

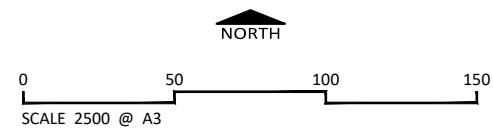
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 Boundaries are not survey accurate.  
 Although all reasonable care has been taken to ensure the information shown on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.

**Legend**

- Subject Site
- Management Zone 1
- Management Zone 2
- Management Zone 3
- Management Zone 4
- Management Zone 5

**FIGURE 4-1: MANAGEMENT ZONES**

CLIENT Client  
 SITE DETAILS No.196 Robertson Street Mudgee  
 DATE 6 November 2019



Firebird ecoSultants Pty Ltd  
 ABN - 16 105 985 993  
 Level 1, 146 Hunter Street, Newcastle NSW 2300  
 P O Box 354 Newcastle NSW 2300



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## 5 GRASSY WOODLAND RESTORATION STRATEGY

The Grassy Woodland Restoration Strategy (GWRS) will be implemented within the Conservation Area and will seek to achieve the following performance criterion:

- Within 5 years of commencement of this PoM, the loss of 265 individual *L. albicans* var. *tricolor* (Hoary Sunray) plants will be compensated by increasing the retained population of 775 to not less than 1035 ( $\pm 10\%$ ) individuals in the Conservation Area.
- The area of BGGW in the Conservation Area will be increased from 1.2 ha to at least 1.5 ha.
- The condition of the site's BGGW will be improved so that it reaches the highest condition, being 'state 1', in the *Grassy Woodlands in the Box-Gum Grassy Woodland State and Transition Model*, in Appendix 3 of DECCW (2011) (this document is provided in Appendix B of this PoM).

Restoration techniques will vary between each management zone, as discussed below.

### Management Zone 1 – Grassland Not Containing Existing Hoary Sunray

Restoration works in MZ 1 will focus on restoring the native groundlayer so that it achieves recognition as the derived grassland component of the EPBC Act listing for BGGW. Occasional canopy trees and shrubs may naturally regenerate in the area; however overall, it will be restored and maintained as a native grassland community. Effort will be made to maximise the diversity of groundlayer species; although focus will also be on establishing *L. albicans* var. *tricolor* (Hoary Sunray) in this area.

### Management Zone 2 – Grassland Containing Existing Hoary Sunray

Restoration works will not be conducted in MZ 2 unless needed. The focus here will be on preventing disturbance to existing *L. albicans* var. *tricolor* (Hoary Sunray) from any adjacent restoration works.

### Management Zone 3 – Grassy Woodland and Creekline

MZ 3 will require ongoing weed management and the natural restoration of native understorey and ground layer. Restoration in MZ 3 must focus on maximising flora species diversity in the shrub and groundlayer to improve the condition of the BGGW.

### Management Zone 4 – Vegetation Buffer

MZ 4 includes the 20 m Vegetation Buffer around the site's existing BGGW. MZ 4 is currently cleared of trees. Bushfire APZs (from adjacent dwellings) may extend into MZ 4; however, the planting of scattered trees (using tree species typical of BGGW) will be undertaken at a density that complies with the APZ requirements in the NSW Rural Fire Service (RFS) *Planning for Bush Fire Protection 2006* document. Landowners will be permitted to slash/mow the understorey/ground layer of MZ 4 in order to maintain their APZs. The restoration of scattered trees in MZ 4 will serve to increase the effectiveness of the 20 m Vegetation Buffer in protecting the BGGW from edge effects.



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## 5.1 Works to be Conducted in Management Zone I

There is an extensive knowledge base on the restoration of *L. albicans* var. *tricolor* (Hoary Sunray) and native grassland communities, particularly through work by Greening Australia's Grassy Groundcover Research Project (GGRP). The restoration techniques prescribed in this section have been developed under the guidance of techniques proven to be successful by the GGRP (as documented in Gibson-Roy and Delpratt (2015)). They will involve site assessment and preparation (e.g. reduction of nutrient and weed loads), direct seeding and maintenance.

### 5.1.1 Site Assessment

Site-specific characteristics (such as land use history and soil characteristics) must be understood prior to the commencement of restoration work. The site has a long history of use for cattle grazing and has been exposed to various management regimes aimed at pasture improvement. As a result, in some areas it contains a considerable weed load and elevated soil nutrients. Elevated soil nutrients tend to give exotic species a competitive advantage over native species (that have evolved over time in weathered, nutrient poor soil). Available nutrients in the soil thus have a critical impact on restoration success (Gibson-Roy and Delpratt, 2015). Site assessment will involve the following steps:

- A local reference site (i.e. a site within the same region supporting a healthy native grassland community) will be located. This site will be used to clarify what soil nutrient conditions support healthy native grassland and how these differ from the restoration site.
- Soil testing will be conducted in the Conservation Area. Multiple core samples down the soil profile will be taken to determine if nutrient characteristics change with depth.
- Weed bank characteristics will be examined. Additional soil cores will be sampled and pooled from several depths. The samples from separate depths will be spread thinly into labelled nursery trays to monitor and compare the identity and number of emerging seedlings.

### 5.1.2 Site Preparation

The site assessment will determine whether soil remediation is required, but it is likely that at least some of MZ 1 will require some works to manipulate nutrient and weed loads. 'Scalping' is a technique that has proven to be successful by the GGRP (as documented in Gibson-Roy and Delpratt (2015)). Scalping is the physical removal of a defined depth of soil to remove the bulk of nutrients (specifically phosphorus and nitrogen) and weed load.

Where soil remediation is required, the following techniques will be undertaken:



- Comparative soil test data from the reference site and restoration site will inform nutrient targets and scalping depths.
- Phosphorous levels below 20 mg/kg are suitable target for determining the appropriate depth to scalp.
- Scalping will follow the natural contours of the land. This maintains site variations such as depressions or rises that would suit certain species and thus enhances diversity.
- Scalping equipment used may include bobcat and dingo type excavators or road graders and elevated scrapers.
- Scalping or any other excavation works will not be conducted during wet weather.
- Scalped soil will be removed from the conservation area and utilised in the development area for landscaping purposes.

### 5.1.3 Direct Seeding

Approaches to restoration can include the use of tubestock plants, translocation of existing plants or soil sods or direct seeding. In this case, it is considered that direct seeding would be the most economically efficient approach. Notably, it is not considered that translocation of existing *L. albicans var. tricolor* (Hoary Sunray) plants in the development area would be necessary. According to Gibson-Roy and Delpratt (2015), translocation is not an effective means to reinstate complex grassland and rather, “*direct seeding is the most economical way to reintroduce native species on a medium to large scale, either singly or as complex mixes*”.

Where direct seeding is required, the following techniques will be undertaken:

- Direct seeding will involve either drill and slot seeding or broadcast seeding techniques.
- Seed must be of local provenance and must include a diverse mix of groundcover species. Appendix D provides a list of groundcover species that are typical of BGGW. As many species as are available from this list must be included in the seed mix. Effort must also be made to include species from different functional groups that perform different ecological roles. Grassland species can be classed into three simple functional groups, being tussock grasses or grass-like monocots, legumes and interstitial forbs (Gibson-Roy and Delpratt, 2015). Also note that **the seed mix must include *L. albicans var. tricolor* (Hoary Sunray) seed.**
- It is likely that seed for several of the desired species will not be available commercially. Thus, the establishment of a seed production area (SPA) will be required. The SPA must be established and managed by a suitably qualified bushland regeneration company. The SPA may be established either onsite or offsite.
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#### 5.1.4 Maintenance

- The contracted bushland regeneration team must regularly water seeded areas as required, until plants are well established.
- Ongoing weed control works will be conducted to prevent establishment of weeds. See Section 5.5 for more detailed information on weed management.

### 5.2 Works to be Conducted in Management Zone 2

As previously discussed, the focus in MZ 2 will be on preventing disturbance to existing *L. albicans var. tricolor* (Hoary Sunray) from any adjacent restoration works. Prior to the commencement of any restoration works in the Conservation Area, all existing patches of *L. albicans var. tricolor* (Hoary Sunray) will have temporary fencing / bunting installed around them out to a buffer distance of 5 m. This will be kept in place until all excavation works are completed in adjacent MZ 1.

### 5.3 Works to be Conducted in Management Zone 3

Restoration works in MZ 3 will involve the management of weeds to facilitate natural regeneration. Weed management will adhere to the 'General Weed Control Works for all Management Zones' outlined in Section 5.5.

### 5.4 Works to be Conducted in Management Zone 4

Restoration works in MZ 4 will involve the planting of scattered trees (using tree species typical of BGGW). As bushfire APZs (from adjacent dwellings) may extend into MZ 4, these trees must be planted at a density that complies with Inner Protection Area (IPA) APZ requirements in the NSW RFS PBP 2006 document. In accordance with PBP 2006, an IPA must provide a tree canopy cover of less than 15%. Flammable shrubs are not to be located under trees. Landowners will be permitted to slash/mow the understorey/ground layer of MZ 4 in order to maintain their APZs.

Restoration techniques in MZ 4 will involve weed management, tree planting and maintenance, as prescribed below.

#### 5.4.1 Weed Management

- Weed management will adhere to the 'General Weed Control Works for all Management Zones' outlined in Section 5.5.

#### 5.4.2 Tree Planting

- The contracted bushland regeneration team will plant tubestock trees, at a density that ensures a canopy cover (at maturity) of less than 15%. Further, trees must be planted far enough apart so that their canopies (at maturity) will not be in contact.



- Appendix C provides a list from which species to be planted must be selected. To avoid the planting of human created cultivars, tubestock must be sourced from nurseries growing seedlings of native plants grown from seed sourced from local bushland. As many species as are available from the list must be planted, to maximise biodiversity.
- Planting must occur no later than six months after completion of primary weeding and ideally in autumn when climatic conditions are the most stable for new plantings. Planting should occur in spring if the timing of the construction period does not allow for autumn planting.
- For optimal results, the following steps should be followed when planting tube stock:
  - Water plants the day before, and prior to, planting.
  - Holes for tube stock should be dug deep enough so that at least a few centimetres of the plant are below the soil surface.
  - When remove the seedling from the pot, aim to keep the main root ball undisturbed.
  - When planting, replace the soil around the seedling and press the soil down to remove air pockets.
  - Plants should be watered immediately after planting
  - A layer of organic mulch, leaf litter or layers of wet newspaper should be placed around the plant, to reduce water loss and inhibit weed growth. Note that mulch should not be used near the edge of a water course if a sediment fence or screen is not used. This may apply to plantings along the southern most edge of the site.
  - A tree guard should be placed around each plant, to protect from herbivory and herbicide drift.

### 5.4.3 Maintenance

- The contracted bushland regeneration team must regularly water plants as required, until plants are well established.
- Ongoing weed control works will be conducted to prevent establishment of weeds. See Section 5.5 for more detailed information on weed management.
- During watering and weed control site visits, the contracted bushland regeneration team must monitor the plantings for death of individual plants. Any dead plants must be replaced during subsequent site visits.

## 5.5 General Weed Control Works for all Management Zones

### 5.5.1 Weed Distribution and Target Weed Species

The Conservation Area is fairly weedy, as would be expected for a historically used cattle pasture. Weeds are dispersed evenly across MZ 3; see Table 3-3 for a list of weedy species recorded on the site by Firebird ecoSultants (2017).



The *Central Tablelands Regional Strategic Weed Management Plan (RSWMP)* (2017-2022) is the relevant RSWMP for the site. While none of the species recorded are listed as Priority Weeds in the Central Tablelands RSWMP, it is certainly possible that such weeds may still occur in the site. Regardless, as best practice, weed control should aim to control all environmental weeds.

The *Biosecurity Act 2015* places a General Biosecurity Duty on any weed determined by the regional planning of Weed Management Committees (though Regional Strategic Weed Management Plans (RSWMP)). A General Biosecurity Duty determines that; *any person who deals with any plant, who knows (or ought to know) of any biosecurity risk, has a duty to ensure the risk is prevented, eliminated or minimised, so far as is reasonably practicable.*

**Table 5-1: Weeds Recorded in the Site**

Species	Common Name	Category in Central Tablelands RSWMP, and/or WONS?
<b>ANACARDIACEAE</b>		
<i>Schinus molle</i> var. <i>ariera</i> *	Pepper Tree	NA
<b>APOCYNACEAE</b>		
<i>Vina major</i>	Blue Periwinkle	NA
<i>Conyza sumatrensis</i>	Tall Fleabane	NA
<i>Hypochaeris radicata</i>	Catsear	NA
<i>Senecio jacobaea</i>	Ragwort	NA
<i>Sonchus oleraceus</i>	Common Sowthistle	NA
<b>BORAGINACEAE</b>		
<i>Echium plantagineum</i>	Paterson's Curse	NA
<b>EUPHORBIACEAE</b>		
<i>Euphorbia peplus</i>	Petty Spurge	NA
<b>FABACEAE - Subfamily Faboideae</b>		
<i>Trifolium campestre</i>	Hop Clover	NA
<i>Trifolium repens</i>	White Clover	NA
<b>MRYCINACEAE</b>		
<i>Anagallis arvensis</i>	Pimpernel	NA
<b>PLANTAGINACEAE</b>		
<i>Plantago lanceolata</i>	Lamb's Tongues	NA
<b>POACEAE</b>		
<i>Briza maxima</i>	Quaking Grass	NA
<i>Pennisetum clandestinum</i>	Kikuyu Grass	NA
<i>Setaria parviflora</i>	Pidgeon Grass	NA
<b>VERBENACEAE</b>		
<i>Verbena bonariensis</i>	Purpletop	NA





### 5.5.2 Core Weed Control Works

Weed control works will be undertaken by a locally based, suitably qualified bushland regeneration company. The initial site visit should focus primarily upon controlling mature individuals. Priority should be given to the WONS and the State and Regional Priority Weeds, as well as the Species of Additional Concern, as listed within the Central Tablelands RSWMP; however, as common best practice, weed management will aim to control all environmental weeds in the Conservation Area. This should be done before the situation deteriorates further.

Weeds compete with newly established plants for moisture. Many weed species are more efficient at drawing moisture from the soil than new seedlings, typically resulting in reduced growth of native seedlings. Primary weed removal should be undertaken prior to revegetation and in accordance with the *Biosecurity Act 2016*.

Ongoing maintenance must occur for the entirety of the 20-year (life of the approval) period of the PoM (and in-perpetuity management beyond this. Note: reviews of this PoM will occur before the 20-year end period). The aim of ongoing maintenance is to diminish the soil seed bank of weeds; weed plants should not be allowed to achieve a reproductive stage in their life cycles.

During the first year, site visits will occur at least twice each month with the visits spread out approximately every two weeks. This is especially required during the warmer, wetter months in spring and summer, as some annual weed species can grow and develop seed within a three week period.

After the first year, provided that weed abundances have diminished, site visits will occur once a month for a period of two years. If, during this two year period, the bushland management or ecological consultant determines that weed populations have been reduced to minor occurrences, site visits can be scaled back to once every two months. After this, weed control visits will be conducted where and when needed, as determined by the bushland management or ecological consultant during the monitoring process.

### 5.5.3 Weed Control Techniques

Weed management should integrate a variety of control techniques, considering knowledge of the specific biological and ecological characteristics of the weed species present. A combination of chemical and physical removal should be incorporated.

Chemical removal should involve the use of a non-selective Glyphosate herbicide with a surfactant that is formulated for use in environmentally sensitive areas. Care should be taken to avoid herbicide drift onto non-target species. For instance, spraying should be done only with a knapsack sprayer or smaller spraying device; a cone shield should be used, where necessary; and spraying should be done only on days with low wind speeds.

Note that, under the *Pesticides Act 1999*, there can be legal restrictions and permit requirements for use of specific herbicides for specific plants; chemical labels and permit requirements always need to be researched prior to herbicide application. Some control methods will require a permit from the Australian Pesticides and Veterinary Management Authority.





## 5.6 Management of Fire for Conservation

*L. albicans* var. *tricolor* (Hoary Sunray) requires areas of bare ground to persist. Populations in protected areas have been known to decline in areas of high competition from densely growing species such as *Themeda triandra* (Kangaroo Grass) (Sinclair, 2011). Fire is known to be an important disturbance agent in native grasslands and inappropriate fire regime is a known threat to *L. albicans* var. *tricolor* (Hoary Sunray) (Sinclair, 2011).

Optimal fire regimes for *L. albicans* var. *tricolor* (Hoary Sunray) are not known; however, the NPWS (2004) *Guidelines for Ecologically Sustainable Fire Management* specify the ecological fire requirements for vegetation types. NPWS (2004)

The following measures must be adhered to, regarding the management of fire in the Conservation Area:

- The burning regime will be determined in consultation with OEH. Any plans for burning in the Conservation Area will be discussed with and approved by OEH prior to each burn being undertaken.
- All burns within the Conservation Area will be timed to occur soon after *L. albicans* var. *tricolor* (Hoary Sunray) plants have set seed.



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## 6 HABITAT AUGMENTATION STRATEGY

Habitat augmentation is also required to re-establish native animal roosting/nesting potential, which is a component of the BGGW ecological community. The site does not contain any hollow-bearing trees. The habitat augmentation strategy will involve the installation and maintenance of artificial nest boxes.

### 6.1 Nest Box Installation

Eucalypts containing large hollows are rarely less than 220 years old. These larger, older trees provide a greater density of hollows per tree and are more valuable to hollow-dependent fauna than younger hollow-bearing trees (although the latter are still important as a future resource). Large hollow-bearing trees are numerically rare and vertebrate species strongly select them as nest and roost sites. In addition to this, many vertebrates are known to select hollows with specific characteristics, indicating that suitable hollows represent a fraction of the total hollow resource.

Site surveys found no hollow-bearing trees present at the site (generally these would have been cleared over time for grazing purposes). This PoM requires that nine artificial nest boxes are set up at appropriate locations within the Conservation Area. The installation of nest boxes will be undertaken in accordance with the following measures:

- A total of nine nest boxes are to be installed within the Conservation Area.
- Nest boxes will be installed during the construction phase of the project.
- The nest boxes will cater to a broad range of species including larger possums, smaller possums/phascogales/gliders, small to medium sized parrots, microbats, and a large forest owl nest box.
- Nest boxes will be constructed from recycled local hardwoods, where possible. Otherwise, marine/external grade plywood with a minimum thickness of 18 mm will be substituted. The inside faces of the nest boxes will have slots cut into them, to assist with internal access to the exit hole. Nest boxes will be screwed using stainless steel or galvanised screws (not nails) and the base will have a minimum of three drainage holes of not more than 10 mm diameter. Toxic substances will not be used in the construction.
- Nest boxes will be installed by a suitably qualified ecologist, to ensure suitable orientation, height, densities, and tree selection requirements of target species.
- The location of all nest boxes will be recorded by hand-held GPS and each box marked with a unique identifier for future monitoring purposes. Following installation of nest boxes, a report (including GIS map) will be prepared that records the locations, identification numbers and nest box types, heights and orientations.
- Nest boxes will be maintained and monitored for the full 20-year period of this PoM (See Section 7 for details of maintenance and monitoring).





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## 7 MONITORING AND REPORTING

### 7.1 Monitoring

A monitoring program will be employed by the Project Ecologist, to ensure that the measures required in this HEVMP are implemented and successful. This program will specifically address the Monitoring Checklist in Appendix E and will be based on the following main components:

- A pre-clearance survey and the supervision of clearing / construction works.
- Annual assessments of the success of vegetation restoration and weed management, including:
  - Photographs taken at each photo reference point (see Section 4.1.2).
  - A targeted survey for *L. albicans var. tricolor* (Hoary Sunray), in order to estimate plant numbers in the Conservation Area.
  - Quantitative assessments of the success rate of natural regeneration and the abundance of weeds in the Conservation Area. These assessments should be designed so that they can be repeated annually.
  - Recommendations for corrective measures and/or vegetation management.
- Documentation of the nest box installation procedures.
- Annual nest box monitoring and maintenance including monitoring of nest box use by fauna and nest box maintenance, including the replacement or repair of any damaged nest boxes.

### 7.2 Reporting

Reporting will consist of the following components:

- A report will be prepared by the Project Ecologist at the completion of clearing and construction. This report will detail the pre-clearance survey findings and all procedures taken during supervision of clearing / excavation works. This report is to be submitted to DAWE and Council.
- A report will be prepared by the Project Ecologist following the installation of nest boxes. The report is to include the nest box identification numbers, nest box types, GPS locations (including GIS map), species and diameter at breast height of host trees, nest box heights and nest box orientations. This report is to be submitted DAWE and Council.
- A combined report regarding the Grassy Woodland Restoration Strategy and the Habitat Augmentation Strategy will be prepared by the Project Ecologist annually. The reports must be based on the Monitoring Checklist in Appendix E. Reports will also include a photograph at each photo reference point for a visual



assessment of site progress. These reports are to be submitted annually, to DAWE and Council.

- A final summary report will be submitted to DAWE and Council for approval; this will certify completion of the works or recommendations for further management requirements.





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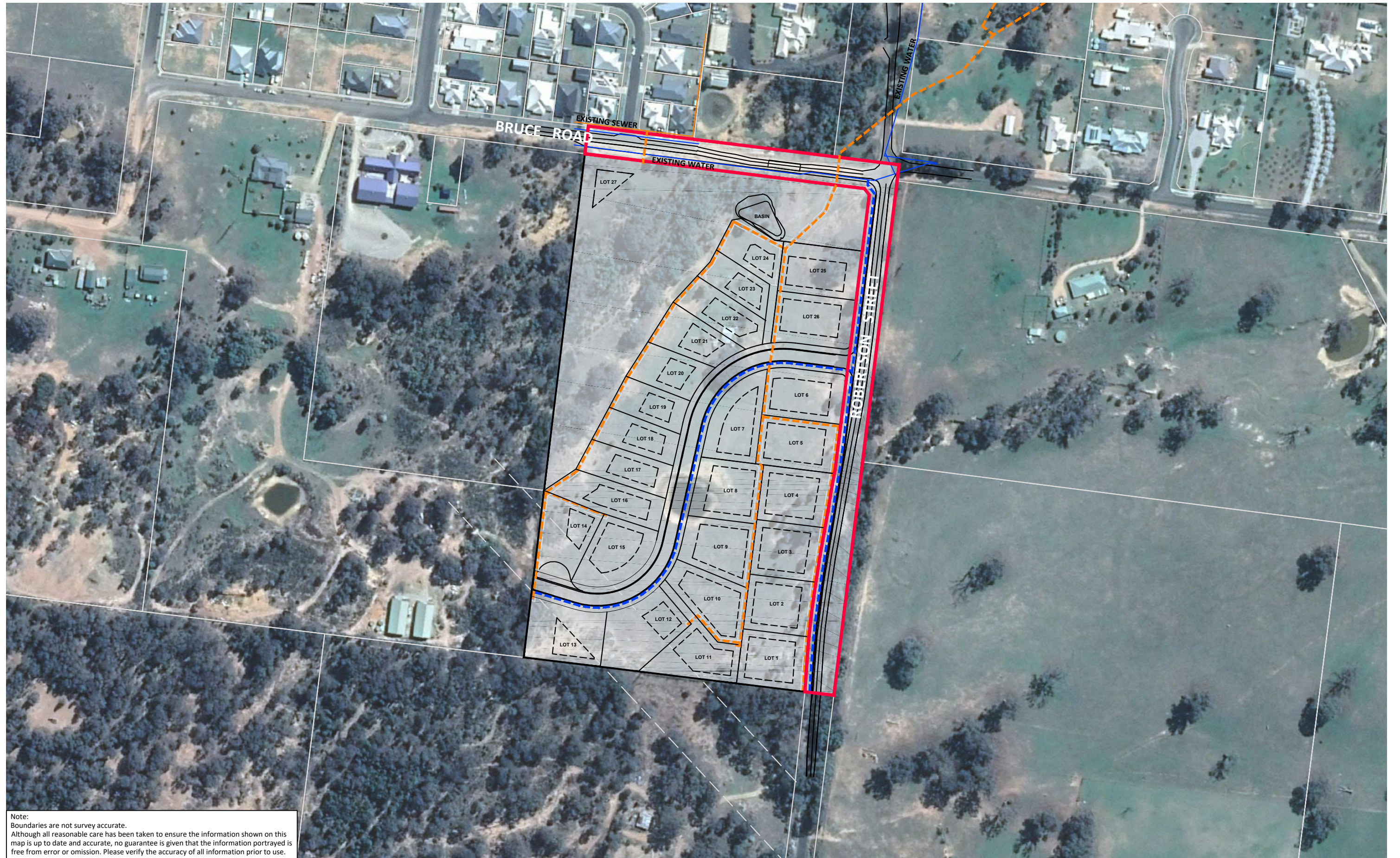
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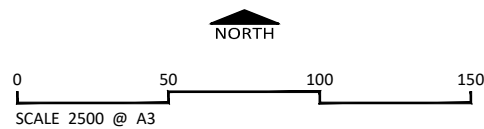
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APPENDIX A: SITE PLANS

CLIENT Client  
 No.196 Robertson Street Mudgee  
 DATE 28 October 2019

Legend

- Subject Site
- Proposed Building Envelope
- Proposed Water
- Proposed Sewer



Firebird ecoSultants Pty Ltd  
 ABN - 16 105 985 993  
 Level 1, 146 Hunter Street, Newcastle NSW 2300  
 P O Box 354 Newcastle NSW 2300

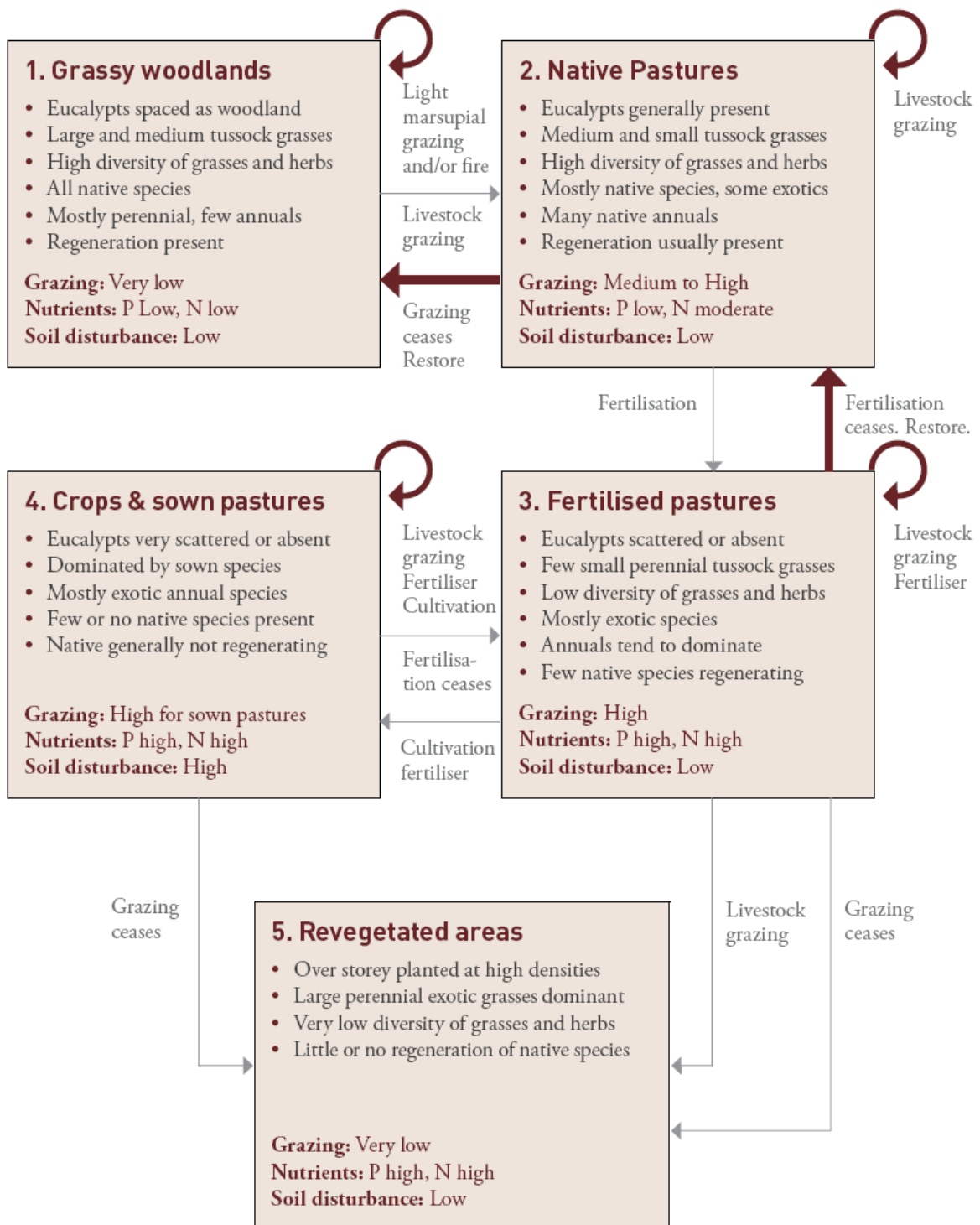


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# **APPENDIX B BOX-GUM GRASSY WOODLAND STATE AND TRANSITION MODEL**

## Appendix B: Box-Gum Grassy Woodland State and Transition Model



Reference: Department of the Environment, Water, Heritage and the Arts (2008b), *Caring for our Country - Environmental Stewardship - Box-Gum Grassy Woodland Project Implementation Plan*



# APPENDIX C COST ESTIMATES



Proposed measure	Anticipated Cost	Funding Source and Responsibility	Timing	Information Source
Construction phase mitigation measures including fencing/signposting of protected areas, sediment/erosion control measures and weed/disease control measures.	These are generally common practice measures implemented during construction works. The offset package is not likely to significantly increase these costs.	The proponent would be responsible for funding during the construction phase of the initial subdivision. Thereafter, the individual lot owners would be responsible for any construction phase costs within their lot.	The construction phase of the initial subdivision and thereafter, the construction phases of any dwellings on the site.	N/A
Establishment of positive / restrictive covenants, under Section 88B or 88E of the <i>Conveyancing Act 1919</i> .	\$3,500	The proponent would be responsible for funding.	The initial subdivision phase, prior to the sale of lots.	Approximate estimate from Le Mottee Group
Preparation of a PoM, linked to covenants on the site.	\$1,200	The proponent would be responsible for funding.	The initial subdivision phase, prior to the sale of lots.	Approximate estimate from Firebird ecoSultants.
Permanent fencing of protected areas, as indicated in Figure 3-1.	\$15,000	The proponent would be responsible for funding. Thereafter, fence maintenance would be the responsibility of the relevant lot owners.	The initial subdivision phase, prior to the sale of lots (although fence maintenance would be ongoing).	Estimate based on approximately 500 m of post and wire fencing, at \$30/m.
Box-Gum Grassy Woodlands / <i>L. albicans</i> var. <i>tricolor</i> (Hoary Sunray) restoration strategy.	\$15,000 to \$75,000. Costs may vary and are dependent on several factors, such as availability of local services and machinery.	The proponent would be responsible for funding until the sale of the relevant lots. Thereafter, funding would be the responsibility of the owners of the relevant lots.	Prior to, during and after the initial subdivision phase. Implementation of some measures may still be ongoing after the sale of lots.	Approximate estimate from Dr Paul Gibson-Roy, pers. comm. 26 October 2016. It was noted that costs may vary and are dependent on several factors, such as availability of local services and machinery.
Monitoring and reporting on PoM management actions.	\$1,200	The proponent would be responsible for funding until the sale of the relevant lots. Thereafter, funding would be the responsibility of the owners of the relevant lots.	Once annually, for the entire period of the PoM.	Approximate estimate from Firebird ecoSultants.

# APPENDIX D LIST OF BOX GUM GRASSY WOODLAND GROUNDCOVER SPECIES FOR INCLUDING IN SEED MIX FOR MANAGEMENT ZONE I

*Leucochrysum albicans* var. *tricolor* (Hoary Sunray) must be included in the seed mix.

Species used by the Grassy Groundcover Research Project (GGRP) during its first decade of operation for direct-sown restorations or for the cultivation of seed crops predominantly in Victoria and more recently in New South Wales. Nomenclature and family names follow the advice of the National Herbarium of Victoria, Melbourne.

#### Column headings

Form = growth habit (dominant photosynthetic pathway in grasses).

Height = range or maximum height reached in natural habitat.

Buds = location of regenerative dormant buds ('base' indicates they are located at or near the ground surface).

Unit = dispersal unit.

Pro. = expected seed productivity: + none or low, ++ moderate, +++ abundant.

Ger. = expected germination: 1 none or very slow, 2 sporadic, 3 reliable/uniform (the performance of a seed lot will vary with its health and the proportion of dormant seeds).

SPA = observations in a seed production area: y seed harvested, n no seed harvested.

Res. = observation of direct-sown restorations: y seedlings recorded, n sown but no seedlings recorded.

nd = no data.

Grasses											
Species	Common name	Family	Form	Height	Buds	Unit	Pro.	Ger.	SPA	Res.	
<i>Amphibromus nervosus</i>	Swamp Wallaby-grass	Poaceae	C3	120	base	floret	++	3	y	y	
<i>Amphipogon strictus</i>	Grey-beard Grass	Poaceae	C3	40	rhizome	floret	++	nd	nd	nd	
<i>Anthosachne scabra</i>	Common Wheat-grass	Poaceae	C3	120	base	floret	+++	3	y	y	
<i>Aristida behriana</i>	Bush Wire-grass	Poaceae	C4	40	base	floret	++	3	y	y	
<i>Aristida vagans</i>	Three-awn Wire-grass	Poaceae	C4	80	base	floret	++	3	y	y	
<i>Aristida warburgii</i>	Wire-grass	Poaceae	C4	120	base	floret	++	nd	nd	nd	
<i>Austrostipa aristiglumis</i>	Plump Spear-grass	Poaceae	C3	200	base	floret	++	3	y	y	
<i>Austrostipa bigeniculata</i>	Tall Spear-grass	Poaceae	C3	120	base	floret	++	3	y	y	
<i>Austrostipa densiflora</i>	Dense Spear-grass	Poaceae	C3	150	base	floret	++	3	nd	y	
<i>Austrostipa elegantissima</i>	Feather Spear-grass	Poaceae	C3	200	rhizome	floret	+++	3	y	y	
<i>Austrostipa gibbosa</i>	Spurred Spear-grass	Poaceae	C3	150	base	floret	++	3	nd	y	
<i>Austrostipa mollis</i>	Soft Spear-grass	Poaceae	C3	120	base	floret	++	3	y	y	
<i>Austrostipa nodosa</i>	Knotty Spear-grass	Poaceae	C3	120	base	floret	++	3	y	y	
<i>Austrostipa oligostachya</i>	Fine-head Spear-grass	Poaceae	C3	100	base	floret	++	3	nd	y	
<i>Austrostipa pubinodis</i>	Long-shaft Spear-grass	Poaceae	C3	130	rhizome	floret	++	3	nd	y	
<i>Austrostipa ramosissima</i>	Stout Bamboo-grass	Poaceae	C3	250	rhizome	floret	++	3	nd	y	
<i>Austrostipa scabra subsp. albica</i>	Spear-grass	Poaceae	C3	60	base	floret	++	3	y	y	
<i>Austrostipa scabra subsp. arida</i>	Bush Spear-grass	Poaceae	C3	60	base	floret	++	3	y	y	



Species	Common name	Family	Form	Height	Buds	Unit	Pro.	Ger.	SPA	Res.
<i>Auistrostipa semibarbata</i>	Fibrous Spear-grass	Poaceae	C3	90	base	floret	++	3	Y	Y
<i>Bothriochloa macra</i>	Red-leg Grass	Poaceae	C4	80	rhizome	floret	++	3	Y	Y
<i>Capillipedium parviflorum</i>	Scented-top Grass	Poaceae	C4	150	base	floret	++	3	Y	Y
<i>Chloris truncata</i>	Windmill Grass	Poaceae	C4	40	stolon	floret	+++	2	Y	Y
<i>Chloris ventricosa</i>	Plump Windmill-grass	Poaceae	C4	100	base	floret	+++	2	Y	Y
<i>Gymbopogon refractus</i>	Barbed Wire-grass	Poaceae	C4	120	base	floret	++	2	Y	Y
<i>Dichelachne sericeum</i>	Silky Blue-grass	Poaceae	C4	80	base	floret	++	3	Y	Y
<i>Dichelachne crinita</i>	Long-hair Plume-grass	Poaceae	C3	150	base	floret	++	3	Y	Y
<i>Dichelachne nitrantha</i>	Short-hair Plume-grass	Poaceae	C3	120	base	floret	++	3	Y	Y
<i>Echinopogon caespitosus</i>	Bushy Hedgehog-grass	Poaceae	C3	100	base	floret	++	3	Y	nd
<i>Echinopogon ovatus</i>	Forest Hedgehog-grass	Poaceae	C3	100	rhizome	floret	++	3	Y	nd
<i>Enteropogon acicularis</i>	Large Windmill-grass	Poaceae	C4	50	stolon	floret	++	3	Y	Y
<i>Entolasia stricta</i>	Wiry Panic	Poaceae	C3	40	rhizome	floret	++	3	Y	nd
<i>Eragrostis brownii</i>	Common Love-grass	Poaceae	C4	30	base	floret	+++	3	Y	Y
<i>Eragrostis elongata</i>	Clustered Love-grass	Poaceae	C4	80	base	floret	++	3	Y	nd
<i>Eriochloa pseudocrotichia</i>	Early Spring Grass	Poaceae	C4	70	base	floret	+++	3	Y	nd
<i>Lachnagrostis aemula</i> var. <i>aemula</i>	Blown Grass	Poaceae	C3	60	seed	floret	+++	3	nd	Y
<i>Lachnagrostis filiformis</i>	Common Blown Grass	Poaceae	C3	80	rhizome	floret	+++	nd	nd	Y
<i>Microaena stipoides</i>	Weeping Grass	Poaceae	C3	40	tuber	floret	+++	3	Y	Y
<i>Neurachne alopecuroides</i>	Fox-tail Mulga-grass	Poaceae	C3	30	bulbils	floret	+++	nd	nd	Y
<i>Pentapogon quadrifidus</i>	Five-awned Spear-grass	Poaceae	C3	150	stem	floret	++	3	Y	Y
<i>Poa labillardierei</i>	Common Tussock-grass	Poaceae	C3	90	base	floret	+++	3	Y	Y
<i>Poa morrisii</i>	Soft Tussock-grass	Poaceae	C3	60	base	floret	+++	3	Y	Y
<i>Poa rodwayi</i>	Velvet Tussock-grass	Poaceae	C3	80	base	floret	+++	3	nd	Y
<i>Poa sieberiana</i> var. <i>hirtella</i>	Grey Tussock-grass	Poaceae	C3	80	base	floret	+++	3	nd	Y
<i>Poa sieberiana</i> var. <i>sieberiana</i>	Grey Tussock-grass	Poaceae	C3	70	base	floret	+++	3	nd	Y
<i>Rytdosperma curticulatum</i>	Lobed Wallaby-grass	Poaceae	C3	50	base	floret	+++	3	Y	Y
<i>Rytdosperma caespitosum</i>	Ringed Wallaby-grass	Poaceae	C3	90	base	floret	+++	3	Y	Y
<i>Rytdosperma carphoides</i>	Short Wallaby-grass	Poaceae	C3	40	base	floret	++	3	Y	Y
<i>Rytdosperma duttonianum</i>	Brown-back Wallaby-grass	Poaceae	C3	80	base	floret	+++	3	Y	Y
<i>Rytdosperma erianthum</i>	Hill Wallaby-grass	Poaceae	C3	70	base	floret	+++	3	nd	Y
<i>Rytdosperma fulvum</i>	Wallaby-grass	Poaceae	C3	100	base	floret	+++	3	nd	Y
<i>Rytdosperma geniculatum</i>	Knead Wallaby-grass	Poaceae	C3	60	base	floret	+++	3	Y	Y
<i>Rytdosperma indutum</i>	Tall Wallaby-grass	Poaceae	C3	120	base	floret	+++	3	nd	Y

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Grasses cont.		Common name	Family	Form	Height	Buds	Unit	Pro.	Ger.	SPA	Res.
Species											
<i>Rytidosperma laeve</i>		Wallaby-grass	Poaceae	C3	60	base	floret	+++	3	nd	y
<i>Rytidosperma longifolium</i>		Long-leaved Wallaby-grass	Poaceae	C3	100	base	floret	+++	3	nd	y
<i>Rytidosperma pilosum</i>		Velvet Wallaby-grass	Poaceae	C3	50	base	floret	+++	3	nd	y
<i>Rytidosperma racemosum</i>		Striped Wallaby-grass	Poaceae	C3	80	rhizome	floret	+++	3	y	y
<i>Rytidosperma setaceum</i>		Small-flower Wallaby-grass	Poaceae	C3	70	base	floret	+++	3	y	y
<i>Rytidosperma tenuius</i>		Purplish Wallaby-grass	Poaceae	C3	100	base	floret	+++	3	y	y
<i>Sorghum leiocladium</i>		Native Sorghum	Poaceae	C4	100	base	floret	++	2	y	y
<i>Themeda triandra</i>		Kangaroo Grass	Poaceae	C4	100	base	floret	+	2	y	y
<i>Walwhalleya proluta</i>		Rigid Panic	Poaceae	C3	100	base	floret	++	nd	nd	nd
<b>Non-grass monocots e.g. lilies, sedges, rushes and related plants</b>											
<i>Arthropodium fimbriatum</i>		Nodding Chocolate-lily	Asparagaceae	perennial herb	80	base	seed	+++	3	y	y
<i>Arthropodium milleflorum</i>		Pale Vanilla-lily	Asparagaceae	perennial herb	100	base	seed	++	3	y	y
<i>Arthropodium strictum</i>		Chocolate-lily	Asparagaceae	perennial herb	120	base	seed	+++	3	y	y
<i>Bulbine bulbosa</i>		Bulbine Lily	Xanthorrhoeaceae	perennial herb	50	tuber	seed	+++	3	y	y
<i>Burchardia umbellata</i>		Milkmaids	Colchicaceae	perennial herb	65	corn	seed	++	1	y	n
<i>Caesia calliantha</i>		Blue Grass-lily	Asparagaceae	perennial herb	70	base	seed	++	2	y	y
<i>Carex inversa</i>		Knob sedge	Cyperaceae	perennial sedge	50	base	utricle	++	3	y	nd
<i>Centrolepis strigosa</i>		Hairy Centrolepis	Centrolepidaceae	annual herb	11	seed	seed	+	nd	nd	y
<i>Chamaescilla corymbosa</i>		Blue Squill	Asparagaceae	perennial herb	25	base	seed	+	nd	nd	nd
<i>Commelina cyanea</i>		Commelina	Commelinaceae	perennial herb	prostrate	low	seed	++	nd	y	nd
<i>Dianella admixta</i>		Pale Flax-lily	Xanthorrhoeaceae	perennial herb	150	rhizome	berry	+	2	nd	y
<i>Dianella longifolia</i>		Smooth Flax-lily	Xanthorrhoeaceae	perennial herb	80	rhizome	berry	+	2	nd	y
<i>Fimbristylis dichotoma</i>		Common Fringe-sedge	Cyperaceae	perennial sedge	75	rhizome	nut	+	2	y	nd
<i>Hypoxis glabella</i>		Tiny Star	Hypoxidaceae	perennial herb	25	corn	seed	+	nd	nd	y
<i>Hypoxis hygrometrica</i>		Golden Weather-grass	Hypoxidaceae	perennial herb	20	corn	seed	+	nd	nd	nd
<i>Laxmannia gracilis</i>		Slender Wire-lily	Asparagaceae	perennial herb	40	low	seed	+	1	nd	nd
<i>Lomandra effusa</i>		Scented Mat-rush	Asparagaceae	perennial herb	40	base	seed	+	nd	nd	nd
<i>Lomandra filiformis</i>		Wattle Mat-rush	Asparagaceae	perennial herb	30	base	seed	+	nd	nd	nd
<i>Lomandra nana</i>		Pale Mat-rush	Asparagaceae	perennial herb	10	base	seed	+	2	nd	y
<i>Luzula spp.</i>		Woodrush	Juncaceae	perennial rush	50	rhizome	seed	+++	2	y	nd
<i>Thysanotus patersonii</i>		Twining Fringe-lily	Asparagaceae	perennial herb	twiner	rhizome	seed	+	nd	nd	nd
<i>Thysanotus tuberosus</i>		Common Fringe-lily	Asparagaceae	perennial herb	60	base	seed	++	2	y	nd
<i>Tylosyne elatior</i>		Yellow Rush-lily	Asparagaceae	perennial herb	70	rhizome	mericarp	+	1	nd	n
<i>Wandoo thalia</i>		Early Hairy	Colchicaceae	perennial herb	90	corn	seed	++	1	y	n



Broad-leaved (eudicots) herbs, sub-shrubs and shrubs

Species	Common name	Family	Form	Height	Buds	Unit	Pro.	Ger.	SPA	Res.
<i>Acaena gniphila</i>	Downy Sheep's Burr	Rosaceae	perennial herb	70	base	achene	++	2	Y	Y
<i>Acaena echinata</i>	Sheep's Burr	Rosaceae	perennial herb	70	base	achene	++	2	Y	Y
<i>Acaena novae-zelandiae</i>	Bidgee-widgee	Rosaceae	perennial herb	prostrate	base	achene	+++	2	Y	Y
<i>Actinobole vilginosum</i>	Camel Dung	Asteraceae	annual herb	prostrate	seed	cypsela	++	nd	nd	nd
<i>Ayuga australis</i>	Austral Bugle	Lamiaceae	perennial herb	50	base	mericarp	+	nd	nd	nd
<i>Allittia cardiocarpa</i>	Heart-fruit Daisy	Asteraceae	perennial herb	45	base	cypsela	++	2	nd	Y
<i>Asperula conferta</i>	Common Woodruff	Rubiaceae	perennial herb	30	low	mericarp	+	1	n	n
<i>Asperula scoparia</i> subsp. <i>scoparia</i>	Prickly Woodruff	Rubiaceae	perennial herb	15	low	mericarp	+	1	n	n
<i>Bossiaea prostrata</i>	Creeping Bossiaea	Fabaceae	prostrate shrub	5	stem	seed	+	1	Y	Y
<i>Brachyscome basaltica</i> var. <i>gracilis</i>	Basalt Daisy	Asteraceae	perennial herb	60	stolon	cypsela	++	2	Y	Y
<i>Brachyscome chrysoglossa</i>	Yellow-tongue Daisy	Asteraceae	perennial herb	40	base	cypsela	++	2	Y	Y
<i>Brachyscome ciliaris</i>	Variable Daisy	Asteraceae	perennial herb	40	base	cypsela	++	nd	nd	nd
<i>Brachyscome dentata</i>	Lobed-seed Daisy	Asteraceae	perennial herb	45	base	cypsela	++	2	Y	Y
<i>Brunonia australis</i>	Blue Pincushion	Goodeniaceae	perennial herb	30	base	calyx	+	1	Y	Y
<i>Brunoniella australis</i>	Blue Trumpet	Acanthaceae	perennial herb	15	tuber	seed	+	1	nd	nd
<i>Calocephalus citreus</i>	Lemon Beauty-heads	Asteraceae	perennial herb	60	low	cypsela	+++	3	Y	Y
<i>Calocephalus lacteus</i>	Milky Beauty-heads	Asteraceae	perennial herb	70	low	cypsela	+++	3	Y	Y
<i>Calocephalus sonderi</i>	Pale Beauty-heads	Asteraceae	annual herb	45	seed	cypsela	++	nd	nd	nd
<i>Calotis lapulacea</i>	Cut-leaf Burr-daisy	Asteraceae	perennial herb	20	base	cypsela	++	3	Y	nd
<i>Calotis anthemoides</i>	Burr-daisy	Asteraceae	perennial herb	50	base	cypsela	++	1	nd	nd
<i>Calotis canefolia</i>	Purple Burr-daisy	Asteraceae	perennial herb	60	base	cypsela	+++	3	Y	nd
<i>Ceritipeda minima</i>	Spreading Sneezeweed	Asteraceae	annual herb	prostrate	seed	cypsela	++	3	Y	nd
<i>Chorizema parviflorum</i>	Eastern Flame Pea	Fabaceae	shrub	50	stem	seed	++	2	Y	nd
<i>Chrysocephalum apiculatum</i>	Common Everlasting	Asteraceae	perennial herb	60	base	cypsela	+++	3	Y	Y
<i>Chrysocephalum semipapposum</i>	Clustered Everlasting	Asteraceae	perennial herb	60	base	cypsela	++	3	Y	Y
<i>Convolvulus angustissimus</i>	Pink Bindweed	Convolvulaceae	perennial herb	twiner	base	seed	++	2	Y	Y
<i>Convolvulus remotus</i>	Grassy Bindweed	Convolvulaceae	perennial herb	twiner	base	seed	++	2	Y	Y
<i>Coronidium scorpioides</i>	Button Everlasting	Asteraceae	perennial herb	50	base	cypsela	+++	3	Y	nd
<i>Craspedia paludicola</i>	Swamp Billy-buttons	Asteraceae	perennial herb	75	base	cypsela	+++	3	Y	Y
<i>Craspedia variabilis</i>	Variable Billy-buttons	Asteraceae	perennial herb	50	base	cypsela	+++	3	Y	Y
<i>Crassula sieberiana</i>	Australian Stonecrop	Crassulaceae	ann./per. herb	20	seed	seed	++	3	nd	nd
<i>Cullen tenax</i>	Tough Scurf-pea	Fabaceae	perennial herb	50	stem	seed	+	2	Y	Y
<i>Cynoglossum suaveolens</i>	Sweet Hound's-tongue	Boraginaceae	perennial herb	50	base	mericarp	+	1	Y	Y
<i>Daucus glochidiatus</i>	Austral (Wild) Carrot	Apiaceae	annual herb	60	seed	mericarp	++	nd	Y	n

The restoration of native grasslands







Broad-leaved (eudicots) herbs, sub-shrubs and shrubs cont.

Species	Common name	Family	Form	Height	Buds	Unit	Pro.	Ger.	SPA	Res.
<i>Hydoserpma praecox</i>	Mayweed Sunray	Asteraceae	annual herb	20	seed	cypsela	nd	nd	nd	nd
<i>Hydrocotyle laxiflora</i>	Stinking Pennywort	Araliaceae	perennial herb	40	stem	mericarp	+	1	nd	n
<i>Hydrocotyle peduncularis</i>	Pennywort	Araliaceae	perennial herb	prostrate	stem	mericarp	+	nd	nd	nd
<i>Hydrocotyle tripartita</i>	Pennywort	Araliaceae	perennial herb	prostrate	stem	mericarp	+	nd	nd	nd
<i>Hypericum gramineum</i>	Small St. John's Wort	Clusiaceae	perennial herb	40	base	seed	+++	3	Y	Y
<i>Kennedia prostrata</i>	Running Postman	Fabaceae	perennial herb	prostrate	stem	seed	+++	2	Y	Y
<i>Lagenophora huegelii</i>	Coarse Bottle-daisy	Asteraceae	perennial herb	30	rhizome	cypsela	++	nd	nd	nd
<i>Lagenophora stipitata</i>	Blue Bottle-daisy	Asteraceae	perennial herb	20	rhizome	cypsela	++	3	Y	nd
<i>Leiocarpa panaetoides</i>	Woolly Buttons	Asteraceae	perennial herb	60	base	cypsela	++	nd	nd	nd
<i>Leptorhynchus squamatus</i>	Scaly Buttons	Asteraceae	perennial herb	40	base	cypsela	++	2	Y	Y
<i>Leptorhynchus tenuifolius</i>	Wiry Buttons	Asteraceae	perennial herb	40	base	cypsela	++	2	Y	Y
<i>Leucochrysum albicans</i> var. <i>tricolor</i>	Hoary Sunray	Asteraceae	perennial herb	50	base	cypsela	+++	3	Y	Y
<i>Linum marginale</i>	Native Flax	Linaceae	perennial herb	100	base	seed	+++	3	Y	Y
<i>Lobelia pratensis</i>	Poison Lobelia	Campanulaceae	perennial herb	prostrate	stolon	seed	+	nd	nd	nd
<i>Lobelia purpurascens</i>	Whiteroot	Campanulaceae	perennial herb	40	base	seed	+	nd	Y	nd
<i>Lotus australis</i>	Australian Trefoil	Fabaceae	sub-shrub	60	stem	seed	+	2	nd	Y
<i>Maireana decalvans</i>	Black Cottonbush	Chenopodiaceae	shrub	40	stem	utricle	++	3	nd	nd
<i>Maireana enchytaenoides</i>	Wingless Bluebush	Chenopodiaceae	sub-shrub	30	stem	utricle	++	3	nd	Y
<i>Maireana excavata</i>	Bottle Bluebush	Chenopodiaceae	sub-shrub	prostrate	stem	utricle	++	3	nd	Y
<i>Mentha saturoides</i>	Creeping Mint	Lamiaceae	perennial herb	prostrate	rhizome	mericarp	nd	nd	nd	Y
<i>Microris lanceolata</i>	Yam Daisy	Asteraceae	perennial herb	40	tuber	cypsela	+++	3	Y	Y
<i>Minuria leptophylla</i>	Minnie Daisy	Asteraceae	perennial herb	30	base	cypsela	++	3	Y	Y
<i>Myoporum parvifolium</i>	Creeping Myoporum	Scrophulariaceae	shrub	10	stem	drupe	+++	nd	nd	nd
<i>Myriocephalus rhizocephalus</i>	Woolly Heads	Asteraceae	annual herb	10	seed	cypsela	++	nd	nd	nd
<i>Oxalis perennans</i>	Grassland Woodsorrel	Oxalidaceae	perennial herb	30	bulbils	seed	+++	3	Y	Y
<i>Pelargonium rodneyanum</i>	Magenta Stork-s-bill	Geraniaceae	perennial herb	40	base	mericarp	++	3	Y	Y
<i>Pimelea curviflora</i>	Curved Rice-flower	Thymelaeaceae	shrub	150	stem	floret	++	1	nd	Y
<i>Pimelea glauca</i>	Smooth Rice-flower	Thymelaeaceae	shrub	100	stem	floret	+	1	nd	n
<i>Pimelea humilis</i>	Common Rice-flower	Thymelaeaceae	shrub	50	stem	floret	++	1	Y	Y
<i>Pimelea spicata</i>	Spiked Rice-flower	Thymelaeaceae	shrub	50	stem	floret	++	1	nd	nd
<i>Plantago gaudichaudii</i>	Narrow-leaf Plantain	Plantaginaceae	perennial herb	20	base	seed	++	3	Y	Y
<i>Plantago varia</i>	Variable Plantain	Plantaginaceae	perennial herb	20	base	seed	+++	3	Y	Y
<i>Plectranthus parviflorus</i>	Cockspur Flower	Lamiaceae	shrub	70	stem	mericarp	+++	nd	nd	nd
<i>Podolepis ficeoides</i>	Showy Podolepis	Asteraceae	perennial herb	70	base	cypsela	+++	3	Y	Y

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Broad-leaved (eudicots) herbs, sub-shrubs and shrubs cont.

Species	Common name	Family	Form	Height	Buds	Unit	Pro.	Ger.	SPA	Res.
<i>Pomax umbellata</i>	Pomax	Rubiaceae	sub-shrub	40	stem	seed	+++	2	y	nd
<i>Poranthera microphylla</i>	Small Poranthera	Phyllanthaceae	annual herb	15	seed	seed	++	2	y	nd
<i>Ptilotus erubescens</i>	Hairy-tails	Amaranthaceae	perennial herb	30	seed	perianth	+	2	y	y
<i>Ptilotus exaltatus</i>	Lamb-tails	Amaranthaceae	perennial herb	100	base	perianth	+	2	y	y
<i>Ptilotus macrocephalus</i>	Feather-heads	Amaranthaceae	perennial herb	50	base	perianth	+	2	y	y
<i>Ptilotus spatulatus</i>	Cat's Paw	Amaranthaceae	perennial herb	prostrate	low	perianth	+++	nd	nd	nd
<i>Pycnosorus chrysanthus</i>	Golden Billy-buttons	Asteraceae	perennial herb	60	base	cypsela	+++	3	y	y
<i>Pycnosorus globosus</i>	Drumsticks	Asteraceae	perennial herb	100	base	cypsela	+++	3	y	y
<i>Ranunculus lappaceus</i>	Austral Buttercup	Ranunculaceae	perennial herb	90	base	achene	++	3	y	nd
<i>Rumex brownii</i>	Slender Dock	Polygonaceae	perennial herb	100	base	nut	+++	2	y	y
<i>Rumex drumosus</i>	Wiry Dock	Polygonaceae	perennial herb	60	base	nut	+++	2	y	y
<i>Rutidosia leptorhynchoides</i>	Button Wrinklewort	Asteraceae	perennial herb	30	base	cypsela	+++	2	y	y
<i>Scaevola albida</i>	Pale Fan-flower	Goodeniaceae	perennial herb	50	stem	drupe	++	nd	nd	nd
<i>Senecio diaschides</i>	Erect Groundsel	Asteraceae	ann./per. herb	120	seed	cypsela	++	2	y	nd
<i>Senecio glomeratus</i>	Annual Fireweed	Asteraceae	ann./per. herb	140	seed	cypsela	++	nd	nd	nd
<i>Senecio hispidulus</i>	Rough Fireweed	Asteraceae	ann./per. herb	100	seed	cypsela	++	nd	nd	nd
<i>Senecio macrocarpus</i>	Large-fruit Groundsel	Asteraceae	sub-shrub	70	base	cypsela	++	2	y	y
<i>Senecio minimus</i>	Shrubby Fireweed	Asteraceae	annual herb	120	seed	cypsela	++	nd	nd	nd
<i>Senecio quadridentatus</i>	Cotton Fireweed	Asteraceae	perennial herb	100	base	cypsela	++	2	y	y
<i>Senecio tenuiflorus</i>	Slender Fireweed	Asteraceae	ann./per. herb	100	seed	cypsela	++	nd	nd	nd
<i>Sida corrugata</i>	Variable (Corrugated) Sida	Malvaceae	sub-shrub	prostrate	stem	mericarp	++	nd	nd	n
<i>Solanum prinophyllum</i>	Forest Nightshade	Solanaceae	perennial herb	50	base	berry	++	2	y	nd
<i>Solenogyne dominii</i>	Solenogyne	Asteraceae	perennial herb	10	base	cypsela	+++	3	y	y
<i>Solenogyne gummii</i>	Hairy Solenogyne	Asteraceae	perennial herb	10	base	cypsela	+++	3	y	nd
<i>Sphaeromorphaea littoralis</i>	Spreading Nut-heads	Asteraceae	ann./per. herb	25	seed/base	cypsela	++	3	y	nd
<i>Stackhousia subterranea</i>	Grassland Candles	Celastraceae	perennial herb	50	base	mericarp	+	2	y	nd
<i>Stylidium graminifolium</i>	Grass Triggerplant	Stylidiaceae	perennial herb	110	base	seed	++	2	y	n
<i>Swainsona procumbens</i>	Broughton Pea	Fabaceae	perennial herb	spreading	stem	seed	++	nd	nd	y
<i>Tynerium racemosum</i>	Grey Germander	Lamiaceae	perennial herb	40	root sucker	mericarp	++	2	y	y
<i>Typhlocladus pygmaeus</i>	Common Sunray	Asteraceae	annual herb	20	seed	cypsela	++	3	y	y
<i>Veltheia patula</i>	Blue Veltheia	Goodeniaceae	perennial herb	60	base	seed	++	2	y	y
<i>Warraba churea</i>	Warraba	Asteraceae	ann./per. herb	100	seed	cypsela	++	2	y	nd
<i>Warraba churea</i>	Warraba	Phyllanthaceae	perennial herb	75	flattened	seed	+	1	y	n
<i>Warraba churea</i>	Warraba	Phyllanthaceae	perennial herb	85	seed	seed	+	nd	nd	nd

Broad-leaved (eudicots) herbs, sub-shrubs and shrubs cont.

Species	Common name	Family	Form	Height	Buds	Unit	Pro.	Ger.	SPA	Res.
<i>Viola betonicifolia</i>	Native Violet	Violaceae	perennial herb	30	base	seed	+++	2	Y	nd
<i>Vitradinia cuneata</i>	Common New Holland Daisy	Asteraceae	sub-shrub	40	low	cypsela	+++	3	Y	Y
<i>Vitradinia gracilis</i>	Woolly New Holland Daisy	Asteraceae	sub-shrub	40	low	cypsela	+++	3	Y	Y
<i>Wahlenbergia communis</i>	Tufted Bluebell	Campanulaceae	perennial herb	80	base	seed	+++	3	Y	Y
<i>Wahlenbergia gracilis</i>	Sprawling Bluebell	Campanulaceae	perennial herb	100	base	seed	+++	3	Y	Y
<i>Wahlenbergia luteola</i>	Yellowish Bluebell	Campanulaceae	perennial herb	60	base	seed	+++	3	Y	Y
<i>Wahlenbergia stricta</i>	Austral Bluebell	Campanulaceae	perennial herb	90	base	seed	+++	3	Y	Y
<i>Xerochrysum bracteatum</i>	Golden Everlasting	Asteraceae	ann/per. herb	100	seed/base	cypsela	+++	3	Y	Y
<i>Xerochrysum viscosum</i>	Sticky Everlasting	Asteraceae	ann/per. herb	90	seed/base	cypsela	+++	3	Y	Y

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# APPENDIX E LIST OF BOX GUM GRASSY WOODLAND TREE SPECIES FOR PLANTING IN MANAGEMENT ZONES 4 AND 5

Species	Common Name	MZ 4	MZ 5
Trees			
<i>Brachychiton populneus</i>	Kurrajong	✓	✓
<i>Callitris endlicheri</i>	Black Cypress Pine	✓	✓
<i>Callitris glaucophylla</i>	White Cypress	✓	✓
<i>Eucalyptus albens</i>	White Box	✓	✓
<i>Eucalyptus amplifolia</i>	Cabbage Gum	✓	✓
<i>Eucalyptus blakelyi</i>	Blakely's Red Gum	✓	✓
<i>Eucalyptus bridgesiana</i>	Apple Box	✓	✓
<i>Eucalyptus conica</i>	Fuzzy Box	✓	✓
<i>Eucalyptus goniocalyx</i>	Bundy	✓	✓
<i>Eucalyptus mannifera</i>	Brittle Gum	✓	✓
<i>Eucalyptus melliodora</i>	Yellow Box	✓	✓
<i>Eucalyptus microcarpa</i>	Gum-topped Box	✓	✓
<i>Eucalyptus nortonii</i>	Large-flowered Bundy	✓	✓
<i>Eucalyptus polyanthemos</i>	Red Box	✓	✓
Shrubs			
<i>Acacia buxifolia</i>	Box-leaved Wattle	✓	
<i>Acacia implexa</i>	Hickory Wattle	✓	
<i>Acacia paradoxa</i>	Kangaroo Thorn	✓	
<i>Alectryon oleifolius</i>	Western Rosewood	✓	
<i>Allocasuarina verticillata</i>	Drooping Sheoak	✓	
<i>Atalaya hemiglauca</i>	Whitewood	✓	
<i>Bursaria spinosa</i>	Blackthorn	✓	
<i>Capparis mitchellii</i>	Wild Orange	✓	



<i>Cassinia longifolia</i>	-	✓	
<i>Cassinia quinquefaria</i>	-	✓	
<i>Dodonaea viscosa</i>	Hop Bush	✓	
<i>Ehretia membranifolia</i>	Peach Bush	✓	
<i>Eremophila mitchellii</i>	False Sandalwood	✓	
<i>Exocarpos cupressiformis</i>	Native Cherry	✓	
<i>Hibbertia linearis</i>	-	✓	
<i>Hibbertia obtusifolia</i>	-	✓	
<i>Jacksonia scoparia</i>	Dogwood	✓	
<i>Lissanthe strigosa</i>	Peach Heath	✓	
<i>Melichrus urceolatus</i>	Urn Heath	✓	
<i>Notelaea microcarpa</i>	Native Olive	✓	
<i>Olearia elliptica</i>	Sticky Daisy Bush	✓	
<i>Olearia viscidula</i>	Wallaby Weed	✓	
<i>Pimelea curviflora</i>	-	✓	
<i>Stackhousia monogyna</i>	Creamy Candles	✓	
<i>Stackhousia viminea</i>	Slender Stackhousia	✓	
<i>Swainsona galegifolia</i>	Smooth Darling Pea	✓	
<i>Templetonia stenophylla</i>	Leafy Templetonia	✓	
<b>Grasses</b>			
<i>Aristida behriana</i>	Bunch Wiregrass	✓	
<i>Aristida ramosa</i>	-	✓	
<i>Austrodanthonia auriculata</i>	Lobed Wallaby Grass	✓	
<i>Austrodanthonia bipartita</i>	-	✓	
<i>Austrodanthonia racemosa</i>	-	✓	
<i>Austrodanthonia richardsonii</i>	Wallaby Grass	✓	
<i>Austrostipa aristiglumis</i>	Plains Grass	✓	
<i>Austrostipa blackii</i>	-	✓	
<i>Austrostipa nodosa</i>	-	✓	
<i>Austrostipa scabra</i>	Speargrass	✓	
<i>Bothriochloa macra</i>	Red Grass	✓	

<i>Chloris truncata</i>	Windmill Grass	✓	
<i>Chloris ventricosa</i>	Tall Chloris	✓	
<i>Cymbopogon refractus</i>	Barbed Wire Grass	✓	
<i>Dichanthium sericeum</i>	Queensland Bluegrass	✓	
<i>Dichelachne micrantha</i>	Shorthair Plumegrass	✓	
<i>Dichelacne sciurea</i>	-	✓	
<i>Echinopogon caespitosus</i>	Hedgehog Grass	✓	
<i>Elymus scaber</i>	Wheatgrass	✓	
<i>Eulalia aurea</i>	Silky Browntop	✓	
<i>Panicum queenslandicum</i>	Coolibah Grass	✓	
<i>Poa labillardieri</i>	Tussock	✓	
<i>Poa sieberiana</i>	Snow Grass	✓	
<i>Sorghum leiocladum</i>	Wild Sorghum	✓	
<i>Themeda australis</i>	Kangaroo Grass	✓	
<b>Herbs and Ferns</b>			
<i>Asperula conferta</i>	Common Woodruff	✓	
<i>Brachyloma daphnoides</i>	-	✓	
<i>Bracteantha viscosa</i>	Sticky Everlasting	✓	
<i>Brunoniella australis</i>	Blue Trumpet	✓	
<i>Bulbine bulbosa</i>	Golden Lily	✓	
<i>Cheilanthes sieberi</i>	Forest Fern	✓	
<i>Chrysocephalum apiculatum</i>	Yellow Buttons	✓	
<i>Dianella longifolia</i>	A flax lily	✓	
<i>Dianella revoluta</i>	A flax lily	✓	
<i>Diuris dendrobioides</i>	-	✓	
<i>Geijera parviflora</i>	Wilga	✓	
<i>Geranium solanderi</i>	Native Geranium	✓	
<i>Gonocarpus elatus</i>	-	✓	
<i>Goodenia pinnatifida</i>	-	✓	
<i>Hypericum gramineum</i>	Small St John's Wort	✓	
<i>Leptorhynchos squamatus</i>	Scaly Buttons	✓	

<i>Leucochrysum albicans</i> var. <i>tricolor</i>	Hoary Sunray		
<i>Lomandra filiformis</i>	A mat rush	✓	
<i>Microseris lanceolata</i>	-	✓	
<i>Oxalis perennans</i>	Yellow Wood Sorrell	✓	
<i>Plantago debilis</i>	-	✓	
<i>Plantago gaudichaudii</i>	-	✓	
<i>Rostellularia adscendens</i>	-	✓	
<i>Rumex brownii</i>	Swamp Dock	✓	
<i>Sida corrugata</i>	-	✓	
<i>Wahlenbergia communis</i>	Native Bluebell	✓	
Vines			
<i>Glycine clandestina</i>	Love Twiner	✓	
<i>Glycine tabacina</i>	-	✓	
<i>Glycine tomentella</i>	Woolly Glycine	✓	
<i>Jasminum lineare</i>	Desert Jasmine	✓	
<i>Jasminum suavissimum</i>	-	✓	
<i>Pandorea pandorana</i>	Wonga Vine	✓	
<i>Parsonsia eucalyptophylla</i>	Gargaloo	✓	

## APPENDIX F MONITORING CHECKLIST

Action	Responsibility	Timing	Performance Indicator
<b>CONSTRUCTION PHASE MANAGEMENT MEASURES</b>			
A Construction Environmental Management Plan (CEMP) will be established. The CEMP will include (but not necessarily be limited to) the measures outlined in Section 3 of the PoM.	Principal Contractor	Prior to the commencement of any clearing, excavation and construction works.	CEMP prepared and submitted to DEE and Council as required.
Vegetation may only be removed from the approved development footprint, which is indicated in the approved site plans in Appendix B.	Principal Contractor	Prior to and during clearing works.	All vegetation outside the approved development is intact and undisturbed by works.
Clearing limits must be identified on all design, construction and operational drawings. The CEMP must indicate the boundaries of individual <i>L. albicans var. tricolor</i> (Hoary Sunray) and BGGW (including buffer zones), to be protected for environmental conservation purposes. No more than 351 m <sup>2</sup> of BGGW and 265 individual <i>L. albicans var. tricolor</i> (Hoary Sunray) plants are to occur within the clearing footprint.	Principal Contractor	Prior to and during clearing, excavation and construction works.	Clearing limits identified in CEMP as required.
Exclusion fencing will be installed around the boundaries of vegetation to be retained (including the conservation area and any vegetation on adjoining lands). The exclusion fencing will extend out to at least 5 m from trees and native vegetation, including retained <i>L. albicans var. tricolor</i> (Hoary Sunray) (to protect root zones).	Principal Contractor	Prior to and during clearing, excavation and construction works.	Exclusion fencing installed as required.
The areas of retained vegetation within the exclusion fencing shall be marked as 'No-Go' zones. All vehicles, construction materials and refuse will be prohibited from these areas. Compaction and the	Principal Contractor	Prior to and during clearing, excavation and construction works.	The areas of retained vegetation within the exclusion fencing shall be marked as



placement of fill within 5 metres of trees and native vegetation will be prohibited. Access points to 'No-Go' zones will be limited.			'No-Go' signs installed. Areas of retained vegetation within the exclusion fencing remains intact and undisturbed by works.
Any trees to be retained within the clearing footprint, will have bunting installed around their drip line, to prevent any disturbance that may impact on their health; this must remain around the tree until all construction activities have been completed.	Principal Contractor	Prior to and during clearing, excavation and construction works.	Protective measures installed around trees as required.
Hydrological and erosion / sediment controls must be implemented to maintain the quality and quantity of pre-development water flows into downstream wetland areas. These measures must be consistent with those specified in the <i>Blue Book - Managing Urban Stormwater: Soils and Construction. Volume 2A Installation of Services</i> (Department of Environment and Climate Change, 2008).	Principal Contractor	Prior to and during clearing, excavation and construction works.	Hydrological and erosion / sediment controls are installed in accordance with the <i>Blue Book - Managing Urban Stormwater: Soils and Construction. Volume 2A Installation of Services</i> (Department of Environment and Climate Change, 2008)
Appropriate weed control measures must be implemented, including the following: <ul style="list-style-type: none"> <li>All weeds removed from the site must be transported in a sealed container or bag and disposed at a waste management facility licenced to accept green waste.</li> <li>Vehicles, machinery and equipment must be free from weed material (including seeds) before entering the construction corridor.</li> </ul>	Principal Contractor	Principal Contractor	No WONS, Priority Weeds or Additional Species of Concern are in the development area.
During site inductions, all contractors, sub-contractors, and personnel must be notified of these vegetation protection requirements.	Principal Contractor	Prior to and during clearing, excavation and construction works.	
Clearing is not to occur during the months of spring (i.e. September, October, November).	Principal Contractor	Prior to and during clearing and excavation works.	Clearing only outside of Spring.

<p>A pre-clearing survey will be conducted by the project ecologist. The project ecologist will inspect vegetation within the clearing footprint and advise the site manager and tree clearing staff of any habitat potential and precautions necessary during vegetation removal.</p>	<p>Project Ecologist</p>	<p>Prior to the commencement of any clearing, excavation and construction works.</p>	<p>Pre-clearing survey completed as required.</p>
<p>The project ecologist will inspect the designated clearing footprint to ensure that no more than 351 m<sup>2</sup> of BGGW occurs within the development footprint.</p>	<p>Project Ecologist</p>	<p>Prior to the commencement of any clearing, excavation and construction works.</p>	<p>No more than 351 m<sup>2</sup> of BGGW occurs within the development footprint.</p>
<p>The project ecologist will oversee the removal of the 265 permissible <i>L. albicans var. tricolor</i> (Hoary Sunray) during the construction/earthworks stage, or what will essentially be the initial excavation/clearing stage. The project ecologist will count and each specimen of <i>L. albicans var. tricolor</i> (Hoary Sunray) removed from the development site proper (this will need to be executed with the site project manager present, particularly for record keeping).</p>	<p>Project Ecologist</p>	<p>During clearing, excavation and construction works.</p>	<p>No more than 265 <i>L. albicans var. tricolor</i> (Hoary Sunray) removed from the development site proper.</p>
<p>The CEMP must include monitoring of protected <i>L. albicans var. tricolor</i> (Hoary Sunray) and BGGW, by the project ecologist, to be undertaken weekly during construction, and any non-compliance observed, to be recorded in the Environment Issues Register. The register must include the date, the nature of the issue, the remedial action taken, and any monitoring required as a result.</p>	<p>Project Ecologist</p>	<p>During clearing, excavation and construction works.</p>	
<p>Any displaced fauna will be relocated into adjacent habitat, as close to the development area as possible. Any injured fauna will be placed into the care of a local veterinary hospital or wildlife rescue group.</p> <p>In circumstances where native fauna are detected during the removal of vegetation, clearing will cease until the ecologist or wildlife carer has relocated the animal.</p>	<p>Project Ecologist</p>	<p>During clearing, excavation and construction works.</p>	<p>Fauna have been dealt with accordingly.</p>

If any injured or displaced fauna are encountered onsite in the absence of an ecologist or licensed wildlife carer, the advice of a local wildlife rescue group will be sought immediately.			
Prior to any clearing occurring in the development area, the project ecologist will conduct a survey in the development area to locate any significant, salvageable habitat features (such as large hollow ground logs and bush rocks). These features are to be salvaged and redistributed in the Conservation Area, under the supervision of the project ecologist.	Project Ecologist	Prior to the commencement of any clearing, excavation and construction works.	All salvageable features removed from development footprint and placed in Conservation Area.
During any vegetation clearing works, all tree trunks and larger branches (over 10 cm diameter) are to be removed from the development site proper and are to be cut up into long pieces (i.e. over 4 m where possible) and carefully translocated and placed within the Conservation Area, in such a way as to look natural, not add to bushfire risks, and to provide benefit to native fauna.	Principal Contractor and Project Ecologist	During clearing works.	Tree trunks and larger branches dealt with accordingly.
Cleared vegetation will be mulched and re-used throughout the site, where necessary, as part of any vegetation regeneration or landscaping activities. Note, that any Priority Weeds or WONS are to be excluded from the mulching process. Non-salvageable material shall be disposed of in an approved manner.	Principal Contractor	During clearing, excavation and construction works.	Cleared vegetation dealt with accordingly.
<b>ESTABLISHMENT OF THE CONSERVATION AREA</b>			
The on-ground measures outlined in this PoM will be linked restrictive covenants under Section 880 or 88E of the <i>Conveyancing Act 1919</i> , in accordance with Section 4.1 of this PoM. This will ensure that the site's Conservation Area and 20 m Vegetation Buffer are protected in perpetuity.	Landowner	Prior to the commencement of any clearing, excavation and construction works.	Restrictive covenants registered on title as required.
Permanent fencing and conservation signage to be erected in accordance with Section 4.2 of the PoM.	Principal Contractor	After initial clearing and excavation works and prior to the issue of the subdivision certificate.	Permanent, fauna friendly fencing fully installed around the boundaries of the Conservation Area. Locked gates at any agreed illegal access points.



Locked gates to be installed at any agreed illegal access points; these are to be shown on plans.			
Existing dumped rubbish and barbed wire fencing to be removed from the Conservation Area, in accordance with Section 4.3 of the PoM.	Principal Contractor	Prior to or during clearing, excavation and construction works and prior to the issue of the subdivision certificate.	All existing rubbish and barbed wire fencing has been removed from the Conservation Area (with the exception of items such as solid metal objects, timber or sheets of iron, which will be left in situ).
A minimum of six photo reference points will be established in the Conservation Area.	Project Ecologist	After initial clearing and excavation works and prior to the issue of the subdivision certificate.	Six photo reference points have been established.
<b>GRASSY WOODLAND RESTORATION STRATEGY</b>			
<b>Management Zone 1</b>			
Site assessment, site preparation and direct seeding in MZ 1 to be undertaken in accordance with Section 5.1 of the PoM.	Bush Regeneration Contractor	Immediately after initial clearing and excavation works and prior to the issue of the subdivision certificate.	Site has been prepared and seeded as required.
Maintenance in MZ 1 (i.e. watering of plants and weed control) to be undertaken in accordance with Section 5.1 of the PoM.	Bush Regeneration Contractor	Immediately after direct seeding and ongoing.	Within 5 years of commencement of this PoM, the loss of 265 individual <i>L. albicans</i> var. <i>tricolor</i> (Hoary Sunray) plants will be compensated by increasing the retained population of 775 to not less than 1035 ( $\pm 10\%$ ) individuals in the Conservation Area.  The area of BGGW in the Conservation Area will be increased from 1.2 ha to at least 1.5 ha.
<b>Management Zone 2</b>			
All existing patches of <i>L. albicans</i> var. <i>tricolor</i> (Hoary Sunray) in MZ 2 will have temporary fencing / bunting installed around them out to a buffer distance of 5 m.	Project Ecologist	Prior to the commencement of any restoration works in the Conservation Area.	Temporary fencing / bunting installed as required.

		Will be kept in place until all excavation works are completed in adjacent MZ 1.	
<b>Management Zone 3</b>			
Restoration works in MZ 3 will involve the management of weeds to facilitate natural regeneration. Weed management will adhere to the 'General Weed Control Works' outlined below.	Bush Regeneration Contractor	See 'General Weed Control Works' below	The condition of the site's BGGW will be improved so that it reaches the highest condition, being 'state 1', in the Grassy Woodlands' in the Box-Gum Grassy Woodland State and Transition Model, in Appendix 3 of DECCW (2011) (this document is provided in Appendix B.
<b>Management Zone 4 and Management Zone 5</b>			
Weed management and tree planting in MZ 4 and MZ 5 to be undertaken in accordance with Section 5.4 of the PoM.	Bush Regeneration Contractor	Immediately after initial clearing and excavation works and prior to the issue of the subdivision certificate.	Trees have been planted as required.
Maintenance in MZ 4 and MZ 5 (i.e. watering of planted trees and weed control) to be undertaken in accordance with Section 5.4 of the PoM.	Bush Regeneration Contractor	Immediately after tree planting and ongoing.	All planted trees are healthy.
<b>General Weed Control Works for all Management Zones</b>			
Primary weed control works to be undertaken in accordance with Section 5.4 of this PoM.	Bush Regeneration Contractor	Immediately at the commencement of the Grassy Woodland Restoration Strategy.	All mature individuals of WONS, Priority Weeds or Additional Species of Concern have been removed/killed.

Secondary weed control works to be undertaken in accordance with Section 5.4 of this PoM.	Bush Regeneration Contractor	During the first year, site visits will occur at least twice each month with the visits spread out approximately every two weeks.  After the first year, provided that weed abundances have diminished, site visits will occur once a month for a period of two years. If, during this two-year period, the bushland management or ecological consultant determines that weed populations have been reduced to minor occurrences, site visits can be scaled back to once every two months.	Any regrowth of WONS, Priority Weeds or Additional Species of Concern have been removed/killed.
Tertiary weed control works (ongoing maintenance) to be undertaken in accordance with Section 5.4 of this PoM.	Bush Regeneration Contractor	Ongoing maintenance must occur where and when needed, for the entirety of the 20-year (life of the approval) period of the PoM.	Any regrowth of WONS, Priority Weeds or Additional Species of Concern have been removed/killed.
<b>Management of Fire for Conservation</b>			
Burning regime to be determined in consultation with OEH.	Bush Regeneration Contractor	Burns within the grassland areas of the Conservation Area – minimum interval of 2 years and maximum interval of 10 years.  Burns within the grassy woodland (treed) areas of the Conservation Area – minimum interval of 5 years and maximum interval of 40 years.  <b>All burns within the Conservation Area to be timed to occur soon after <i>L. albicans</i> var. <i>tricolor</i> (Hoary Sunray) plants have set seed.</b>	
<b>HABITAT AUGMENTATION STRATEGY</b>			
A total of nine nest boxes are to be installed within the Conservation Area, in accordance with Section 6 of the PoM.	Project Ecologist	Nest boxes to be installed prior to the commencement of clearing works.	A total of nine nest boxes installed as required.



Nest boxes to be maintained and monitored in accordance with Section 7.1 of the PoM.	Project Ecologist	Annually or the full 20-year period of this PoM (See Section 7 of the PoM for details of maintenance and monitoring).	All nest boxes are in good condition and are securely attached to tree.
<b>MONITORING</b>			
Documentation of the nest box installation procedures, prior to clearing works.	Project Ecologist	Immediately following nest box installation.	See 'Reporting' below.
A pre-clearance survey and the supervision of clearing / construction works	Project Ecologist	Prior to and during clearing works.	See 'Reporting' below.
Annual assessments of the success of restoration and weed management and revegetation efforts, including: <ul style="list-style-type: none"> <li>• Photographs taken at each photo reference point (see Section 4.1.2).</li> <li>• A targeted survey for <i>L. albicans var. tricolor</i> (Hoary Sunray), in order to estimate plant numbers in the Conservation Area.</li> <li>• Quantitative assessments of the success rate of plantings and natural regeneration and the abundance of weeds. These assessments should be designed so that they can be repeated annually, monitoring period.</li> <li>• Recommendations for corrective measures and/or vegetation management.</li> </ul>	Project Ecologist	Annually for the full 20-year period of this PoM.	See 'Reporting' below.
Annual nest box monitoring and maintenance including monitoring of nest box use by fauna and nest box maintenance.	Project Ecologist	Annually for the full 20-year period of this PoM.	See 'Reporting' below.
<b>REPORTING</b>			
A report to be prepared following the installation of nest boxes. The report is to include the nest box identification numbers, nest box types, GPS locations (including GIS map), species and diameter at	Project Ecologist	Report to be submitted to Council prior to the commencement of clearing and construction.	Report prepared and submitted to DEE and Council as required.

breast height of host trees, nest box heights and nest box orientations.			
A report to be prepared, detailing the pre-clearance survey findings and all procedures taken during supervision of clearing / excavation works.	Project Ecologist	Report is to be submitted to Council at the completion of clearing and construction	Report prepared and submitted to DEE and Council as required.
A combined report regarding the Grassy Woodland Restoration Strategy and the Habitat Augmentation Strategy to be prepared annually. The reports must be based on this Monitoring Checklist. Reports will also include a photograph at each photo reference point for a visual assessment of site progress.	Project Ecologist	Reports to be submitted annually, to Council, for the full 20-year period of this PoM.	Report prepared and submitted to DEE and Council as required.
A final summary report will be prepared to certify completion of the works or recommendations for further management requirements.	Project Ecologist	Report to be submitted to Council for approval at the end of the 20-year PoM period.	Report prepared and submitted to DEE and Council as required.

# APPENDIX G QUALIFICATION, LICENSING AND CERTIFICATION

## Qualifications

Fieldwork and report writing for this project was undertaken by Bart Schiebaan, Lizzie MacDonald and Sarah Jones. Qualifications are provided in the table below.

<b>Sarah Jones</b>	<b>Director / Ecologist / Bushfire Planner</b> B.Env.Sc., G.DIP.DBPA (Design for Bushfire Prone Areas) BPAD-A Certified Practitioner (BPD-PA-26512) <i>BAAS18020 Accredited Assessor, as required by the Biodiversity Conservation Regulation 2017 and accredited to apply the BAM</i> Member of the Ecological Consultants Association of NSW
<b>Lizzie MacDonald</b>	<b>Ecologist</b> B.Sc., GradCert.Env.Mng&Sus <i>BAAS18112 Accredited Assessor, as required by the Biodiversity Conservation Regulation 2017 and accredited to apply the BAM</i> Member of the Ecological Consultants Association of NSW
<b>Bart Schiebaan</b>	<b>Ecologist</b> B.App.Sc. <i>BAAS 18033 Accredited Assessor, as required by the Biodiversity Conservation Regulation 2017 and accredited to apply the BAM</i>

## Licensing

Research was conducted under the following licences:

- NSW National Parks and Wildlife Service Scientific Investigation Licence SL100533;
- Animal Research Authority (Trim File No: TRIM 11/5655) issued by NSW Department of Primary Industries; and
- Animal Care and Ethics Committee Certificate of Approval (Trim File No: TRIM 11/5655) issued by Department of Primary Industries.

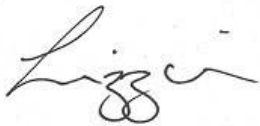


## Certification

As the principal author, I, Lizzie MacDonald make the following certification:

- The results presented in the report are, in the opinion of the principal author and certifier, a true and accurate account of the species recorded, or considered likely to occur within the site;
- Commonwealth, state and local government policies and guidelines formed the basis of project surveying methodology, or where the survey work has been undertaken with specified departures from industry standard guidelines, details of which are discussed and justified in Section 2;
- All research workers have complied with relevant laws and codes relating to the conduct of flora and fauna research, including the *Animal Research Act 1995*, *National Parks and Wildlife Act 1974* and the *Australian Code of Practice for the Care and Use of Animals for Scientific Purposes*.

Signature of Principal Author and Certifier:



Lizzie MacDonald  
Ecologist  
B.Sc., G.Cert.EnvMgt&Sus  
*BAAS18112 Accredited Assessor*