically sustainable.</p>	<p>Permit individual and group visits, subject to limits on numbers and other conditions if necessary to minimise impacts.</p> <p>Pedestrian access only will be permitted within the reserves.</p> <p>Prohibit camping, horse riding, the use of open fires and firewood collection.</p> <p>No recreational facilities, including roads, will be provided in the reserves.</p> <p>Assess the environmental and public risk of previous mining sites and erect signs or fences where necessary.</p> <p>Organise media releases, information and contact with neighbours and community organisations to increase the public awareness of the significance of these conservation areas.</p> <p>Monitor levels and impacts of use.</p>	<p>Medium</p> <p>High</p> <p>High</p> <p>High</p> <p>High</p> <p>Medium</p> <p>Low</p>
<p><b>Research</b></p> <p>Further research will improve understanding of the reserves' natural and cultural heritage, the processes that affect them and management requirements.</p>	<p>Research enhances the management information base and has minimal environmental impact.</p>	<p>Encourage research to improve knowledge and management of natural and cultural heritage. Priority will be given to studies of cultural heritage values, effects of fire on the natural ecology, physical geography and natural values of the reserves.</p>	<p>Low</p>
<p><b>Management operations</b></p> <p>Public access roads run through Meringo NR and to some parts of the boundary of Merriangaah NR. Merriangaah NR also has a number of management trails.</p> <p>Several roads through the reserves are used to access private and leasehold property. Roads that provide the only practical means of access to a private land holding will be retained. NPWS may enter into maintenance agreements with users.</p> <p>The boundaries of all of the reserves are only partially fenced to a stock proof standard.</p>	<p>Management facilities adequately serve management needs and have acceptable impact.</p> <p>Domestic stock do not enter the reserves.</p>	<p>Maintain trails retained for management purposes (see Map 2 for trails to be retained).</p> <p>Consult with neighbours to determine the existing use of internal roads and appropriate arrangements for future access and maintenance.</p> <p>Where stock encroachment becomes a problem, undertake law enforcement to ensure the removal of stock and enter into fencing agreements with neighbours in accordance with NPWS policies and as resources permit.</p>	<p>Medium</p> <p>Medium</p> <p>Medium</p>

**High** priority activities are those imperative to achievement of the objectives and desired outcomes. They must be undertaken in the near future to avoid significant deterioration in natural, cultural or management resources.

**Medium** priority activities are those that are necessary to achieve the objectives and desired outcomes but are not urgent.

**Low** priority activities are desirable to achieve management objectives and desired outcomes but can wait until resources become available.

## APPENDIX 1. Flora of Merriangaah, Quidong and Meringo Nature Reserves

Scientific Name	Common Name	Legal Status	Merriangaah	Quidong	Meringo
<i>Acacia binervia</i>	Coast Myall		✓		
<i>Acacia dealbata</i>	Silver Wattle		✓	✓	✓
<i>Acacia genistifolia</i>	Early Wattle		✓	✓	
<i>Acacia gunnii</i>	Ploughshare Wattle		✓	✓	
<i>Acacia pycnantha</i>	Golden Wattle		✓		
<i>Acacia rubida</i>	Red-leaved Wattle		✓	✓	✓
<i>Acacia ulicifolia</i>	Prickly Moses		✓		
<i>Acaena agnipila</i>			✓		
<i>Acaena novaezelandiae</i>				✓	
<i>Acaena ovina</i>					✓
<i>Acrotriche serrulata</i>	Honeypots		✓		
<i>Ajuga australis</i>	Austral Bugle		✓	✓	
<i>Allocasuarina falciformis</i>			✓		
<i>Arthropodium</i> sp.			✓		
<i>Asperula conferta</i>	Common Woodruff		✓		
<i>Asplenium flabellifolium</i>	Necklace Fern		✓	✓	
<i>Austroanthonia</i> sp.			✓		
<i>Bossiaea buxifolia</i>			✓	✓	
<i>Brachycome aculeata</i>	Hill Daisy				
<i>Brachycome spathulata</i>			✓		
<i>Brachyscome rigidula</i>			✓		✓
<i>Brachyloma daphnoides</i>			✓	✓	
<i>Bursaria spinosa</i>			✓		
<i>Caladenia congesta</i>			✓	✓	
<i>Callitris endlicheri</i>	Black Cypress Pine		✓	✓	
<i>Calotis glandulosa</i>		V 3VC-		✓	
<i>Carex breviculmis</i>			✓		
<i>Cassinia longifolia</i>			✓	✓	✓
<i>Cheilanthes sieberi</i>			✓		
<i>Chrysocephalum</i> sp.			✓		
<i>Chrysocephalum semipapposum</i>	Clustering Everlasting		✓		
<i>Clematis microphylla</i>	Small-leaved Clematis		✓	✓	✓
<i>Convolvulus erubescens</i>			✓	✓	
<i>Craspedia canens</i>			✓		
<i>Crassula sieberiana</i>	Australian Stonecrop		✓		✓
<i>Crowea exalata</i>			✓	✓	
<i>Cymbonotus lawsonianus</i>	Bears Ear		✓		
<i>Cymbonotus preissianus</i>			✓	✓	✓
<i>Cynoglossum suaveolens</i>			✓		✓
<i>Daucus glochidiatus</i>	Native Carrot		✓		
<i>Daviesia leptophylla</i>			✓	✓	
<i>Derwentia perfoliata</i>	Digger's Speedwell		✓	✓	
<i>Desmodium varians</i>	Slender Tick-trefoil		✓		✓
<i>Dianella revoluta</i>			✓	✓	
<i>Dichondra repens</i>				✓	
<i>Dillwynia sericea</i>			✓	✓	
<i>Diuris pedunculata</i>	Small Snake Orchid	E1 2E	✓		
<i>Diuris semilunulata</i>				✓	
<i>Diuris sulphurea</i>	Tiger orchid		✓	✓	
<i>Dodonaea viscosa</i>			✓		
<i>Echinopogon intermedius</i>	Erect Hedgehog Grass		✓		
<i>Echinopogon ovatus</i>	Forest Hedgehog Grass		✓	✓	
<i>Einadia nutans</i>	Climbing Saltbush		✓	✓	
<i>Elymus scaber</i>			✓		✓
<i>Euchiton gymnoceph</i>			✓	✓	✓

<i>Eucalyptus bridgesiana</i>	Apple Box		✓	✓	✓
<i>Eucalyptus dives</i>	Broad-leaved Peppermint		✓	✓	
<i>Eucalyptus doratoxylon</i>	Currawang		✓	✓	
<i>Eucalyptus mannifera</i>	Brittle Gum		✓		
<i>Eucalyptus melliodora</i>	Yellow Box		✓	✓	✓
<i>Eucalyptus nortonii</i>	Large-flowered Bundy		✓	✓	
<i>Eucalyptus parvula</i>	Small-leaved Gum	V 2VCi	✓		
<i>Eucalyptus pauciflora</i>	Snow Gum		✓		
<i>Eucalyptus pulverulenta</i>	Silver-leaved Gum	V 3V	✓	✓	✓
<i>Eucalyptus radiata</i>	Narrow-leaved Peppermint			✓	
<i>Eucalyptus rubida</i>	Candlebark		✓	✓	✓
<i>Eucalyptus sieberi</i>	Silver-top Ash		✓		
<i>Eucalyptus stellulata</i>	Black Sallie		✓		
<i>Eucalyptus viminalis</i>	Ribbon Gum			✓	
<i>Euphrasia scabra</i>		E1 3KCa	✓	✓	✓
<i>Exocarpus cupressiformis</i>	Native Cherry		✓	✓	
<i>Galium gaudichaudii</i>	Rough Bedstraw		✓	✓	
<i>Galium propinquum</i>			✓	✓	
<i>Gentiana baeuerlenii</i>		E1 2ECi		✓	
<i>Geranium solanderi</i>	Native Geranium		✓		
<i>Glycine clandestina</i>			✓		
<i>Gonocarpus tetragynus</i>			✓		✓
<i>Hardenbergia violacea</i>	False Sarsparilla			✓	
<i>Hibbertia obtusifolia</i>			✓	✓	
<i>Hovea heterophylla</i>			✓	✓	
<i>Hydrocotyle laxiflora</i>			✓	✓	✓
<i>Indigofera australis</i>			✓	✓	
<i>Joycea pallida</i>			✓	✓	
<i>Kunzea ericoides</i>	Burgan		✓	✓	✓
<i>Kunzea parvifolia</i>			✓	✓	
<i>Laxmannia gracilis</i>				✓	
<i>Leucopogon fletcheri</i>			✓	✓	
<i>Lepidosperma gunnii</i>			✓	✓	
<i>Leptospermum obovatum</i>			✓		
<i>Lissanthe strigosa</i>	Peach Heath		✓		
<i>Lomandra longifolia</i>	Spiny-headed Mat-rush		✓	✓	
<i>Lomandra filiformis</i>	Wattle Mat-rush		✓	✓	
<i>Melichrus urceolatus</i>	Urn Heath		✓	✓	✓
<i>Microlaena stipoides</i>				✓	✓
<i>Mirbelia platylobioides</i>			✓		
<i>Olearia iodochroa</i>			✓	✓	
<i>Oxalis perennans</i>			✓	✓	
<i>Ozothamnus conditus</i>			✓	✓	
<i>Ozothamnus obcordatus</i>			✓	✓	
<i>Persoonia chamaepeuce</i>			✓		
<i>Persoonia rigida</i>			✓	✓	
<i>Pilularia novae-hollandiae</i>	Austral Pillwort	E1	✓	✓	✓
<i>Pimelea linifolia</i> ssp. <i>caesia</i>			✓		
<i>Plantago hispida</i>			✓		
<i>Plantago varia</i>			✓		✓
<i>Platysace lanceolata</i>			✓	✓	
<i>Poa sieberiana</i> var. <i>sieberiana</i>			✓	✓	✓
<i>Poa sieberiana</i> var. <i>cyano</i>			✓		
<i>Podolobium procumbens</i>			✓	✓	
<i>Polyscias sambucifolia</i>			✓		
<i>Pomaderris parrisiae</i>		V 2VC-	✓	✓	✓
<i>Pteridium esculentum</i>				✓	
<i>Pultenaea procumbens</i>			✓	✓	
<i>Ranunculus sessiliflorus</i>				✓	
<i>Rumex brownii</i>			✓	✓	✓



Senecio tenuiflorus			✓	✓	✓
Solanum vescum				✓	
Solenogyne dominii			✓		
Stackhousia monogyna			✓	✓	✓
Stellaria multiflora			✓		✓
Stellaria pungens			✓	✓	
Stylidium graminifolium			✓		
Thelymitra ixioides				✓	
Thelymitra pauciflora				✓	
Themeda triandra			✓		✓
Urtica incisa				✓	
Vittadinia muelleri			✓		
Veronica calycina			✓	✓	
Wahlenbergia gracilis			✓	✓	✓
Wahlenbergia luteola			✓		
Wahlenbergia communis			✓	✓	✓
Wahlenbergia stricta			✓		✓

\* Legal Status Codes under the *Threatened Species Conservation Act 1995* - E = Endangered; V = Vulnerable

# ROTAP classification - E = Endangered; V = Vulnerable; K = Poorly known species; C = Species known to be represented on protected lands; 2 = Species with a very restricted distribution; 3 = Species with a range of over 100 km but occurring in small populations

## APPENDIX 2. Fauna of Merriangaah, Quidong and Meringo Nature Reserves

Scientific Name	Common Name	Legal Status	Merriangaah	Quidong	Meringo
<b>BIRDS</b>					
<i>Acanthiza chrysorhoa</i>	Yellow-rumped Thornbill	P	✓	✓	✓
<i>Acanthiza lineata</i>	Striated Thornbill	P	✓	✓	✓
<i>Acanthiza nana</i>	Yellow Thornbill	P		✓	
<i>Acanthiza pusilla</i>	Brown Thornbill	P	✓	✓	✓
<i>Acanthiza reguloides</i>	Buff-rumped Thornbill	P	✓	✓	✓
<i>Acanthorhynchus tenuirostris</i>	Eastern Spinebill	P	✓	✓	✓
<i>Accipiter fasciatus</i>	Brown Goshawk	P	✓	✓	✓
<i>Acrocephalus australis</i>	Australian Reed-Warbler	P	✓	✓	✓
<i>Alcedo azurea</i>	Azure Kingfisher	P	✓		
<i>Alisterus scapularis</i>	Australian King-Parrot	P	✓	✓	✓
<i>Anas castanea</i>	Chestnut Teal	P	✓	✓	✓
<i>Anas gracilis</i>	Grey Teal	P	✓	✓	✓
<i>Anas rhynchotis</i>	Australasian Shoveler	P	✓	✓	✓
<i>Anas superciliosa</i>	Pacific Black Duck	P	✓	✓	✓
<i>Anthochaera carunculata</i>	Red Wattlebird	P	✓	✓	✓
<i>Anthochaera chrysoptera</i>	Little Wattlebird	P	✓	✓	✓
<i>Anthus australis</i>	Australian Pipit	P	✓	✓	✓
<i>Aphelocephala leucopsis</i>	Southern Whiteface	P	✓	✓	✓
<i>Aquila audax</i>	Wedge-tailed Eagle	P	✓	✓	✓
<i>Ardea alba</i>	Great Egret	P	✓	✓	✓
<i>Ardea intermedia</i>	Intermediate Egret	P	✓	✓	✓
<i>Ardea pacifica</i>	White-necked Heron	P	✓	✓	✓
<i>Artamus cyanopterus</i>	Dusky Woodswallow	P	✓	✓	✓
<i>Artamus superciliosus</i>	White-browed Woodswallow	P	✓	✓	
<i>Aythya australis</i>	Hardhead	P	✓	✓	
<i>Biziura lobata</i>	Musk Duck	P	✓		✓
<i>Cacatua galerita</i>	Sulphur-crested Cockatoo	P	✓	✓	✓
<i>Cacomantis flabelliformis</i>	Fan-tailed Cuckoo	P	✓	✓	✓
<i>Cacomantis variolosus</i>	Brush Cuckoo	P	✓		✓
<i>Callocephalon fimbriatum</i>	Gang-gang Cockatoo	V	✓		✓
<i>Calyptorhynchus funereus</i>	Yellow-tailed Black Cockatoo	P	✓		✓
<i>Calyptorhynchus lathani</i>	Glossy Black-Cockatoo	V		✓	
<i>Chalcites basalis</i>	Horsfield's Bronze-Cuckoo	P		✓	
<i>Chalcites lucidus</i>	Shining Bronze-Cuckoo	P	✓	✓	✓
<i>Charadrius ruficapillus</i>	Red-capped Plover	P	✓	✓	✓
<i>Chenonetta jubata</i>	Australian Wood Duck	P	✓	✓	✓
<i>Cincloramphus cruralis</i>	Brown Songlark	P	✓		✓
<i>Cinclosoma punctatum</i>	Spotted Quail-Thrush	P		✓	
<i>Circus approximans</i>	Swamp Harrier	P	✓		
<i>Climacteris picumnus</i>	Brown Treecreeper	V	✓	✓	
<i>Colluricincla harmonica</i>	Grey Shrike-Thrush	P	✓	✓	✓
<i>Coracina novaehollandiae</i>	Black-faced Cuckoo-shrike	P	✓	✓	✓
<i>Cormobates leucophaeus</i>	White-throated Treecreeper	P	✓	✓	✓
<i>Corvus coronoides</i>	Australian Raven	P	✓	✓	✓
<i>Corvus mellori</i>	Little Raven	P	✓	✓	✓
<i>Coturnix pectoralis</i>	Stubble Quail	P		✓	
<i>Cracticus torquatus</i>	Grey Butcherbird	P	✓	✓	✓
<i>Crocorax melanorhamphos</i>	White-winged Chough	P	✓	✓	✓
<i>Cuculus pallidus</i>	Pallid Cuckoo	P	✓	✓	
<i>Cygnus atratus</i>	Black Swan	P	✓	✓	✓
<i>Dacelo novaeguineae</i>	Laughing Kookaburra	P	✓	✓	✓
<i>Daphoenositta chrysoptera</i>	Varied Sittella	P	✓	✓	✓
<i>Dicaeum hirundinaceum</i>	Mistletoebird	P	✓	✓	✓

<i>Dicrurus bracteatus</i>	Spangled Drongo	P		✓	
<i>Dromaius novaehollandiae</i>	Emu	P	✓		
<i>Egretta novaehollandiae</i>	White-faced Heron	P	✓	✓	✓
<i>Elanus axillaris</i>	Black-shouldered Kite	P	✓	✓	✓
<i>Euseyornis melanops</i>	Black-fronted Dotterel	P	✓	✓	✓
<i>Eolophus roseicapillus</i>	Galah	P	✓	✓	✓
<i>Eopsaltria australis</i>	Eastern Yellow Robin	P	✓	✓	✓
<i>Eurystomus orientus</i>	Dollarbird	P	✓		
<i>Falco berigora</i>	Brown Falcon	P	✓	✓	✓
<i>Falco cenchroides</i>	Nankeen Kestrel	P	✓	✓	✓
<i>Falco longipennis</i>	Australian Hobby	P		✓	
<i>Falco peregrinus</i>	Peregrine Falcon	P	✓	✓	
<i>Falunculus frontatus</i>	Eastern Shrike-tit	P	✓	✓	✓
<i>Fulica atra</i>	Eurasian Coot	P	✓	✓	✓
<i>Gallianula tenebrosa</i>	Dusky Moorhen	P	✓	✓	✓
<i>Glossopsitta concinna</i>	Musk Lorikeet	P	✓	✓	✓
<i>Grallina cyanoleuca</i>	Magpie-Lark	P	✓	✓	✓
<i>Gymnorhina tibicen</i>	Australian Magpie	P	✓	✓	✓
<i>Haliaeetus leucogaster</i>	White-bellied Sea-Eagle	P	✓	✓	✓
<i>Haliastur sphenurus</i>	Whistling Kite	P	✓	✓	✓
<i>Hieraaetus morphnoides</i>	Little Eagle	P	✓		
<i>Himantopus himantopus</i>	Black-winged Stilt	P	✓	✓	✓
<i>Hirundapus caudacutus</i>	White-throated Needletail	P		✓	
<i>Hirundo neoxena</i>	Welcome Swallow	P	✓	✓	✓
<i>Lalage tricolor</i>	White-winged Triller	P	✓		✓
<i>Larus novaehollandiae</i>	Silver Gull	P	✓	✓	✓
<i>Leucosarcia melanoleuca</i>	Wonga Pigeon	P	✓	✓	✓
<i>Lichenostomus chrysopterus</i>	Yellow-faced Honeyeater	P	✓	✓	✓
<i>Lichenostomus fuscus</i>	Fuscous Honeyeater	P	✓	✓	
<i>Lichenostomus leucotis</i>	White-eared Honeyeater	P	✓	✓	✓
<i>Lichenostomus melanops</i>	Yellow-tufted Honeyeater	P	✓	✓	✓
<i>Lichenostomus penicillatus</i>	White-plumed Honeyeater	P	✓		
<i>Limosa lapponica</i>	Bar-tailed Godwit	P	✓	✓	✓
<i>Malurus cyaneus</i>	Superb Fairy-Wren	P	✓	✓	✓
<i>Manorina melanocephala</i>	Noisy Miner	P	✓	✓	✓
<i>Manorina melanophrys</i>	Bell miner	P	✓	✓	✓
<i>Melanodryas cucullata</i>	Hooded Robin	V	✓	✓	✓
<i>Meliphaga lewinii</i>	Lewin's Honeyeater	P	✓	✓	✓
<i>Melithreptus brevirostris</i>	Brown-headed Honeyeater	P	✓	✓	
<i>Melithreptus lunatus</i>	White-naped Honeyeater	P	✓	✓	✓
<i>Menura novaehollandiae</i>	Superb Lyrebird	P	✓	✓	✓
<i>Merops ornatus</i>	Rainbow Bee-eater	P	✓		
<i>Microeca fascinans</i>	Jacky Winter	P	✓	✓	✓
<i>Morus serrator</i>	Australasian Gannet	P	✓		✓
<i>Myiagra cyanoleuca</i>	Satin Flycatcher	P	✓	✓	✓
<i>Myiagra inquieta</i>	Restless Flycatcher	P	✓	✓	✓
<i>Myiagra rubecula</i>	Leaden Flycatcher	P	✓	✓	✓
<i>Neochmia temporalis</i>	Red-browed Finch	P	✓	✓	✓
<i>Ninox boobook</i>	Southern Boobook	P	✓		
<i>Oriolus sagittatus</i>	Olive-backed Oriole	P	✓	✓	✓
<i>Pachycephala pectoralis</i>	Golden Whistler	P	✓	✓	✓
<i>Pachycephala rufiventris</i>	Rufous Whistler	P	✓	✓	✓
<i>Pardalotus punctatus</i>	Spotted Pardalote	P	✓	✓	✓
<i>Pardalotus striatus</i>	Striated Pardalote	P	✓	✓	✓
<i>Pelecanus conspicillatus</i>	Australian Pelican	P	✓	✓	✓
<i>Petrochelidon nigricans</i>	Tree Martin	P	✓	✓	✓
<i>Petroica boodang</i>	Scarlet Robin	P	✓	✓	✓
<i>Petroica phoenicea</i>	Flame Robin	P	✓	✓	✓
<i>Petroica rosea</i>	Rose Robin	P	✓		✓
<i>Phalacrocorax carbo</i>	Great Cormorant	P	✓	✓	✓

Phalacrocorax melanoleucos	Little Pied Cormorant	P	✓	✓	✓
Phalacrocorax sulcirostris	Little Black Cormorant	P	✓	✓	✓
Phalacrocorax varius	Pied Cormorant	P	✓	✓	✓
Phaps chalcoptera	Common Bronzewing	P	✓	✓	✓
Philemon corniculatus	Noisy Friarbird	P	✓	✓	✓
Pholidonyris pyrrhoptera	Crescent Honeyeater	P	✓	✓	✓
Phylidonyris novaehollandiae	New Holland Honeyeater	P	✓	✓	✓
Platalea flavipes	Yellow-billed Spoonbill	P	✓	✓	✓
Platalea regia	Royal Spoonbill	P	✓	✓	✓
Platyercus adscitus eximius	Eastern Rosella	P	✓	✓	✓
Platyercus elegans	Crimson Rosella	P	✓	✓	✓
Podargus strigoides	Tawny Frogmouth	P	✓	✓	
Poliocephalus poliocephalus	Hoary-headed Grebe	P	✓	✓	✓
Porphyrio porphyrio	Purple Swamphen	P	✓	✓	✓
Psephotus haematonotus	Red-rumped Parrot	P	✓	✓	✓
Psophodes olivaceus	Eastern Whipbird	P	✓	✓	✓
Ptilonorhynchus violaceus	Satin Bowerbird	P	✓	✓	
Pyrrholaemus sagittatus	Speckled Warbler	V	✓	✓	
Rhipidura albiscapa	Grey Fantail	P	✓	✓	✓
Rhipidura leucophrys	Willie Wagtail	P	✓	✓	✓
Sericornis frontalis	White-browed Scrubwren	P	✓	✓	✓
Smicronis brevirostris	Weebill	P	✓		
Stagonopleura guttata	Diamond Firetail	V	✓	✓	
Sterna bergii	Crested Tern	P	✓	✓	✓
Sterna caspia	Caspian Tern	P	✓	✓	✓
Strepera graculina	Pied Currawong	P	✓	✓	✓
Strepera versicolor	Grey Currawong	P	✓	✓	✓
Tachybaptus novaehollandiae	Australasian Grebe	P	✓	✓	✓
Tadorna tadornoides	Australian Shelduck	P	✓	✓	✓
Thinornis rubicollis	Hooded Plover	E	✓	✓	✓
Threskiornis molucca	Australian White Ibis	P	✓	✓	✓
Threskiornis spinicollis	Straw-necked Ibis	P	✓	✓	✓
Todiramphus sanctus	Sacred Kingfisher	P	✓	✓	✓
Trichoglossus haematodus	Rainbow Lorikeet	P	✓	✓	✓
Vanellus miles	Masked Lapwing	P	✓	✓	✓
Vanellus tricolor	Banded Lapwing	P	✓	✓	✓
Zosterops lateralis	Silvereye	P	✓	✓	✓
<b>MAMMALS</b>					
Dasyurus maculatus	Spotted-tailed Quoll	V	✓		
Macropus giganteus	Eastern Grey Kangaroo	P	✓	✓	✓
Ornithorhynchus anatinus	Platypus	P	✓		
Vombatus ursinus	Common Wombat	P	✓	✓	✓
<b>REPTILES</b>					
Austrelaps superba	Copperhead	P	✓		✓
Pseudechis porphriacus	Red-bellied Black Snake	P	✓		
Pseudonaja textilis	Eastern Brown Snake	P	✓		
* Legal Status Codes under the <i>Threatened Species Conservation Act 1995</i> - E = Endangered; V = Vulnerable; P = Protected					

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