

GRANGE FLORA RESERVE NO. 64

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*.

DETAILS OF THE RESERVE

1.1 LOCATION

Grange Flora Reserve is located approximately 45km northwest of the city of Grafton, in Grange State Forest. It comprises part of the upper catchment of Towgon Creek which flows northeasterly into the Clarence River. The western boundary of the reserve is shared with the State Forest boundary, the southern boundary is a ridgeline, and the eastern and northeastern boundary is formed by a watercourse. See Locality Map in Appendix 1.

1.2 KEY ATTRIBUTES OF THE RESERVE

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

- » high quality stands of Spotted Gum (*Eucalyptus maculata*), some of which is listed as High Conservation Value Old Growth
- » areas of Lowland Rainforest (a Threatened Ecological Community in the NSW North Coast Bioregion as listed in the *Biodiversity Conservation Act 2016*)
- » Aboriginal cultural sites.

1.3 GENERAL DESCRIPTION

Area

The reserve has an area of about 55 hectares.

Topography

The reserve has a gently undulating surface with an easterly drainage pattern. Elevation lies between 490 and 535 metres above sea level. Refer to Appendix 2 for topographic map.

Geology and Soils

Grange Flora Reserve is within the Grange Landform. The Grange Landform is underlain by Ordovician-Silurian metamorphics and has two major outcroppings of Permian granite and granodiorite, which however do not occur in or directly influence the reserve.

Soils are generally of moderate fertility and are derived from ancient parent material such as argillites, phyllites, slates, mudstones, and greywacke with varying amounts of quartz present, and are generally very stable and resistant to erosion. Red podsolics are predominant.

Climate

Warm temperate. Average annual rainfall is approximately 1300mm, falling predominantly in summer and autumn months.

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Vegetation / flora and fauna

The major feature of this reserve is the presence of high-quality stands of Spotted Gum (*Eucalyptus maculata*), some of which is classified as High Conservation Value Old Growth. Stands of Spotted Gum cover all but a small section in the southeast of the reserve.

Three forest types are present in the reserve, Spotted Gum (forest type 70), Spotted Gum – Grey Ironbark (forest type 74), and White Mahogany (forest type 60). The stand throughout is of wet sclerophyll forest, with the overstorey trees being of very good form. Rainforest ('brushwood') species occur in the understorey, particularly in more sheltered sites. Appendix 2 Map shows the various Forest Types and their locations within the reserve. Appendices 3 and 4 outline a list of flora and fauna species known to occur within the reserve.

1.4 HISTORY

Aboriginal History and Cultural Values

Grange Flora Reserve is situated within the traditional lands of the Bundjalung people and there are a number of Aboriginal cultural heritage sites located within the surrounding area. The area is part of a cultural landscape, used for everyday and ceremonial activities including seasonal food and resource gathering in association with the Clarence River and its tributaries, also as 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 and grazing

The reserve and surrounding state forest was undisturbed until 1967, when the Western Boundary Road was constructed in the west of the reserve. Since that time logging has occurred in adjacent areas to the reserve in Grange State Forest, followed by hazard reduction burning of the logging debris.

The reserve was included within an area covered by Occupation Permit No. 13556, for grazing, but because of the moist understorey and the distance of the reserve from the areas normally used for grazing under the Occupation Permit, little if any of the reserve has been grazed.

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. General control burning over the reserve and surrounding area has been carried out during favourable weather conditions periodically.

Most recently wildfire entered the reserve in the 2019/20 summer season, with low to medium intensity recorded, resulting in a burnt understorey along the east of the reserve and a partially burnt canopy in discrete areas. Additional fire history is detailed below:

- » 2000 wildfire
- » 2002 wildfire
- » 2005 wildfire
- » 2013 wildfire
- » 2019 wildfire.

Establishment of Flora Reserve

The area was gazetted as Flora Reserve No. 80024 on 30th November 1984. In a general renumbering of Flora Reserves in the Government Gazette of 24th July 1987, the reserve became Grange Flora Reserve No. 64.

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1.5 CURRENT USAGE

The reserve receives limited recreational usage, primarily by visitors driving through the reserve on Western Boundary Road. No recreational facilities are provided at the reserve and there is no intention to develop any facilities.

SYSTEM OF MANAGEMENT

2.1 OBJECTIVES OF MANAGEMENT

Under the *Forestry Act 2012*, flora reserves are set apart for the preservation of native flora. The objectives of Grange Flora Reserve are to:

- » protect the high-quality stands of Spotted Gum (*Eucalyptus maculata*), some of which is listed as High Conservation Value Old Growth
- » enhance the ecological quality of the areas of Lowland Rainforest (a Threatened Ecological Community in the NSW North Coast Bioregion as listed in the *Biodiversity Conservation Act* 2016)
- » protect Aboriginal cultural heritage sites and cultural values
- maintain reference stands and provide for limited scientific study consistent with the protection of the area, including the development of an understanding of successional growth processes after disturbance and as a reference for assessing the effects of alternative land use in surrounding areas.

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 may 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
 - management of human disturbance, including harvesting and other forest product operations
 - retention of dead timber and other habitat resources
 - fire management, including cultural burning in a manner consistent with maintaining the health of forest ecosystems and in consultation with local Aboriginal communities.

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» 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, Grange Flora Reserve N. 64 is zoned FMZ 1 and therefore contributes to the dedicated reserve system in the Upper North East Region. Management will be consistent with the requirements of JANIS dedicated reserves and the area cannot be revoked except by an act of Parliament.

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

The following activities may be permitted subject to standard conditions approved by Forestry Corporation's Hardwood Forest Division Manager and consistent with the, relevant 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
- » limited tree and or limb removal for safety
- » 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 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:
 - 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.

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Mining

The reserve was exempted from the provisions of the *Mining Act 1992* by notice in the Government Gazette of 14th February 1986.

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

The region 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.

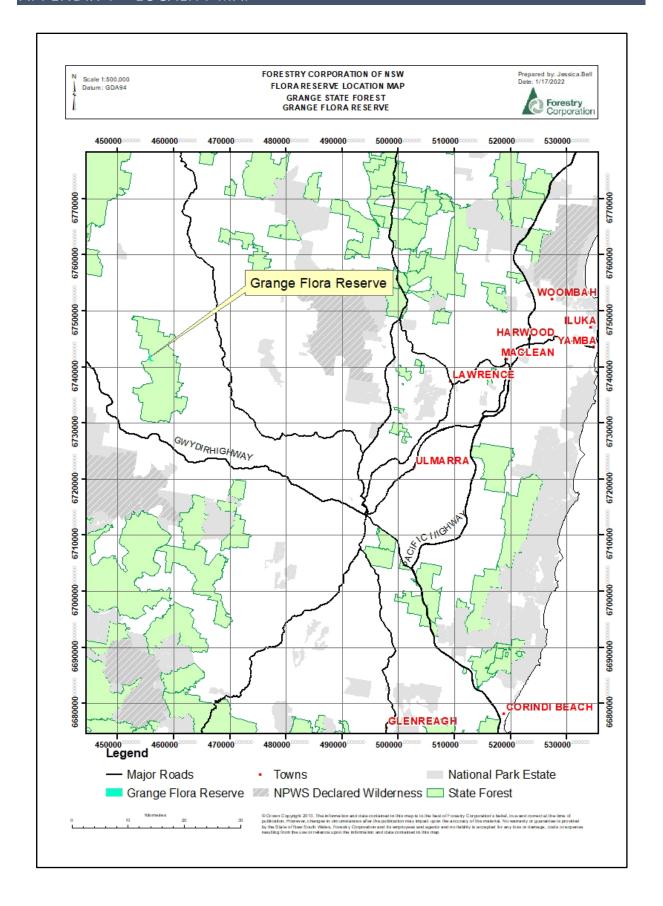
The results of this monitoring, review and management response will be included in annual reporting processes.

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.

LIST OF APPENDICES

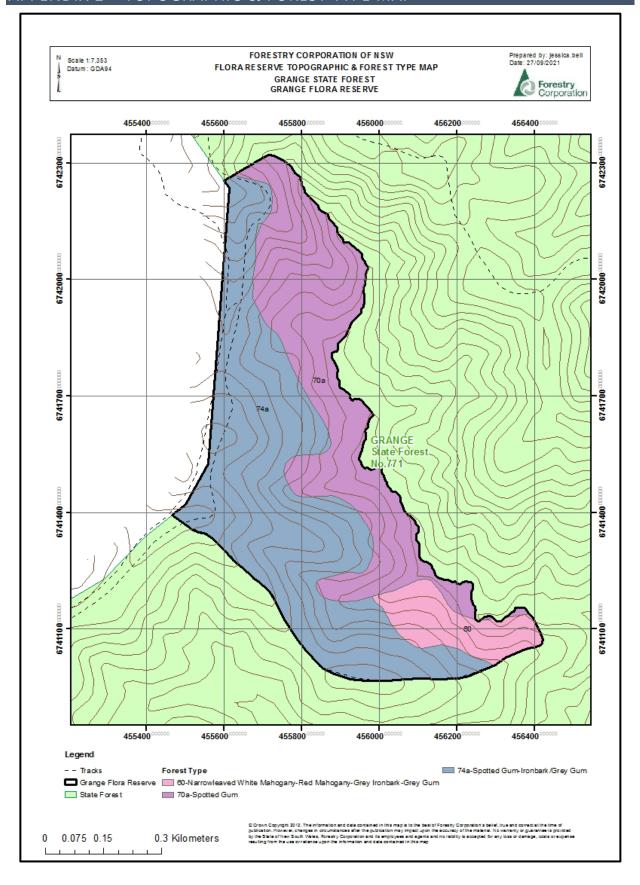
- » Appendix 1 Locality Map
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APPENDIX 1 – LOCALITY MAP



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APPENDIX 2 – TOPOGRAPHIC & FOREST TYPE MAP



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

Colonia Coloni
Scientific name
Abildgaardia ovata
Acacia irrorata
Acacia irrorata subsp.
irrorata
Acacia irrorata subsp.
velutinella
Acacia longifolia
Acacia maidenii
Acacia melanoxylon
Acacia spp.
Acalypha nemorum
Acmena smithii
Acronychia oblongifolia
Adiantum aethiopicum
Adiantum diaphanum
Adiantum formosum
Adiantum hispidulum
Adiantum silvaticum
Ageratina adenophora
Ajuga australis
Alectryon subcinereus
Allocasuarina torulosa
Alocasia brisbanensis
Alphitonia excelsa
Alpinia caerulea
Aneilema acuminatum
Aphanopetalum resinosum
Arachniodes aristata
Archirhodomyrtus beckleri
Archontophoenix
cunninghamiana
Arthropteris tenella
Asplenium attenuatum
Asplenium australasicum
Austrosteenisia blackii var.
blackii
Backhousia myrtifolia
Bidens pilosa
Billardiera scandens
Blechnum cartilagineum

Blechnum neohollandicum

<u> </u>
Scientific name
Blechnum spinulosum
Boehmeria macrophylla
Breynia oblongifolia
Brunoniella australis
Bulbine bulbosa
Bulbophyllum exiguum
Caladenia carnea
Calanthe triplicata
Caldcluvia paniculosa
Calochlaena dubia
Carex appressa
Carex breviculmis
Carex declinata
Cayratia clematidea
Celastrus australis
Celastrus subspicata
Cenchrus caliculatus
Centella asiatica
Cephalaralia cephalobotrys
Cheilanthes distans
Cirsium vulgare
Cissus antarctica
Cissus hypoglauca
Claoxylon australe
Clematis aristata
Clematis glycinoides
Clematis spp.
Clerodendrum tomentosum
Commelina cyanea
Conyza bonariensis
Conyza spp.
Cordyline petiolaris
Cordyline stricta
Corymbia intermedia
Corymbia maculata
Corymbia variegata
Croton verreauxii
Cryptocarya microneura
Cryptocarya obovata
Cryptocarya rigida

Scientific name
Cuttsia viburnea
Cyathea australis
Cyathea cooperi
Cymbidium suave
Cymbopogon refractus
Cyperus disjunctus
Cyperus gracilis
Cyperus laevis
Cyperus spp.
Cyperus tetraphyllus
Daphnandra apatela
Davallia solida var. pyxidata
Dendrobium aemulum
Dendrobium tetragonum
Dendrobium x gracillimum
Denhamia bilocularis
Denhamia celastroides
Dennstaedtia davallioides
Derris involuta
Desmodium nemorosum
Desmodium rhytidophyllum
Desmodium varians
Dianella caerulea
Dianella caerulea var.
producta
Dianella spp.
Dichondra repens
Dichopogon strictus
Dictymia brownii
Digitaria parviflora
Digitaria spp.
Dioscorea transversa
Diospyros australis
Diploglottis australis
Doodia australis
Drypetes deplanchei
Dysoxylum rufum
Echinopogon caespitosus
Echinopogon ovatus
Ehretia acuminata var.
acuminata

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Scientific name
Elatostema reticulatum
Embelia australiana
Endiandra muelleri
Endiandra sieberi
Endiandra virens
Entolasia marginata
Entolasia stricta
Eragrostis brownii
Eremophila debilis
Eucalyptus acmenoides
Eucalyptus campanulata
Eucalyptus carnea
Eucalyptus interstans
Eucalyptus laevopinea
Eucalyptus microcorys
Eucalyptus pilularis
Eucalyptus propinqua
Eucalyptus resinifera
Eucalyptus saligna
Eucalyptus siderophloia
Eucalyptus tindaliae
Eupomatia laurina
Euroschinus falcatus var.
falcatus
Eustrephus latifolius
Ficus coronata
Gahnia melanocarpa
Galium gaudichaudii
Galium migrans
Galium propinquum
Gamochaeta purpurea
Geitonoplesium cymosum
Geranium homeanum
Geranium potentilloides
Geranium solanderi
Geranium solanderi var.
solanderi Caranium son
Geranium spp.
Glochidion ferdinandi
Glycine clandestina
Gomphocarpus fruticosus
Gomphocarpus physocarpus
Gompholobium spp.
Gonocarpus tetragynus
Goodenia hederacea
Goodenia rotundifolia

Scientific name
Guioa semiglauca
-
Gymnostachys anceps
Gynochthodes jasminoides
Hackelia latifolia
Hardenbergia violacea
Hibbertia aspera
Hibbertia dentata
Hibbertia linearis
Hibbertia obtusifolia
Hibbertia scandens
Hodgkinsonia ovatiflora
Homalanthus populifolius
Hybanthus stellarioides
Hydrocotyle acutiloba
Hydrocotyle laxiflora
Hydrocotyle sibthorpioides
Hydrocotyle spp.
Hymenosporum flavum
Hypericum gramineum
Hypochaeris radicata
Hypolepis glandulifera
Imperata cylindrica
Indigofera australis
Jacksonia scoparia
Juncus usitatus
Kennedia rubicunda
Lagenophora gracilis
Lantana camara
Lastreopsis decomposita
Lastreopsis microsora subsp.
microsora
Lastreopsis munita
Lepidosperma laterale
Leucopogon lanceolatus
Lindsaea linearis
Linospadix monostachyos
Lobelia purpurascens
Lobelia trigonocaulis
Logania albiflora
Lomandra confertifolia
Lomandra filiformis
Lomandra filiformis subsp.
filiformis
Lomandra hystrix
Lomandra longifolia
Lorriana a longijona

Scientific name
Lomandra multiflora subsp.
multiflora
Lomandra spp.
Lomatia silaifolia
Lophostemon confertus
Marsdenia flavescens
Marsdenia rostrata
Medicago intertexta
Microlaena stipoides
Monotoca scoparia
Muellerina celastroides
Myrsine variabilis
Neolitsea dealbata
Notelaea longifolia f. glabra
Olearia oppositifolia
Olearia spp.
Opercularia aspera
Oplismenus aemulus
Oplismenus imbecillis
Orites excelsus
Oxalis chnoodes
Oxalis corniculata
Oxalis radicosa
Oxytes brachypoda
Pandorea pandorana
Panicum effusum
Papillilabium beckleri
Parsonsia induplicata
Parsonsia straminea
Passiflora herbertiana
Patersonia sericea
Pellaea falcata
Peperomia blanda var.
floribunda
Persoonia stradbrokensis
Phyllanthus gunnii
Phyllanthus hirtellus
Phyllanthus similis
Phyllanthus spp.
Picris angustifolia subsp.
angustifolia
Pimelea latifolia
Pimelea ligustrina
Piper hederaceum var.
hederaceum Dittornorum multiflorum
Pittosporum multiflorum

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Scientific name
Pittosporum revolutum
Pittosporum undulatum
Platycerium bifurcatum
Platycerium superbum
Plectranthus graveolens
Plectranthus parviflorus
Plectranthus spp.
Poa labillardierei var.
labillardierei
Poa sieberiana
Poa spp.
Pollia crispata
Polygala japonica
Polyscias elegans
Polyscias sambucifolia
Poranthera microphylla
Pseuderanthemum variabile
Psychotria loniceroides
Pteridium esculentum
Pteris tremula
Pteris umbrosa
Pterostylis pedunculata
Pyrrosia confluens var.
confluens
Pyrrosia rupestris
Pyrrosia spp.
Ranunculus lappaceus
Rhodamnia rubescens

Ripogonum album

Scientific name
Ripogonum fawcettianum
Rubus moluccanus var.
trilobus
Rubus parvifolius
Rubus rosifolius
Rytidosperma bipartitum
Sarcochilus falcatus
Sarcochilus parviflorus
Schizaea bifida
Schizomeria ovata
Scolopia braunii
Senecio amygdalifolius
Senecio lautus
Senecio madagascariensis
Senecio spp.
Sigesbeckia orientalis subsp.
orientalis
Smilax australis
Smilax glyciphylla
Solanum aviculare
Solanum densevestitum
Solanum prinophyllum
Solanum pungetium
Solenogyne bellioides
Sorghum leiocladum
Stephania japonica
Swainsona galegifolia
Syncarpia glomulifera

Scientif	ic name
Synoum	glandulosum subsp.
glandul	osum
Syzygiui	m australe
Syzygiui	m oleosum
Taberno	nemontana
pandac	aqui
Tapeino	
	ambosa
Tasman	nia insipida
Tetrasti	gma nitens
Teucriui	m corymbosum
Themea	la triandra
Trema t	omentosa var.
aspera	
	enia cunninghamii
Trochoc	arpa laurina
Tylopho	ra paniculata
Vernoni	a cinerea
Veronic	a plebeia
Viola be	rtonicifolia
Viola he	deracea
Wilkiea	huegeliana
Xanthor	rhoea johnsonii
Xanthor	rhoea latifolia
Xanthor	rhoea malacophylla
Xanthor	rhoea spp.
Xerochr	ysum bracteatum
Youngia	i japonica
Zieria sr	

APPENDIX 4 – FAUNA SPECIES LIST

Fauna found within 5000m of reserve, desktop search undertaken September 2021			
Scientific name Common name			
Litoria fallax	Eastern Dwarf Tree Frog		
Calyptorhynchus lathami	Glossy Black-Cockatoo		
Phascolarctos cinereus	Koala		
Dasyurus maculatus	Spotted-tailed Quoll		

APPENDIX 5 – 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 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
1.0	» First version of the Paperbark Flora Reserve Working Plan	» The Hon. Tara Moriarty MLC, Minister for Agriculture, Minister for Regional New South Wales and Minister for Western New South Wales, 6/9/23