



COCO CREEK FLORA RESERVE NO. 160

SITE SPECIFIC WORKING PLAN



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This site-specific working describes the important values of an individual flora reserve and identifies site-specific priorities for management. The plan is to be read in conjunction with the Flora Reserve Plan: Background and General Management document, which identifies Forestry Corporation's broad objectives and strategies for managing flora reserves. These two documents together form the flora reserve working plan in line with the requirements of section 25 of the *Forestry Act 2012*.

1. DETAILS OF THE RESERVE

1.1 LOCATION

Coco Creek Flora Reserve is 80 kilometres southeast of the town of Walcha in Nowendoc State Forest. The reserve is in the headwaters of Coco Creek, a tributary of Cooplacurripa River in the Manning catchment. See Locality Map in Appendix 1.

1.2 KEY ATTRIBUTES OF THE RESERVE

Under the *Forestry Act 2012*, flora reserves are set apart for the preservation of native flora.

The reserve possesses the following identified attributes that are to be protected:

- » prime examples of mature warm temperate Coachwood – Sassafras rainforest with only minimal past disturbance
- » moist tablelands eucalypt forest, representative of the forest ecosystem in the area
- » an island refuge habitat for native fauna, including the Manning River Helmeted Turtle, Platypus and Spotted-tailed Quoll.

1.3 GENERAL DESCRIPTION

Area

Coco Creek Flora Reserve comprises 95 hectares and is roughly rectangular in shape. The north of the reserve borders the Bicentennial National Trail.

Topography

The reserve ranges in altitude from 790 to 930 metres above sea level and principally includes the southern fall of a main ridgeline and a few lesser spurs at the head of Coco Creek.

The undulating Walcha-Yarrowitch basaltic plateau extends to the northern part of the reserve and the terrain then drops away quickly in a series of shelves into Coco Creek some 150m below the plateau. Aspect of the reserve is generally southerly.

Geology and Soils

The soils of the reserve cover a gradation from fertile, basalt red loams to metamorphosed sedimentary soil. The Woolamin sedimentary soils generally have cherts, schists, claystones, jasper and quartzite as their parent materials.

Climate

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The reserve has an average annual rainfall of 1200mm with a summer maximum. The driest periods occur between June and August, and one or two snowfalls may occur each year.

Vegetation/Flora and Fauna

The reserve contains representative examples of four main forest types: Mountain Walnut, Messmate-Silvertop Stringybark, Messmate-Gum, and New England Blackbutt.

The reserve contains 55 hectares of rainforest, which has had only minimal disturbance. The rainforest is predominantly of the Warm Temperate League with a few subtropical species occurring. It is of the forest type Mountain Walnut (forest type 20) dominated by Mountain Walnut (*Cryptocarya foveolata*) with associated Sassafras (*Doryphora sassafras*), Prickly Ash (*Orites excelsa*) and Brown Possumwood (*Quintinia spp.*).

The eucalypt stands have a sparse understorey reflecting in part, the past occurrence of fairly frequent fires. The boundary between the rainforest and eucalypt forest is sharply defined by wildfires, which do not normally penetrate the rainforest. The absence of fire, the sheltered location and deep fertile soil, contribute to the continued development of the rainforest area.

The reserve is located in an isolated block of native forest surrounded by Exotic Pine Plantations and cleared farmland. The reserve provides an island refuge for fauna within the predominantly cleared pastoral land. Appendix 2 and 3 outline a list of flora and fauna species known to occur within the reserve.

1.4 HISTORY

Aboriginal History and Cultural Values

Coco Creek Flora Reserve is situated within the traditional lands of the Biripi people and there are a number of Aboriginal cultural heritage sites located within or within the surrounding area. The area is part of a cultural landscape, used for everyday and ceremonial activities including seasonal food and resource gathering. The area is part of a significant ridge providing a travel route from the mountains to the coast. Tangible aspects of these activities are evident as walking tracks and scar trees, the remains of camp sites with stone tools (isolated stone artefact and artefact scatters) as well as sacred features and places created at the beginning of time.

Post European Settlement

Harvesting

The early logging history of the reserve is associated with its easy accessibility and proximity to the settlement of Nowendoc.

There is evidence of very selective logging early in the century for red cedar and rosewood in the rainforest area using cross-cut saw and axe. Although, there is still good examples of red cedar and rosewood remaining within the reserve.

The surrounding hardwood was selectively logged in 1972. There is evidence of earlier logging of Sydney Blue Gum with boards, cross-cut saw and axe.

Fire

Fire has been part of the Australian landscape for at least the last 60,000 years and most forests have experienced fire multiple times over many centuries. Fire very seldom enters the extreme edges of the rainforest while the surrounding hardwood has been regularly burnt. The fire records prior to 1950 are incomplete but severe wildfires affected the area in the summers of 1953/54, 1957/58, 1964/65, 1968/69, 1979/80, 1980/81 and 2019/20.

Establishment of Flora Reserve

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The area was set aside as a reserve to protect the area of rainforest with associated eucalypt forest stands as a representative sample of the vegetation occurring before surrounding forest were cleared for grazing or pine plantation. The area illustrates well the effect of soil and topography upon the vegetation.

The area was gazetted as Coco Creek Flora Reserve No. 160 on 22nd December 1993 and notified in the Government Gazette No. 310 on 21st of January 1994.

1.5 CURRENT USAGE

The reserve receives limited use by bushwalkers, researchers and school groups. The reserve also receives traffic driving past the reserve on The Bicentennial National Trail. No recreational facilities are provided at the reserve and there is no intention to develop any facilities.

2. SYSTEM OF MANAGEMENT

2.1 OBJECTIVES OF MANAGEMENT

The objects of management will be to:

- » enhance the ecological quality of stands of mature warm temperate Coachwood – Sassafras rainforest
- » enhance the ecological quality of moist tablelands eucalypt forest
- » preserve native flora and fauna, including the Manning River Helmeted Turtle, Platypus and Spotted-tailed Quoll.
- » provide an island refuge for native fauna
- » Aboriginal cultural heritage sites and cultural values.

2.2 MANAGEMENT STRATEGIES

The broad management strategies and related actions to preserve native flora and improve the value and extent of habitat in State forest flora reserves are detailed in the Flora Reserve Management Plan: Background and General Management document, which is to be read in conjunction with this plan. Specific additional management strategies applied in this flora reserve include:

- » Property maintenance, through:
 - establishment and maintenance of appropriate fences, gates and signs
 - removal of unnecessary fencing
 - maintenance of roads and trails
 - restricting visitor use to walking trails for educational activities.
- » Conservation and improvement of habitat, through:
 - maintenance of native vegetation which may include manipulation by mechanical means for habitat improvement
 - regeneration of any cleared or degraded land, through plantings and natural recruitment
 - weed control
 - removal of rubbish

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- management of human disturbance, including harvesting and other forest product operations
 - retention of dead timber and other habitat resources
 - management of fire, including prescribed or hazard reduction burning.
- » Pest animal control.

Cultural Values

Explore opportunities for Aboriginal community involvement in managing the flora reserve.

Weeds

The vegetation within the flora reserve is in very healthy state with no obvious weeds present. As far as reasonably practicable, exotic species will be controlled, as detailed in section 2.4.

Trail maintenance

Maintenance of roads and trails is important to enable access to the forest for forest management, firefighting, tourism and recreation. Poorly maintained roads can also transport significant levels of sediment, increasing the turbidity of water within creeks. This consequently reduces habitat quality and aquatic biodiversity and can take significant periods of time to recover.

Permitted activities

Under the Forest Management Zoning (FMZ) system, Coco Creek Flora Reserve is zoned FMZ 1 and therefore contributes to the dedicated reserve system in the Lower North East Region. Management will be consistent with the requirements of JANIS dedicated reserves.

The latest operational guide detailing information not permitted in FMZ1 is published on the Forestry Corporation website.

The following activities may be permitted subject to standard conditions approved by the delegated Manager and consistent with the management objectives for the reserve, codes of practice, forest practices/operational circulars, protocols, licenses and management/recovery plans:

- » scientific studies (e.g., fauna surveys including trapping)
- » maintenance of existing roads and fire trails
- » maintenance of existing recreation facilities and upgrading where necessary to keep pace with demand while protecting the attributes of the Reserve
- » limited tree and or limb removal for safety, viewing or construction of facilities in areas used for recreation
- » pest animal and weed control
- » general access for activities such as bush walking, photography and nature study
- » beekeeping (existing set-down sites may be used)
- » Aboriginal use of forest products is consistent with the maintenance of the conservation attributes to be protected in the reserve
- » fire management will be undertaken in a manner consistent with maintaining the health of forest ecosystems.

The following activities may only be permitted with special conditions:

- » Construction of new roads. Construction will only be permitted in exceptional instances and consistent with the following principles:

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- no practical alternative is available
- the attributes of the Reserve will not be significantly affected by the road or fire trail
- opportunity is provided for public comment on the proposal, obtained through advertising in the local newspaper
- Ministerial approval is given for the proposal.

Mining

There are no gazetted exemptions from provisions of the *Mining Act 1992* for this flora reserve.

2.3 MANAGEMENT RESPONSIBILITY

The reserve will be administered by Forestry Corporation of NSW's Hardwood Forests Division, with the authority for decision making delegated to the Senior Manager Forest Stewardship or equivalent level manager.

2.4 MONITORING, REPORTING AND REVIEW

Forestry Corporation will monitor changes to the key attributes of the reserve and will review the effectiveness of the management strategies designed to protect those attributes and to achieve the management objectives.

The results of this monitoring, review and management response will be included in annual reporting processes.

The provisions of this working plan will be amended, if necessary, in light of the results of the monitoring program and / or legislative change and with the approval of the Minister administering the *Forestry Act 2012*.

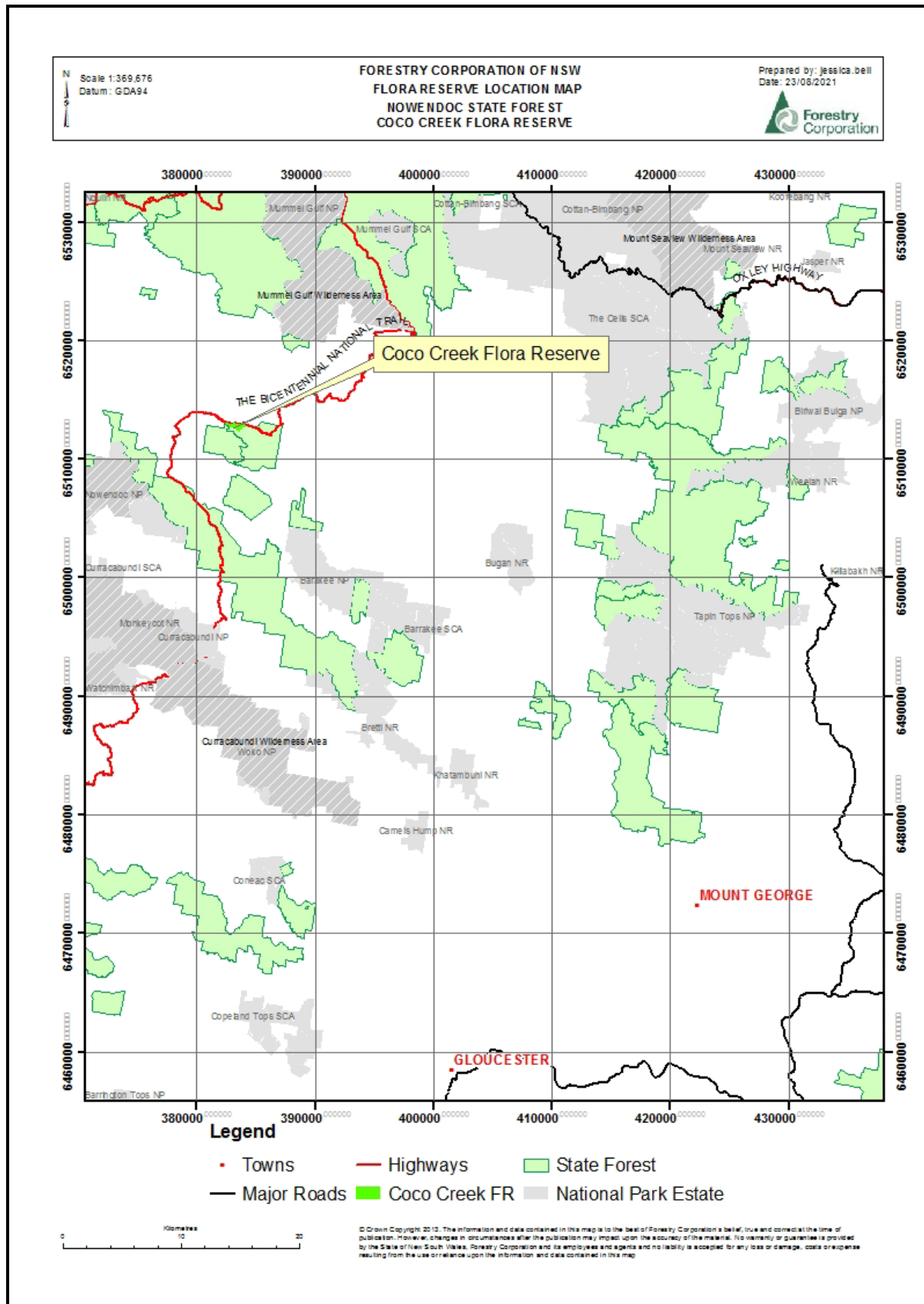
3. LIST OF APPENDICES

- » Appendix 1 – Locality Map
- » Appendix 2 – Flora Species List
- » Appendix 3 – Fauna Species List
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APPENDIX 1 – LOCALITY MAP



APPENDIX 2 – FLORA SPECIES LIST

Flora found within 5000m of flora reserve, desktop search undertaken August 2021

Scientific name	Scientific name	Scientific name
<i>Acacia blakei</i> subsp. <i>diphylla</i>	<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>	<i>Entolasia stricta</i>
<i>Acacia floribunda</i>	<i>Chrysocephalum apiculatum</i>	<i>Eragrostis</i> spp.
<i>Acacia implexa</i>	<i>Cirsium vulgare</i>	<i>Eucalyptus cameronii</i>
<i>Acacia irrorata</i>	<i>Cissus antarctica</i>	<i>Eucalyptus campanulata</i>
<i>Acacia maidenii</i>	<i>Cissus hypoglauca</i>	<i>Eucalyptus carnea</i>
<i>Acacia melanoxylon</i>	<i>Clerodendrum tomentosum</i>	<i>Eucalyptus eugenioides</i>
<i>Acacia serpentinicola</i>	<i>Correa reflexa</i> var. <i>reflexa</i>	<i>Eucalyptus laevopinea</i>
<i>Acacia ulicifolia</i>	<i>Crassula sieberiana</i>	<i>Eucalyptus moluccana</i>
<i>Acmena smithii</i>	<i>Cryptandra amara</i> var. <i>floribunda</i>	<i>Eucalyptus nobilis</i>
<i>Adiantum formosum</i>	<i>Cryptocarya foveolata</i>	<i>Eucalyptus obliqua</i>
<i>Alangium villosum</i> subsp. <i>polyosmoides</i>	<i>Cryptocarya glaucescens</i>	<i>Eucalyptus pauciflora</i>
<i>Allocasuarina littoralis</i>	<i>Cryptocarya meissneriana</i>	<i>Eucalyptus radiata</i> subsp. <i>sejuncta</i>
<i>Allocasuarina torulosa</i>	<i>Cymbopogon refractus</i>	<i>Eucalyptus saligna</i>
<i>Alphitonia excelsa</i>	<i>Daphnandra apatela</i>	<i>Eucalyptus tereticornis</i>
<i>Angophora floribunda</i>	<i>Daphnandra micrantha</i>	<i>Eucalyptus viminalis</i>
<i>Angophora subvelutina</i>	<i>Daviesia acicularis</i>	<i>Euchiton sphaericus</i>
<i>Argyrodendron actinophyllum</i>	<i>Dendrobium pugioniforme</i>	<i>Euphrasia ciliolata</i>
<i>Arthropodium milleflorum</i>	<i>Dendrobium teretifolium</i>	<i>Exocarpos cupressiformis</i>
<i>Arthropteris tenella</i>	<i>Dendrocnide excelsa</i>	<i>Fimbristylis dichotoma</i>
<i>Asplenium australasicum</i>	<i>Desmodium varians</i>	<i>Gahnia aspera</i>
<i>Asplenium flabellifolium</i>	<i>Dianella caerulea</i>	<i>Galium migrans</i>
<i>Asplenium polyodon</i>	<i>Dianella revoluta</i>	<i>Geitonoplesium cymosum</i>
<i>Backhousia myrtifolia</i>	<i>Dichelachne micrantha</i>	<i>Geranium solanderi</i> var. <i>solanderi</i>
<i>Baloghia inophylla</i>	<i>Dichondra repens</i>	<i>Glycine clandestina</i>
<i>Botrychium australe</i>	<i>Dichondra</i> sp. <i>Inglewood</i>	<i>Glycine microphylla</i>
<i>Brachychiton acerifolius</i>	<i>Dicksonia antarctica</i>	<i>Gonocarpus humilis</i>
<i>Brachyscome aculeata</i>	<i>Dictymia brownii</i>	<i>Guilfoylia monostylis</i>
<i>Brunoniella australis</i>	<i>Diospyros australis</i>	<i>Gynochthodes jasminoides</i>
<i>Bursaria spinosa</i>	<i>Diuris sulphurea</i>	<i>Haloragis heterophylla</i>
<i>Caesia parviflora</i>	<i>Dodonaea triquetra</i>	<i>Hardenbergia violacea</i>
<i>Caldcluvia paniculosa</i>	<i>Doryphora sassafras</i>	<i>Hibbertia obtusifolia</i>
<i>Callistemon rigidus</i>	<i>Dysoxylum fraserianum</i>	<i>Hibbertia riparia</i>
<i>Cardamine paucijuga</i>	<i>Dysoxylum rufum</i>	<i>Hibbertia scandens</i>
<i>Carex breviculmis</i>	<i>Echinopogon caespitosus</i>	<i>Hybanthus monopetalus</i>
<i>Cassinia leptocephala</i> subsp. <i>leptocephala</i>	<i>Echinopogon nutans</i>	<i>Hydrocotyle acutiloba</i>
<i>Casuarina cunninghamiana</i> subsp. <i>cunninghamiana</i>	<i>Ehretia acuminata</i> var. <i>acuminata</i>	<i>Hypericum gramineum</i>
<i>Centella asiatica</i>	<i>Elaeodendron australe</i>	<i>Hypochaeris radicata</i>
<i>Cheilanthes sieberi</i>	<i>Elattostachys nervosa</i>	<i>Hypoestes floribunda</i> var. <i>pubescens</i>

Scientific name
<i>Imperata cylindrica</i>
<i>Indigofera australis</i>
<i>Jacksonia scoparia</i>
<i>Juncus australis</i>
<i>Lagenifera stipitata</i>
<i>Lastreopsis decomposita</i>
<i>Leptospermum brevipes</i>
<i>Leucanthemum vulgare</i>
<i>Leucopogon lanceolatus</i> var. <i>lanceolatus</i>
<i>Leucopogon neoanglicus</i>
<i>Lissanthe strigosa</i>
<i>Lissanthe strigosa</i> subsp. <i>strigosa</i>
<i>Lobelia purpurascens</i>
<i>Lomandra filiformis</i> subsp. <i>filiformis</i>
<i>Lomandra longifolia</i>
<i>Lomandra spicata</i>
<i>Marsdenia lloydii</i>
<i>Melia azedarach</i>
<i>Microlaena stipoides</i> var. <i>stipoides</i>
<i>Microsorium scandens</i>
<i>Opercularia diphylla</i>
<i>Oxalis exilis</i>
<i>Oxytes brachypoda</i>
<i>Pandorea pandorana</i>
<i>Panicum effusum</i>
<i>Pellaea falcata</i>
<i>Pennantia cunninghamii</i>
<i>Peperomia tetraphylla</i>

Scientific name
<i>Persoonia cornifolia</i>
<i>Persoonia media</i>
<i>Phytolacca octandra</i>
<i>Picris angustifolia</i> subsp. <i>angustifolia</i>
<i>Pittosporum multiflorum</i>
<i>Plantago hispida</i>
<i>Plectranthus graveolens</i>
<i>Plectranthus parviflorus</i>
<i>Poa labillardierei</i> var. <i>labillardierei</i>
<i>Poa meionectes</i>
<i>Poa sieberiana</i>
<i>Polygala japonica</i>
<i>Polymeria calycina</i>
<i>Polyosma cunninghamii</i>
<i>Polyscias murrayi</i>
<i>Polystichum proliferum</i>
<i>Pomaderris vellea</i>
<i>Poranthera microphylla</i>
<i>Pteridium esculentum</i>
<i>Pteris umbrosa</i>
<i>Pterostylis longifolia</i>
<i>Pterostylis nutans</i>
<i>Pyrrosia confluens</i> var. <i>confluens</i>
<i>Ranunculus lappaceus</i>
<i>Ripogonum discolor</i>
<i>Robinia pseudoacacia</i>
<i>Rubus parvifolius</i>
<i>Rytidosperma racemosum</i> var. <i>racemosum</i>

Scientific name
<i>Rytidosperma</i> spp.
<i>Schizomeria ovata</i>
<i>Schoenus apogon</i>
<i>Scleranthus biflorus</i>
<i>Senecio amygdalifolius</i>
<i>Senecio diaschides</i>
<i>Senecio lautus</i>
<i>Senecio quadridentatus</i>
<i>Senna barronfieldii</i>
<i>Sigesbeckia orientalis</i> subsp. <i>orientalis</i>
<i>Smilax glycyphylla</i>
<i>Solanum aviculare</i>
<i>Solanum brownii</i>
<i>Solenogyne bellioides</i>
<i>Sporobolus africanus</i>
<i>Sporobolus creber</i>
<i>Stackhousia viminea</i>
<i>Styphelia perileuca</i>
<i>Synoum glandulosum</i> subsp. <i>glandulosum</i>
<i>Syzygium australe</i>
<i>Themeda triandra</i>
<i>Vernonia cinerea</i>
<i>Veronica plebeia</i>
<i>Viola betonicifolia</i>
<i>Wahlenbergia stricta</i>
<i>Xanthorrhoea glauca</i>
<i>Xanthorrhoea glauca</i> subsp. <i>glauca</i>
<i>Zieria smithii</i>

APPENDIX 3 – FAUNA SPECIES LIST

Fauna found within 5000m of flora reserve, desktop search undertaken August 2021

Amphibians and reptiles	
Scientific name	Common name
<i>Litoria fallax</i>	Eastern Dwarf Tree Frog
<i>Litoria phyllochroa</i>	Leaf-green Tree Frog
<i>Litoria peronii</i>	Peron's Tree Frog
<i>Myuchelys purvisi</i>	Manning River Helmeted Turtle, Purvis' Turtle

Birds	
Scientific name	Common name
<i>Platycercus eximius</i>	Eastern Rosella
<i>Anas superciliosa</i>	Pacific Black Duck
<i>Aquila audax</i>	Wedge-tailed Eagle

Mammals	
Scientific name	Common name
<i>Vombatus ursinus</i>	Bare-nosed Wombat
<i>Antechinus stuartii</i>	Brown Antechinus
<i>Rattus fuscipes</i>	Bush Rat
<i>Canis lupus</i>	Dingo, domestic dog
<i>Melomys cervinipes</i>	Fawn-footed Melomys
<i>Phascolarctos cinereus</i>	Koala
<i>Ornithorhynchus anatinus</i>	Platypus
<i>Dasyurus maculatus</i>	Spotted-tailed Quoll

APPENDIX 4 – APPROVAL AND AMENDMENTS FROM PREVIOUS VERSION

In line with section 25 of the *Forestry Act 2012*, flora reserve working plans and any amendments must be approved by the Minister. This plan forms part of the working plans for each of the individual flora reserves listed in section 6.

This plan was approved by The Hon. Tara Moriarty MLC, Minister for Agriculture, Minister for Regional New South Wales and Minister for Western New South Wales

Date of approval: 6/9/23

Version	Changes	Approval details
2.0	<ul style="list-style-type: none">» Reference to the <i>Flora Reserve Plan: Background and General Management</i>» Formatting updated» Change	<ul style="list-style-type: none">» The Hon. Tara Moriarty MLC, Minister for Agriculture, Minister for Regional New South Wales and Minister for Western New South Wales, 6/9/23