Lot 102 Fence Line Collie

Detailed Flora and Vegetation Survey

Report to South32

25 January 2024

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Executive Summary

South32 is proposing to construct a feral predator proof exclusion fence to enclose a portion of Lot 102 on Deposited Plan 23201, Collie, Western Australia, to support offset requirements required as part of the Environmental Impact Assessment process. Lot 102 is situated approximately 20 km northwest from the township of Collie.

South32 commissioned Biologic Environmental Survey (Biologic) to complete a two-phase detailed flora and vegetation survey within the Survey Area, defined as the area bounded by the proposed fence line, including a 15 m buffer on the external side of the proposed fence line route. The Survey Area covers 954.21 hectares (ha), including native vegetation and minor access tracks (Figure 1.1). The overall objective of the survey was to describe representative flora and vegetation within the Survey Area, focusing on the boundary where the fence line is proposed.

Biologic completed a two-phase detailed flora and vegetation survey within Lot 102 on Deposited Plan 23201, Collie, Western Australia, approximately 20 km northwest from the township of Collie (Figure 1.1).

A feral predator proof exclusion fence has been proposed to enclose the perimeter of a portion of Lot 102 (South32, 2022b), within the northeastern section of the lot. The area bounded by the proposed fence line, including a 15 m buffer on the external side of the proposed fence line route, constitutes the Survey Area. The Survey Area covers an area of 954.21 ha, including native vegetation minor access tracks (Figure 1.1). The overall objective of the survey was to describe representative flora and vegetation within the Survey Area, focusing on the boundary where the fence line is proposed.

The field survey was undertaken over 20 person days by a team of botanists from Biologic. The survey was completed over two sampling events, from 31 July–4 August 2023 and from 23–28 October 2023. A total of 17 quadrats, 7 relevés and 25 vegetation mapping notes were sampled across the Survey Area.

A total of 148 confirmed vascular flora taxa from 48 families and 133 genera were recorded from the Survey Area, comprising 137 native taxa and eleven introduced taxa. During the survey, additional *Lomandra whicherensis* (P3) locations were recorded within the Survey Area, but no other significant taxa were observed. Following the survey, a further two significant flora species still remained Possible to occur in the Survey Area. Eleven confirmed introduced taxa were recorded within the Survey Area, with only one (**Gomphocarpus fruticosus*) listed as a Declared Pest. None of the other introduced taxa recorded during the survey are listed as Weeds of National Significance or Declared Pests.

Five vegetation types and two mapping units were described in the Survey Area. The vegetation types described from the Survey Area are not considered to be analogous with the known Threatened or Priority Ecological Communities occurring in the Jarrah Forest bioregion. The condition of the vegetation in the Survey Area ranged from Excellent to Very Good, with the majority considered to be in Excellent condition (98.8 %). The main disturbances observed were associated with historical logging, including access tracks.

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1 Introduction

1.1 Background

South32 is the managing company for the South32 Worsley Alumina Pty Ltd Joint Venture (Worsley Alumina) operation, which currently includes bauxite mining near Boddington, bauxite transport via overland conveyor, an alumina refinery near Collie and port operations in the Bunbury Port. Worsley Alumina currently has a proposal under assessment by the Environmental Protection Authority (EPA) for a mining expansion within the Boddington region. As part of the Environmental Impact Assessment (EIA) process for this expansion, a number of Offset Implementation Plans (OIP) have been prepared to support an overarching Biodiversity Offset Plan (BOP).

The objective of OIP#1 (South32, 2022a) is to create a conservation benefit for multiple fauna species in order to address any significant residual impact (SRI) arising from the expansion. To facilitate this, a feral predator proof exclusion fence has been proposed to enclose the perimeter of a portion of Lot 102 on Deposited Plan 23201, Collie, Western Australia. Lot 102 is situated approximately 20 km northwest from the township of Collie (Figure 1.1), within the northeastern section of the lot.

South32 has commissioned Biologic Environmental Survey (Biologic) to complete a two-phase detailed flora and vegetation survey within the Survey Area, defined as the area bounded by the proposed fence line, including a 15 m buffer on the external side of the proposed fence line route. The Survey Area covers 954.21 hectares (ha), including native vegetation and minor access tracks (Figure 1.1). The overall objective of the survey was to describe representative flora and vegetation within the Survey Area, focusing on the boundary where the fence line is proposed.

402500
405000
407500
6322500
6320000
6317500
Mornington Rd
Beela Rd
IBRA Region
Jarrah Forest
Swan Coastal Plain
Warren
IBRA Subregion
Northern Jarrah Forest
Perth
Southern Jarrah Forest
Warren
Bunbury
Dunsborough

LEGEND

Study Area
Local Road
Rail
Fence Line Corridor
Proposed Fence Line Route

Scale 1:25,000
0 0.5 1 Km
Coordinate System: GDA 1994 MGA Zone 50
Transverse Mercator Created: 18/01/2024

Biologic

Bunbury
Dunsborough

SOUTH32

Lot 102 Fence Line Collie Detailed Flora and Vegetation Survey

Figure 1.1: Survey Area and regional context

1.2 Scope and Objectives

The scope of works includes a two-phase detailed flora and vegetation survey of the Survey Area. The detailed survey aims to describe representative flora and vegetation within the Survey Area, with a focus on the Fence Line Corridor (Figure 1.1). The scope of works was addressed via:

- A desktop assessment to gather contextual information on the Survey Area and surrounds;
- A two-phase field assessment to determine the species present, the vegetation types present, and the condition of the vegetation, including any significant species; and
- A detailed flora and vegetation report.

The information collected during the detailed flora and vegetation survey will also be used to complete future surveys across Lot 100 and the remainder of Lot 102, which will be addressed in a separate report.

1.3 Legislation and Compliance

Significant flora and vegetation are protected at a state and commonwealth level and legislated by the following parliamentary acts:

- State *Biodiversity Conservation Act 2016* (BC Act);
- State *Environmental Protection Act 1986* (EP Act); and
- Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The EPA outlines guidance for biological surveys in WA. All aspects of botanical assessments at Biologic are compliant with the EPA Technical Guidance for Flora and Vegetation Surveys for Environmental Impact Assessment (EPA, 2016b), this extends to preparation, survey design, personnel, data analysis, reporting and client data submission. Additionally, Biologic is consistent with the values presented in the Environmental Factor Guidelines for flora and vegetation (EPA, 2016a), intended to protect the biological diversity and ecological integrity of WA flora and vegetation during the Environmental Impact Assessment process (EIA).

1.3.1 Significant Flora & Vegetation

The state and commonwealth governments protect rare, endemic, new or special flora and vegetation communities at varying levels by classifying them under codes of conservation significance (Appendix A). Significant flora may extend beyond the assigned codes and may include:

- Being identified as Threatened, Critically Endangered, Endangered or Vulnerable species (State listed BC Act and/or commonwealth listed EPBC Act);

- Being listed as Priority flora species (DBCA, 2023e);
- Locally endemic or associated with a restricted habitat type (e.g. surface water or groundwater dependent ecosystems);
- New species or anomalous features that indicate a potential new species;
- Range extensions or representative of outer population extent (particularly at the extremes of range, recently discovered range extensions or isolated outliers of the main range);
- Unusual species; restricted subspecies, varieties, naturally occurring hybrids, or complex taxonomic groups; or
- Relictual status, being representative of taxonomic groups that no longer occur widely in the broader landscape.

Significant vegetation may extend beyond the assigned codes and may include:

- Being identified as Threatened Ecological Community (TEC), Critically Endangered, Endangered or Vulnerable ecological community (State listed BC Act and/or commonwealth listed EPBC Act)
- Identified as a Priority Ecological Community (PEC) (DBCA, 2022);
- Restricted or endemic distribution;
- Degree of historical impact from threatening processes (such as mining or agricultural);
- A role as a refuge for significant flora; or
- Providing an important function required to maintain ecological integrity of a significant ecosystem.

1.3.2 Introduced Flora

Introduced flora can pose a threat to native vegetation and biodiversity. A database of declared pests is kept by the Department of Industries and Regional Development (DPIRD). This database falls under State jurisdiction, legislated by the *Biosecurity and Agricultural Management Act 2007* (BAM Act). Some introduced flora taxa may be classified within categories that have legal control or management requirements (Appendix A). These requirements must be met by the landholder.

2 Existing Environment

2.1 Biogeography

The Survey Area is located within the Jarrah Forest bioregion, as described by the Interim Biogeographic Regionalisation for Australia (IBRA) (Thackway & Cresswell, 1995). This bioregion is described as duricrusted plateau of the Yilgarn Craton and is characterised by jarrah (*Eucalyptus marginata*) – marri (*Corymbia calophylla*) forest on laterite gravels and, in eastern parts, by wandoo – marri woodlands on clayey soils. Eluvial and alluvial deposits support *Agonis* shrublands, and in areas of Mesozoic sediments, jarrah forests occur in a mosaic with a variety of species rich shrublands (Williams & Mitchell, 2001).

The Jarrah Forest bioregion is classified into two subregions, the Northern Jarrah Forest (JAF01), of which the Survey Area is located in the south-western corner, and Southern Jarrah Forest (JAF02) (Figure 1.1). The Northern Jarrah Forest subregion is characterised by jarrah – marri forest on laterite gravels in the west, with bullich (*Eucalyptus megacarpa*) and blackbutt (*E. patens*) in the valleys, grading to wandoo (*E. wandoo*) – marri woodlands on clayey soils in the east, with powder bark (*E. accedens*) on breakaways (Williams & Mitchell, 2001). There are extensive, but localised, sand sheets with *Banksia* low woodlands, and heath is found on granite rocks and as a common understory of forests and woodlands in the north and east (Williams & Mitchell, 2001). Most of the diversity in the communities occurs on lower slopes or near granite soils where there are rapid changes in site conditions (Williams & Mitchell, 2001).

2.2 Climate

The climate of the Jarrah Forest bioregion is classified by cool wet winters, and warm, relatively dry summers. Average annual rainfall for the Northern Jarrah Forest subregion is from 1300 millimetres (mm) on the scarp, to approximately 700 mm in the east and north (Williams & Mitchell, 2001). The closest weather station with both rainfall and temperature data is Collie (station number 9628), located approximately 17 km from the Survey Area (BoM, 2023a).

The hottest month for Collie is January (mean maximum temperature 30.5°C), while the coolest month is July (mean maximum temperature 15.5°C) (Figure 2.1). Average annual rainfall is 928.8 mm, with average monthly rainfall peaking in winter (June to August) (BoM, 2023a). The highest average monthly rainfall occurs in July (175.9 mm), with the lowest occurring in February (14.5 mm) (BoM, 2023a).

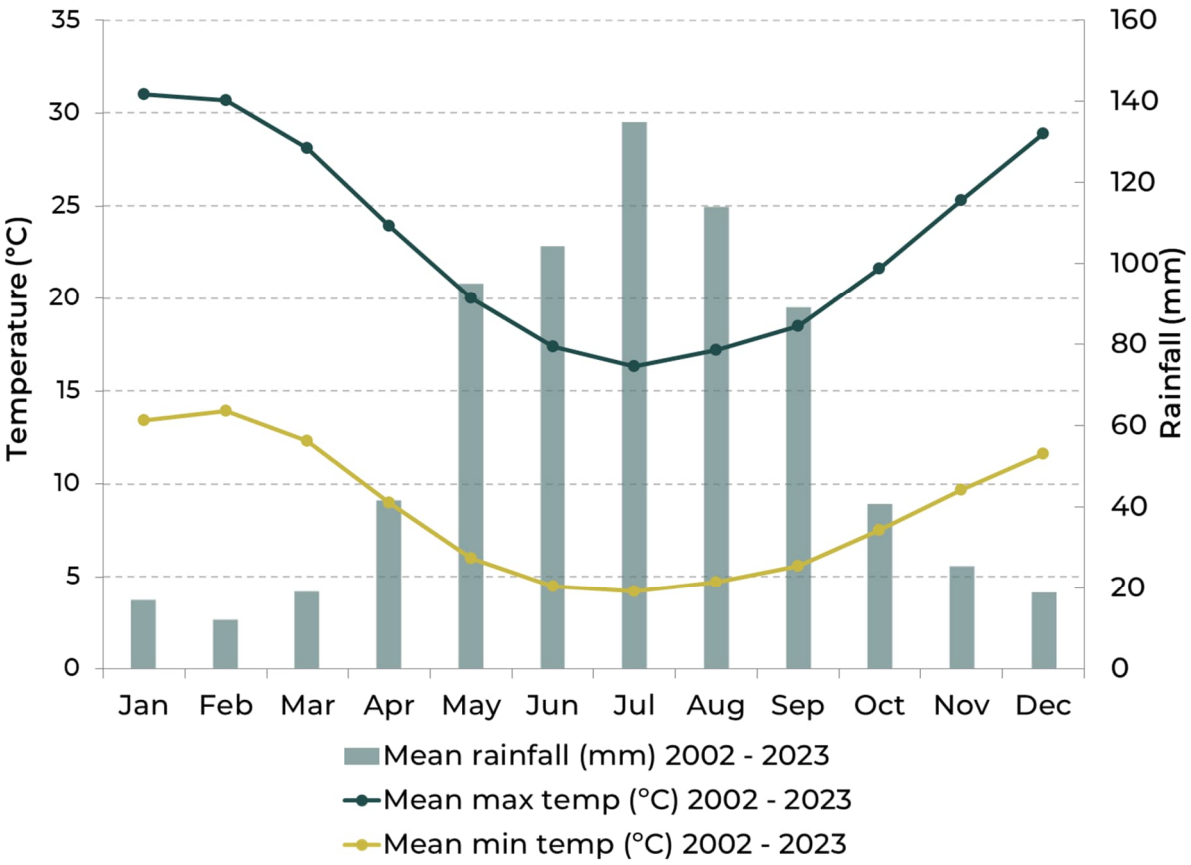


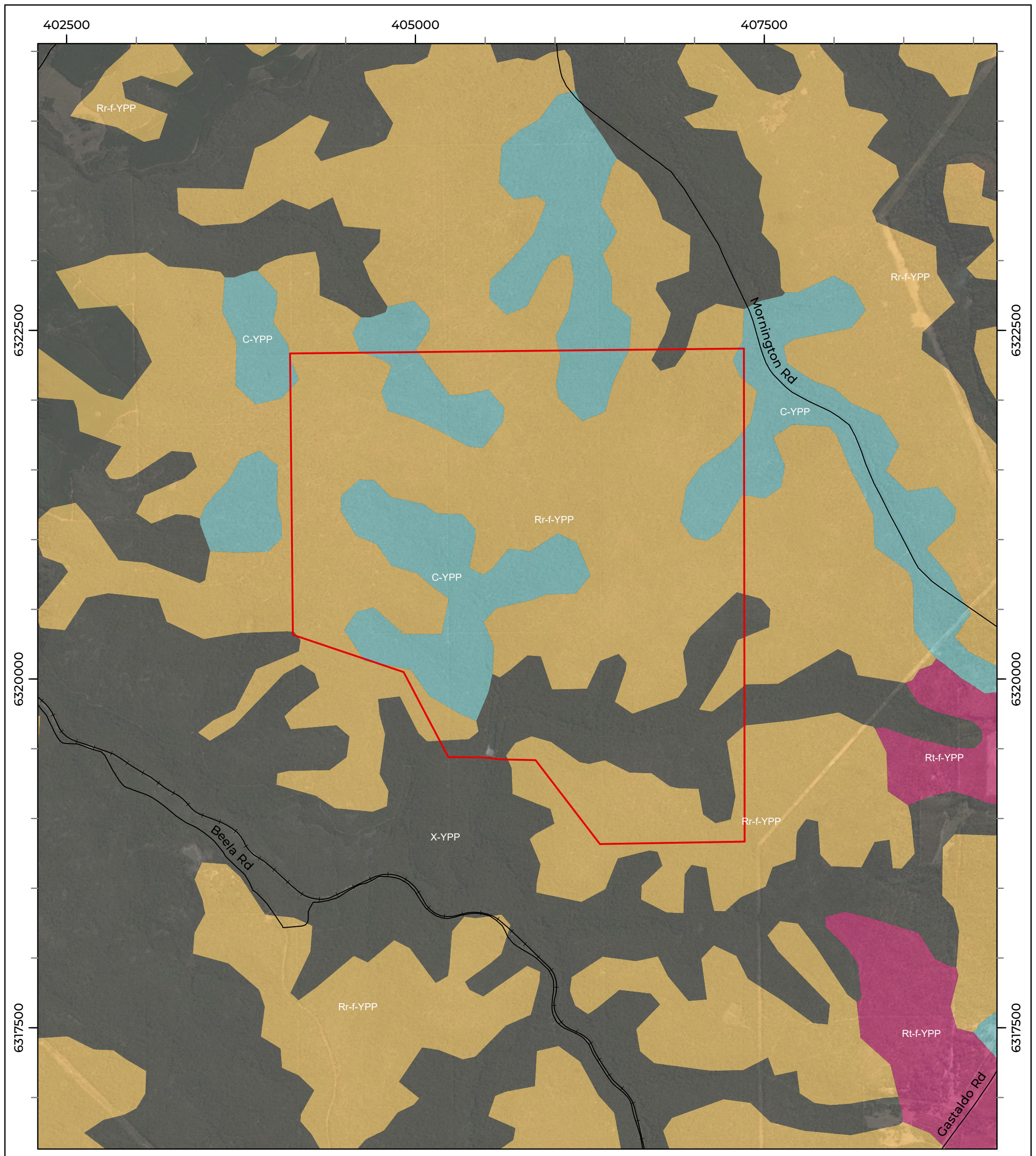
Figure 2.1: Long-term climatic data for Collie East (station number 9994) (BoM, 2023a)

2.3 Geology

Regolith geology of the Survey Area is displayed in Table 2.1 and Figure 2.2 (GSWA, 2020). The Survey Area extends across three regolith geological units, which the dominant unit is massive to rubbly ferruginous duricrust (Rr-f-YPP; 65.2%). The remaining units comprise colluvium (C-YPP; 20.7%) and exposed bedrock (X-YPP; 14.1%).

Table 2.1: Regolith geology at the Survey Area (1:500,000) (GSWA, 2020).

Code	Description	Extent
C-YPP Colluvial unit, YPP	Colluvium derived from different rock types; includes gravel, sand, and silt	197.6 ha 20.7%
Rr-f-YPP Residual or relict unit, YPP	Ferruginous duricrust, massive to rubbly; includes iron-cemented reworked products	622.2 ha 65.2%
X-YPP Exposed unit, YPP	Exposed bedrock	134.4 ha 14.1%



LEGEND

- Study Area
- Local Road
- Rail

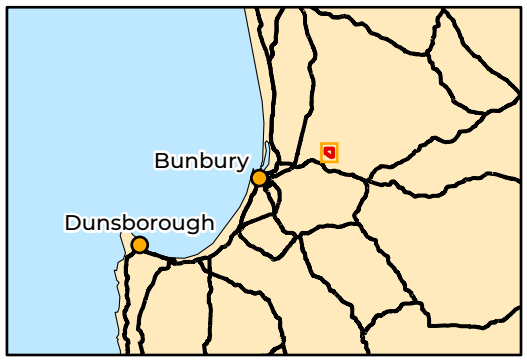
Regolith

- C-YPP; Colluvial unit, YPP
- Rr-f-YPP; Residual or relict unit, YPP
- Rt-f-YPP; Residual or relict unit, YPP
- X-YPP; Exposed unit, YPP

Scale 1:25,000

0 0.5 1 Km

Coordinate System: GDA 1994 MGA Zone 50
Transverse Mercator Created: 28/12/2023



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Lot 102 Fence Line Collie Detailed Flora and Vegetation Survey

Figure 2.2: Broad geology of the Survey Area

2.4 Land Systems

Soil landscapes and land system mapping of the southwest agricultural areas of Western Australia describes the broad soil and landscape characteristics from regional and local scales, and has been captured at scales ranging from 1:20,000 to 1:50,000 (Purdie *et al.*, 2004). The Survey Area is located on the Darling Plateau and occurs within two soil landscape systems, the Darling Plateau System (255Dp) and the Lowden Valley System (255Lv) (Purdie *et al.*, 2004).

The Darling Plateau System is lateritic plateau with duplex sandy gravels, loamy gravels and wet soils vegetated by Jarrah-marri-wandoo forest and woodland, while the Lowden Valley System comprises deep gneissic valleys, in the south of the Western Darling Range (Purdie *et al.*, 2004).

Table 2.2: Land Systems of the Survey Area

Land System	Description	Extent
Darling Plateau System	Undulating lateritic plateau. Soils are gravels and sands.	866.7 ha 90.8%
Lowden Valleys System	Deeply incised valleys of the Leschenault and Blackwood River Catchments with mostly loamy earths and gravels.	87.49 9.17%

2.5 Soils

Broadly speaking, soils of the Northern Jarrah Forest subregion are defined as lateritic gravels consisting of up to 5 m or more of ironstone gravels in a yellow, sandy matrix. Related to these are the lateritic podzolic soils with ironstone gravels in a sandy surface horizon, overlying a mottled yellow-brown clay subsoil (Beard, 1990). The Atlas of Australian Soils places the Survey Area within two broad soil landscape units, JZ1 (943.6 ha/ 98.9 %) and Sd1 (10.6 ha/ 1.1 %) (Northcote *et al.*, 1960-1968) (Figure 2.4). JZ1 consists of dissected, undulating plateaus, while Sd2 occupies hills of the Darling Scarp, which have gneissic rock outcrops. Slopes are moderate to very steep and soils are often hard acidic (CSIRO, 1967).

Table 2.3: Soil landscape units of the Survey Area

Unit Code	Description	Extent
JZ1	Dissected plateau having a strongly undulating relief.	943.6 ha 98.9%
Sd2	Rounded hills of the Darling scarp with gneissic rock outcrops; slopes are moderate to very steep: chief soils seem to be hard acidic.	10.63 1.11%

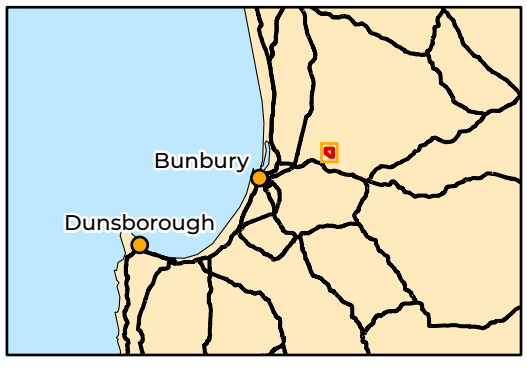
402500
405000
407500
6322500
6320000
6317500
Mornington Rd
Beela Rd
Gastaldo Rd

LEGEND

Study Area
Local Road
Rail

Land System
Darling Plateau System
Lowden Valleys System

Scale 1:25,000
0 0.5 1 Km
Coordinate System: GDA 1994 MGA Zone 50 Transverse Mercator
Created: 28/12/2023



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Lot 102 Fence Line Collie Detailed Flora and Vegetation Survey

Figure 2.3: Land systems of the Survey Area

402500
405000
407500
6322500
6320000
6317500
Mornington Rd
Beela Rd
Gastaldo Rd

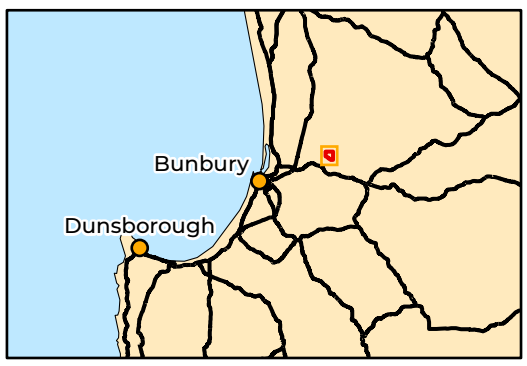
LEGEND

Study Area
Local Road
Rail

Soil Unit
JZ1
Sd2

Scale 1:25,000
0 0.5 1 Km

Coordinate System: GDA 1994 MGA Zone 50
Transverse Mercator Created: 28/12/2023



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Lot 102 Fence Line Collie
Detailed Flora and
Vegetation Survey

Figure 2.4: Soils
of the Survey Area

2.6 Hydrology and Hydrogeology

The Survey Area is located in the Brunswick subcatchment within the Leschenault Estuary - Lower Collie Catchment of the Collie River Basin (Figure 2.5). Rivers and minor/ ephemeral drainage lines are the main hydrological feature of the Northern Jarrah Forest. The watercourses in this subregion are dominated by dams and reservoirs within forested catchments which provide potable water to the metropolitan area of Perth, regional towns and communities and irrigation to the horticultural and agricultural industries (Williams & Mitchell, 2001).

There are two un-named minor watercourses which run through the Survey Area. The first extends 500 m into the north-west of the Survey Area, draining northwest into the Brunswick River. The second intersects the Survey Area at its eastern edge, flowing into the Lunenburgh River (Figure 2.5).

2.6.1 Groundwater Dependent Ecosystems

Groundwater Dependent Ecosystems (GDEs) are ecosystems that rely upon groundwater for their continued existence (BoM, 2023b). GDEs can be represented by many different assemblages of biota which rely on groundwater, and as a result come in many forms;

- Aquatic ecosystems: that rely on the surface expression of groundwater – this includes surface water ecosystems which may have a groundwater component, such as rivers, wetlands, and springs;
- Terrestrial ecosystems: that rely on the subsurface presence of groundwater – this includes all vegetation ecosystems or GDV; and
- Subterranean ecosystems: this includes cave and aquifer ecosystems.

The BoM has developed the Groundwater Dependent Ecosystems Atlas (GDE Atlas) as a national dataset of Australian GDEs to inform groundwater planning and management (BoM, 2023b). It is the first and only national inventory of GDEs in Australia. The BoM GDE Atlas indicates that the Survey Area has the potential to support terrestrial GDEs but not aquatic GDEs. The southern section of the Survey Area has been mapped as having low GDE potential to support terrestrial GDEs, while small portions of the northern section of the Survey Area have been classified as having low to moderate potential (Figure 2.6).

The GDE Atlas also includes the national inflow-dependent landscapes layer which is derived from remotely sensed data. This layer indicates the likelihood that a landscape is accessing water in addition to rainfall (such as soil moisture, surface water or groundwater), and generally represents a potential GDE dataset for all areas not yet studied or investigated in any detail.

402500
405000
407500
6322500
6320000
6317500

Brunswick River
Mornington Rd
Augustus River
Frederic River
Lunenburgh River
Sophia River
Beela Rd
Otho River
Matilda River
Gastaldo Rd

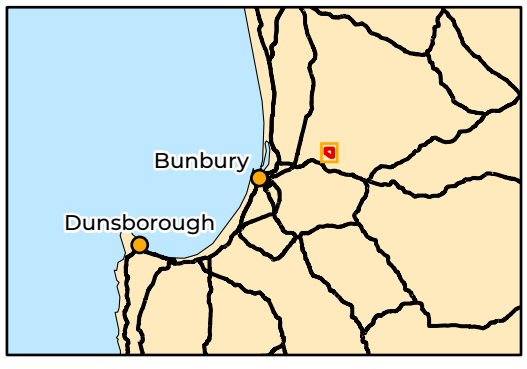
LEGEND

Study Area
Local Road
Rail

Surface Hydrology
Minor
Major

Scale 1:25,000
0 0.5 1 Km

Coordinate System: GDA 1994 MGA Zone 50
Transverse Mercator Created: 28/12/2023



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SOUTH32

Lot 102 Fence Line Collie Detailed Flora and Vegetation Survey

Figure 2.5: Hydrology of the Survey Area

402500
405000
407500
6322500
6320000
6317500
Brunswick River
Mornington Rd
Augustus River
Frederic River
Lunenburgh River
Sophia River
Beela Rd
Otho River
Matilda River
Gastaldo Rd

LEGEND

Study Area
Local Road
Rail

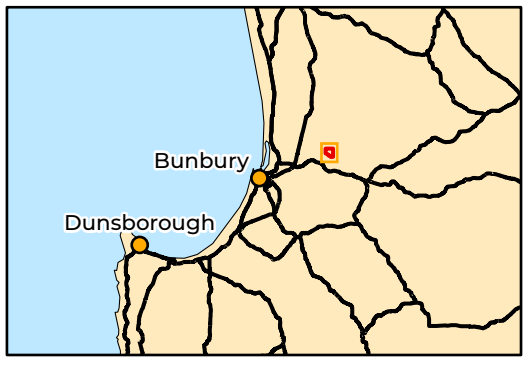
Surface Hydrology

Minor
Major

Terrestrial GDE

Moderate potential GDE - from national assessment
Low potential GDE - from national assessment

Scale 1:25,000
0 0.5 1 Km
Coordinate System: GDA 1994 MGA Zone 50 Transverse Mercator
Created: 28/12/2023



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Lot 102 Fence Line Collie Detailed Flora and Vegetation Survey

Figure 2.5: Hydrology of the Survey Area

BoM (2023b) defines Inflow Dependent Ecosystems (IDEs) as vegetation that is either groundwater dependent or is likely to be reliant on subsurface water in addition to rainfall, i.e., from soil water, surface water or irrigation. The likelihood of a landscape using additional water is rated from 1 to 10, with ratings above six indicating that a landscape is likely to be inflow dependent (BoM, 2023b). The areas mapped as having low to moderate GDE potential in the Survey Area have IDE ratings of 5 and 6 (Figure 2.6).

2.7 Broad Regional Vegetation

2.7.1 Pre-European Vegetation

Pre-European vegetation mapping was originally undertaken by Beard (1975) at various scales (predominantly 1:1,000,000) across the state and has since been updated to be consistent with (Native Vegetation Information System) NVIS descriptions at a scale of 1:250,000 (ESCAVI, 2003; Shepherd *et al.*, 2002). This update also accounts for extensive clearing since the Beard (1975) mapping. Shepherd *et al.* (2002) created a series of 'systems' to assist in removing mosaic vegetation associations originally mapped by Beard (1975); however, some mosaics still occur.

The entirety of the Survey Area is located within the West Darling (Beard, 1975), and the West Darling 3 vegetation system association (954.21 ha/ 100%) (Shepherd *et al.*, 2002) (Figure 2.7). This system association comprises mainly jarrah (*Eucalyptus marginata*) and marri (*Corymbia calophylla*) woodland.

2.7.2 Vegetation Complexes

Mattiske and Havel (1998) mapped vegetation complexes across the south-west forest region at a scale of 1:50,000 as part of the Regional Forest Agreement (RFA). More recently this dataset has been reviewed to correct errors while the mapping along the Whicher Scarp has been updated to ensure a continuation of complexes defined by Mattiske and Havel (1998) (see Webb *et al.*, 2016). The Survey Area comprises three different vegetation complexes, with the most dominant being Murray (My1) (588.6ha/ 61.7 %) (Table 2.4; Figure 2.8).

402500
405000
407500
6322500
6320000
6317500
Mornington Rd
Beela Rd
Gastaldo Rd

LEGEND

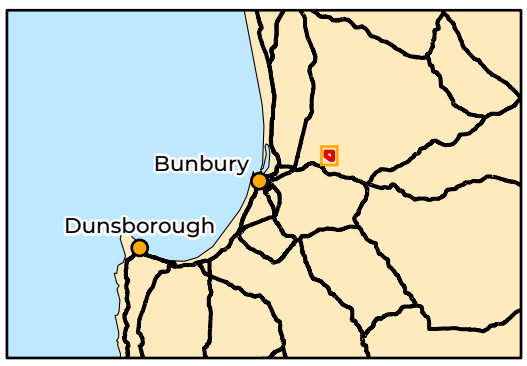
Study Area
Local Road
Rail

Pre-European Vegetation

WEST DARLING 3
WEST DARLING 1184

Scale 1:25,000
0 0.5 1 Km

Coordinate System: GDA 1994 MGA Zone 50 Transverse Mercator
Created: 28/12/2023



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Lot 102 Fence Line Collie Detailed Flora and Vegetation Survey

Figure 2.7: Pre-European vegetation of the Survey Area

402500
405000
407500
6322500
6320000
6317500
Mornington Rd
Beela Rd
Gastaldo Rd

LEGEND

Study Area
Local Road
Rail

Vegetation Complexes of the South West Forest

Darling Plateau - Uplands

Dwellingup, D1

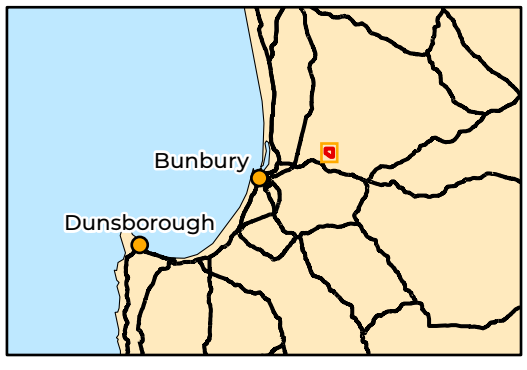
Darling Plateau - Valleys

Murray 1, My1

Yarragil 1, Yg1

Scale 1:25,000
0 0.5 1 Km

Coordinate System: GDA 1994 MGA Zone 50
Transverse Mercator Created: 28/12/2023



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Lot 102 Fence Line Collie Detailed Flora and Vegetation Survey

Figure 2.8: Vegetation complexes of the Survey Area

Table 2.4: Vegetation complexes occurring within the Survey Area (DBCA, 2018)

Vegetation Complex & Code	Sub-Category	Description	Extent
Dwellingup (D1)	Uplands	Open forest of *Eucalyptus marginata* subsp. *marginata-Corymbia calophylla* on lateritic uplands in mainly humid and subhumid zones.	315.0 ha 33.0%
Murray (My1)	Valleys	Open forest of *Eucalyptus marginata* subsp. *marginata-Corymbia calophylla-Eucalyptus patens* on valley slopes to woodland of *Eucalyptus rudis-Melaleuca rhaphiophylla* on the valley floors in humid and subhumid zones.	588.6 ha 61.7%
Yarragil (Yg1)	Valleys	Open forest of *Eucalyptus marginata* subsp. *marginata-Corymbia calophylla* on slopes with mixtures of *Eucalyptus patens* and *Eucalyptus megacarpa* on the valley floors in humid and subhumid zones.	50.6 ha 5.3%

2.7.3 Bioregional Significance

Under the Convention on Biological Diversity, Australia has worked towards a target of 17 % of the continent to be protected as part of the National Reserve System (NRS). The National Reserve System is an Australia-wide network of protected areas, defined as legally recognised, dedicated and managed areas with the purpose of achieving long-term conservation of nature, ecosystem services and cultural values (NRSTG, 2009). In building the NRS, priority is given to under-represented bioregions that have less than 10 % of their remaining area protected in reserves (NRSTG, 2009). The Jarrah Forest bioregion is currently adequately represented under the NRS, with greater than 10 % of its total area protected in reserves (including State Forests). The Northern Jarrah Forest subregion is also adequately represented, with more than 10 % of the subregional area protected in reserves.

The Government of Western Australia reports annually on the statistics of the pre-European and current extent for both vegetation associations and vegetation complexes of the south-west of Western Australia, and is a useful tool to determine if vegetation is rare or otherwise significant (Government of Western Australia, 2019a, 2019b). The statistics provide details on the progress towards achieving a conservation reserve system that is comprehensive, adequate, and representative (CAR Reserve) and the statistics for each local government area (LGA; Shire of Collie). Lands protected for conservation are defined as lands managed by DBCA with an IUCN category of I – IV (with a primary purpose of conservation) (Government of Western Australia, 2019a, 2019b).

The current extent remaining of the West Darling 3 vegetation system association ranges from 17 % to 85 % across the four regional scales of State, bioregion (Jarrah Forest),

subregion (Northern Jarrah Forest) and LGA (Shire of Collie) (Table 2.5). The West Darling 3 has greater than 84% of its current extent within conservation reserves (Table 2.5)

The current extent remaining for all vegetation complexes present in the Survey Area ranges from 63.2 % to 90.2% across both the state and LGA scales. Reservation of the vegetation complexes is generally lower, ranging from 6.7 % to 25.7 % (Table 2.6).

Table 2.5: Regional and local extent of vegetation system associations within the Survey Area (Government of Western Australia, 2019b)

Scale	Extent		
	Pre-European (ha)	Current (ha / %)	Remaining in Reserves (ha / %)^
State	485,532	416,850 / 85.6	71,483 / 17.1
Jarrah Forest	485,532	416,850 / 85.6	71,483 / 17.1
Northern Jarrah Forest	485,010	416,466/ 85.9	71,126/ 17.1
LGA	70,227	58,828 / 83.8	17,706 / 30.1

^ Lands protected within IUCN Class I-IV reserves for conservation and land proposed for conservation.

LGA: Local Government Authority – Shire of Collie

Table 2.6: Vegetation complexes occurring within the Survey Area and their remaining extent (Government of Western Australia, 2019a)

Vegetation Complex & Code	Scale	Pre-European Extent (ha)	Current Extent Remaining (ha / %)	Current Extent Protected (ha / %)^
Yarragil (Yg1)	State	80,203	64,927 / 81.0	7,912 / 9.9
	Darling Plateau	80,203	64,927 / 81.0	7,116 / 8.9
	LGA	14,494	11,744 / 81.0	N/A
Dwellingup (D1)	State	208,491	181,039 / 86.8	17,407/ 8.3
	Darling Plateau	20, 8491	181,039 / 86.8	13,937 / 6.7
	LGA	44,162	39,818 / 90.2	N/A
Murray (My1)	State	68,695	52,296 / 76.1	17,626 / 25.7
	Darling Plateau	68695	52296 / 76.1	10,419 / 15.2
	LGA	12,927	8,174 / 63.2	N/A

^ Protected refers to lands protected within IUCN Class I-IV reserves for conservation.

LGA: Local Government Authority – Shire of Collie

2.8 Land use

Land use in the immediate locality of the Survey Area includes recreation and conservation (Harris River State Forest and Wellington National Park), mining (Worsley Alumina mine to the east), and cereal cropping and grazing of sheep and cattle to the west (Figure 2.9).

2.9 Conservation areas

The Survey Area is directly adjacent (to the east) and 1.9 km south of the Harris River State Forest (HRSF). This forest is managed by DBCA and administered under the *Conservation and Land Management Act 1984* (CALM Act). Wellington National Park is 3.6 km to the south/ southwest. This area is also managed by DBCA and administered under the *Conservation and Land Management Act 1984* (CALM Act) (Figure 2.9).

404000

408000

6324000

6320000

6316000

Sandalwood Rd

Harris River
State Forest

Mornington Rd

Big Tree Rd

Harris River
State Forest

Edwards Rd

Coalfields Rd

Beela Rd

Castaldo Rd

Wellington
National Park

Worsley

Worsley Back Rd

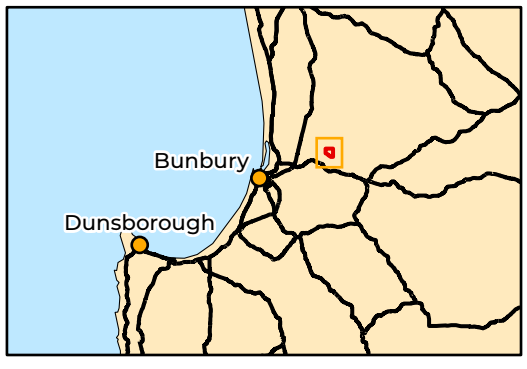
LEGEND

- Study Area
- Local Road
- State Road
- Rail
- National Park
- State Forest

Scale 1:40,000

0 0.5 1 1.5 Km

Coordinate System: GDA 1994 MGA Zone 50
Transverse Mercator Created: 28/12/2023



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Lot 102 Fence Line Collie
Detailed Flora and
Vegetation Survey

Figure 2.9: Conservation areas of the Survey Area

3 Desktop Assessment

3.1 Methods

A desktop assessment, comprising database searches and a literature review, was undertaken prior to the field survey. The purpose of the desktop assessment was to identify vascular flora and vegetation potentially occurring in the Survey Area.

3.1.1 Database Searches

3.1.1.1 Overview

Database searches were undertaken prior to field survey mobilisation. This provided a contextual understanding of general and significant flora and vegetation within the Survey Area. Six database searches were conducted either from a single central point of the Survey Area to a radius of 20 km or, in the case of the DP database, a search of the Shire of Collie (Table 3.1).

Table 3.1: Database searches conducted at the Survey Area

Database	Purpose	Search radius
TPFL: Threatened & Priority Flora; and databases (DBCA, 2023d)	To identify flora species and communities previously recorded within the Survey Area and its vicinity, in particular those of conservation significance	20 km buffer around Survey Area
Atlas of Living Australia (ALA, 2023)		20 km buffer around Survey Area
Threatened and Priority Ecological Communities (PEC or TEC) database (DBCA, 2023c)		20 km buffer around Survey Area
Dandjoo, (DBCA, 2023a)		20 km buffer around Survey Area
DAWE Protected Matters Search Tool (PMST) (DCCEEW, 2023)	To identify potential species listed under the Commonwealth EPBC Act within the Survey Area	20 km buffer around Survey Area
DP Database – WA Organism List (WAOL) (DPIRD, 2023)	To identify declared pest plants within the Survey Area	Shire of Collie

3.1.2 Literature review

Background information on the Survey Area and surrounds was compiled as part of the desktop assessment, prior to the field survey. The literature review considered 14 botanical reports of relevance to the Survey Area including field surveys and desktop assessments (Table 3.2). Existing reports and assessments considered relevant were sourced from the Index of Biological Surveys for Assessments (IBSA).

Table 3.2: Previous botanical surveys forming the literature review.

Project Area	Survey Type	Reference
Intersecting the Survey Area		
Worsley Mine Expansion Primary Assessment Area	Desktop	Mattiske (2021)
<40 km from the Survey Area		
Myalup-Wellington Project - Above Dam Pipelines	Detailed flora and vegetation assessment	Strategen (2018)
Collie Water pipeline alignments near Harris Dam	Reconnaissance Flora and Vegetation Survey	GHD (2017)
Reconnaissance and Targeted Flora and Vegetation Survey at pt. Reserve 34343, Collie (Mininnup Pools)	Reconnaissance and Targeted Flora and Vegetation	Ecoedge (2018)
Bunbury Outer Ring Road Northern and Central Sections	Detailed flora and vegetation assessment and targeted surveys	BORR Team (2019)
Lot 43 Stanley Road Wellesley	Detailed flora and vegetation assessment	Lundstrom (2019a)
City of Bunbury: Flora, Fauna Survey- Harris Road, Bunbury	Detailed flora and vegetation survey	Natural Area (2021)
Banksia Road Dardanup	Detailed flora and vegetation assessment	Astron (2014)
Lot 7 Runnymede Rd, Wellesley	Detailed flora and vegetation assessment	Lundstrom (2019b)
Lot 5 Wellesley Rd Wellesley Flora and Vegetation	Detailed flora and vegetation assessment	Plantecology (2020)
Bunbury Water Resource Recovery Scheme	Two-Phase detailed flora and vegetation survey	GHD (2021)
Muja Power Station	Reconnaissance flora and vegetation assessment	Woodman (2012)
< 100 km from Survey Area		
Collie-Lake King Road Bowelling between SLK 64.5- 71	Reconnaissance Flora and Vegetation Survey	Ecoedge (2014)
Collie-Lake King Road at Bowelling (SLK 64.5 - 71.0)	Detailed Flora and Vegetation Survey	Ecoedge (2016)

3.1.3 Assessment of Occurrence

Significant flora species identified in the database searches and previous reports are assessed per taxa for their likelihood of occurrence in the Survey Area. Prior to field mobilisation, Biologic utilised botanical expertise and a decision matrix to guide a preliminary occurrence assessment for likely presence of significant flora (Table 3.3).

Following the field assessment, presence of potential habitat was reviewed to revise the occurrence assessment per taxa.

Table 3.3: Occurrence assessment decision matrix

		Habitat categories within the Survey Area			
		Core/ critical habitat present	Suitable habitat present/ within known distribution	Marginal habitat present/ adjacent to known distribution	Not present/ outside of known distribution
Species records / occurrence categories	Within the Survey Area	Confirmed	Confirmed	Confirmed	Confirmed
	Within <2 km	Highly Likely	Likely	Possible	Possible
	Within 2-5 km	Likely	Possible	Possible	Unlikely
	Within 5-20 km	Possible	Possible	Unlikely	Unlikely
	Greater than 20 km	Possible	Unlikely	Unlikely	Highly Unlikely
	Taxa considered locally/ regionally extinct	Unlikely	Unlikely	Highly Unlikely	Highly Unlikely

3.2 Results and Discussion

Database searches identified a total of 1,172 flora taxa with potential to occur in the Survey Area, including 214 introduced flora taxa (Appendix B, Appendix C, Appendix D). The database search list includes varieties and subspecies of the same genus, undescribed (phase name) taxa, and indeterminate taxa.

3.2.1 Significant Flora

The desktop assessment identified 85 significant flora taxa (those listed under the EPBC Act, BC Act, or the DBCA Priority List) within and occurring in the vicinity of the Survey Area (Table 3.4, Figure 3.1, Appendix E). The significant flora identified from the desktop assessment comprised:

- Twenty-four Threatened flora taxa
- Nine Priority 1 taxa;
- Thirteen Priority 2 taxa;
- Twenty-five Priority 3 taxa; and
- Fourteen Priority 4 taxa.

Prior to mobilisation the 85 taxa were assessed to determine likelihood of occurrence within the Survey Area using Table 3.3 (Appendix E). This assessment utilised information observed from the database search results and literature review (Appendix B, Appendix C). Of the 85 flora taxa identified by the desktop assessment, one has been previously recorded within the Survey Area: *Lomandra whicherensis* (P3) (Table 3.4). Of the remaining 84 taxa, five were assessed as Likely, and ten as Possible (Table 3.4). The remaining 69 desktop taxa were assessed as Unlikely or Highly Unlikely to occur (Appendix E).

Table 3.4: Summary of the assessment of occurrence

Taxon	Description	Proximity to Survey Area
Confirmed		
Lomandra whicherensis (P3)	Erect herb, to 0.5 m high. Fl. yellow-purple, Nov-Dec. Sandy loam, sandy clay, gravel. Slopes, ridges.	Within
Likely		
Stylidium acuminatum subsp. *acuminatum* (P2)	Perennial herb up to 0.4 m high, with basal rosette. Fl. pale yellow, Nov. Sand, loam over laterite. Slopes.	1.5 km E
Juncus meianthus (P3)	Tufted perennial, herb, 0.05-0.2 m high, to 0.4 m wide. Fl. brown, Nov to Dec or Jan. Black sand, sandy clay. Creeks, seepage areas.	1.1 km NNE
Cyanothamnus tenuis (P4)	Procumbent or erect and slender perennial shrub, to 0.5 m high. Fl. blue. Brown sandy clay or loam over granite. Hillsides, amongst granite outcrops.	1.1 km W
Grevillea ripicola (P4)	Spreading, much-branched, non-lignotuberous shrub, 0.6-2(-3) m high, to 4 m wide. Fl. red/red-orange, Jan or Mar to Apr or Nov to Dec. Sandy clay, clay or gravelly loam. Swampy flats, granite outcrops, along watercourses.	1.7 km ESE
Pultenaea skinneri (P4)	Slender shrub, 1-2 m high. Fl. yellow/orange & red, Jul to Sep. Sandy or clayey soils. Winter-wet depressions.	1.2 km E
Possible		
Grevillea rara (T)	Dense, prickly shrub, to 2 m high. Fl. white-pink/white, Oct. Lateritic loam. Creeklines.	5.9 km E
Gonocarpus keigheryi (P2)	Erect or decumbent shrub up to 0.3m high. Fl. green/brown, Dec-Feb. Laterite, clayey sand. Slopes, valleys (seasonally wet).	13 km SSW
Acacia oncinophylla subsp. *oncinophylla* (P3)	Shrub, 0.9-2.5 m high, 'minni-ritchi' bark, phyllodes mostly 8-13 cm long, 1-2 mm wide. Fl. yellow, Aug to Oct. Granitic soils.	9.9 km SSW

Taxon	Description	Proximity to Survey Area
Dillwynia sp. Capel (P.A. Jurjevich 1771) (P3)	Erect, open, spreading shrub, to 2 m high. Fl. yellow & orange & red & pink, Sep to Oct. Littered grey loamy sand, rocky soils. Valleys, rangelands.	6.4 km ESE
Grevillea prominens (P3)	Spreading shrub, 0.5-1.7 m high, 0.3-1 m wide. Fl. cream-white, Sep to Oct. Gravelly loam. Along creeklines.	14.5 km SSE
Tetratheca parvifolia (P3)	Small shrub, 0.2-0.3 m high. Fl. pink, Oct-Nov. Sandy loam, gravel. Slopes, broad ridges, near riverbank.	5.4 km ESE
Thysanotus unicupensis (P3)	Erect caespitose herb to 0.3 m high. Fl. purple, Oct-Dec. Sandy loam over laterite. Undulating hills, lower slopes.	3.9 km E
Acacia semitrullata (P4)	Slender, erect, pungent shrub, (0.1-)0.2-0.7(-1.5) m high. Fl. cream-white, May to Oct. White/grey sand, sometimes over laterite, clay. Sandplains, swampy areas.	13.4 km NNW
Eucalyptus rudis subsp. *cratyantha* (P4)	Tree, 5-20m high, bark rough, box-type. Fl. White, Jul to Sept. Loam. Flats, hillsides.	11.5 km WNW
Senecio leucoglossus (P4)	Erect annual, herb, to 1.3 m high. Fl. white, Aug to Dec. Gravelly lateritic or granitic soils. Granite outcrops, slopes.	2.3 km NNW

3.2.2 Significant Vegetation

The database searches indicated that no TECs or PECs occur within or around the Survey Area (20 km radius). Ten TECs and PECs are known to occur within a 20 km radius of the Survey Area (Table 3.5; Figure 3.2). Most TECs and PECs identified in the database searches are almost entirely restricted to the Swan Coastal Plain and are highly unlikely to occur in the jarrah forest. Some of the TECs and PECs can have outlying occurrences in the jarrah forest (i.e. Banksia woodlands of the Swan Coastal Plain (TSSC, 2016).

Both the Banksia Woodlands of the Swan Coastal Plain and Claypans of the Swan Coastal Plain TECs listed under the EPBC Act comprise multiple state-listed TECs and PECs. State-listed TECs and PECs that form part of these two TECs are indicated in Table 3.5.

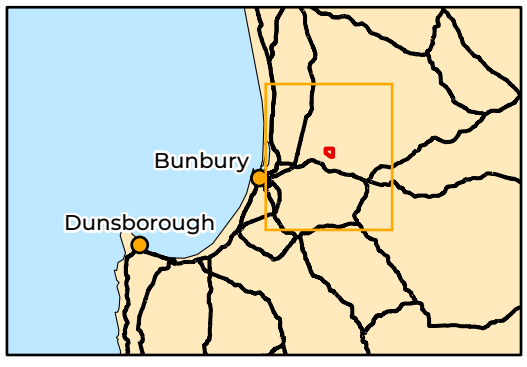
380000
400000
420000
6340000
6320000
6300000
Cookernup
Harvey
Wokalup
Benger
Forrest Hwy
South Western Hwy
Brunswick Junction
Coalfields Rd
Roelands
Raymond Rd
Burekup
Worsley
Collie Williams Rd
Allanson
Collie
Mungalup
Collie Cardiff
Collie Preston Rd
Dardanup
Boyanup Picton Rd
Boyanup
Gwindinup
Preston
Donnybrook Kojonup Rd

LEGEND

- Study Area
- Local Road
- State Road
- Rail

Scale 1:200,000
0 4 8 Km

Coordinate System: GDA 1994 MGA Zone 50
Transverse Mercator Created: 24/01/2024



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Lot 102 Fence Line Collie Detailed Flora and Vegetation Survey

Figure 3.1: Significant flora from the desktop assessment

Significant Flora (DBCA)

Threatened

- *Austrostipa bronweniae*
- *Caladenia procera*
- *Diuris drummondii*
- *Diuris micrantha*
- *Drakaea confluens*
- *Drakaea elastica*
- *Drakaea micrantha*
- *Eleocharis keigheryi*
- *Grevillea rara*
- *Synaphea* sp. Fairbridge Farm (D. Papenfus 696)

P1

- *Bolboschoenus medianus*
- *Boronia juncea* subsp. *juncea*
- *Caladenia uliginosa* subsp. *patulens*
- *Caladenia validinervia*
- *Grevillea bipinnatifida* subsp. *pagna*
- *Stylidium perplexum*
- *Synaphea odocoileops*

P2

- *Craspedia* sp. Waterloo (G.J. Keighery 13724)
- *Daviesia mesophylla*
- *Gonocarpus keigheryi*
- *Grevillea rosieri*
- *Leucopogon extremus*
- *Pterostylis frenchii*
- *Sphaerolobium benetectum*
- *Stylidium acuminatum* subsp. *acuminatum*
- *Stylidium korijekup*

P3

- *Acacia oncinophylla* subsp. *oncinophylla*
- *Adenanthos cygnorum* subsp. *chamaephyton*
- *Angianthus drummondii*
- *Calytrix pulchella*
- *Carex tereticaulis*
- *Chamaescilla gibsonii*
- *Cyathochaeta teretifolia*
- *Dillwynia dillwynioides*
- *Dillwynia* sp. Capel (P.A. Jurjevich 1771)
- *Grevillea prominens*
- *Hemigenia microphylla*
- *Juncus meianthus*
- *Lasiopetalum membranaceum*
- *Lomandra whicherensis*
- *Myriophyllum echinatum*
- *Schoenus capillifolius*
- *Schoenus* sp. Waroona (G.J. Keighery 12235)
- *Stylidium paludicola*
- *Synaphea hians*
- *Tetratheca parvifolia*
- *Thysanotus unicupensis*
- *Verticordia attenuata*

P4

- *Acacia flagelliformis*
- *Acacia semitrullata*
- *Aponogeton hexatepalus*
- *Caladenia speciosa*
- *Calothamnus graniticus* subsp. *leptophyllus*
- *Cyanothamnus tenuis*
- *Eucalyptus rudis* subsp. *cratyantha*
- *Grevillea ripicola*
- *Hypolaena robusta*
- *Pultenaea skinneri*
- *Rumex drummondii*
- *Senecio leucoglossus*
- *Tripterococcus* sp. Brachylobus (A.S. George 14234)

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Table 3.5: Ecological communities in proximity to the Survey Area

Definition	State		Cth	Banksia Woodlands of the Swan Coastal Plain TEC	Claypans of the Swan Coastal Plain TEC
	PEC	TEC	TEC		
SCP20b *Banksia attenuata* and/or *Eucalyptus marginata* woodlands of the eastern side of the Swan Coastal Plain		CR	EN	Yes	
Banksia Woodlands of the Swan Coastal Plain ecological community	Priority 3		EN	Yes	
SCP3c *Corymbia calophylla-Xanthorrhoea preissii* woodlands and shrublands, Swan Coastal Plain		EN	EN		
SCP09 Dense shrublands on clay flats		EN	CR		Yes
SCP08 Herb rich shrublands in clay pans		EN	CR		Yes
SCP21c Low lying *Banksia attenuata* woodlands or shrublands	Priority 3		EN	Yes	
Shrublands and woodlands on Muchea Limestone of the Swan Coastal Plain		EN	EN		
SCP21b Southern *Banksia attenuata* woodlands	Priority 3		EN	Yes	
SCP25 Southern Swan Coastal Plain *Eucalyptus gomphocephala-Agonis flexuosa* woodlands	Priority 3				
Tuart (*Eucalyptus gomphocephala*) woodlands and forests of the Swan Coastal Plain	Priority 3		CR		

380000 400000 420000

6340000 6320000 6300000

Cookernup
Wokalup
Benger
Brunswick Junction
Raymond Rd
Roelands
Burekup
Coalfields Rd
Worsley
Dardanup
Boyanup
Gwindinup
Preston
Donnybrook Kojonup R
Forrest Hwy
South Western Hwy
Boyanup Picton Rd

Community - State Category, Commonwealth Category

- Banksia Woodlands of the Swan Coastal Plain ecological community - Priority 3, Endangered
- *Banksia attenuata* and/or *Eucalyptus marginata* woodlands of the eastern side of the Swan Coastal Plain - Critically Endangered, Endangered
- *Corymbia calophylla — Xanthorrhoea preissii* woodlands and shrublands, Swan Coastal Plain - Endangered, Endangered
- Dense shrublands on clay flats - Endangered, Critically Endangered
- Herb rich shrublands in clay pans - Endangered, Critically Endangered
- Low lying *Banksia attenuata* woodlands or shrublands - Priority 3, Endangered
- Shrublands and woodlands on Muchea Limestone of the Swan Coastal Plain - Endangered, Endangered
- Southern *Banksia attenuata* woodlands - Priority 3, Endangered
- Southern *Eucalyptus gomphocephala-Agonis flexuosa* woodlands - Priority 3
- Tuart (*Eucalyptus gomphocephala*) woodlands and forests of the Swan Coastal Plain - Priority 3, Critically Endangered

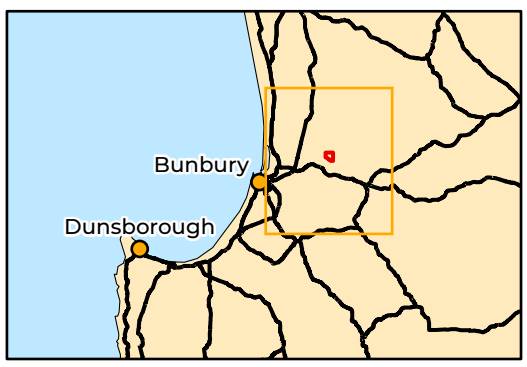
LEGEND

- Study Area
- Local Road
- State Road
- Rail

Scale 1:200,000

0 4 8 Km

Coordinate System: GDA 1994 MGA Zone 50
Transverse Mercator Created: 24/01/2024



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Lot 102 Fence Line Collie Detailed Flora and Vegetation Survey

Figure 3.2: Significant vegetation from the desktop assessment

4 Field Survey

4.1 Methods

4.1.1 Survey Timing & Personnel

The two-phase detailed flora and vegetation survey was conducted over two field surveys in August and October 2023, with a total of 20 person days (inclusive of mobilisation). All personnel were fully inducted to site and have appropriate experience for the bioregion. The project and overall field lead has over 10 years' experience in botanical surveys in WA. All licensing requirements for flora survey in WA were satisfied.

The first field survey was undertaken from 31 July–4 August 2023 by two Biologic personnel (Table 4.1, 10 person days). Senior botanist Emily Eakin-Busher led the field survey with the support of Principal Botanist Ben Eckermann. The second field survey was undertaken from 23–28 October 2023 (Table 4.1, 10 person days) also led by Senior Botanist Emily Eakin-Busher, with support from Ecologists Michael Just and Georgina Mattner. Collections were made under licences held by Emily Eakin-Busher and Ben Eckermann.

Table 4.1: Personnel involved with the project

Biologic Personnel	Project Involvement	Licencing	Experience
Principal Botanist			
Ben Eckermann	Field survey: 31 July to 2 August 2023	FB62000262-2 / TFL 2324-0013	19+ years
Senior Botanist			
Rachel Meissner	Specimen identification	n/a	20+ years
Emily Eakin-Busher	Project manager, field survey design, reporting lead, vegetation mapping, field lead: 31 July–2 August 2023 23–28 October 2023	FB62000453 / TFL 2223-0140	10 years
Robyn Chesney	Reporting	n/a	13 years
Ecologist			
Michael Just	Field survey: 23–26 October 2023	n/a	7 years
Georgina Mattner	Field survey: 26–28 October 2023	n/a	5 years
Botanist			
Darcy Reith	Reporting	n/a	3 years

4.1.2 Weather and climate

Minimum and maximum temperature data in the months prior to the field survey was plotted using data from Collie East weather station (station no. 9994; Figure 4.1). While Collie weather station (station no. 9628) is slightly closer to the Survey Area, temperature data has not been collected at this station since 1975. Rainfall prior to the survey as well as long-term rainfall averages were plotted using data from Collie weather station (station no. 9628), as data were missing from Collie East records during the highest rainfall months of June and July (BoM, 2023a). The two weather stations are approximately 2 km apart, thus were considered likely to have received a similar amount of rainfall.

In the 10 months prior to the Phase 1 survey, mean minimum and maximum temperatures were comparable to long-term averages at Collie East weather station (Figure 4.1). Cumulative rainfall at Collie weather station in the six months prior to the Phase 1 survey (February to July) was 52.9 mm below the Collie LTA (BoM, 2023a). Weather during the survey was generally fine and cool, with the exception of 3rd August during which 47.8 mm of rainfall was recorded (BoM, 2023a). Seasonal timing was good with adequate taxonomic material (flowering/fruiting material) present to facilitate identification of the majority of species observed.

In the 12 months prior to the Phase 2 survey, mean minimum and maximum temperatures were also comparable to long-term averages (Figure 4.1). Cumulative rainfall at Collie weather station in the six months prior to the Phase 2 survey (April to September) was 42.9 mm below the Collie LTA for that period; however, rainfall immediately prior to the survey (September 2023) was comparable to the LTA (BoM, 2023a). The weather during the field survey was fine and cool, with minimal rainfall recorded (0.4 mm on 23rd October (BoM, 2023a)). Seasonal timing for the Phase 2 survey was also suitable with many annual species recorded, and adequate taxonomic material (flowering/fruiting material) observed for identification.

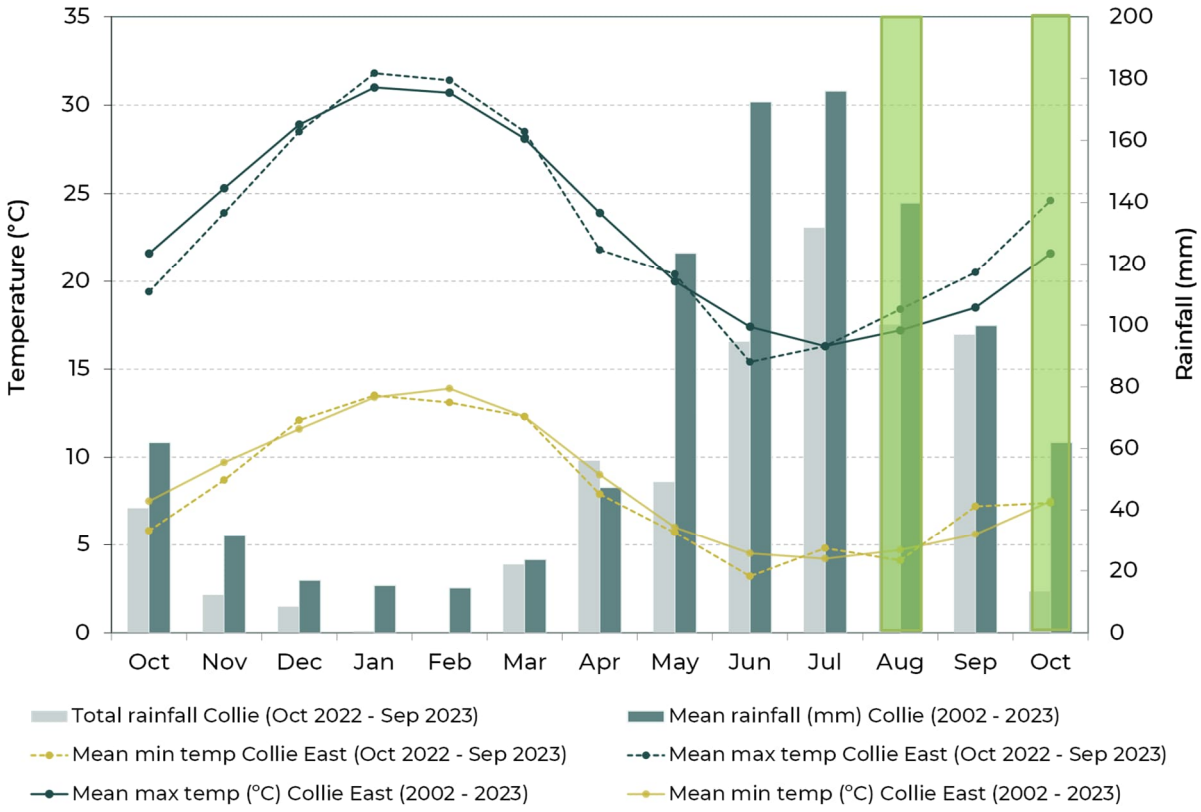

Figure 4.1: Long-term and current climatic data for Collie East (station no. 9994) and Collie (station no. 9628) (BoM, 2023a). Survey timing shown in green.

4.1.3 Detailed Flora Survey

A combination of quadrats, relevés, vegetation mapping notes, meandering traverses, and opportunistic sampling is appropriate for a detailed level flora survey as stipulated in the EPA guidance statement (EPA, 2016b). Detailed surveys require quadrat data to define and differentiate vegetation composition to support statistical analysis. Relevés are less detailed and not used in statistical analysis. Relevés provide context when mapping and ground-truthing previous vegetation mapping. They also support the vegetation assessment. These field survey techniques are explained in Table 4.2.

Table 4.2: Detailed field survey techniques

Approach	Description
Quadrat	A comprehensive and replicable survey technique for gathering information during a detailed flora and vegetation assessment. A clearly defined area of set proportions, giving a consistent assessment of flora and vegetation across the Survey Area. Each quadrat represents a vegetation type, and each vegetation type must be represented by a minimum of three quadrat sites. Information collected at each quadrat includes: • Site code, date, location, botanist; • A minimum of one photograph, one from the NW corner of the site; • Soil characteristics (texture and colour); • Geology (type, size and nature of any rocks, stones, gravel, or outcropping); • Topography (landform type and aspect); • Brief description of the vegetation structure in line with NVIS level V classifications (NVIS Technical Working Group, 2017) Appendix F); • Vegetation condition (Appendix G); • Disturbances (including fire, invasive flora/fauna species); • Flora and vegetation information (including dominant cover, structure); and • Comprehensive recording of every vascular flora species within the quadrat boundary (including overhang from plants rooted outside the quadrat boundary), along with height, cover and number of individuals where necessary (10 x 10 m)
Relevé	Relevés are an unbounded, lower intensity survey technique utilised in a detailed survey to: • Support vegetation mapping; • Support the survey effort and sampling intensity; • Provide assessment where quadrats are too dangerous to set up (such as steep gorges or embankments); or • Provide assessment where the landform does not support adequate area for a detailed quadrat. Information collected at each relevé is the same as that of a quadrat site, excluding the comprehensive collection of every species within the quadrat boundary.
Traverse/ Meandering Traverse	A traverse is an unmarked route along which data is collected. Traverses are useful for identifying the boundaries and characteristics of vegetation types, selecting sites for detailed survey, and targeting significant flora or vegetation. Information recorded along a traverse may be the same as a relevé or less detailed, with the addition of noting vegetation changes and relationships between vegetation and substrate.
Vegetation Mapping Notes	Vegetation mapping notes are used to ground-truth existing vegetation mapping and significant flora locations. They are a lower intensity, unbounded, survey technique. Information collected at each vegetation mapping note may vary in detail depending upon what is present and needed for that site. The following is recorded as a minimum: • Location co-ordinates; • Representative photograph; and • Brief description of the mapping note focus.

Approach	Description
Opportunistic (Supplementary) Sampling	Flora and vegetation not recorded through other sampling methods are opportunistically sampled as encountered in the survey. Opportunistic sampling includes recording locations of significant, introduced and unknown species.
Targeted Sampling	Habitat likely to support significant flora or vegetation are targeted during the survey. Including areas with existing records of significant flora. Areas are selected based on existing records from database searches, geology, vegetation mapping and known Environmentally Sensitive Areas (ESAs; such as PEC/ TEC or GDE). Where possible, unusual, and restricted geological features are sampled. When potentially significant flora taxa are encountered during a survey, sufficient information is recorded in compliance with a Threatened and Priority Flora Report Form (TPRF) pursuant to the conditions of the flora taking licencing and authorisation to collect threatened flora.

Thirty-nine floristic sampling sites were sampled in the Survey Area across the two-phase survey, comprising 17 quadrats and seven relevés (Figure 4.2, Appendix H). All 17 quadrats were set up in the Phase 1 survey and were re-sampled during the Phase 2 field survey. For the purpose of this project (a proposed fence line within a wider offset property to be surveyed later), quadrats were usually established adjacent to the proposed Fence Line Corridor (Figure 4.2). This was in order to capture the vegetation types occurring within the Fence Line Corridor, but enabling quadrats to be retained for future offset monitoring if required (i.e. so that quadrat vegetation is not disturbed or damaged during construction activities).

These sites were supplemented with 25 vegetation mapping notes for additional context and boundaries during vegetation mapping. Prior to field mobilisation, site locations were selected using a combination of aerial imagery and with reference to previous vegetation mapping completed by Mattiske (2021). Parts of the Survey Area that looked unusual from the aerial imagery or appeared to represent potential habitat for significant flora and vegetation were also targeted for site sampling.

4.1.4 Targeted Flora Survey

Targeted searches were conducted opportunistically upon identifying significant taxa, or invasive species in the field. Searches were conducted within a minimum radius of 10 m from the given specimen (as appropriate and practicable), to document the number of individual plants and approximate spatial extent of the population. Approximate extent and density of the population were determined. Depending on the number and density of individuals, coordinates for each plant were recorded or a single point with a 10 m radius. The following information was recorded as part of each search:

- GPS track logs of search effort;

- number, condition and reproductive status of plants in each population;
- coordinates of either each plant (if few) or the extent of the population (if many) using a GPS; and
- photographs of individuals and of vegetation habitat.

Rare Flora Report Forms will be completed and submitted to DBCA with voucher specimens, where applicable. Flora

4.1.4.1 Nomenclature & Specimen Identification

Flora nomenclature used in this report is consistent with the Western Australian Herbarium's (WAH) plant census, provided on Florabase (WAH, 1998-). All species nomenclature is current at the time of report preparation.

Specimens were identified by Dr Rachel Meissner and Dr Emily Eakin-Busher using the appropriate taxonomic keys, WA reference herbarium and, where required, relevant taxonomic experts at the WAH. Significant flora taxa (Priority listed) were submitted to WAH for formal identification (accession #10,541).

4.1.4.2 Significant Flora

A list of significant flora with the potential to occur in the Survey Area was compiled prior to the survey. These flora taxa were previously recorded within the Survey Area or have potential to occur based on an assessment of occurrence (see Section 3.1.3). Field personnel familiarised themselves with photographs, reference samples and descriptions of these taxa before conducting the survey. Once on the ground, personnel actively searched while traversing the Survey Area, in known locations or optimal habitat encountered in the field. As *Lomandra whicherensis* (P3) was known to occur within the Survey Area, teams focused on making new records within the Fence Line Corridor rather than visiting the two existing records within the broader Survey Area. However, additional records were made in quadrats that were established close to the existing records (FEN-004 and FEN-011).

4.1.4.3 Introduced Taxa

Whilst completing the detailed flora assessment and targeted searches, any significant environmental weeds were noted. Significant environmental weeds refer to any plant listed as Weeds of National Significance (WoNS) or Declared Plant Pests listed under Section 12 and Section 22 of the BAM Act. Records of any introduced species identified in the Survey Area were recorded and searched with a minimum 20 m radius to establish population density and extent. Each record noted the number of individual plants and map the spatial extent of the infestation. Weed classification definitions are provided in Section 1.3.2. and Appendix A.

404000
405500
407000
6322000
6320500
6319000
Mornington Rd
Beela Rd
FENM-02
FENR-002
FENM-03
FENM-05
FENR-019
FEN-021
FEN-023
FEN-001
FEN-029
FENM-21
FENR-003
FEN-020
FENM-17
FEN-003
FENM-10
FENM-15
FENM-09
FEN-009
FEN-019
FENM-16
FEN-004
FENR-004
FENM-08
FENM-18
FEN-013
FENM-04
FEN-011
FENMB-01
FENM-13
FENR-010
FEN-017
FENR-005
FENM-06
FEN-024
FEN-005
FENR-001
FENM-12
FEN-007
FENM-20
FENMB-02
FENM-01
FENMB-03
FENMB-04
FEN-016
FENM-07
FENMB-06
FEN-013
FEN-015
FENM-14
FENMB-05

LEGEND

Study Area
Local Road
Rail

Sampling Type

Quadrat
Relevé
Vegetation Mapping Note
Traverse

Scale 1:15,000
0 250 500 Meters
Coordinate System: GDA 1994 MGA Zone 50 Transverse Mercator
Created: 30/12/2023

Bunbury
Dunsborough

Biologic

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Lot 102 Fence Line Collie Detailed Flora and Vegetation Survey

Figure 4.2: Flora sample sites and traverses

4.1.5 Vegetation

Vegetation was sampled using quadrats, relevés, and vegetation mapping notes, including information on disturbance and condition, as outlined in Section 4.1.3. The sampling methods were carried out in accordance with EPA guidelines (EPA, 2016b).

Vegetation sampling focused on the proposed disturbance area (i.e., the Fence Line Corridor, Figure 1.1), with additional quadrats/ mapping notes surveyed within the broader Survey Area for context. Additional quadrats and relevés will be sampled within the broader Survey Area during future surveys.

4.1.5.1 Vegetation Mapping

The current nationally adopted classification system for vegetation descriptions is Native Vegetation Information System (NVIS) (NVIS Technical Working Group, 2017). NVIS seeks to manage national vegetation data to help improve vegetation planning and management within Australia including standardising scale and technical wording for vegetation associations. Vegetation types and condition is mapped in accordance with the scale for NVIS level V.

Site photographs and full descriptions were taken at each sampling site to support the vegetation mapping. The floristic data collected from the quadrats was analysed using R version 4.2.1 (R Core Team, 2023), and mapping units were determined based on dendrograms and field observations. This method is sufficient to meet EPA expectations in accordance with the flora and vegetation guidance statement for assessment.

Vegetation types and condition were mapped for the Survey Area using pre-existing mapping done by Mattiske (2021). Boundaries were refined with ground-truthing, interpretation of aerial imagery, botanical expertise of jarrah forest composition, and statistical analysis. The vegetation type mapping was digitised using GIS software.

4.1.5.2 Vegetation Condition

Vegetation condition was defined within the Survey Area using the vegetation condition scale for the South West Botanical Province in EPA (2016a), which has been adapted from Keighery (1994) and Trudgen (1988) (Appendix G). The vegetation condition was determined based on the level of disturbance observed in the sampling area. Condition was recorded at each quadrat and relevé, while additional notes were taken while traversing the Survey Area to broadly map vegetation condition boundaries. Vegetation condition mapping was then digitised using GIS software.

4.1.6 Floristic Data Analysis

Analysis of the field survey results was conducted to assist with delineating vegetation types and to assess survey adequacy. Floristic composition for vegetation classification is a

repeatable method and is considered suitable for identification of significant vegetation as it focuses on the suite of species present within a quadrat (EPA, 2016b). During the survey, flora taxa were recorded using an estimate of the foliage cover of each species within each quadrat. Analyses to delineate vegetation communities were carried out using R (version 4.2.1; R Core Team, 2023).

4.1.6.1 Data Transformation & Reconciliation

Following the survey, the flora taxa list was reconciled to amalgamate selected taxa, e.g., varieties of the same species (Appendix I). In general, tentative genus or species identifications (indicated with the prefix of a query) were removed from analyses. However, where taxa were distinct from confirmed taxa, and taxa were observed at multiple sites, observations were retained. Flora taxa recorded at relevés were excluded from the analyses as relevés are unbounded and were not often resampled. The final dataset used in the analyses comprised 111 flora taxa from 17 sample sites.

4.1.6.2 Hierarchical Clustering

To allow for disparity in cover between different strata, the cover values were standardised using a square root transformation. Singletons (taxa that were only recorded once) and introduced taxa were removed from the dataset. A resemblance matrix was created using the vegdist function in the vegan package (Oksanen J, 2022) in R. The resemblance matrix was created using the Bray Curtis coefficient and clustering used the Ward's method (ward.D2). Vegetation units were initially grouped based on visual distinction in a dendrogram (Appendix H).

Simper (similarity percent) analysis displays the most important taxa in distinguishing each pair of groups (species which contribute at least to 70 % of the difference). However, the apparent differences can also be caused by variation in species abundance. While Simper analysis is common, the results are difficult to interpret and are often misunderstood (see simper vignette Oksanen J, 2022). Consequently, a fidelity analysis using the "indicspecies" package (De Caceres & Legendre, 2009) has been used as an exploratory tool to investigate dendrogram groups.

4.1.6.3 Species Accumulation Curve

Species accumulation curves provide a visual overview of the observed number of flora taxa as the number of sample sites (quadrats) increases. When a curve approaches an asymptote (i.e., flattens), it suggests that sampling effort has been sufficient to collect the taxa comprising the floral assemblage at the locations sampled (Thompson *et al.*, 2003). The value at which the curve reaches an asymptote can also be used as an approximate measure of the total size of the species complement at that location (Thompson *et al.*, 2003). Estimator

curves (Chao, Jacknife 1, and Bootstrap) were used to predict the number of taxa that may have actually been present. The species accumulation curves were created using the reconciled native flora taxa list for each quadrat sampled during the survey. These curves were based on presence absence data, with a random sample order and a maximum 999 permutations.

4.2 Results and Discussion

4.2.1 Flora

A total of 148 confirmed vascular flora taxa from 48 families and 133 genera were recorded from the Survey Area, comprising 137 native taxa and eleven introduced taxa (Appendix J). The dominant families recorded during the survey were Fabaceae (25 taxa/ 16.9%), Asparagaceae (15 taxa/ 10.1%) and Cyperaceae (seven taxa/ 4.7%) and equates to 31.7% of the total taxa recorded (Appendix J). Of the 133 genera recorded, 66 were represented by one taxon, which equates to 49.6% of the total taxa recorded (Appendix J).

4.2.2 Significant Flora

Of the 85 significant flora identified in the desktop assessment, one taxon, *Lomandra whicherensis* (P3), was previously recorded in the Survey Area (Section 3.2.1, Appendix E).

This taxon was previously Confirmed to occur at two locations in the Survey Area, situated near the western and southern boundaries (Figure 3.1), and was observed to be common at the population near the southern boundary (DBCA, 2023d). One further population of 20 individuals was known from approximately 100 m to the east of the eastern boundary of the Survey Area (DBCA, 2023d) (Figure 3.1). Records from the current survey represent new populations of the taxon.

Locations of previous records fell outside the focus area of the Fence Line Corridor (Figure 1.1) and were not ground-truthed as part of the current survey; however, the taxon was recorded frequently throughout the Fence Line Corridor and at other locations within the Survey Area, with approximately 206 individuals from 90 point-locations recorded, across multiple vegetation types (Figure 4.3, Table 4.4).

4.2.3 Introduced Flora

Eleven introduced taxa were recorded from the Survey Area (Figure 4.4, Appendix H, Appendix J, Appendix K). Of these, one (**Gomphocarpus fruticosus*) is listed as a declared pest under the BAM Act.

Introduced weeds recorded from the Survey Area were all annual or perennial grasses and herbs. No major weed infestations were observed with foliage cover in quadrats recorded at

0.1 %. Weeds were found lower in the landscape on drainage lines, adjacent to tracks and in areas of higher disturbance.

Table 4.3: Introduced flora recorded in the Survey Area

Family	Taxon	Lifeform/ Habit	Number of occurrences
Apocynaceae	**Gomphocarpus fruticosus*	Perennial herb	1 individual at 1 location
Asteraceae	**Hypochaeris glabra*	Annual/ perennial herb	4 individuals at 4 locations
	**Sonchus asper* subsp. *asper*	Annual herb	1 individual at 1 location
	**Sonchus oleraceus*	Annual herb	1 individual at 1 location
Fabaceae	**Acacia longifolia* subsp. *longifolia*	Perennial shrub	1 individual at 1 location
	**Lotus subbiflorus*	Annual herb	1 individual at 1 location
Oxalidaceae	**Oxalis corniculata*	Annual herb	5 individuals at 5 locations
Pinaceae	**Pinus radiata*	Perennial shrub / tree (conifer)	1 individual at 1 location
Poaceae	**Hordeum leporinum*	Annual grass	1 individual at 1 location
Primulaceae	**Lysimachia arvensis*	Annual or perennial herb	2 individuals at 2 locations
Lamiaceae	**Mentha pulegium*	Perennial herb	1 individual at 1 location

404000
405500
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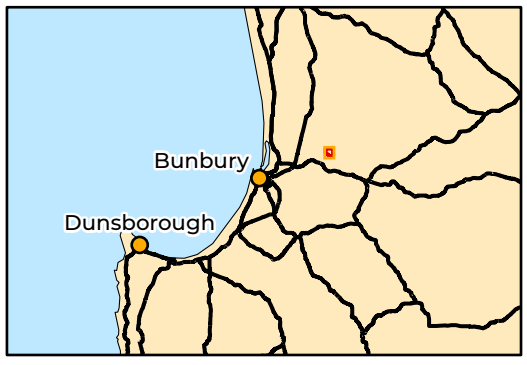
6320500
6319000
Mornington Rd
Beela Rd

LEGEND

Study Area
Local Road
Rail

Significant Flora
Lomandra whicherensis

Scale 1:15,000
0 250 500 Meters
Coordinate System: GDA 1994 MGA Zone 50 Transverse Mercator Created: 30/12/2023



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Lot 102 Fence Line Collie Detailed Flora and Vegetation Survey

Figure 4.3: Significant flora recorded in the Survey Area

Table 4.4: Significant flora recorded in the Survey Area

Description	Habitat	Results of detailed survey assessment	Representative floristic material, habit and/or habitat
Priority 3			
Lomandra whicherensis Erect, perennial, rhizomatous herb to 30 cm in height. Leafy stems up to 15 cm long, densely tufted, and completely covered from ground level up to 12 cm by a dense tangle of coiled and curled old brown leaves (Keighery, 2008)	Previous populations from the area were recorded on gentle upper slopes of broad ridges on loamy sand to lateritic gravels, in jarrah-marri forest with *Banksia grandis*, over low open shrubland to shrubland of *Bossiaea aquifolium*, over low open heath of *Macrozamia riedlei* and *Hibbertia hypericoides* (DBCA, 2023d). Populations of *L. whicherensis* (P3) recorded during the current survey were located in jarrah-marri mid open woodland to mid open forest, sometimes over *Banksia grandis* low woodland, with understorey ranging from mid to tall open to sparse shrubland of *Bossiaea aquifolium* subsp. *aquifolium* and occasionally *Trymalium odoratissimum* subsp. *odoratissimum* over mid to low sparse shrubland variously including *Pteridium esculentum* subsp. *esculentum*, *Hibbertia hypericoides* subsp. *hypericoides*, *Macrozamia riedlei*, *Tremandra stelligera*, *Xanthorrhoea gracilis* low sparse shrubland.	Approximately 206 individuals from 90 point-locations, associated with vegetation types EmCc (BgTo) Ba(PeMr) Hh and EmCc Bg (ToBa) (PeMr) Hh. Multiple populations occurred in areas with evidence of grazing, recent fire and localised *Banksia* deaths.	

404000
405500
407000
6322000
6320500
6319000
Mornington Rd
Beela Rd

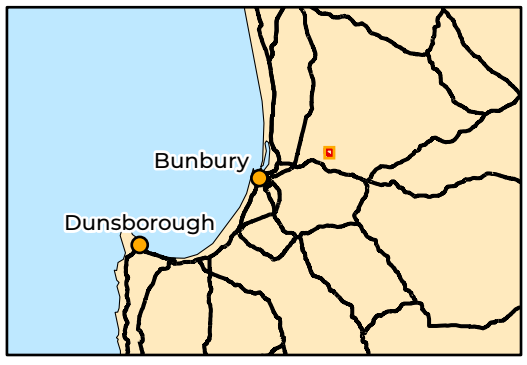
LEGEND

Study Area
Local Road
Rail

Introduced Flora

*Acacia longifolia subsp. longifolia
*Gomphocarpus fruticosus
*Hordeum leporinum
*Hypochaeris glabra
*Lotus subbiflorus
*Lysimachia arvensis
*Mentha pulegium
*Oxalis corniculata
*Pinus radiata
*Sonchus asper subsp. asper
*Sonchus oleraceus

Scale 1:15,000
0 250 500 Meters
Coordinate System: GDA 1994 MGA Zone 50 Transverse Mercator Created: 08/01/2024



Biologic

SOUTH32

Lot 102 Fence Line Collie Detailed Flora and Vegetation Survey

Figure 4.4: Introduced flora recorded in the Survey Area

4.2.4 Vegetation

4.2.4.1 Vegetation Types

Five vegetation types were described and mapped in the Survey Area (Table 4.6, Figure 4.5). These were derived from a combination of the dendrogram (hierarchical clustering), structural floristic assemblages, aerial imagery, and known landforms in the Survey Area. Each of the mapped vegetation types occurred within the Fence Line Corridor (Table 4.6). The Fence Line Corridor is largely located along existing access tracks, so the mapped vegetation types within the Fence Line Corridor are often dissected by a cleared area (Table 4.6). It should be noted that vegetation sampling focused on vegetation adjacent to the proposed the Fence Line Corridor (Figure 1.1), with additional quadrats/ mapping notes surveyed within the broader Survey Area for contextual purposes. Additional quadrats and relevés will be sampled within the broader Survey Area during future surveys and it is expected that vegetation types within the broader Survey Area will be refined based on this additional sampling.

Statistical analysis resulted in three broad groupings. Most of the overstorey vegetation in the Survey Area comprised *Eucalyptus marginata* (jarrah) and *Corymbia calophylla* (marri) forest, with *Eucalyptus patens* (Swan River blackbutt) in wetter areas (lower slopes and creek lines). The composition of midstorey and understorey vegetation was inconsistent, possibly as a result of fires in the area from 2015–2018 (DBCA, 2023b). Vegetation types were generally distinguished based on the presence/absence of *Banksia grandis*, *Taxandria linearifolia*, *Trymalium odoratissimum* subsp. *odoratissimum* in the midstorey. *Bossiaea aquifolium* subsp. *aquifolium* was a dominant, but inconsistent mid to tall shrub, while understorey vegetation often included patches of *Pteridium esculentum* subsp. *esculentum*, *Macrozamia riedlei*, and *Hibbertia hypericoides* subsp. *hypericoides*. *Lepidosperma tetraquetrum* was the dominant understorey taxon in creek lines. The composition of understorey taxa, in particular *Bossiaea aquifolium* subsp. *aquifolium,* may have been denser in parts than it would have been without fire.

In the dendrogram, the first group contained quadrats FEN-024, FEN-007, and FEN-009 (Appendix L). This group formed one vegetation type, with all sites in low-lying creek lines. These sites contained *Eucalyptus patens* and *Corymbia calophylla* over *Trymalium odoratissimum* subsp. *odoratissimum* (±*Taxandria linearifolia*) with *Pteridium esculentum* subsp. *esculentum* and *Lepidosperma tetraquetrum*. Fidelity analysis shows that the most influential taxa (statistically significant in distinguishing this group from the others) were *Lepidosperma tetraquetrum, Poa ?drummondiana*, *Eucalyptus patens* and *Taxandria linearifolia*. In addition, a second similar vegetation type was delineated using previous mapping (Mattiske, 2021) and mapping notes (Table 4.6).

The second dendrogram group contained quadrats FEN-003 and FEN-021 (one vegetation type) and was visibly distinct during the survey due to the presence of *Banksia grandis*. The most influential taxa for this group were *Banksia grandis* and ?*Dichelachne micrantha*. Although FEN-017 was not within this group in the dendrogram, it was included with the vegetation type as a nearby relevé within the Fence Line Corridor contained *Banksia grandis*. FEN-017 may have been situated at or near an ecotone between vegetation types, hence the atypical grouping.

The third dendrogram group contained all remaining quadrats, and was separated into two vegetation types. The vegetation generally comprised woodland of *Corymbia calophylla* and *Eucalyptus marginata*, separated into multiple units based on key mid-storey species *Taxandria linearifolia* and *Agonis flexuosa*. The most influential taxa in distinguishing this group from the others were *Lagenophora huegelii*, *Stylidium rhynchocarpum*, *Hibbertia amplexicaulis*, *Lomandra integra*, and *Persoonia longifolia*. Although quite similar to the *Eucalyptus marginata/Corymbia calophylla* vegetation, FEN-029 was separated into its own group due to the presence of *Agonis flexuosus* and *Eucalyptus patens*.

All remaining area not covered by native vegetation is mapped as cleared (access tracks) or water (Table 4.6, Figure 4.5).

4.2.4.2 Groundwater Dependent Ecosystems

Minor water courses are located in the Survey Area, particularly within the southern half (Figure 2.5). During the survey, some of the low-lying areas had surface water present, including a dam on the southern boundary.

The low-lying wet areas provided suitable habitat for several taxa typical of valleys and watercourses in the Jarrah Forest bioregion (Table 4.5). There was one vegetation type mapped within the main drainage line, and three on lower slopes (Table 4.6).

Table 4.5: Potential groundwater dependent taxa and associated habitat

Taxon	Florabase Habitat
Eucalyptus patens	Depressions, stream banks, valleys.
Banksia littoralis	Low-lying, seasonally damp areas, along watercourses.
Agonis flexuosa var. flexuosa	Coastal sand dunes, granite outcrops, limestone areas.
Trymalium odoratissimum subsp. *odoratissimum*	Near watercourses & swamps, in gullies.
Taxandria linearifolia	Bordering swamps & watercourses.
Gahnia decomposita	White sand, wet black sandy loam. Swamps, streams, seasonally wet flats.
Juncus sp. (?*amabilis*)	Moist sand. River banks.

Taxon	Florabase Habitat
Lepidosperma tetraquetrum	Gullies, swamps, streams.
Opercularia vaginata	Sandy, lateritic or granitic soils, coastal limestone.
Hypocalymma angustifolium	Flats, swamps, along watercourses, near permanent fresh-water springs, outcrops, hillsides.
Xanthosia huegelii	Winter-wet areas, sandplains, outcrops.

Based on a combination of topography, landforms, soils, flora assemblages and vegetation types present within the Survey Area, vegetation type EpCc (ToTl) (Pe) Lt in particular may represent groundwater dependent vegetation. The riparian vegetation types of the Survey Area would likely access surface water or water in the hyporheic zone for much of the year but would potentially be reliant on access to groundwater during periods of drought.

It is generally accepted that the greater the depth to groundwater, the less dependent the vegetation is on access to groundwater (Eamus & Froend, 2006; Hyde, 2006). Whether or not riparian taxa can access groundwater depends upon their lifeform, root depth, and the depth to groundwater.

4.2.4.3 Vegetation Condition

The condition of the vegetation in the Survey Area was mostly excellent (98.8%) (Figure 4.6). The remaining vegetation (<1 ha) was in very good condition, while the other areas (1.2%) were mapped as cleared or water (Figure 4.6). The main disturbance was access tracks, with recreational vehicle access potentially transporting introduced taxa to a camping area beside the dam. The vegetation surrounding the dam had a modified structure in parts (i.e. some shrubs were present between vehicle access tracks and the water's edge).

404000
405500
407000
6322000
6320500
6319000
Mornington Rd
Beela Rd

LEGEND

Study Area
Local Road
Rail

Vegetation Type

Cleared
EmCc (BgTo) Ba(PeMr) Hh
EmCc Bg (ToBa) (PeMr) Hh
EpCc (ToTl) (Pe) Lt
EpCc(Em) To Hc
EpCcEm Af (ToTl) Ba Hh
Water

Scale 1:15,000
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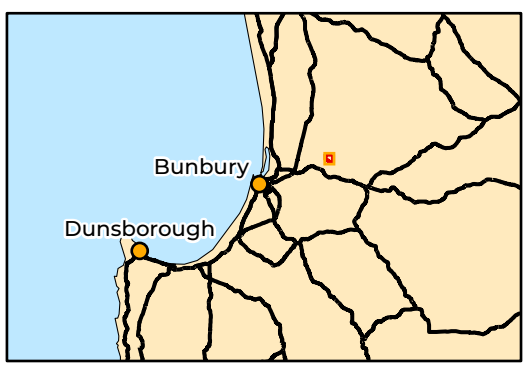
Meters

Coordinate System: GDA 1994 MGA Zone 50 Transverse Mercator
Created: 24/01/2024



Biologic

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Lot 102 Fence Line Collie Detailed Flora and Vegetation Survey

Figure 4.5: Vegetation types in the Survey Area

404000
405500
407000
6322000
6320500
6319000
Mornington Rd
Beela Rd

LEGEND

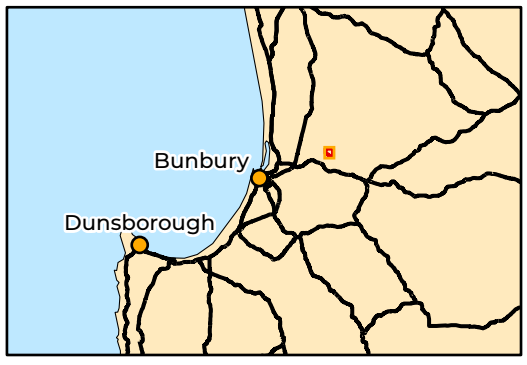
Study Area
Local Road
Rail

Vegetation Condition

Cleared
Excellent
Very Good
Water

Scale 1:15,000
0 250 500 Meters

Coordinate System: GDA 1994 MGA Zone 50 Transverse Mercator Created: 30/12/2023



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Lot 102 Fence Line Collie Detailed Flora and Vegetation Survey

Figure 4.5: Vegetation condition in the Survey Area

Table 4.6: Vegetation types of the Survey Area

Vegetation code Description	Sample sites	Extent		Features of interest & condition	Additional comments	Representative photo
		Survey Area	Fence Line Corridor			
***Eucalyptus marginata/Corymbia calophylla* open forest**						
EmCc (BgTo) Ba(PeMr) Hh *Eucalyptus marginata* subsp. *marginata*, *Corymbia calophylla* mid open forest (±over *Banksia grandis* low trees) over *Trymalium odoratissimum* subsp. *odoratissimum*, *Bossiaea aquifolium* subsp. *aquifolium* mid to tall shrubland (±over *Pteridium esculentum* subsp. *esculentum*, *Macrozamia riedlei* mid to low open shrubland) over *Hibbertia hypericoides* subsp. *hypericoides* low open shrubland	FEN-001, FEN-004 FEN-005, FEN-011 FEN-013, FEN-015 FEN-016, FEN-019 FEN-020, FEN-023 FENR-004, FENR-019 14 mapping notes	733.9 ha 76.9%	23.3 ha 62.3%	Most extensive vegetation type in the Survey Area. Supports populations of *Lomandra whicherensis* (P3). Excellent condition	Mid to tall shrubland is present in patches. Dendrogram group three.	
EmCc Bg (ToBa) (PeMr) Hh *Eucalyptus marginata* subsp. *marginata*, *Corymbia calophylla* mid open forest over *Banksia grandis* low trees (±over *Trymalium odoratissimum* subsp. *odoratissimum*, *Bossiaea aquifolium* subsp. *aquifolium* mid to tall shrubland) (±over *Pteridium esculentum* subsp. *esculentum*, *Macrozamia riedlei* mid to low open shrubland) over *Hibbertia hypericoides* subsp. *hypericoides* low open shrubland	FEN-003 FEN-017 FEN-021 FENR-005	43.6 ha 4.6%	6.8 ha 18.3%	Supports populations of *Lomandra whicherensis* (P3). Excellent condition	Mid to tall shrubland is present in patches. Dendrogram group two. FEN-017 sits separately in dendrogram possibly due to ecotone.	
***Eucalyptus patens* drainage/low slopes**						
EpCc (ToTl) (Pe) Lt *Eucalyptus patens*, *Corymbia calophylla* mid open woodland over *Trymalium odoratissimum* subsp. *odoratissimum* (±*Taxandria linearifolia*) tall shrubland over *Pteridium esculentum* mid open shrubland over *Lepidosperma tetraquetrum* mid sedgeland	FEN-007 FEN-009 FEN-024 FENR-001 FENM-01 FENM-06	45.0 ha 4.7%	0.4 ha 1.1%	*Eucalyptus patens* present. Main drainage vegetation type (potential groundwater dependence) Excellent–Very Good condition	Tall shrubland is present in patches. Dendrogram group one.	

Vegetation code Description	Sample sites	Extent		Features of interest & condition	Additional comments	Representative photo
		Survey Area	Fence Line Corridor			
EpCc(Em) To Hc *Eucalyptus patens*, *Corymbia calophylla* (±*Eucalyptus marginata*) mid woodland over *Trymalium odoratissimum* subsp. *odoratissimum* tall sparse shrubland (patches) over *Hibbertia commutata* low sparse shrubland	FENM-12 FENMB-03 FENR-010	113.3 ha 11.9%	2.2ha 5.9%	*Eucalyptus patens* present Excellent condition	Lower hillslopes adjacent to drainage lines, not extensive within Fence Line corridor. Based on Mattiske 2021: 'Open Forest of *Eucalyptus patens* and *Corymbia calophylla* with mixed understorey species ... on lower slopes, but extent reduced after ground truthing. Southern section (adjacent south of EpCc (ToTl) (Pe) Lt) previously mapped as EmCc, however *Eucalyptus patens* extent was recorded during survey. The area not within the Fence Line Corridor may be refined further in future surveys from more extensive sampling across the remainder of Lot 102..	
EpCcEm Af (ToTl) Ba Hh *Eucalyptus patens*, *Corymbia calophylla*, *Eucalyptus marginata* mid woodland over *Agonis flexuosa* mid to low open forest (±over *Trymalium odoratissimum* subsp. *odoratissimum*, *Taxandria linearifolia* tall open shrubland) over *Bossiaea aquifolium*, *Xanthorrhoea preissii* (±*Pteridium esculentum*) mid to tall sparse shrubland over *Hibbertia hypericoides* low open shrubland (with *Lepidosperma tetraquetrum* isolated clumps of sedges)	FEN-029 FENM-03 FENR-002 FENR-003	6.6 ha 0.7%	0.8 ha 2.3%	Potential groundwater-dependent taxa (*Eucalyptus patens*, *Agonis flexuosa* var. *flexuosa*) Excellent condition	Low-lying area near drainage. Mapping considered relevés and mapping notes. Quadrat FEN-029 grouped in dendrogram group three.	

Vegetation code Description	Sample sites	Extent		Features of interest & condition	Additional comments	Representative photo
		Survey Area	Fence Line Corridor			
Cleared Gravel access tracks with negligible vegetation	n/a	10.7 ha 1.1%	3.8 ha 10.1%		Occasional plants germinating on tracks, but vehicle access prevents reestablishment	
Water Freshwater dam	FENM-20	1.0 ha 0.1%	0.03 ha <0.1%		Permanent water	

4.3 Review of Likelihood

Following the field surveys, likelihood of significant flora occurrence at the Survey Area has been reviewed and a large portion were re-classified at a lower level of likelihood (Table 4.7, Appendix E). Likelihoods were downgraded if species would have been present and flowering during the survey, were medium-large shrubs/ trees, were easily identifiable without flowering or fruiting material, or where limited or no suitable habitat was present within the Survey Area. Given the narrow extent of the Fence Line Corridor, much of the area was able to be observed and traversed.

Lomandra whicherensis (P3) was already known to occur within the Survey Area. This taxon was recorded during the field survey and its likelihood remains Confirmed. Eleven taxa which were considered Likely or Possible to occur prior to the survey, are now considered either Unlikely (9) or Possible (2) or occur (Table 4.7).

The two taxa that remain Possible to occur, *Stylidium acuminatum* subsp. *acuminatum* (P2) and *Juncus meianthus* (P3) are both small (<20 cm) annual herbs which can be difficult to detect, particularly amongst denser vegetation.

Table 4.7: Post-survey review of likelihood of occurrence

Taxon	Post-Survey Likelihood	Reasoning
Pre-survey likelihood – Confirmed		
Lomandra whicherensis (P3)	Confirmed	Confirmed during field survey
Pre-survey likelihood – Likely		
Stylidium acuminatum subsp. *acuminatum* (P2)	Possible	*Stylidium acuminatum* subsp. *acuminatum* is a small rosetted perennial herb that flowers between late October and November. Eight *Stylidium* species were recorded during surveys; however, while targeted surveys covered the full extent of the Fence Line Corridor, it is possible that species with a low growth habit could be missed, especially in denser vegetation; therefore, the likelihood for this species remains "Possible."
Juncus meianthus (P3)	Possible	*Juncus meianthus* is a delicate herb up to 20 cm in height. Two unconfirmed *Juncus* spp. were recorded: *J. ?amabilis* and *J.* sp. indet. *Juncus ?amabilis* was much greater than 20 cm tall, and did not match the description of *J. meianthus*. The *J.* sp. indet. was small and sterile, but superficially was a much better match a larger specimen identified as *Juncus planifolius* than it would be to *Juncus meianthus*. While targeted surveys covered the full extent of the Fence Line Corridor, it is possible that

Taxon	Post-Survey Likelihood	Reasoning
		species with a low growth habit could be missed, especially in denser vegetation; therefore, the likelihood for this species remains "Possible."
Cyanothamnus tenuis (P4)	Unlikely	The Fence Line Corridor was traversed thoroughly during the flowering season for this species (August to December) and was not observed.
Grevillea ripicola (P4)	Unlikely	The Fence Line Corridor was traversed thoroughly and this species was not observed. While surveys occurred outside the known flowering times for the species (Jan or Mar to Apr or Nov to Dec), *Grevillea* species can still be identified to genus when no flowers are present on plants. No *Grevillea* species were recorded during surveys.
Pultenaea skinneri (P4)	Unlikely	The Fence Line Corridor was traversed thoroughly during the flowering season for this species (July to September) and was not observed.
Pre-survey likelihood – Possible		
Grevillea rara (T)	Unlikely	The Fence Line Corridor was traversed thoroughly during the flowering season for this species (September to October) and was not observed. No other *Grevillea* species were recorded during surveys.
Acacia oncinophylla subsp. *oncinophylla* (P3)	Unlikely	The Fence Line Corridor was traversed thoroughly during the flowering season for this species (August to October) and was not observed.
Dillwynia sp. Capel (P.A. Jurjevich 1771) (P3)	Unlikely	The Fence Line Corridor was traversed thoroughly during the flowering season for this species (September to October) and was not observed.
Grevillea prominens (P3)	Unlikely	The Fence Line Corridor was traversed thoroughly during the flowering season for this species (September to October) and was not observed. No other *Grevillea* species were recorded during surveys.
Eucalyptus rudis subsp. *cratyantha* (P4)	Unlikely	The Fence Line Corridor was traversed thoroughly. Two *Eucalyptus* species were recorded (*E. marginata* and *E. patens*), both of which are readily distinguishable from *E. rudis*. This species was not observed.
Senecio leucoglossus (P4)	Unlikely	The Fence Line Corridor was traversed thoroughly during the flowering season for this species (August to December) and was not observed.

4.4 Survey Adequacy

A total of 17 quadrats were sampled across the Survey Area (Section 4.1.3), totalling 0.02 sites sampled per hectare of native vegetation. This is a conservative estimate of sites per hectare for the proposed Fence Line Corridor (37.3 ha), as 14 quadrats were established in representative vegetation adjacent to the Fence Line Corridor (roughly equivalent to 0.38 sites/ha). The survey intensity is likely to increase with further surveys, as these calculations are based on the whole Survey Area (not solely within the Fence Line Corridor). The sampling intensity is consistent with other flora and vegetation surveys of large Survey areas (900 ha and above) reviewed in the desktop assessment, which range from <0.01 to 0.03 sites per hectare (Table 4.8). The number of sites/ ha of Survey Areas approximately 100 ha or less is expected to be higher for smaller Survey Areas, as time and access becomes more constrained and survey costs increase as the size of the survey area increases.

Not all the reports reviewed in the desktop assessment are included due to survey type and missing information in the reports (i.e., size of the survey areas).

Table 4.8: Survey intensity and effort comparison

Survey	Survey Area Size (ha)	No. of Taxa Recorded	No. of Sites	Sites / ha
Ecoedge (2016)	47.8	278	23	0.48
GHD (2021)	63.97	294	17	0.27
Strategen (2018)	165.13	106	22	0.13
Lundstrom (2019a)	77.2	70	9	0.12
Lundstrom (2019b)	80.2	81	8	0.10
Natural Area (2021)	118	122	5	0.04
BORR Team (2019)	1,128	354	38	0.03
Current survey	**954.21**	**148**	**17**	**0.02**
Mattiske (2021)	54,241.66	1,320	148	<0.01

The species accumulation curve shows a steady increase, with estimators starting to plateau (Figure 4.7). Richness estimators indicated that the survey was approximately 79% (Chao 1) to 89 % (Bootstrap) adequate, with an observed value of 107 flora taxa (confirmed native vascular flora taxa recorded from quadrats and reconciled for statistical analysis (Appendix I, Table 4.9)). The survey adequacy increases when 34 additional taxa from the relevés, mapping notes, and opportunistic observations are included (Table 4.9). With opportunistic records included, the richness estimators suggest that up to 104.2 % of the flora potentially present has been recorded (Table 4.9). For the purposes of a detailed survey, survey effort is considered to be adequate.

Table 4.9: Expected native species richness for the Survey Area

Treatment	Results	Richness Estimates	
		Based on Species Observed (107)	Based on Total (141)
Chao 1	135.3 ± 13.5	79.0 %	104.2 %
Jacknife 1	136.2 ± 9.8	78.6 %	103.5 %
Bootstrap	120.7 ± 5.9	88.6 %	102.2 %
SOBS (Species Observed)	107		

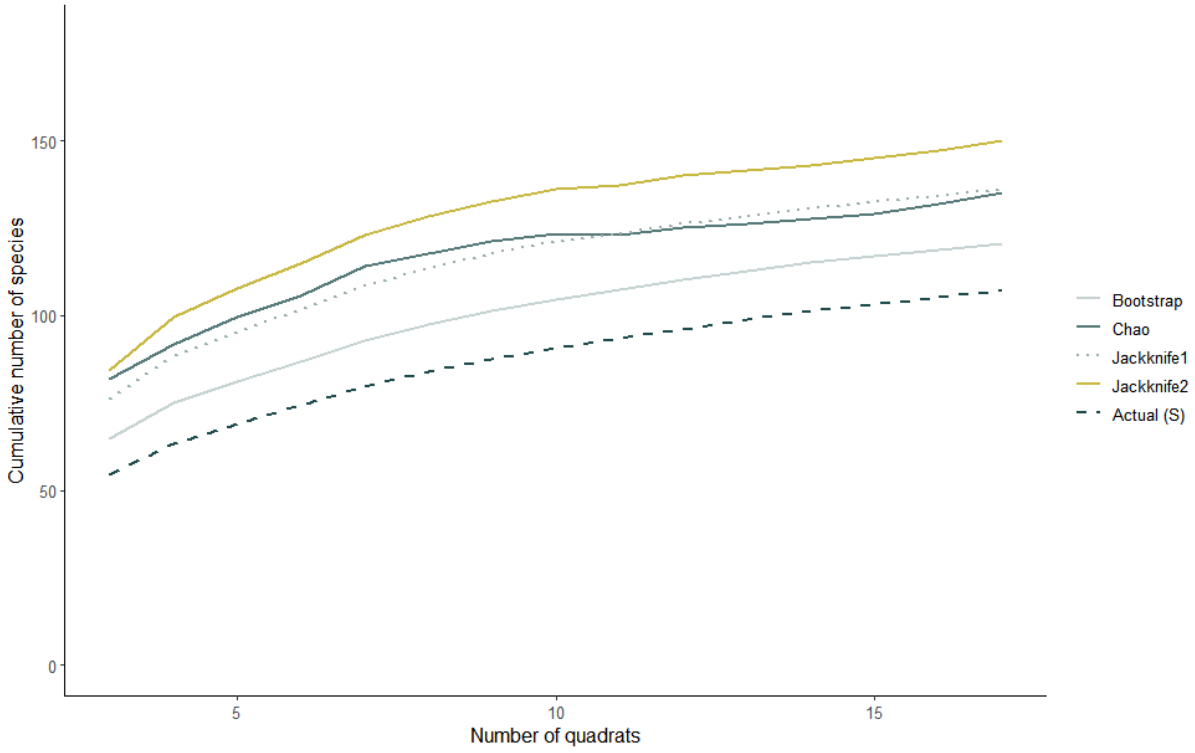

Figure 4.7: Species accumulation curve for the Survey Area

4.5 Potential Limitations and Constraints

There are a number of possible limitations and constraints that can impinge on the adequacy of vegetation and flora surveys. The limitations of the current assessment are presented in accordance with the Technical Guidance (EPA, 2016b) (Table 4.10).

Table 4.10: Potential limitations and constraints

Limitation	Constraint	Comment
Availability of contextual information at a regional and local scale	No	Sufficient contextual information was available for the Survey Area, including broad information on land systems and vegetation associations. Botanical survey work has been previously carried out by Mattiske (2021). Vegetation mapping spatial data was reviewed prior to conducting the survey.
Competency/ experience of the team carrying out the survey, including experience in the bioregion surveyed	No	Each field survey was led by a senior botanist with over ten years' experience. The lead botanist met the minimum requirements of the EPA (2016b) to manage a flora and vegetation field survey in the Jarrah Forest bioregion (i.e., five years field experience the bioregion).
Proportion of flora recorded and/or collected, any identification issues	No	The survey intensity (detailed) was designed to capture most of the flora within the Survey Area. Approximately 40 of the 176 taxa observed or collected from the field were difficult to confidently identify to species or infraspecies level. These unconfirmed taxa were mainly annuals or small–medium herbs/ grasses. Most are genera that are already represented by confirmed taxa (e.g. Patersonia sp. indet.). A number of sterile orchid leaves were observed but unable to be confirmed (e.g. *Caladenia* sp. indet., *Eriochilus* sp. indet., *Pterostylis* sp. indet.). None of the unconfirmed taxa are likely to be significant flora.
Was the appropriate area fully surveyed (effort and extent)	No	The Fence Line Corridor was traversed and surveyed on foot with all major vegetation units visited. The survey intensity and coverage (related to quadrat sampling) align with EPA guidance for a detailed survey. Where possible, a minimum of three quadrats were established and sampled within each vegetation type, with additional quadrats assigned to larger units or to ensure spatial coverage. The broader Survey Area (i.e. the area enclosed by, but external to, the Fence Line Corridor was surveyed at a lower intensity for context, but will be surveyed more thoroughly during a future detailed survey.
Survey timing, rainfall, season of survey	No	The survey timing was adequate for this level of survey. Both field surveys were undertaken during a period which is considered to be optimal for the Jarrah Forest region (EPA, 2016b). Above LTA rainfall was received in the three months prior to the primary field survey (August 2023). he species richness assessment indicates 79–104% of native flora taxa have been captured by the field survey.

5 Conclusion

A detailed two-phase flora and vegetation survey was completed for the Survey Area over two field surveys in August 2023 and October 2023, with a total of 20 person days. All vegetation types were ground-truthed and sampled with no substantial limitations to the field survey. The survey and reporting have been completed in line with EPA guidelines, with survey adequacy being consistent with the level of a detailed survey. Seventeen quadrats, 22 relevés and 33 vegetation mapping notes were sampled across the Survey Area, and opportunistic sampling was also carried out.

The key findings of the survey are:

- The context area contained 148 confirmed vascular flora taxa from 48 families and 133 genera, comprising 137 native and 11 introduced taxa;
- One Priority listed flora taxon (*Lomandra whicherensis* (P3)) was recorded from 90 point-locations in the Survey Area, totalling approximately 206 individuals;
- One introduced taxon (**Gomphocarpus fruticosus*) is listed as a declared plant under the BAM Act;
- Five vegetation types were described in the Survey Area;
- No TECs or PECs were recognised in the vegetation types of the Survey Area;
- Two vegetation types supported a priority flora taxon and are therefore significant in providing suitable habitat for these species;
- The condition of the vegetation in the Survey Area ranged from Excellent to Very Good, with most considered to be in Excellent condition (98.8 %).

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Appendix A: Conservation codes

Environment Protection and Biodiversity Conservation Act 1999

Category	Definition
Threatened Flora Species	
Extinct (EX)	A native species is eligible to be included in the Extinct category at a particular time if, at that time, there is no reasonable doubt that the last member of the species has died.
Extinct in the Wild (EW)	A native species is eligible to be included in the Extinct in the Wild category at a particular time if, at that time: (a) it is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or (b) it has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.
Critically Endangered (CR)	A native species is eligible to be included in the critically endangered category at a particular time if, at that time, it is facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria.
Endangered (EN)	A native species is eligible to be included in the endangered category at a particular time if, at that time: (a) it is not critically endangered; and (b) it is facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria.
Vulnerable (VU)	A native species is eligible to be included in the vulnerable category at a particular time if, at that time: (a) it is not critically endangered or endangered; and (b) it is facing a high risk of extinction in the wild in the medium term future, as determined in accordance with the prescribed criteria.
Conservation Dependent (CD)	A native species is eligible to be included in the Conservation Dependent category at a particular time if, at that time: (a) the species is the focus of a specific conservation program the cessation of which would result in the species becoming Vulnerable, Endangered or Critically Endangered; or (b) the following subparagraphs are satisfied (i) the species is a species of fish; (ii) the species is the focus of a plan of management that provides for management actions necessary to stop the decline of, and support the recovery of, the species so that its chances of long term survival in nature are maximised; (iii) the plan of management is in force under a law of the Commonwealth or of a State or Territory; and (iv) cessation of the plan of management would adversely affect the conservation status of the species.
Threatened Ecological Communities	

Category	Definition
Critically Endangered	An ecological community is eligible to be included in the critically endangered category at a particular time if, at that time, it is facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria.
Endangered	An ecological community is eligible to be included in the endangered category at a particular time if, at that time: (a) it is not critically endangered; and (b) it is facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria.
Vulnerable	An ecological community is eligible to be included in the vulnerable category at a particular time if, at that time: (a) it is not critically endangered nor endangered; and (b) it is facing a high risk of extinction in the wild in the medium term future, as determined in accordance with the prescribed criteria.

Biodiversity Conservation Act 2016

Category	Definition
Threatened Flora Species	
Critically Endangered (CR)	Threatened species considered to be "facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with criteria set out in the ministerial guidelines". Published under schedule 1 of the *Wildlife Conservation (Rare Flora) Notice 2018* for critically endangered flora.
Endangered (EN)	Threatened species considered to be "facing a very high risk of extinction in the wild in the near future, as determined in accordance with criteria set out in the ministerial guidelines". Published under schedule 2 of the *Wildlife Conservation (Rare Flora) Notice 2018* for endangered flora.
Vulnerable (VU)	Threatened species considered to be "facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with criteria set out in the ministerial guidelines". Published under schedule 3 of the Wildlife Conservation (Rare Flora) Notice 2018 for vulnerable flora.
Extinct (EX)	Species where "there is no reasonable doubt that the last member of the species has died", and listing is otherwise in accordance with the ministerial guidelines (section 24 of the BC Act). Published as presumed extinct under schedule 4 of the Wildlife Conservation (Rare Flora) Notice 2018 for extinct flora.
Extinct in the Wild (EW)	Species that "is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; and it has not been recorded in its known habitat or expected habitat, at appropriate seasons, anywhere in its past range, despite surveys over a time frame appropriate to its life cycle and form", and listing is otherwise in accordance with the ministerial guidelines

Category	Definition
	(section 25 of the BC Act). Currently there are no threatened flora species listed as extinct in the wild.
Threatened Ecological Communities (TEC)	
Critically Endangered (CR)	An ecological community is eligible for listing in the category of critically endangered ecological community at a particular time if, at that time — (a) it is facing an extremely high risk of becoming eligible for listing as a collapsed ecological community in the immediate future, as determined in accordance with criteria set out in the ministerial guidelines; and (b) listing in that category is otherwise in accordance with the ministerial guidelines.
Endangered (EN)	An ecological community is eligible for listing in the category of endangered ecological community at a particular time if, at that time — (a) it is not a critically endangered ecological community; and (b) it is facing a very high risk of becoming eligible for listing as a collapsed ecological community in the near future, as determined in accordance with criteria set out in the ministerial guidelines; and (c) listing in that category is otherwise in accordance with the ministerial guidelines.
Vulnerable (VU)	An ecological community is eligible for listing in the category of vulnerable ecological community at a particular time if, at that time — (a) it is not a critically endangered ecological community or an endangered ecological community; and (b) it is facing a high risk of becoming eligible for listing as a collapsed ecological community in the medium-term future, as determined in accordance with criteria set out in the ministerial guidelines; and (c) listing in that category is otherwise in accordance with the ministerial guidelines.
Collapsed	An ecological community is eligible for listing as a collapsed ecological community at a particular time if, at that time — (a) there is no reasonable doubt that the last occurrence of the ecological community has collapsed; or (b) the ecological community has been so extensively modified throughout its range that no occurrence of it is likely to recover — (i) its species composition or structure; or (ii) its species composition and structure.

Department of Biodiversity, Conservation and Attractions Priority Definitions

Category	Definition
Priority Flora Species	
Priority 1 (P1)	Poorly-known Species Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation, e.g., agricultural, or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or otherwise under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes. Such species are in urgent need of further survey.
Priority 2 (P2)	Poorly-known Species Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, e.g., national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes. Such species are in urgent need of further survey.
Priority 3 (P3)	Poorly-known Species Species that are known from several locations, and the species does not appear to be under imminent threat, or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. Such species need further survey.
Priority 4 (P4)	Rare, Near Threatened and other species in need of monitoring (a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection but could be if present circumstances change. These species are usually represented on conservation lands. (b) Near Threatened. Species that are considered to have been adequately surveyed and that are close to qualifying for vulnerable but are not listed as Conservation Dependent. (c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.
Priority Ecological Communities (PEC)	
Priority 1 (P1)	Poorly-known ecological communities Ecological communities that are known from very few occurrences with a very restricted distribution (generally ≤5 occurrences or a total area of ≤ 100ha). Occurrences are believed to be under threat either due to limited extent, or being on lands under immediate threat (e.g.,

Category	Definition
	within agricultural or pastoral lands, urban areas, active mineral leases) or for which current threats exist. May include communities with occurrences on protected lands. Communities may be included if they are comparatively well-known from one or more localities but do not meet adequacy of survey requirements, and/or are not well defined, and appear to be under immediate threat from known threatening processes across their range.
Priority 2 (P2)	Poorly-known Ecological Communities Communities that are known from few occurrences with a restricted distribution (generally ≤10 occurrences or a total area of ≤200ha). At least some occurrences are not believed to be under immediate threat (within approximately 10 years) of destruction or degradation. Communities may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements, and/or are not well defined, and appear to be under threat from known threatening processes.
Priority 3 (P3)	Poorly-known Ecological Communities (i) Communities that are known from several to many occurrences, a significant number or area of which are not under threat of habitat destruction or degradation or: (ii) communities known from a few widespread occurrences, which are either large or with significant remaining areas of habitat in which other occurrences may occur, much of it not under imminent threat (within approximately 10 years), or; (iii) communities made up of large, and/or widespread occurrences, that may or may not be represented in the reserve system, but are under threat of modification across much of their range from processes such as grazing by domestic and/or feral stock, inappropriate fire regimes, clearing, hydrological change etc. Communities may be included if they are comparatively well known from several localities but do not meet adequacy of survey requirements and/or are not well defined, and known threatening processes exist that could affect them.
Priority 4 (P4)	Ecological communities that are adequately known, rare but not threatened or meet criteria for Near Threatened, or that have been recently removed from the threatened list. These communities require regular monitoring. (i) Rare. Ecological communities known from few occurrences that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection but could be if present circumstances change. These communities are usually represented on conservation lands. (ii) Near Threatened. Ecological communities that are considered to have been adequately surveyed and that do not qualify for Conservation Dependent, but that are close to qualifying for a higher threat category. (iii) Ecological communities that have been removed from the list of threatened communities during the past five years.
Priority 5 (P5)	Conservation Dependent Ecological Communities

Category	Definition
	Ecological communities that are not threatened but are subject to a specific conservation program, the cessation of which would result in the community becoming threatened within five years.

Legal Status Definitions of Listed Plants in Western Australia

Legal status	Definition
Declared Pest, Prohibited – s12	Prohibited organisms are declared pests by virtue of section 22(1) and many only be imported and keep subject to permits
Declared Pest – s22(2)	Declared pests must satisfy any applicable import requirements when imported and may be subject to control keeping requirements
Permitted – s11	Permitted organisms must satisfy applicable import requirements and import permits (where required)
Permitted Requires Permit – r73	Regulation 73 permitted organisms may be subject to restriction under legislation other and the BAM Act (2007)
Unlisted	Unlisted organisms are prohibited in WA
Control Categories	Definition
C1 Exclusion	Organisms should be excluded from parts or all of WA
C2 Eradication	Organisms should be eradicated from all or parts of WA
C3 Management	Organisms should have some form of management applied that will alleviate the harmful impact of the organism, reduce the numbers or distribution of the organism or prevent or contain the spread of the organism
Unassigned	Declared pests that are recognised a having a harmful impact under certain circumstances where their subsequent control requirements are determined by a plan or other legislative arrangements under the Act
Keeping Categories	Definition
Prohibited Keeping	Can only be kept under a permit or public display, education or scientific purposes
Restricted Keeping	Kept under a permit by private individuals due to low risk of becoming a problem for the environment
Exempt Keeping	No permit or conditions are required for keeping. Organism may be subject to restrictions under the Wildlife Conservation Act (1950)

Appendix B: Key findings of the desktop assessment

		Worsley Mine Expansion Primary Assessment Area	Myalup-Wellington Project -Above Dam Pipelines	Collie Water - Wellington Myalup Water for Food Feasibility Study: Flora and Fauna Survey	Reconnaissance and Targeted Flora and Vegetation Survey at pt. Reserve 34343, Collie
Survey Details	**Reference**	Mattiske (2021)	Strategen (2018)	GHD (2017)	Ecoedge (2018)
	Type	Desktop review	Detailed flora and vegetation assessment	Reconnaissance flora and vegetation survey	Reconnaissance & targeted flora and vegetation
	Client	South32 Worsley Alumina Pty Ltd	Harvey Water Pty Ltd	Collie Water Pty Ltd	Shire of Collie
	Location	Boddington and Collie	Water supply pipelines above Wellington Dam	Pipeline alignments near Harris Dam	Mininnup Pools
	Size (ha)	54241.66 ha (wider Boddington area)	165.13 ha	166.2 ha	70.45 ha
	Timing	Boddington North and South January 2020 Collie 2020	October 2017	November 2016	September and October 2018
Methods	**Desktop Assessment (Yes/No)**	Yes	Yes	Yes	Yes
	Quadrat #	114 Mt Saddleback 14 Quindanning Area 20 Marradong	22	-	-
	Relevé #	Not specified	3	-	150+
	Targeted Searching (Yes/No)	Yes- in previous surveys	Yes	Yes	Yes
	Other Methods	Transects	-	Transects and 'Rapid Assessment points'	-
Results	**Taxa**	1031 Boddington / 289 Collie	106	228	198
	Families	83 Boddington / 54 Collie	37	-	-
	Genera	319 Boddington / 149 Collie	72	-	-
	Vegetation Types	34 WMDE 25 BTC- Boddington area 10 Collie area	4	7	7
	Vegetation Condition	Excellent- Completely Degraded: Boddington Excellent or Completely Degraded: Collie	Excellent- Completely Degraded (76% Completely Degraded, 20% Excellent/ Very good)	Excellent to Very good (37%), Good (14%) and Degraded or Completely Degraded (49%)	Excellent- Completely Degraded (90% Very Good or Excellent)
	Weeds #	132 total 15 'CBME area' (area within the wider Collie survey area)	7	19	14
Significant Findings	**Threatened/ Priority Flora**	*Caladenia hopperiana* (T)	*Grevillea rara* (T)	*Grevillea rara* (T) *Caladenia leucochila* (T) *Leucopogon extremus* (P2) *Synaphea hians* (P3) *Synaphea petiolaris* subsp. *simplex* (P3) *Grevillea ripicola* (P4)	*Synaphea hians* (P3) *Grevillea ripicola* (P4)
	Threatened/ Priority Ecological Communities	*Mt Saddleback Heath Communities* (P1)	None recorded	None recorded	None recorded
	WoNS and DPP Weeds	**Gomphocarpus fruticosus* **Silybum marianum* **Asparagus asparagoides* **Moraea flaccida*	None recorded	None recorded	None recorded
	Range Extensions	None recorded	None recorded	None recorded	*Stylidium scandens*
	Other significant findings	-	-	-	-
Other	**Limitations of Survey**	None recorded	Recent controlled burn and some historic disturbance (minor limitation).	Twelve collections were only identified to genus level due to lack of material. Historical disturbance (minor limitation).	No information on conservation status of some vegetation types in Collie Basin. Rainfall was slightly below average.

		BORR Northern and Central Sections Vegetation and Flora Assessment	Flora and Vegetation Survey Report: Lot 43 Stanley Road, Wellesley	City of Bunbury: Flora, Fauna Survey- Harris Road, Bunbury	Banksia Road Dardanup Level 2 Flora and Vegetation Survey and Level 1 Fauna Assessment	Flora and Vegetation Report Lot 7 Runnymede Rd, Wellesley
Survey Details	**Reference**	BORR Team (2019)	Lundstrom (2019a)	Natural Area (2021)	Astron (2014)	Lundstrom (2019b)
	Type	Detailed flora and vegetation assessment and targeted surveys	Detailed flora and vegetation assessment	Detailed flora and vegetation survey	Detailed flora and vegetation assessment	Detailed flora and vegetation assessment
	Client	Main Roads WA	Peel Resource Recovery Pty Ltd	City of Bunbury	Transpacific Industries Group Ltd	B&J Catalano Pty Ltd
	Location	Bunbury Outer Ring Road (Northern and Central Sections)	Lot 43 Stanley Road	Harris Road Bunbury	Banksia road Dardanup	Lot 2 Runnymede Rd
	Size (ha)	1, 128 ha	77.2 ha	Not specified	118 ha	80.2 ha
	Timing	August-November 2018 (Detailed survey) December 2018 (Targeted survey)	September 2018	February 2021	November 2014	September 2018
Methods	**Desktop Assessment (Yes/No)**	Yes	Yes	Yes	Yes	Yes
	Quadrat #	38	9	n/a	5	8
	Relevé #	-	-	n/a	2	-
	Targeted Searching (Yes/No)	Yes	Yes	Yes	Yes	Yes
	Other Methods	159 photographic reference points	Opportunistic sampling	-	-	-
Results	**Taxa**	354	70	41	122	81
	Families	69	28	22	35	34
	Genera	198	60	-	80	63
	Vegetation Types	17	1	1	2	1
	Vegetation Condition	Excellent- Completely Degraded (81% completely Degraded) Patches of vegetation Good to Very Good (1.88% of Survey Area)	Good - Very Good	Degraded - Completely Degraded	Excellent - Degraded (The majority of the vegetated areas were rated Very Good')	Excellent - Degraded Excellent (70.8%) Very Good (16.3%)
	Weeds #	113	14	9	10	9
Significant Findings	**Threatened/ Priority Flora**	*Chamaescilla gibsonii* (P3) *Acacia semitrullata* (P4) *Caladenia speciosa* (P4)	*Acacia semitrullata* (P4)	None recorded	None recorded	*Millotia tenuifolia* ?var. *laevis* (P2) *Lasiopetalum* ?*membranaceum* (P3) *Acacia semitrullata* (P4)
	Threatened/ Priority Ecological Communities	*Banksia Woodlands of the Swan Coastal Plain Threatened Ecological Community* (TEC) - Endangered *Banksia dominated woodlands of the Swan Coastal Plain IBRA region Priority Ecological Community* (PEC) (P3) *Claypans of the Swan Coastal Plain / Herb rich shrublands in claypans* (SCP08) (TEC) – Critically Endangered	FCT 21c '*Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region TEC*' (Banksia Woodlands TEC)	None recorded	None recorded	Survey area consistent with FCT 21a
	WoNS and DPP Weeds	* *Gomphocarpus fruticosus* * *Asparagus asparagoides* * *Zantedeschia aethiopica* * *Solanum linnaeanum*	None recorded	None recorded	None recorded	None recorded
	Range Extensions	None recorded	None recorded	None recorded	None recorded	None recorded
	Other significant findings	-	-	-	-	-
Other	**Limitations of Survey**	GPS used were accurate within ±5 metres so points recorded by GPS may have inaccuracies.	None recorded	Survey conducted outside optimal season timing.	Minor timing limitations as survey was in late Spring.	None recorded

		Lot 5 Wellesley Rd Wellesley Flora and Vegetation Survey	Flora and Vegetation Survey Bunbury Water Resource Recovery Scheme	Verve Energy Muja Power Station: Fly Ash Dam Plume Studies, Flora and Vegetation Studies	Level 1 Flora and Vegetation Survey – Collie-Lake King Road between SLK 64.5 – 71, Bowelling Curves	Report of a Level 2 Flora and Vegetation Survey and Level 1 Fauna Survey along Collie-Lake King Road at Bowelling (SLK 64.5 - 71.0)
Survey Details	**Reference**	Plantecology (2020)	GHD (2021)	Woodman (2012)	Ecoedge (2014)	Ecoedge (2016)
	Type	Detailed flora and vegetation assessment	Two-Phase detailed flora and vegetation survey	Reconnaissance flora and vegetation assessment	Reconnaissance Flora and Vegetation Survey	Detailed Flora and Vegetation assessment
	Client	Lundstrom Environmental Consultants Pty Ltd	Aquest	Verve Energy	Main Roads WA	Main Roads WA
	Location	Lot 5 Wellesley Rd Wellesley	Water Corporation Bunbury Water Treatment Plant to Southwestern Highway	Muja Power Station	Collie - Lake King Road (Coalfields Road) - Bowelling curves SLK 64.5-71	Collie-Lake King Road at Bowelling (SLK 64.5 - 71.0)
	Size (ha)	Not specified	63.97 ha	Not specified	Area A 37.3 ha Area B (expanded survey area) 58.4 ha	47.8 ha
	Timing	September 2019	Spring and summer 2020 Smaller additional areas 2021	October 2012	September and October 2014	September and November 2016
Methods	**Desktop Assessment (Yes/No)**	Yes	Yes	Yes	Yes- some searches/ review	Yes
	Quadrat #	5	17	18	-	23
	Relevé #	-	89	-	42	19
	Targeted Searching (Yes/No)	Yes	Yes	Yes	No	No
	Other Methods	-	-	-	-	-
Results	**Taxa**	61	294	163	220	278
	Families	33	67	41	-	-
	Genera	58	-	105	-	-
	Vegetation Types	2	6	7	6	9
	Vegetation Condition	Excellent- Degraded (mostly Degraded but some areas of Good to Excellent Condition)	Excellent- Completely Degraded (57.23% Completely Degraded)	Excellent- Degraded (majority Excellent/ Very Good)	Very Good/ Excellent 32%) Completely Degraded (43%)- Area A 68.9% Very Good/ Excellent, <20% Completely Degraded- Area B	Very Good- Excellent (49.6%)- Completely Degraded (42.6%)
	Weeds #	14	65	16	20	32
Significant Findings	**Threatened/ Priority Flora**	*Lasiopetalum ?membranaceum* (P3)	*Caladenia speciose* (P4) *Blennospora doliiformis* (P3) *Lasiopetalum membranaceum* (P3)	None recorded within the survey area	*Leucopogon subsejunctus* (P2) *Synaphea hians* (P3)	*Leucopogon subsejunctus* (P2) *Synaphea hians* (P3)
	Threatened/ Priority Ecological Communities	Some quadrats were FCT 21a with some similarity to FCT 28- Spearwood *Banksia attenuata* or *Banksia attenuata- Eucalyptus* woodlands	Six conservation significant ecological communities were recorded within the survey area	16	*Melaleuca viminea* shrubland- potentially a restricted range unit.	Vegetation unit B2 (*Melaleuca viminea-Hakea prostrata-Kunzea ciliata* tall open shrubland) 'very likely' a restricted floristic community type and potentially the *Claypans of Swan Coastal Plain- Clay pans with shrubs over herbs*- TEC
	WoNS and DPP Weeds	**Zantedeschia aethiopicum*	None recorded	None recorded	**Moraea flaccida*	**Moraea flaccida*
	Range Extensions	None recorded	None recorded	None recorded	None recorded	None recorded
	Other significant findings	-	-	-	-	-
Other	**Limitations of Survey**	Vegetation was disturbed due to stock grazing, therefore, difficult to know which vegetation types are present.	Some smaller 'additional' areas were surveyed out of season but were deemed to only be a minor limitation (adjacent to already surveyed areas). Additional areas were not visited at the correct time for targeted searches.	Some limitations due to previous fire history.	Area A survey was late in Spring (October 31) so some annuals may have not been identifiable. Lack of surveys in eastern jarrah forest.	Lack of previous regional survey

Appendix C: Flora of the desktop assessment

Family	Taxon	Source						Conservation Status			Introduced
		Dandjoo	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
Alismataceae	*Sagittaria platyphylla*						•				Y
Alliaceae	*Allium triquetrum*		•								Y
Amaranthaceae	*Ptilotus declinatus*		•								
	Ptilotus drummondii var. minor		•								
	Ptilotus esquamatus	•	•								
	Ptilotus manglesii	•	•								
Amaryllidaceae	*Amaryllis belladonna*	•									Y
	Crinum moorei	•	•								Y
	Leucojum aestivum	•	•								Y
Anarthriaceae	*Anarthria dioica*		•								
	Anarthria prolifera	•	•								
	Anarthria scabra	•	•								
	Lyginia imberbis		•								
Apiaceae	*Actinotus glomeratus*	•	•								
	Actinotus leucocephalus		•								
	Apium prostratum subsp. prostratum var. prostratum		•								
	Apium prostratum var. filiforme		•								
	Brachyscias verecundus					•		T	CR	CR	
	Daucus glochidiatus	•	•								
	Eryngium pinnatifidum	•									
	Homalosciadium homalocarpum	•	•								
	Pentapeltis peltigera	•	•								
	Pentapeltis silvatica	•	•								
	Platysace compressa	•	•								
	Platysace filiformis	•	•								
	Xanthosia atkinsoniana	•	•								
	Xanthosia candida	•	•								
	Xanthosia ciliata	•									
	Xanthosia huegelii	•	•								
	Xanthosia singuliflora	•	•								
	Xanthosia tasmanica	•	•								
Apocynaceae	*Asclepias curassavica*	•	•								Y
	Calotropis procera						•				Y
	Cryptostegia madagascariensis						•				Y

Family	Taxon	Source						Conservation Status			Introduced
		Dandjoo	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	Gomphocarpus fruticosus	•	•				•				Y
	Vinca major	•	•								Y
Aponogetonaceae	*Aponogeton hexatepalus*			•	•			P4			
Araceae	*Pistia stratiotes*						•				Y
	Zantedeschia aethiopica						•				Y
Araliaceae	*Hydrocotyle alata*	•	•								
	Hydrocotyle callicarpa	•	•								
	Hydrocotyle hirta		•								
	Hydrocotyle hispidula	•									
	Hydrocotyle ranunculoides						•				Y
	Trachymene pilosa	•	•								
Asparagaceae	*Arthropodium curvipes*	•									
	Asparagus asparagoides	•	•				•				Y
	Dichopogon sp.	•	•								
	Laxmannia minor	•	•								
	Laxmannia ramosa subsp. ramosa		•								
	Laxmannia sessiliflora	•	•								
	Laxmannia sessiliflora subsp. australis	•	•								
	Laxmannia squarrosa	•	•								
	Lomandra brittanii	•	•								
	Lomandra caespitosa	•	•								
	Lomandra drummondii	•	•								
	Lomandra hermaphrodita	•									
	Lomandra integra	•	•								
	Lomandra micrantha	•									
	Lomandra micrantha subsp. micrantha	•	•								
	Lomandra nigricans	•	•								
	Lomandra odora	•	•								
	Lomandra pauciflora	•	•								
	Lomandra preissii	•	•								
	Lomandra purpurea	•	•								
	Lomandra sericea	•	•								
	Lomandra sonderi	•	•								
	Lomandra spartea		•								

Family	Taxon	Source						Conservation Status			Introduced
		Dandjoo	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	Lomandra whicherensis		•	•				P3			
	Sowerbaea laxiflora	•	•								
	Thysanotus arbuscula		•								
	Thysanotus dichotomus	•	•								
	Thysanotus manglesianus	•	•								
	Thysanotus multiflorus	•	•								
	Thysanotus patersonii		•								
	Thysanotus pseudojunceus	•									
	Thysanotus sparteus	•	•								
	Thysanotus tenellus	•									
	Thysanotus thyrsoideus	•	•								
	Thysanotus triandrus	•									
	Thysanotus unicupensis		•	•				P3			
Aspleniaceae	*Asplenium aethiopicum*	•	•								
	Asplenium flabellifolium		•								
Asteraceae	*Angianthus drummondii*			•				P3			
	Angianthus platycephalus		•								
	Arctotheca calendula		•								Y
	Argyranthemum frutescens	•									Y
	Brachyscome iberidifolia	•	•								
	Carthamus lanatus	•									Y
	Centipeda cunninghamii		•								
	Chondrilla juncea						•				Y
	Cotula coronopifolia	•	•								Y
	Cotula sessilis	•	•								Y
	Craspedia sp. Waterloo (G.J. Keighery 13724)			•				P2			
	Craspedia variabilis	•	•								
	Dittrichia graveolens	•	•								Y
	Erigeron bonariensis	•	•								Y
	Euchiton collinus	•									
	Euchiton sphaericus	•	•								
	Galinsoga parviflora	•	•								Y
	Gamochaeta calviceps	•	•								Y
	Glebionis segetum	•	•								Y

Family	Taxon	Source						Conservation Status			Introduced
		Dandjoo	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	Hyalosperma cotula	•	•								
	Hyalosperma demissum	•	•								
	Hyalosperma simplex subsp. simplex		•								
	Hypochaeris glabra	•	•								Y
	Lactuca saligna	•	•								Y
	Lagenophora huegelii	•	•								
	Lagenophora platysperma	•	•								
	Leontodon saxatilis		•								Y
	Millotia tenuifolia	•	•								
	Millotia tenuifolia var. laevis		•					P2			
	Millotia tenuifolia var. tenuifolia	•	•								
	Myriophyllum echinatum				•			P3			
	Olearia axillaris		•								
	Olearia paucidentata	•	•								
	Onopordum acaulon						•				Y
	Osteospermum ecklonis		•								Y
	Panaetia lessonii	•									
	Pithocarpa ramosa	•	•								
	Podolepis gracilis	•	•								
	Podolepis lessonii		•								
	Podotheca angustifolia	•	•								
	Pseudognaphalium luteoalbum	•	•								
	Quinetia urvillei	•	•								
	Rhodanthe citrina	•	•								
	Rhodanthe pyrethrum	•	•								
	Senecio diaschides	•	•								
	Senecio leucoglossus		•	•	•			P4			
	Senecio multicaulis subsp. multicaulis	•	•								
	Sigesbeckia orientalis	•	•								Y
	Siloxerus filifolius	•	•								
	Siloxerus humifusus	•	•								
	Silybum marianum	•					•				Y
	Sonchus asper	•	•								Y
	Sonchus oleraceus	•	•								Y

Family	Taxon	Source						Conservation Status			Introduced
		Dandjoo	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	Tolpis barbata	•	•								Y
	Trichocline spathulata	•	•								
	Vellereophyton dealbatum	•	•								Y
	Waitzia nitida		•								
	Waitzia suaveolens		•								
	Waitzia suaveolens var. suaveolens	•	•								
	Xanthium spinosum						•				Y
	Xanthium strumarium						•				Y
Boraginaceae	*Echium plantagineum*						•				Y
	Symphytum x uplandicum	•									Y
Boryaceae	*Borya sphaerocephala*		•								
Brassicaceae	*Lepidium africanum*	•	•								Y
	Lepidium bonariense	•	•								Y
Cactaceae	*Austrocylindropuntia cylindrica*						•				Y
	Austrocylindropuntia subulata						•				Y
	Cylindropuntia fulgida						•				Y
	Cylindropuntia imbricata						•				Y
	Cylindropuntia kleiniae						•				Y
	Cylindropuntia pallida						•				Y
	Cylindropuntia tunicata						•				Y
	Opuntia elata						•				Y
	Opuntia elatior						•				Y
	Opuntia engelmannii						•				Y
	Opuntia microdasys						•				Y
	Opuntia monacantha						•				Y
	Opuntia polyacantha						•				Y
	Opuntia puberula						•				Y
	Opuntia stricta						•				Y
	Opuntia tomentosa						•				Y
Campanulaceae	Grammatotheca bergiana var. bergiana		•								Y
	Isotoma hypocrateriformis	•	•								
	Lobelia anceps	•	•								
	Lobelia heterophylla	•	•								
	Lobelia rhombifolia	•	•								

Family	Taxon	Source						Conservation Status			Introduced
		Dandjoo	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	Monopsis debilis		•								Y
	Wahlenbergia gracilenta	•									
	Wahlenbergia multicaulis		•								
	Wahlenbergia preissii	•	•								
Caprifoliaceae	*Centranthus macrosiphon*		•								Y
	Centranthus ruber subsp. ruber		•								Y
	Lonicera japonica		•								Y
Caryophyllaceae	*Gypsophila vaccaria*	•	•								Y
	Petrorhagia dubia	•									Y
	Silene nocturna	•									Y
	Spergula arvensis	•	•								Y
Casuarinaceae	*Allocasuarina fraseriana*	•	•								
	Allocasuarina humilis		•								
	Allocasuarina thuyoides		•								
	Casuarina equisetifolia		•								Y
Celastraceae	*Stackhousia huegelii*	•	•								
	Stackhousia monogyna	•									
	Tripterococcus brunonis	•	•								
	Tripterococcus sp. Brachylobus (A.S. George 14234)			•				P4			
Centrolepidaceae	*Aphelia drummondii*	•	•								
	Aphelia sp. Albany (B.G. Briggs 596)		•								
	Centrolepis aristata	•	•								
	Centrolepis glabra		•								
	Centrolepis pilosa	•	•								
Chenopodiaceae	*Dysphania multifida*	•	•								Y
Colchicaceae	*Burchardia congesta*	•	•								
	Burchardia multiflora		•								
	Wurmbea dioica		•								
	Wurmbea dioica subsp. alba	•	•								
Convolvulaceae	Convolvulus angustissimus subsp. angustissimus	•									
	Ipomoea indica	•	•								Y
Crassulaceae	*Crassula decumbens*		•								
	Crassula natans		•								Y
	Crassula natans var. minor	•									Y

Family	Taxon	Source						Conservation Status			Introduced
		Dandjoo	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	Crassula peduncularis	•									
Cupressaceae	*Hesperocyparis lusitanica*	•	•								Y
Cyperaceae	*Baumea articulata*		•								
	Baumea vaginalis		•								
	Bolboschoenus caldwellii	•	•								
	Bolboschoenus medianus			•				P1			
	Carex appressa	•	•								
	Carex tereticaulis		•	•				P3			
	Chaetospora curvifolia		•								
	Chaetospora subbulbosa		•								
	Cyathochaeta avenacea	•	•								
	Cyathochaeta teretifolia			•				P3			
	Cyperus alterniflorus	•	•								
	Cyperus brevifolius	•									Y
	Cyperus congestus	•	•								Y
	Cyperus eragrostis	•									Y
	Cyperus polystachyos		•								
	Cyperus tenellus	•	•								Y
	Cyperus tenuiflorus	•	•								Y
	Eleocharis keigheryi		•	•		•		T	VU	VU	
	Gahnia decomposita	•	•								
	Isolepis cyperoides	•	•								
	Isolepis marginata	•	•								
	Isolepis prolifera	•	•								Y
	Lepidosperma gracile	•									
	Lepidosperma leptostachyum	•	•								
	Lepidosperma persecans		•								
	Lepidosperma pubisquameum	•	•								
	Lepidosperma scabrum	•	•								
	Lepidosperma sp. Margaret River (B.J. Lepschi 1841)		•								
	Lepidosperma squamatum	•	•								
	Lepidosperma tenue	•	•								
	Lepidosperma tetraquetrum	•	•								
	Lepidosperma tuberculatum	•	•								

Family	Taxon	Source						Conservation Status			Introduced
		Dandjoo	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	Mesomelaena graciliceps	•	•								
	Mesomelaena tetragona	•	•								
	Morelotia octandra	•	•								
	Netrostylis sp.	•									
	Schoenus bifidus	•	•								
	Schoenus capillifolius			•				P3			
	Schoenus nanus	•	•								
	Schoenus sp. Waroona (G.J. Keighery 12235)			•				P3			
	Schoenus subbarbatus		•								
	Schoenus unispiculatus	•									
	Tetraria capillaris		•								
	Tricostularia neesii	•	•								
Dasypogonaceae	*Calectasia demarzii*	•	•								
	Dasypogon bromeliifolius	•	•								
	Kingia australis	•	•								
Dennstaedtiaceae	*Pteridium esculentum*		•								
	Pteridium esculentum subsp. esculentum	•									
Dilleniaceae	*Hibbertia acerosa*	•									
	Hibbertia amplexicaulis	•	•								
	Hibbertia commutata	•	•								
	Hibbertia cunninghamii	•	•								
	Hibbertia depilipes		•								
	Hibbertia diamesogenos	•	•								
	Hibbertia ferruginea	•	•								
	Hibbertia hemignosta	•	•								
	Hibbertia huegelii		•								
	Hibbertia hypericoides	•	•								
	Hibbertia hypericoides subsp. hypericoides	•	•								
	Hibbertia montana		•								
	Hibbertia mylnei	•	•								
	Hibbertia nymphaea	•	•								
	Hibbertia perfoliata		•								
	Hibbertia pilosa	•	•								
	Hibbertia polystachya		•								

Family	Taxon	Source						Conservation Status			Introduced
		Dandjoo	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	Hibbertia pulchra var. pulchra		•								
	Hibbertia racemosa	•	•								
	Hibbertia rupicola		•								
	Hibbertia semipilosa	•	•								
	Hibbertia silvestris	•	•								
	Hibbertia stellaris	•	•								
	Hibbertia vaginata	•	•								
Droseraceae	*Drosera bulbosa*	•									
	Drosera bulbosa subsp. bulbosa	•	•								
	Drosera collina	•	•								
	Drosera drummondii		•								
	Drosera erythrogyne		•								
	Drosera erythrorhiza	•									
	Drosera gigantea	•	•								
	Drosera glanduligera	•	•								
	Drosera heterophylla		•								
	Drosera huegelii	•	•								
	Drosera indumenta	•	•								
	Drosera marchantii	•	•								
	Drosera menziesii		•								
	Drosera modesta	•	•								
	Drosera pallida	•	•								
	Drosera pulchella		•								
	Drosera rosulata	•	•								
	Drosera stolonifera	•	•								
Elaeocarpaceae	*Platytheca galioides*	•	•								
	Tetratheca hirsuta	•	•								
	Tetratheca hirsuta subsp. hirsuta	•	•								
	Tetratheca hirsuta subsp. viminea	•	•								
	Tetratheca parvifolia		•	•				P3			
	Tetratheca setigera		•								
	Tremandra stelligera	•	•								
Ericaceae	*Andersonia aristata*	•	•								
	Andersonia caerulea	•	•								

Family	Taxon	Source						Conservation Status			Introduced
		Dandjoo	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	Andersonia gracilis					•		T	VU	EN	
	Andersonia involucrata	•	•								
	Andersonia lehmanniana	•	•								
	Andersonia sprengelioides	•									
	Conostephium minus	•	•								
	Conostephium pendulum	•	•								
	Erica arborea		•								Y
	Leucopogon australis	•	•								
	Leucopogon capitellatus	•	•								
	Leucopogon extremus		•	•				P2			
	Leucopogon glabellus	•	•								
	Leucopogon gracillimus	•	•								
	Leucopogon obovatus subsp. revolutus		•								
	Leucopogon pulchellus	•	•								
	Leucopogon reflexus	•	•								
	Leucopogon sprengelioides	•	•								
	Leucopogon unilateralis		•								
	Leucopogon verticillatus	•	•								
	Lysinema pentapetalum	•	•								
	Sphenotoma capitata	•	•								
	Sphenotoma gracilis	•	•								
	Styphelia conostephioides	•	•								
	Styphelia discolor	•	•								
	Styphelia erectifolia	•	•								
	Styphelia erubescens	•	•								
	Styphelia nitens	•	•								
	Styphelia pallida	•	•								
	Styphelia pendula	•	•								
	Styphelia propinqua	•	•								
	Styphelia stricta	•	•								
	Styphelia tenuiflora	•	•								
Euphorbiaceae	*Amperea simulans*	•	•								
	Calycopeplus oligandrus	•	•								
	Euphorbia dendroides	•	•								Y

Family	Taxon	Source						Conservation Status			Introduced
		Dandjoo	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	Euphorbia terracina	•	•								Y
	Jatropha gossypiifolia						•				Y
	Monotaxis occidentalis	•	•								
	Stachystemon vermicularis	•	•								
Fabaceae	*Acacia acuminata*		•								
	Acacia alata	•	•								
	Acacia alata var. alata	•	•								
	Acacia applanata	•	•								
	Acacia baileyana		•								Y
	Acacia browniana var. obscura		•								
	Acacia celastrifolia	•	•								
	Acacia decurrens		•								Y
	Acacia dentifera	•	•								
	Acacia divergens	•	•								
	Acacia drummondii		•								
	Acacia drummondii subsp. candolleana	•	•								
	Acacia drummondii subsp. drummondii		•								
	Acacia drummondii subsp. elegans	•	•								
	Acacia elata		•								Y
	Acacia ephedroides		•								
	Acacia extensa	•	•								
	Acacia flagelliformis			•				P4			
	Acacia incurva	•	•								
	Acacia insolita	•	•								
	Acacia insolita subsp. insolita	•	•								
	Acacia lateriticola	•	•								
	Acacia microbotrya	•	•								
	Acacia nervosa	•	•								
	Acacia obovata	•	•								
	Acacia oncinophylla subsp. oncinophylla		•	•	•			P3			
	Acacia paradoxa	•									Y
	Acacia podalyriifolia		•								Y
	Acacia preissiana	•	•								
	Acacia pulchella	•	•								

Family	Taxon	Source						Conservation Status			Introduced
		Dandjoo	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	Acacia pulchella var. glaberrima	•	•								
	Acacia pulchella var. pulchella	•	•								
	Acacia pycnantha	•	•								Y
	Acacia saligna		•								
	Acacia semitrullata			•	•			P4			
	Acacia spectabilis		•								Y
	Acacia squamata	•	•								
	Acacia stenoptera	•	•								
	Acacia teretifolia	•	•								
	Acacia tetragonocarpa	•	•								
	Acacia urophylla	•	•								
	Acacia varia var. crassinervis	•	•								
	Acacia varia var. varia	•	•								
	Acacia willdenowiana		•								
	Alhagi maurorum						•				Y
	Aotus cordifolia	•	•								
	Aotus gracillima	•	•								
	Aotus sp. Diffusa (W.E. Blackall & C.A. Gardner 1739)		•								
	Bossiaea angustifolia	•	•								
	Bossiaea aquifolium		•								
	Bossiaea aquifolium subsp. aquifolium	•	•								
	Bossiaea eriocarpa	•	•								
	Bossiaea linophylla	•	•								
	Bossiaea ornata	•									
	Bossiaea pulchella		•								
	Bossiaea rufa	•	•								
	Callistachys lanceolata	•	•								
	Chamaecytisus palmensis	•	•								Y
	Chorizema aciculare	•	•								
	Chorizema aciculare subsp. aciculare		•								
	Chorizema aciculare subsp. laxum		•								
	Chorizema cordatum	•	•								
	Chorizema diversifolium		•								
	Chorizema ilicifolium	•	•								

Family	Taxon	Source						Conservation Status			Introduced
		Dandjoo	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	Chorizema nanum	•	•								
	Chorizema retrorsum	•	•								
	Chorizema rhombeum	•	•								
	Daviesia cordata	•	•								
	Daviesia costata	•	•								
	Daviesia decurrens	•	•								
	Daviesia decurrens subsp. decurrens	•	•								
	Daviesia divaricata		•								
	Daviesia hakeoides subsp. subnuda		•								
	Daviesia horrida	•	•								
	Daviesia incrassata subsp. incrassata		•								
	Daviesia mesophylla		•	•				P2			
	Daviesia physodes		•								
	Daviesia preissii	•	•								
	Daviesia rhombifolia	•	•								
	Dillwynia dillwynioides		•	•	•			P3			
	Dillwynia laxiflora	•	•								
	Dillwynia sp. Capel (P.A. Jurjevich 1771)		•	•				P3			
	Dipogon lignosus	•	•								Y
	Euchilopsis linearis	•	•								
	Eutaxia virgata	•	•								
	Gastrolobium bilobum		•								
	Gastrolobium capitatum	•	•								
	Gastrolobium ebracteolatum	•	•								
	Gastrolobium praemorsum		•								
	Gastrolobium spinosum	•	•								
	Gastrolobium whicherense		•					P2			
	Gleditsia triacanthos	•	•								Y
	Gompholobium burtonioides	•	•								
	Gompholobium capitatum	•	•								
	Gompholobium confertum		•								
	Gompholobium knightianum	•	•								
	Gompholobium marginatum	•	•								
	Gompholobium ovatum	•	•								

Family	Taxon	Source						Conservation Status			Introduced
		Dandjoo	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	Gompholobium polymorphum	•	•								
	Gompholobium preissii	•	•								
	Gompholobium scabrum	•	•								
	Gompholobium shuttleworthii		•								
	Gompholobium tomentosum	•	•								
	Hovea chorizemifolia	•	•								
	Hovea elliptica		•								
	Hovea trisperma	•	•								
	Hovea trisperma var. grandiflora	•									
	Isotropis cuneifolia	•	•								
	Isotropis cuneifolia subsp. cuneifolia	•	•								
	Jacksonia furcellata	•	•								
	Jacksonia horrida	•									
	Kennedia carinata	•	•								
	Kennedia coccinea	•	•								
	Kennedia coccinea subsp. coccinea		•								
	Kennedia nigricans	•	•								
	Kennedia prostrata	•	•								
	Kennedia stirlingii		•								
	Labichea punctata	•	•								
	Lathyrus latifolius	•	•								Y
	Lathyrus tingitanus	•	•								Y
	Lotus angustissimus	•	•								Y
	Lotus subbiflorus		•								Y
	Lupinus albus	•	•								Y
	Medicago polymorpha	•									Y
	Mirbelia dilatata	•	•								
	Ornithopus compressus	•	•								Y
	Ornithopus sativus	•	•								Y
	Paraserianthes lophantha	•	•								
	Paraserianthes lophantha subsp. lophantha	•	•								
	Parkinsonia aculeata						•				Y
	Phyllota gracilis	•	•								
	Podalyria sericea	•									Y

Family	Taxon	Source						Conservation Status			Introduced
		Dandjoo	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	Prosopis glandulosa x Prosopis velutina						•				Y
	Pultenaea ochreata	•	•								
	Pultenaea skinneri		•	•	•			P4			
	Senna alata						•				Y
	Senna obtusifolia						•				Y
	Sphaerolobium benetectum			•	•			P2			
	Sphaerolobium drummondii	•	•								
	Sphaerolobium linophyllum		•								
	Sphaerolobium macranthum	•	•								
	Sphaerolobium medium	•	•								
	Sphaerolobium vimineum		•								
	Trifolium campestre	•									Y
	Trifolium campestre var. campestre	•									Y
	Trifolium dubium	•	•								Y
	Trifolium fragiferum var. fragiferum	•									Y
	Trifolium glomeratum	•									Y
	Trifolium ligusticum	•	•								Y
	Trifolium striatum	•									Y
	Trifolium subterraneum	•	•								Y
	Ulex europaeus						•				Y
	Viminaria juncea	•	•								
Francoaceae	*Melianthus major*	•	•								Y
Gentianaceae	*Centaurium erythraea*	•	•								Y
	Cicendia filiformis	•	•								Y
Geraniaceae	*Erodium botrys*	•	•								Y
	Geranium retrorsum	•	•								
	Pelargonium littorale	•	•								
	Pelargonium x domesticum	•	•								Y
Goodeniaceae	*Dampiera alata*	•	•								
	Dampiera hederacea	•	•								
	Dampiera linearis	•	•								
	Dampiera pedunculata	•	•								
	Dampiera trigona	•	•								
	Goodenia coerulea	•	•								

Family	Taxon	Source						Conservation Status			Introduced
		Dandjoo	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	Goodenia eatoniana	•	•								
	Goodenia fasciculata	•	•								
	Goodenia filiformis		•								
	Goodenia pulchella subsp. Coastal Plain A (M. Hislop 634)	•	•								
	Goodenia pusilla	•	•								
	Goodenia trinervis	•	•								
	Lechenaultia biloba	•	•								
	Lechenaultia expansa	•	•								
	Lechenaultia floribunda		•								
	Scaevola calliptera	•	•								
	Scaevola glandulifera	•	•								
	Scaevola striata	•	•								
	Scaevola striata var. striata		•								
Gyrostemonaceae	*Tersonia cyathiflora*		•								
Haemodoraceae	Anigozanthos manglesii subsp. manglesii	•	•								
	Conostylis aculeata	•	•								
	Conostylis aculeata subsp. aculeata	•	•								
	Conostylis aculeata subsp. preissii	•									
	Conostylis laxiflora	•	•								
	Conostylis pusilla	•	•								
	Conostylis serrulata	•	•								
	Conostylis setigera	•	•								
	Conostylis setigera subsp. setigera	•	•								
	Haemodorum discolor	•	•								
	Haemodorum laxum	•	•								
	Haemodorum paniculatum	•	•								
	Haemodorum simplex	•	•								
	Haemodorum sparsiflorum	•	•								
	Haemodorum spicatum	•	•								
	Phlebocarya ciliata	•	•								
	Tribonanthes australis		•								
	Tribonanthes brachypetala	•									
	Tribonanthes variabilis	•									
	Tribonanthes violacea	•	•								

Family	Taxon	Source						Conservation Status			Introduced
		Dandjoo	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
Haloragaceae	*Glischrocaryon angustifolium*	•	•								
	Glischrocaryon aureum	•	•								
	Gonocarpus diffusus	•	•								
	Gonocarpus keigheryi		•	•				P2			
	Gonocarpus paniculatus		•								
	Myriophyllum crispatum	•	•								
	Myriophyllum drummondii	•	•								
	Myriophyllum limnophilum		•								
	Myriophyllum tillaeoides	•	•								
	Myriophyllum verrucosum	•	•								
	Trihaloragis hexandra subsp. hexandra		•								
	Trihaloragis hexandra subsp. integrifolia	•	•								
Hemerocallidaceae	*Agrostocrinum hirsutum*	•	•								
	Caesia micrantha	•	•								
	Caesia occidentalis	•	•								
	Chamaescilla corymbosa	•	•								
	Chamaescilla corymbosa var. corymbosa	•	•								
	Chamaescilla gibsonii		•	•				P3			
	Corynotheca micrantha var. elongata		•								
	Corynotheca micrantha var. micrantha		•								
	Dianella revoluta	•	•								
	Johnsonia lupulina	•	•								
	Stypandra glauca		•								
	Tricoryne elatior	•	•								
	Tricoryne humilis	•	•								
	Tricoryne tenella	•	•								
Hypericaceae	*Hypericum gramineum*	•	•								
	Hypericum perforatum	•	•								Y
Hypoxidaceae	*Pauridia occidentalis*	•	•								
	Pauridia occidentalis var. quadriloba	•									
	Pauridia vaginata var. vaginata	•									
Iridaceae	*Ixia maculata*		•								Y
	Ixia polystachya	•	•								Y
	Moraea flaccida						•				Y

Family	Taxon	Source						Conservation Status			Introduced
		Dandjoo	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	Moraea lewisiae	•									Y
	Moraea miniata						•				Y
	Orthrosanthus laxus	•	•								
	Orthrosanthus laxus var. laxus		•								
	Patersonia babianoides	•	•								
	Patersonia juncea	•									
	Patersonia occidentalis	•	•								
	Patersonia occidentalis var. occidentalis	•	•								
	Patersonia pygmaea	•	•								
	Patersonia rudis	•	•								
	Patersonia umbrosa	•	•								
	Patersonia umbrosa var. xanthina		•								
	Romulea rosea	•									Y
	Watsonia borbonica	•									Y
	Watsonia marginata	•	•								Y
	Watsonia meriana var. bulbillifera	•	•								Y
	Watsonia meriana var. meriana	•									Y
Isoetaceae	*Isoetes drummondii*	•									
Juncaceae	*Juncus aridicola*		•								
	Juncus bufonius	•	•								Y
	Juncus capitatus	•	•								Y
	Juncus gregiflorus	•	•								
	Juncus holoschoenus	•	•								
	Juncus meianthus		•	•	•			P3			
	Juncus microcephalus	•	•								Y
	Juncus pallidus	•	•								
	Juncus pauciflorus	•	•								
	Juncus planifolius	•									
	Juncus polyanthemus	•	•								Y
	Juncus subsecundus	•	•								
	Juncus usitatus	•	•								Y
	Luzula meridionalis	•	•								
Juncaginaceae	*Cycnogeton lineare*	•	•								
	Triglochin nana	•	•								

Family	Taxon	Source						Conservation Status			Introduced
		Dandjoo	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
Lamiaceae	*Hemiandra pungens*	•	•								
	Hemigenia argentea	•	•								
	Hemigenia incana	•	•								
	Hemigenia microphylla			•				P3			
	Hemigenia parviflora	•	•								
	Hemigenia pritzelii	•	•								
	Hemigenia rigida		•					P1			
	Hemigenia sericea	•	•								
	Lachnostachys albicans		•								
	Lavandula stoechas subsp. stoechas		•								Y
	Mentha pulegium	•	•								Y
	Mentha spicata	•									Y
	Quoya oldfieldii		•								
Lauraceae	*Cassytha glabella*	•	•								
	Cassytha pomiformis	•	•								
	Cassytha racemosa	•	•								
	Cassytha racemosa forma racemosa	•	•								
Lentibulariaceae	*Utricularia multifida*	•	•								
Linaceae	*Linum trigynum*	•	•								Y
Lindsaeaceae	*Lindsaea linearis*		•								
Loganiaceae	*Logania sp.*		•								
	Orianthera serpyllifolia subsp. angustifolia	•	•								
	Orianthera serpyllifolia subsp. serpyllifolia		•								
Loranthaceae	*Nuytsia floribunda*	•	•								
Malvaceae	*Commersonia corylifolia*		•								
	Lasiopetalum floribundum	•	•								
	Lasiopetalum membranaceum			•				P3			
	Lawrencia squamata		•								
	Thomasia grandiflora	•	•								
	Thomasia macrocarpa	•	•								
	Thomasia paniculata		•								
	Thomasia pauciflora	•	•								
	Thomasia sp. Big Brook (M. Koch 2373)		•								
	Thomasia triphylla		•								

Family	Taxon	Source						Conservation Status			Introduced
		Dandjoo	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
Marsileaceae	*Marsilea mutica*		•								
Menyanthaceae	*Liparophyllum latifolium*	•	•								
	Ornduffia albiflora	•	•								
	Ornduffia parnassifolia	•	•								
Montiaceae	*Calandrinia calyptrata*	•	•								
	Calandrinia granulifera	•	•								
Myrtaceae	Agonis flexuosa var. flexuosa	•	•								
	Astartea affinis		•								
	Astartea fascicularis		•								
	Astartea scoparia	•	•								
	Astartea zephyra		•								
	Babingtonia camphorosmae	•	•								
	Callistemon glaucus	•	•								
	Callistemon phoeniceus		•								
	Calothamnus graniticus subsp. leptophyllus		•	•				P4			
	Calothamnus lateralis	•	•								
	Calothamnus lehmannii	•	•								
	Calothamnus planifolius var. pallidifolius	•	•								
	Calothamnus rupestris	•	•								
	Calothamnus sanguineus	•									
	Calytrix cravenii	•	•								
	Calytrix flavescens	•	•								
	Calytrix glutinosa	•	•								
	Calytrix leschenaultii	•	•								
	Calytrix pulchella		•	•				P3			
	Calytrix tetragona	•	•								
	Calytrix variabilis	•	•								
	Chamelaucium erythrochlorum		•					P4			
	Chamelaucium roycei					•		T	VU	VU	
	Corymbia calophylla	•	•								
	Corymbia flavescens		•								
	Corymbia haematoxylon	•	•								
	Darwinia citriodora	•	•								
	Darwinia thymoides		•								

Family	Taxon	Source						Conservation Status			Introduced
		Dandjoo	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	Eremaea pauciflora var. pauciflora		•								
	Ericomyrtus parviflora		•								
	Eucalyptus drummondii	•	•								
	Eucalyptus laeliae	•	•								
	Eucalyptus marginata		•								
	Eucalyptus marginata subsp. marginata	•	•								
	Eucalyptus marginata subsp. thalassica		•								
	Eucalyptus megacarpa	•	•								
	Eucalyptus microcorys	•	•								Y
	Eucalyptus patens	•	•								
	Eucalyptus rudis	•	•								
	Eucalyptus rudis subsp. cratyantha		•	•				P4			
	Eucalyptus wandoo	•									
	Eucalyptus wandoo subsp. wandoo	•	•								
	Homalospermum firmum	•	•								
	Hypocalymma angustifolium	•	•								
	Hypocalymma cordifolium	•	•								
	Hypocalymma robustum	•	•								
	Hypocalymma suave	•									
	Kunzea ericifolia	•									
	Kunzea glabrescens	•	•								
	Kunzea micrantha	•									
	Kunzea micrantha subsp. micrantha		•								
	Kunzea micrantha subsp. oligandra		•								
	Kunzea recurva	•	•								
	Leptospermum erubescens	•	•								
	Leptospermum laevigatum	•	•								Y
	Melaleuca acutifolia	•	•								
	Melaleuca armillaris	•	•								Y
	Melaleuca grieveana		•					P1			
	Melaleuca incana	•	•								
	Melaleuca incana subsp. incana		•								
	Melaleuca lateritia	•	•								
	Melaleuca microphylla	•	•								

Family	Taxon	Source						Conservation Status			Introduced
		Dandjoo	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	Melaleuca parviceps	•	•								
	Melaleuca pauciflora	•	•								
	Melaleuca preissiana	•	•								
	Melaleuca rhaphiophylla	•	•								
	Melaleuca scabra		•								
	Melaleuca thymoides	•									
	Melaleuca trichophylla	•	•								
	Melaleuca viminea subsp. viminea		•								
	Paragonis grandiflora	•	•								
	Pericalymma ellipticum		•								
	Pericalymma ellipticum var. ellipticum	•	•								
	Pericalymma ellipticum var. floridum	•	•								
	Pericalymma spongiocaule	•	•								
	Regelia ciliata	•									
	Rinzia fumana	•	•								
	Taxandria linearifolia	•	•								
	Tetrapora glomerata	•	•								
	Verticordia attenuata			•				P3			
	Verticordia densiflora var. cespitosa	•	•								
	Verticordia huegelii		•								
	Verticordia huegelii var. stylosa		•								
	Verticordia pennigera	•									
	Verticordia plumosa var. plumosa	•	•								
	Verticordia roei subsp. roei		•								
Olacaceae	*Olax benthamiana*	•	•								
	Olea europaea	•	•								Y
Onagraceae	*Oenothera glazioviana*	•	•								Y
	Oenothera lindheimeri		•								Y
	Oenothera stricta subsp. stricta	•	•								Y
Ophioglossaceae	*Ophioglossum lusitanicum*	•	•								
Orchidaceae	Caladenia attingens subsp. attingens		•								
	Caladenia cairnsiana	•	•								
	Caladenia discoidea	•	•								
	Caladenia ferruginea	•	•								

Family	Taxon	Source						Conservation Status			Introduced
		Dandjoo	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	Caladenia flava	•	•								
	Caladenia flava subsp. flava		•								
	Caladenia flava subsp. sylvestris	•	•								
	Caladenia hoffmanii					•		T	EN	EN	
	Caladenia latifolia	•									
	Caladenia leucochila					•		T	EN	EN	
	Caladenia longicauda		•								
	Caladenia longicauda subsp. clivicola	•									
	Caladenia longicauda subsp. eminens		•								
	Caladenia longicauda subsp. redacta		•								
	Caladenia longiclavata	•	•								
	Caladenia macrostylis	•	•								
	Caladenia marginata	•	•								
	Caladenia nana		•								
	Caladenia nana subsp. nana		•								
	Caladenia nana subsp. unita		•								
	Caladenia paludosa	•	•								
	Caladenia pectinata	•	•								
	Caladenia procera				•			T	CR	CR	
	Caladenia reptans	•	•								
	Caladenia reptans subsp. reptans	•	•								
	Caladenia speciosa		•	•	•			P4			
	Caladenia splendens	•	•								
	Caladenia uliginosa subsp. patulens			•	•			P1			
	Caladenia uliginosa subsp. uliginosa		•								
	Caladenia validinervia		•	•				P1			
	Corybas recurvus		•								
	Corysanthes recurva	•									
	Cyanicula gemmata	•	•								
	Cyanicula sericea	•	•								
	Cyrtostylis huegelii	•	•								
	Cyrtostylis robusta	•									
	Disa bracteata	•	•								Y
	Diuris corymbosa	•	•								

Family	Taxon	Source						Conservation Status			Introduced
		Dandjoo	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	Diuris drummondii			•	•	•		T	VU	VU	
	Diuris insignis	•	•								
	Diuris longifolia	•	•								
	Diuris micrantha		•		•	•		T	VU	VU	
	Diuris porphyrochila	•	•								
	Diuris porrifolia	•	•								
	Diuris purdiei					•		T	EN	EN	
	Diuris septentrionalis	•	•								
	Drakaea confluens				•			T	CR	EN	
	Drakaea elastica		•		•			T	CR	EN	
	Drakaea glyptodon	•	•								
	Drakaea livida	•	•								
	Drakaea micrantha			•	•	•		T	EN	VU	
	Elythranthera brunonis	•	•								
	Elythranthera emarginata	•	•								
	Eriochilus dilatatus	•	•								
	Eriochilus dilatatus subsp. dilatatus		•								
	Eriochilus scaber	•	•								
	Eriochilus scaber subsp. scaber		•								
	Leporella fimbriata	•	•								
	Leptoceras menziesii	•	•								
	Lyperanthus serratus	•	•								
	Microtis alboviridis		•								
	Paracaleana nigrita	•	•								
	Praecoxanthus aphyllus	•	•								
	Prasophyllum hians		•								
	Prasophyllum macrotys		•								
	Pterostylis angulata	•	•								
	Pterostylis aspera		•								
	Pterostylis barbata		•								
	Pterostylis concava		•								
	Pterostylis crispula	•	•								
	Pterostylis frenchii			•	•			P2			
	Pterostylis karri		•								

Family	Taxon	Source						Conservation Status			Introduced
		Dandjoo	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	Pterostylis pyramidalis		•								
	Pterostylis recurva	•	•								
	Pterostylis rogersii		•								
	Pterostylis serotina	•	•								
	Pterostylis sp. Bloated snail orchid (W. Jackson BJ 486)		•								
	Pterostylis turfosa		•								
	Pterostylis vittata	•	•								
	Pyrorchis nigricans	•	•								
	Thelymitra antennifera	•	•								
	Thelymitra crinita	•	•								
	Thelymitra fuscolutea	•	•								
	Thelymitra graminea	•	•								
	Thelymitra villosa	•	•								
	Thelymitra vulgaris	•									
Orobanchaceae	*Bellardia viscosa*	•	•								Y
	Orobanche minor	•	•								Y
	Parentucellia latifolia	•	•								Y
Oxalidaceae	*Oxalis exilis*	•	•								
	Oxalis incarnata	•	•								Y
	Oxalis perennans	•									
Papaveraceae	*Fumaria sp.*		•								Y
Philydraceae	*Philydrella pygmaea*	•	•								
Phyllanthaceae	*Phyllanthus calycinus*		•								
	Poranthera huegelii	•	•								
	Poranthera microphylla	•	•								
Phytolaccaceae	*Phytolacca octandra*	•	•								Y
Pittosporaceae	*Billardiera floribunda*	•	•								
	Billardiera fraseri		•								
	Billardiera fusiformis	•	•								
	Billardiera variifolia	•	•								
	Billardiera venusta		•								
	Cheiranthera parviflora	•	•								
	Cheiranthera preissiana	•	•								
	Marianthus candidus		•								

Family	Taxon	Source						Conservation Status			Introduced
		Dandjoo	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	Marianthus drummondianus	•	•								
	Marianthus microphyllus		•								
	Marianthus tenuis		•								
Plantaginaceae	Callitriche brutia subsp. brutia		•								Y
	Gratiola pubescens	•	•								
	Plantago lanceolata	•	•								Y
	Veronica calycina	•	•								
	Veronica plebeia	•	•								
Poaceae	*Aira caryophyllea*	•									Y
	Aira cupaniana	•	•								Y
	Aira elegantissima		•								Y
	Alopecurus geniculatus		•								Y
	Amphipogon amphipogonoides	•	•								
	Amphipogon laguroides subsp. laguroides		•								
	Amphipogon turbinatus	•									
	Anthosachne scabra		•								
	Austrostipa bronweniae			•	•			T	EN	EN	
	Austrostipa campylachne	•									
	Austrostipa elegantissima	•	•								
	Austrostipa hemipogon		•								
	Austrostipa mollis	•	•								
	Austrostipa semibarbata	•	•								
	Austrostipa trichophylla	•	•								
	Briza maxima	•	•								Y
	Briza minor	•	•								Y
	Bromus diandrus	•									Y
	Bromus hordeaceus	•	•								Y
	Cortaderia selloana subsp. selloana	•	•								Y
	Cynosurus echinatus	•									Y
	Deyeuxia quadriseta	•	•								
	Dichelachne crinita	•									
	Dichelachne micrantha	•	•								
	Echinochloa crus-galli		•								Y
	Ehrharta calycina	•									Y

Family	Taxon	Source						Conservation Status			Introduced
		Dandjoo	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	Ehrharta longiflora	•									Y
	Eragrostis brownii	•	•								
	Eragrostis curvula	•	•								Y
	Eragrostis elongata	•	•								
	Holcus lanatus	•									Y
	Holcus setiger	•									Y
	Hordeum marinum	•	•								Y
	Lachnagrostis filiformis	•	•								
	Lachnagrostis plebeia	•									
	Lolium perenne	•	•								Y
	Microlaena stipoides	•									
	Neurachne alopecuroidea	•	•								
	Paspalum dilatatum	•	•								Y
	Paspalum distichum	•									Y
	Pentameris airoides	•									Y
	Phalaris aquatica		•								Y
	Phalaris minor	•	•								Y
	Poa drummondiana	•									
	Poa homomalla	•									
	Poa porphyroclados	•	•								
	Polypogon monspeliensis	•									Y
	Rytidosperma acerosum	•	•								
	Rytidosperma caespitosum	•	•								
	Rytidosperma occidentale	•									
	Rytidosperma pilosum	•	•								
	Rytidosperma setaceum	•	•								
	Sporobolus africanus		•								Y
	Tetrarrhena laevis	•	•								
	Themeda triandra	•	•								
	Vulpia bromoides	•	•								Y
	Vulpia myuros	•									Y
	Vulpia myuros forma megalura	•	•								Y
Podocarpaceae	*Podocarpus drouynianus*		•								
Polygalaceae	*Comesperma calymega*	•									

Family	Taxon	Source						Conservation Status			Introduced
		Dandjoo	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	Comesperma ciliatum		•								
	Comesperma confertum	•	•								
	Comesperma flavum		•								
	Comesperma virgatum	•	•								
	Comesperma volubile		•								
Polygonaceae	*Persicaria decipiens*	•									
	Persicaria prostrata	•	•								
	Polygonum arenastrum	•									Y
	Rumex acetosella		•								Y
	Rumex conglomeratus	•	•								Y
	Rumex crispus	•	•								Y
	Rumex drummondii			•				P4			
Portulacaceae	*Portulaca oleracea*	•	•								
Primulaceae	*Lysimachia arvensis*	•	•								Y
Proteaceae	*Adenanthos barbiger*		•								
	Adenanthos cygnorum subsp. chamaephyton		•	•				P3			
	Adenanthos obovatus	•	•								
	Banksia armata	•	•								
	Banksia bipinnatifida subsp. bipinnatifida	•	•								
	Banksia dallanneyi	•	•								
	Banksia dallanneyi subsp. dallanneyi var. dallanneyi	•	•								
	Banksia dallanneyi subsp. dallanneyi var. mellicula	•	•								
	Banksia dallanneyi subsp. sylvestris	•	•								
	Banksia grandis	•	•								
	Banksia ilicifolia	•	•								
	Banksia littoralis	•	•								
	Banksia meisneri subsp. meisneri	•	•								
	Banksia mimica					•		T	VU	EN	
	Banksia seminuda	•	•								
	Banksia sphaerocarpa var. sphaerocarpa	•	•								
	Banksia squarrosa subsp. argillacea					•		T	VU	VU	
	Banksia squarrosa subsp. squarrosa		•								
	Banksia undata var. undata		•								
	Conospermum acerosum subsp. acerosum		•								

Family	Taxon	Source						Conservation Status			Introduced
		Dandjoo	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	Conospermum canaliculatum subsp. canaliculatum		•								
	Conospermum capitatum		•								
	Conospermum capitatum subsp. capitatum		•								
	Conospermum capitatum subsp. glabratum	•	•								
	Conospermum flexuosum subsp. laevigatum	•	•								
	Conospermum huegelii	•	•								
	Conospermum stoechadis		•								
	Conospermum stoechadis subsp. stoechadis		•								
	Conospermum teretifolium		•								
	Grevillea bipinnatifida	•	•								
	Grevillea bipinnatifida subsp. bipinnatifida	•	•								
	Grevillea bipinnatifida subsp. pagna			•				P1			
	Grevillea centristigma	•	•								
	Grevillea depauperata		•								
	Grevillea diversifolia		•								
	Grevillea diversifolia subsp. diversifolia		•								
	Grevillea manglesioides subsp. manglesioides	•	•								
	Grevillea pilulifera	•	•								
	Grevillea prominens		•	•	•			P3			
	Grevillea quercifolia	•	•								
	Grevillea rara		•	•	•	•		T	EN	EN	
	Grevillea ripicola		•	•	•			P4			
	Grevillea rosieri		•	•				P2			
	Grevillea synapheae		•								
	Grevillea trifida	•	•								
	Grevillea wilsonii	•									
	Hakea amplexicaulis	•	•								
	Hakea auriculata		•								
	Hakea ceratophylla	•	•								
	Hakea cyclocarpa	•	•								
	Hakea lasianthoides	•	•								
	Hakea lissocarpha	•	•								
	Hakea marginata	•									
	Hakea ruscifolia	•	•								

Family	Taxon	Source						Conservation Status			Introduced
		Dandjoo	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	Hakea trifurcata	•	•								
	Hakea undulata	•	•								
	Isopogon asper		•								
	Isopogon buxifolius var. buxifolius		•					P2			
	Isopogon crithmifolius	•	•								
	Isopogon spathulatus	•	•								
	Isopogon sphaerocephalus	•	•								
	Isopogon sphaerocephalus subsp. sphaerocephalus		•								
	Isopogon teretifolius		•								
	Lambertia echinata subsp. occidentalis					•		T	CR	EN	
	Lambertia multiflora		•								
	Persoonia elliptica	•	•								
	Persoonia longifolia	•	•								
	Petrophile linearis	•	•								
	Petrophile serruriae	•	•								
	Petrophile striata		•								
	Stirlingia simplex	•	•								
	Synaphea damopsis	•	•								
	Synaphea floribunda	•	•								
	Synaphea gracillima	•	•								
	Synaphea hians		•	•	•			P3			
	Synaphea obtusata	•	•								
	Synaphea odocoileops			•	•			P1			
	Synaphea petiolaris	•	•								
	Synaphea petiolaris subsp. petiolaris	•									
	Synaphea sp. Fairbridge Farm (D. Papenfus 696)		•	•	•	•		T	CR	CR	
	Synaphea sp. Pinjarra Plain (A.S. George 17182)					•		T	EN	EN	
	Synaphea sp. Serpentine (G.R. Brand 103)					•		T	CR	CR	
	Synaphea stenoloba					•		T	CR	EN	
	Xylomelum occidentale	•	•								
Pteridaceae	*Adiantum aethiopicum*	•	•								
	Cheilanthes austrotenuifolia	•	•								
	Cheilanthes distans		•								
Ranunculaceae	*Clematis pubescens*	•	•								

Family	Taxon	Source						Conservation Status			Introduced
		Dandjoo	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	Ranunculus colonorum	•	•								
	Ranunculus muricatus	•									Y
Restionaceae	*Chaetanthus aristatus*		•								
	Cytogonidium leptocarpoides	•	•								
	Desmocladus fasciculatus	•	•								
	Desmocladus flexuosus	•	•								
	Hypolaena exsulca	•	•								
	Hypolaena fastigiata	•									
	Hypolaena robusta		•	•				P4			
	Leptocarpus canus		•								
	Leptocarpus coangustatus		•								
	Leptocarpus laxus	•	•								
	Leptocarpus roycei	•	•								
	Leptocarpus thysananthus	•	•								
	Lepyrodia glauca	•	•								
	Lepyrodia heleocharoides		•					P3			
	Lepyrodia macra	•	•								
	Lepyrodia riparia	•	•								
	Loxocarya cinerea	•	•								
	Tremulina tremula	•	•								
	Tyrbastes glaucescens	•	•								
Rhamnaceae	Cryptandra arbutiflora var. arbutiflora	•	•								
	Cryptandra arbutiflora var. tubulosa	•	•								
	Rhamnus alaternus	•	•								Y
	Trymalium ledifolium	•	•								
	Trymalium ledifolium var. rosmarinifolium	•	•								
	Trymalium odoratissimum subsp. odoratissimum		•								
	Trymalium odoratissimum subsp. trifidum	•	•								
	Trymalium spatulatum		•								
	Ziziphus mauritiana						•				Y
Rosaceae	*Acaena echinata*	•	•								
	Prunus cerasifera	•	•								Y
	Rosa canina		•								Y
	Rosa rubiginosa	•	•								Y

Family	Taxon	Source						Conservation Status			Introduced
		Dandjoo	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	Rubus anglocandicans	•	•				•				Y
	Rubus laudatus	•	•				•				Y
	Rubus loganobaccus	•									Y
	Rubus rugosus						•				Y
	Rubus ulmifolius						•				Y
	Rubus x loganobaccus		•								Y
Rubiaceae	*Galium aparine*						•				Y
	Galium divaricatum	•									Y
	Galium spurium						•				Y
	Opercularia apiciflora	•	•								
	Opercularia echinocephala	•	•								
	Opercularia hispidula	•	•								
	Opercularia vaginata	•									
	Sherardia arvensis		•								Y
Rutaceae	*Asterolasia pallida*	•	•								
	Boronia alata		•								
	Boronia crenulata	•	•								
	Boronia crenulata subsp. crenulata	•									
	Boronia crenulata subsp. crenulata var. crenulata		•								
	Boronia crenulata subsp. pubescens	•	•								
	Boronia crenulata subsp. viminea		•								
	Boronia denticulata		•								
	Boronia fastigiata	•	•								
	Boronia juncea subsp. juncea			•				P1			
	Boronia megastigma	•	•								
	Boronia molloyae	•	•								
	Boronia nematophylla	•	•								
	Boronia purdieana subsp. purdieana		•								
	Boronia scabra	•	•								
	Boronia spathulata	•	•								
	Coleonema pulchellum	•	•								Y
	Cyanothamnus defoliatus	•	•								
	Cyanothamnus ramosus subsp. anethifolius	•	•								
	Cyanothamnus tenuis	•	•	•				P4			

Family	Taxon	Source						Conservation Status			Introduced
		Dandjoo	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	Diplolaena drummondii	•	•								
	Diplolaena graniticola	•	•								
	Diplolaena microcephala	•	•								
	Phebalium lepidotum		•								
	Philotheca nodiflora subsp. lasiocalyx	•	•								
	Philotheca spicata	•	•								
Salviniaceae	*Azolla rubra*	•	•								
	Salvinia x molesta		•								Y
Santalaceae	*Choretrum lateriflorum*		•								
	Exocarpos sparteus	•									
	Leptomeria cunninghamii	•	•								
Sapindaceae	*Dodonaea ceratocarpa*	•	•								
	Dodonaea viscosa subsp. angustissima	•	•								
Scrophulariaceae	*Myoporum caprarioides*	•	•								
Selaginellaceae	*Selaginella gracillima*		•								
Solanaceae	*Anthocercis gracilis*					•		T	VU	VU	
	Solanum elaeagnifolium						•				Y
	Solanum linnaeanum	•	•				•				Y
Stylidiaceae	*Levenhookia pusilla*	•	•								
	Levenhookia stipitata	•	•								
	Stylidium acuminatum subsp. acuminatum		•	•				P2			
	Stylidium adnatum	•	•								
	Stylidium amoenum	•	•								
	Stylidium amoenum var. amoenum	•	•								
	Stylidium androsaceum	•	•								
	Stylidium brunonianum	•	•								
	Stylidium bulbiferum		•								
	Stylidium caespitosum	•	•								
	Stylidium calcaratum	•									
	Stylidium ciliatum	•	•								
	Stylidium crassifolium	•	•								
	Stylidium diversifolium	•	•								
	Stylidium inundatum	•	•								
	Stylidium junceum	•	•								

Family	Taxon	Source						Conservation Status			Introduced
		Dandjoo	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
	Stylidium korijekup			•				P2			
	Stylidium lineatum	•	•								
	Stylidium neurophyllum	•									
	Stylidium paludicola		•	•				P3			
	Stylidium perplexum		•	•				P1			
	Stylidium petiolare	•	•								
	Stylidium piliferum	•	•								
	Stylidium plantagineum	•	•								
	Stylidium pulchellum	•	•								
	Stylidium recurvum	•	•								
	Stylidium rhynchocarpum	•	•								
	Stylidium scandens	•	•								
	Stylidium schoenoides	•	•								
	Stylidium spathulatum	•	•								
	Stylidium tenue subsp. majusculum	•	•								
	Stylidium tenue subsp. tenue	•	•								
	Stylidium thesioides	•	•								
	Stylidium uniflorum subsp. uniflorum	•	•								
	Stylidium violaceum	•	•								
Tamaricaceae	*Tamarix aphylla*						•				Y
	Pimelea angustifolia	•	•								
	Pimelea argentea		•								
	Pimelea ciliata subsp. ciliata		•								
	Pimelea ferruginea		•								
	Pimelea hispida		•								
	Pimelea imbricata	•	•								
Thymelaeaceae	Pimelea imbricata var. piligera	•	•								
	Pimelea lehmanniana	•									
	Pimelea lehmanniana subsp. nervosa	•	•								
	Pimelea rosea		•								
	Pimelea suaveolens		•								
	Pimelea suaveolens subsp. suaveolens	•	•								
	Pimelea sylvestris	•	•								
Typhaceae	*Typha domingensis*	•									

Family	Taxon	Source						Conservation Status			Introduced
		Dandjoo	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
Verbenaceae	*Lantana camara*						•				Y
	Verbena rigida		•								Y
	Verbena rigida var. rigida	•									Y
Violaceae	*Hybanthus calycinus*		•								
	Hybanthus debilissimus	•	•								
	Hybanthus floribundus		•								
	Hybanthus floribundus subsp. floribundus		•								
	Pigea debilissima		•								
	Pigea floribunda	•									
Xanthorrhoeaceae	*Xanthorrhoea acanthostachya*	•	•								
	Xanthorrhoea brunonis subsp. brunonis		•								
	Xanthorrhoea gracilis	•	•								
	Xanthorrhoea nana		•								
	Xanthorrhoea preissii	•	•								
Zamiaceae	*Macrozamia fraseri*	•									
	Macrozamia riedlei	•	•								

Appendix D: Introduced flora of the desktop assessment

Family	Taxon	Source					Declared Plant Pests (DPP)	Weeds of National Significance (WoNS)	Ecological Rating	Invasiveness Rating
		Dandjoo	NM	ALA	EPBC	WAOL				
Alismataceae	*Sagittaria platyphylla*					•	Y	Y	Unknown	Unknown
Alliaceae	*Allium triquetrum*			•					Low	Slow
Amaryllidaceae	*Amaryllis belladonna*	•							Low	Slow
	Crinum moorei	•		•					Low	Rapid
	Leucojum aestivum	•		•					Low	Slow
Apocynaceae	*Asclepias curassavica*	•		•					Not Assessed	Not Assessed
	Calotropis procera					•	Y		Not Assessed	Not Assessed
	Cryptostegia madagascariensis					•	Y	Y	Unknown	Slow
	Gomphocarpus fruticosus	•		•		•	Y		Low	Rapid
	Vinca major	•		•					Unknown	Slow
Araceae	*Pistia stratiotes*					•	Y		Unknown	Unknown
	Zantedeschia aethiopica					•	Y		High	Slow
Araliaceae	*Hydrocotyle ranunculoides*					•	Y		Low	Unknown
Asparagaceae	*Asparagus asparagoides*	•		•		•	Y	Y	High	Rapid
Asteraceae	*Arctotheca calendula*			•					Medium	Moderate
	Argyranthemum frutescens	•							Not Assessed	Not Assessed
	Carthamus lanatus	•							Medium	Rapid
	Chondrilla juncea					•	Y		Not Assessed	Not Assessed
	Cotula coronopifolia	•		•					Unknown	Rapid
	Cotula sessilis	•		•					Unknown	Rapid
	Dittrichia graveolens	•		•					Unknown	Rapid

Family	Taxon	Source					Declared Plant Pests (DPP)	Weeds of National Significance (WoNS)	Ecological Rating	Invasiveness Rating
		Dandjoo	NM	ALA	EPBC	WAOL				
	Erigeron bonariensis	•		•					High	Rapid
	Galinsoga parviflora	•		•					Unknown	Unknown
	Gamochaeta calviceps	•		•					Unknown	Unknown
	Glebionis segetum	•		•					High	Moderate
	Hypochaeris glabra	•		•					Unknown	Moderate
	Lactuca saligna	•		•					High	Slow
	Leontodon saxatilis			•					Medium	Rapid
	Onopordum acaulon					•	Y		Unknown	Unknown
	Osteospermum ecklonis			•					Unknown	Rapid
	Sigesbeckia orientalis	•		•					Unknown	Rapid
	Silybum marianum	•		•		•	Y		Unknown	Rapid
	Sonchus asper	•		•					Medium	Unknown
	Sonchus oleraceus	•		•					Medium	Rapid
	Tolpis barbata	•		•					High	Unknown
	Vellereophyton dealbatum	•		•					Unknown	Unknown
	Xanthium spinosum					•	Y		High	Moderate
	Xanthium strumarium					•	Y		High	Moderate
Boraginaceae	*Echium plantagineum*					•	Y		Unknown	Rapid
	Symphytum x uplandicum	•							Unknown	Rapid
Brassicaceae	*Lepidium africanum*	•		•					Medium	Rapid
	Lepidium bonariense	•		•					Unknown	Rapid

Family	Taxon	Source					Declared Plant Pests (DPP)	Weeds of National Significance (WoNS)	Ecological Rating	Invasiveness Rating
		Dandjoo	NM	ALA	EPBC	WAOL				
Cactaceae	*Austrocylindropuntia cylindrica*					•	Y	Y	Not Assessed	Not Assessed
	Austrocylindropuntia subulata					•	Y	Y	Not Assessed	Not Assessed
	Cylindropuntia fulgida					•	Y	Y	Medium	Rapid
	Cylindropuntia imbricata					•	Y	Y	Medium	Rapid
	Cylindropuntia kleiniae					•	Y	Y	Medium	Rapid
	Cylindropuntia pallida					•	Y	Y	Medium	Rapid
	Cylindropuntia tunicata					•	Y	Y	Medium	Rapid
	Opuntia elata					•	Y	Y	Unknown	Unknown
	Opuntia elatior					•	Y	Y	Unknown	Unknown
	Opuntia engelmannii					•	Y	Y	Unknown	Unknown
	Opuntia microdasys					•	Y	Y	Unknown	Unknown
	Opuntia monacantha					•	Y	Y	Unknown	Unknown
	Opuntia polyacantha					•	Y	Y	Low	Slow
	Opuntia puberula					•	Y	Y	Low	Slow
	Opuntia stricta					•	Y	Y	Low	Slow
	Opuntia tomentosa					•	Y	Y	Low	Slow
Campanulaceae	*Grammatotheca bergiana* var. *bergiana*			•					Unknown	Rapid
	Monopsis debilis			•					Unknown	Unknown
Caprifoliaceae	*Centranthus macrosiphon*			•					Not Assessed	Not Assessed
	Centranthus ruber subsp. *ruber*			•					Not Assessed	Not Assessed
	Lonicera japonica			•					Medium	Rapid

Family	Taxon	Source					Declared Plant Pests (DPP)	Weeds of National Significance (WoNS)	Ecological Rating	Invasiveness Rating
		Dandjoo	NM	ALA	EPBC	WAOL				
Caryophyllaceae	*Gypsophila vaccaria*	•		•					Unknown	Rapid
	Petrorhagia dubia	•							Unknown	Unknown
	Silene nocturna	•							Unknown	Rapid
	Spergula arvensis	•		•					Medium	Rapid
Casuarinaceae	*Casuarina equisetifolia*			•					Not Assessed	Not Assessed
Chenopodiaceae	*Dysphania multifida*	•		•					Unknown	Rapid
Convolvulaceae	*Ipomoea indica*	•		•					High	Slow
Crassulaceae	*Crassula natans*			•					Low	Rapid
	Crassula natans var. *minor*	•							Low	Rapid
Cupressaceae	*Hesperocyparis lusitanica*	•		•					Unknown	Unknown
Cyperaceae	*Cyperus brevifolius*	•							Unknown	Slow
	Cyperus congestus	•		•					High	Moderate
	Cyperus eragrostis	•							Unknown	Moderate
	Cyperus tenellus	•		•					Unknown	Slow
	Cyperus tenuiflorus	•		•					Unknown	Rapid
	Isolepis prolifera	•		•					Low	Rapid
Ericaceae	*Erica arborea*			•					High	Rapid
Euphorbiaceae	*Euphorbia dendroides*	•		•					Unknown	Unknown
	Euphorbia terracina	•		•					Medium	Moderate
	Jatropha gossypiifolia					•	Y	Y	Low	Moderate
Fabaceae	*Acacia baileyana*			•					Low	Slow

Family	Taxon	Source					Declared Plant Pests (DPP)	Weeds of National Significance (WoNS)	Ecological Rating	Invasiveness Rating
		Dandjoo	NM	ALA	EPBC	WAOL				
	Acacia decurrens			•					Low	Slow
	Acacia elata			•					Low	Slow
	Acacia paradoxa	•							Low	Slow
	Acacia podalyriifolia			•					Low	Slow
	Acacia pycnantha	•		•					Low	Slow
	Acacia spectabilis			•					Not Assessed	Not Assessed
	Alhagi maurorum					•			Not Assessed	Not Assessed
	Chamaecytisus palmensis	•		•					High	Rapid
	Dipogon lignosus	•		•					Low	Rapid
	Gleditsia triacanthos	•							High	Moderate
	Gleditsia triacanthos			•					High	Moderate
	Lathyrus latifolius	•		•					Unknown	Moderate
	Lathyrus tingitanus	•		•					Low	Slow
	Lotus angustissimus	•							Unknown	Slow
	Lotus angustissimus			•					Unknown	Slow
	Lotus subbiflorus			•					Unknown	Rapid
	Lupinus albus	•		•					Unknown	Rapid
	Medicago polymorpha	•							Unknown	Slow
	Ornithopus compressus	•		•					Low	Slow
	Ornithopus sativus	•		•					Low	Slow
	Parkinsonia aculeata					•	Y	Y	High	Rapid

Family	Taxon	Source					Declared Plant Pests (DPP)	Weeds of National Significance (WoNS)	Ecological Rating	Invasiveness Rating
		Dandjoo	NM	ALA	EPBC	WAOL				
	Podalyria sericea	•							Low	Slow
	Prosopis glandulosa x Prosopis velutina					•	Y	Y	Low	Unknown
	Senna alata					•	Y		Low	Moderate
	Senna obtusifolia					•	Y		Low	Moderate
	Trifolium campestre	•							Unknown	Unknown
	Trifolium campestre var. *campestre*	•							Unknown	Unknown
	Trifolium dubium	•		•					Unknown	Unknown
	Trifolium fragiferum var. *fragiferum*	•							Unknown	Unknown
	Trifolium glomeratum	•							Unknown	Unknown
	Trifolium ligusticum	•		•					Unknown	Unknown
	Trifolium striatum	•							Unknown	Unknown
	Trifolium subterraneum	•		•					Unknown	Unknown
	Ulex europaeus					•	Y	Y	High	Rapid
Francoaceae	*Melianthus major*	•							Low	Slow
Gentianaceae	*Centaurium erythraea*	•		•					Not Assessed	Not Assessed
	Cicendia filiformis	•		•					Low	Rapid
Geraniaceae	*Erodium botrys*	•		•					Low	Slow
	Pelargonium x domesticum	•		•					High	Rapid
Hypericaceae	*Hypericum perforatum*	•		•					High	Rapid
Iridaceae	*Ixia maculata*			•					Unknown	Rapid
	Ixia polystachya	•		•					Low	Moderate

Family	Taxon	Source					Declared Plant Pests (DPP)	Weeds of National Significance (WoNS)	Ecological Rating	Invasiveness Rating
		Dandjoo	NM	ALA	EPBC	WAOL				
	Moraea flaccida					•	Y		Low	Rapid
	Moraea lewisiae	•							High	Moderate
	Moraea miniata					•	Y		Unknown	Unknown
	Romulea rosea	•							Unknown	Unknown
	Watsonia borbonica	•							Unknown	Rapid
	Watsonia marginata	•		•					High	Moderate
	Watsonia meriana var. *bulbillifera*	•		•					High	Moderate
	Watsonia meriana var. *meriana*	•							High	Moderate
Juncaceae	*Juncus bufonius*	•		•					Unknown	Unknown
	Juncus capitatus	•		•					Low	Rapid
	Juncus microcephalus	•		•					Low	Rapid
	Juncus polyanthemus	•		•					Unknown	Unknown
	Juncus usitatus	•		•					Unknown	Unknown
Lamiaceae	*Lavandula stoechas* subsp. *stoechas*			•					Low	Moderate
	Mentha pulegium	•		•					High	Moderate
	Mentha spicata	•							Medium	Moderate
Linaceae	*Linum trigynum*	•		•					High	Slow
Melianthaceae	*Melianthus major*			•					Low	Slow
Myrtaceae	*Eucalyptus microcorys*	•		•					Unknown	Unknown
	Leptospermum laevigatum	•		•					Unknown	Rapid
	Melaleuca armillaris	•		•					Medium	Unknown
Oleaceae	*Olea europaea*	•		•					Low	Slow

Family	Taxon	Source					Declared Plant Pests (DPP)	Weeds of National Significance (WoNS)	Ecological Rating	Invasiveness Rating
		Dandjoo	NM	ALA	EPBC	WAOL				
Onagraceae	*Oenothera glazioviana*	•		•					Low	Unknown
	Oenothera lindheimeri			•					Low	Slow
	Oenothera stricta subsp. *stricta*	•		•					Low	Slow
Orchidaceae	*Disa bracteata*	•		•					High	Moderate
Orobanchaceae	*Bellardia viscosa*	•		•					Not Assessed	Not Assessed
	Orobanche minor	•		•					Low	Slow
	Parentucellia latifolia	•		•					Unknown	Unknown
Oxalidaceae	*Oxalis incarnata*	•		•					Medium	Moderate
Papaveraceae	Fumaria sp.			•					Unknown	Unknown
Phytolaccaceae	*Phytolacca octandra*	•		•					Unknown	Unknown
Plantaginaceae	*Callitriche brutia* subsp. *brutia*			•					Unknown	Unknown
	Plantago lanceolata	•		•					Unknown	Unknown
Poaceae	*Aira caryophyllea*	•							Unknown	Rapid
	Aira cupaniana	•		•					Unknown	Rapid
	Aira elegantissima			•					Unknown	Rapid
	Alopecurus geniculatus			•					Unknown	Unknown
	Briza maxima	•		•					Unknown	Rapid
	Briza minor	•		•					Unknown	Rapid
	Bromus diandrus	•							High	Rapid
	Bromus hordeaceus	•		•					High	Rapid
	Cortaderia selloana subsp. *selloana*	•		•					High	Rapid

Family	Taxon	Source					Declared Plant Pests (DPP)	Weeds of National Significance (WoNS)	Ecological Rating	Invasiveness Rating
		Dandjoo	NM	ALA	EPBC	WAOL				
	Cynosurus echinatus	•							Unknown	Slow
	Echinochloa crus-galli			•					Unknown	Rapid
	Ehrharta calycina	•							Unknown	Unknown
	Ehrharta longiflora	•							Unknown	Unknown
	Eragrostis curvula	•		•					Low	Rapid
	Holcus lanatus	•							Unknown	Rapid
	Holcus setiger	•							Medium	Unknown
	Hordeum marinum	•		•					Low	Moderate
	Lolium perenne	•		•					Low	Unknown
	Paspalum dilatatum	•		•					High	Rapid
	Pentameris airoides	•							High	Rapid
	Phalaris aquatica			•					Unknown	Unknown
	Phalaris minor	•		•					Unknown	Unknown
	Polypogon monspeliensis	•							Unknown	Unknown
	Sporobolus africanus			•					Unknown	Moderate
	Vulpia bromoides	•		•					Low	Slow
	Vulpia myuros	•							Unknown	Rapid
	Vulpia myuros forma *megalura*	•		•					Unknown	Rapid
Polygonaceae	*Polygonum arenastrum*	•							Medium	Moderate
	Rumex acetosella			•					High	Moderate
	Rumex conglomeratus	•		•					Unknown	Unknown
	Rumex crispus	•		•					Unknown	Unknown

Family	Taxon	Source					Declared Plant Pests (DPP)	Weeds of National Significance (WoNS)	Ecological Rating	Invasiveness Rating
		Dandjoo	NM	ALA	EPBC	WAOL				
Primulaceae	*Lysimachia arvensis*	•		•					High	Moderate
Ranunculaceae	*Ranunculus muricatus*	•							High	Moderate
Rhamnaceae	*Rhamnus alaternus*	•		•					Unknown	Unknown
	Ziziphus mauritiana					•	Y		High	Moderate
Rosaceae	*Prunus cerasifera*	•		•					Unknown	Unknown
	Rosa canina			•					High	Rapid
	Rosa rubiginosa	•		•					Low	Slow
	Rubus anglocandicans	•		•		•	Y	Y	Unknown	Unknown
	Rubus laudatus	•		•		•	Y	Y	High	Moderate
	Rubus loganobaccus	•							High	Moderate
	Rubus rugosus					•	Y	Y	High	Moderate
	Rubus ulmifolius					•	Y	Y	High	Moderate
	Rubus x loganobaccus	•		•					High	Moderate
Rubiaceae	*Galium aparine*					•	Y		Unknown	Unknown
	Galium divaricatum	•							Unknown	Unknown
	Galium spurium					•	Y		Low	Unknown
	Sherardia arvensis			•					Low	Moderate
Rutaceae	*Coleonema pulchellum*	•		•					Low	Moderate
Salviniaceae	*Salvinia x molesta*			•					Unknown	Unknown
Solanaceae	*Solanum elaeagnifolium*					•	Y	Y	Unknown	Moderate
	Solanum linnaeanum	•		•		•	Y		Unknown	Moderate
Tamaricaceae	*Tamarix aphylla*					•	Y	Y	Unknown	Rapid

Family	Taxon	Source					Declared Plant Pests (DPP)	Weeds of National Significance (WoNS)	Ecological Rating	Invasiveness Rating
		Dandjoo	NM	ALA	EPBC	WAOL				
Verbenaceae	*Lantana camara*					•	Y	Y	Unknown	Moderate
	Verbena rigida			•					Low	Moderate
	Verbena rigida var. *rigida*	•							Low	Moderate

Appendix E: Assessment of occurrence

Taxon	Conservation Status			Habit and Habitat	Within Known Distribution?	Within Suitable Habitat?	Distance to Nearest Record	Pre-Survey Likelihood	Post-Survey Likelihood
	DBCA	BC Act	EPBC Act						
Lomandra whicherensis	P3			Erect herb, to 0.5 m high. Fl. yellow-purple, Nov-Dec. Sandy loam, sandy clay, gravel. Slopes, ridges.	Yes	Yes	Within	Confirmed	Confirmed
Cyanothamnus tenuis	P4			Procumbent or erect and slender perennial shrub, to 0.5 m high. Fl. blue. Brown sandy clay or loam over granite. Hillsides, amongst granite outcrops.	Yes	Yes	1.1 km W	Likely	Unlikely
Grevillea ripicola	P4			Spreading, much-branched, non-lignotuberous shrub, 0.6-2(-3) m high, to 4 m wide. Fl. red/red-orange, Jan or Mar to Apr or Nov to Dec. Sandy clay, clay or gravelly loam. Swampy flats, granite outcrops, along watercourses.	Adjacent	Yes	1.7 km ESE	Likely	Unlikely
Juncus meianthus	P3			Tufted perennial, herb, 0.05-0.2 m high, to 0.4 m wide. Fl. brown, Nov to Dec or Jan. Black sand, sandy clay. Creeks, seepage areas.	Yes	Yes	1.1 km NNE	Likely	Possible
Pultenaea skinneri	P4			Slender shrub, 1-2 m high. Fl. yellow/orange & red, Jul to Sep. Sandy or clayey soils. Winter-wet depressions.	Yes	Yes	1.2 km E	Likely	Unlikely
Stylidium acuminatum subsp. *acuminatum*	P2			Perennial herb up to 0.4 m high, with basal rosette. Fl. pale yellow, Nov. Sand, loam over laterite. Slopes.	Yes	Yes	1.5 km E	Likely	Possible
Acacia oncinophylla subsp. *oncinophylla*	P3			Shrub, 0.9-2.5 m high, 'minni-ritchi' bark, phyllodes mostly 8-13 cm long, 1-2 mm wide. Fl. yellow, Aug to Oct. Granitic soils.	Yes	Possible	9.9 km SSW	Possible	Unlikely
Acacia semitrullata	P4			Slender, erect, pungent shrub, (0.1-)0.2-0.7(-1.5) m high. Fl. cream-white, May to Oct. White/grey sand, sometimes over laterite, clay. Sandplains, swampy areas.	Yes	Possible	13.4 km NNW	Possible	Possible
Dillwynia sp. Capel (P.A. Jurjevich 1771)	P3			Erect, open, spreading shrub, to 2 m high. Fl. yellow & orange & red & pink, Sep to Oct. Littered grey loamy sand, rocky soils. Valleys, rangelands.	Yes	Possible	6.4 km ESE	Possible	Unlikely
Eucalyptus rudis subsp. *cratyantha*	P4			Tree, 5-20m high, bark rough, box-type. Fl. White, Jul to Sept. Loam. Flats, hillsides.	Yes	Possible	11.5 km WNW	Possible	Unlikely
Gonocarpus keigheryi	P2			Erect or decumbent shrub up to 0.3m high. Fl. green/brown, Dec-Feb. Laterite, clayey sand. Slopes, valleys (seasonally wet).	Yes	Possible	13 km SSW	Possible	Possible
Grevillea prominens	P3			Spreading shrub, 0.5-1.7 m high, 0.3-1 m wide. Fl. cream-white, Sep to Oct. Gravelly loam. Along creeklines.	Adjacent	Yes	14.5 km SSE	Possible	Unlikely
Grevillea rara	T	EN	EN	Dense, prickly shrub, to 2 m high. Fl. white-pink/white, Oct. Lateritic loam. Creeklines.	Yes	Yes	5.9 km E	Possible	Unlikely
Senecio leucoglossus	P4			Erect annual, herb, to 1.3 m high. Fl. white, Aug to Dec. Gravelly lateritic or granitic soils. Granite outcrops, slopes.	Yes	Yes	2.3 km NNW	Possible	Unlikely
Tetratheca parvifolia	P3			Small shrub, 0.2-0.3 m high. Fl. pink, Oct-Nov. Sandy loam, gravel. Slopes, broad ridges, near riverbank.	Yes	Yes	5.4 km ESE	Possible	Possible
Thysanotus unicupensis	P3			Erect caespitose herb to 0.3 m high. Fl. purple, Oct-Dec. Sandy loam over laterite. Undulating hills, lower slopes.	Yes	Possible	3.9 km E	Possible	Possible
Acacia flagelliformis	P4			Rush-like, erect or sprawling shrub, 0.3-0.75(-1.6) m high. Fl. yellow, May to Sep. Sandy soils. Winter-wet areas.	No	No	16.7 km WNW	Unlikely	Unlikely
Adenanthos cygnorum subsp. *chamaephyton*	P3			Prostrate, mat-forming, non-lignotuberous shrub, to 0.3 m high. Fl. white-cream-pink-green/green, Jul or Sep to Dec or Jan. Grey sand, lateritic gravel	Adjacent	No	10 km ESE	Unlikely	Unlikely
Angianthus drummondii	P3			Erect annual, herb, to 0.1 m high. Fl. yellow, Oct to Dec. Grey or brown clay soils, ironstone. Seasonally wet flats.	Yes	No	17.5 km NNW	Unlikely	Unlikely
Aponogeton hexatepalus	P4			Rhizomatous or cormous, aquatic perennial, herb, leaves floating. Fl. green-white, Jul to Oct. Mud. Freshwater: ponds, rivers, claypans.	Yes	No	16.3 km WSW	Unlikely	Unlikely
Austrostipa bronweniae	T	EN	EN	Tufted perennial gras up to 0.8 m tall (flower spike to 1.5 m). Fl. green, Sept-Nov. Sandy loam over limestone, loam over clay. Seasonal wetlands, flats/uplands.	No	No	17.7 km WNW	Unlikely	Unlikely
Bolboschoenus medianus	P1			Rhizomatous, perennial, grass-like or herb (sedge). Fl. red-brown, Feb. Mud. In water and on river banks.	No	No	18.1 km W	Unlikely	Unlikely

Taxon	Conservation Status			Habit and Habitat	Within Known Distribution?	Within Suitable Habitat?	Distance to Nearest Record	Pre-Survey Likelihood	Post-Survey Likelihood
	DBCA	BC Act	EPBC Act						
Boronia juncea subsp. *juncea*	P1			Slender or straggly shrub, pedicels and sepals glabrous. Fl. pink, Apr. Sand. Low scrub.	No	No	17.2 km WNW	Unlikely	Unlikely
Caladenia leucochila	T	EN	EN	Tuberous, perennial, herb, 0.2 - 0.4m high. Fl. green-white-maroon, Sept-Oct. Grey sand, lateritic pebbles. Midslopes, lower slopes, on edges of damplands. Jarrah-Marri and Allocasuarina woodland.	No	Possible	~ 30 km SE	Unlikely	Unlikely
Caladenia procera	T	CR	CR	Tuberous, perennial, herb, 0.35-0.9 m high. Fl. yellow, Sep to Oct. Rich clay loam. Alluvial loamy flats, jarrah/marri/peppermint woodland, dense heath, sedges.	No	No	17.8 km WNW	Unlikely	Unlikely
Caladenia speciosa	P4			Tuberous, perennial, herb, 0.35-0.6 m high. Fl. white-pink, Sep to Oct. White, grey or black sand.	No	Possible	10.9 km NW	Unlikely	Unlikely
Caladenia uliginosa subsp. *patulens*	P1			Tuberous, perennial, herb, 0.2-0.35 m high. Fl. green-cream, Sep to Oct. Clay loam and gravel. Well drained soils amongst dense shrubs.	Adjacent	Possible	9.8 km SSW	Unlikely	Unlikely
Caladenia validinervia	P1			Tuberous, perennial, herb, up to 0.45m high. Fl. cream/magenta, Sept-Oct. Grey sandy loam with lateritic gravel, slopes.	Adjacent	No	10 km ESE	Unlikely	Unlikely
Calothamnus graniticus subsp. *leptophyllus*	P4			Erect, multi-stemmed shrub, 1-2 m high. Fl. red, Jun to Aug. Clay over granite, lateritic soils. Hillsides.	Yes	No	10 km ESE	Unlikely	Unlikely
Calytrix pulchella	P3			Shrub, 0.3-0.7(-1) m high. Fl. pink, Aug to Nov. Grey or white sand over laterite. Ridges, flats.	No	Possible	16.9 km E	Unlikely	Unlikely
Carex tereticaulis	P3			Monoecious, rhizomatous, tufted perennial, grass-like or herb (sedge), 0.7 m high. Fl. brown, Sep to Oct. Black peaty sand.	Adjacent	No	17.2 km NNW	Unlikely	Unlikely
Chamaescilla gibsonii	P3			Clumped tuberous, herb. Fl. blue, Sep. Clay to sandy clay. Winter-wet flats, shallow water-filled claypans.	No	No	10.4 km W	Unlikely	Unlikely
Craspedia sp. Waterloo (G.J. Keighery 13724)	P2			Caespitose tuberous, perennial, herb, to 0.4 m high. Fl. yellow, Aug to Oct. Brown sandy clays, ironstone. Winter-wet swamps, water-filled claypans.	No	No	15.6 km WSW	Unlikely	Unlikely
Cyathochaeta teretifolia	P3			Rhizomatous, clumped, robust perennial, grass-like or herb (sedge), to 2 m high, to 1.0 m wide. Fl. brown. Grey sand, sandy clay. Swamps, creek edges.	Yes	No	18.4 km WNW	Unlikely	Unlikely
Daviesia mesophylla	P2			Prostrate shrub. Fl. yellow & red, Jan to May. Peaty or white sand. Rocky slopes.	No	Possible	19.8 km E	Unlikely	Unlikely
Dillwynia dillwynioides	P3			Decumbent or erect, slender shrub, 0.3-1.2 m high. Fl. red & yellow/orange, Aug to Dec. Sandy soils. Winter-wet depressions.	No	No	16.3 km NNW	Unlikely	Unlikely
Diuris drummondii	T	VU	VU	Tuberous, perennial, herb, 0.5-1.05 m high. Fl. yellow, Nov to Dec or Jan. Low-lying depressions, swamps.	Yes	No	17.2 km WNW	Unlikely	Unlikely
Diuris micrantha	T	VU	VU	Tuberous, perennial, herb, 0.3-0.6 m high. Fl. yellow & brown, Sep to Oct. Brown loamy clay. Winter-wet swamps, in shallow water.	Adjacent	No	16.5 km W	Unlikely	Unlikely
Drakaea confluens	T	CR	EN	Tuberous, perennial, herb, 0.15-0.3 m high. Fl. red & brown & yellow, Oct to Nov. White-grey sand.	No	Possible	15.4 km ESE	Unlikely	Unlikely
Drakaea elastica	T	CR	EN	Tuberous, perennial, herb, 0.12-0.3 m high. Fl. red & green & yellow, Oct to Nov. White or grey sand. Low-lying situations adjoining winter-wet swamps.	No	No	15.9 km WNW	Unlikely	Unlikely
Drakaea micrantha	T	EN	VU	Tuberous, perennial, herb, 0.15-0.3 m high. Fl. red & yellow, Sep to Oct. White-grey sand.	No	No	15.8 km WNW	Unlikely	Unlikely
Eleocharis keigheryi	T	VU	VU	Rhizomatous, clumped perennial, grass-like or herb (sedge), to 0.4 m high. Fl. green, Aug to Nov. Clay, sandy loam. Emergent in freshwater: creeks, claypans.	Yes	No	17.8 km SW	Unlikely	Unlikely
Gastrolobium whicherense	P2			Slender, open shrub, to 1.6 m high. Fl. orange/yellow/red, Oct. Red-grey sandy clay over quartzite. Steep westerly slopes.	No	No	~ 20 km SW	Unlikely	Unlikely
Grevillea bipinnatifida subsp. *pagna*	P1			Prostrate, lignotuberous shrub, 0.2-0.7 m high. Fl. red & orange & yellow, Aug or Oct to Nov. Grey sandy clay and loam, ironstone. Seasonal wetlands, swamps, roadsides.	No	No	18 km NW	Unlikely	Unlikely

Taxon	Conservation Status			Habit and Habitat	Within Known Distribution?	Within Suitable Habitat?	Distance to Nearest Record	Pre-Survey Likelihood	Post-Survey Likelihood
	DBCA	BC Act	EPBC Act						
Grevillea rosieri	P2			Shrub. Fl. red, Jul or Sep. Sandy soils.	No	No	14.2 km WSW	Unlikely	Unlikely
Hemigenia microphylla	P3			Slender shrub, 0.4-1.8 m high. Fl. blue-purple, Sep to Dec. Sandy clay, peaty clay, granite. Winter-wet depressions.	Yes	No	17.2 km NNW	Unlikely	Unlikely
Hypolaena robusta	P4			Dioecious rhizomatous, perennial, herb, ca 0.5 m high. Fl. Sep to Oct. White sand. Sandplains.	Yes	No	9.8 km ESE	Unlikely	Unlikely
Lasiopetalum membranaceum	P3			Multi-stemmed shrub, 0.2-1 m high. Fl. pink-blue-purple, Sep to Dec. Sand over limestone.	No	No	19.9 km W	Unlikely	Unlikely
Leucopogon extremus	P2			Low spreading shrub 0.4m high x 0.7m wide. Fl. green-white-pink, Sept-Nov. Sandy loam. Valleys, seasonally wet.	No	No	19.5 km ESE	Unlikely	Unlikely
Millotia tenuifolia var. laevis	P2			Ascending to erect annual, herb, 0.02-0.1 m high. Fl. yellow, Sep to Oct. Granite or laterite soils.	No	Possible	~ 42 km NNW	Unlikely	Unlikely
Myriophyllum echinatum	P3			Erect annual, herb, 0.02-0.03 m high. Fl. red, Nov. Clay. Winter-wet flats.	No	No	18.9 km NW	Unlikely	Unlikely
Pterostylis frenchii	P2			Tuberous, herb, to 0.35 m high, with rosette leaves. Fl. green, Nov. Calcareous sand with limestone, laterite. Flatlands and gentle slopes.	No	No	17.2 km W	Unlikely	Unlikely
Rumex drummondii	P4			Erect perennial, herb, 0.6-0.9 m high. Fl. red-green-cream, Aug-Nov. Winter-wet disturbed areas.	No	No	14.4 km WSW	Unlikely	Unlikely
Schoenus capillifolius	P3			Semi-aquatic tufted annual, grass-like or herb (sedge), 0.05 m high. Fl. green, Oct to Nov. Brown mud. Claypans.	Yes	No	19.2 km WSW	Unlikely	Unlikely
Schoenus sp. Waroona (G.J. Keighery 12235)	P3			Tufted annual, grass-like or herb (sedge), 0.02-0.06 m high. Fl. brown-red-green, Oct to Nov. Clay or sandy clay. Winter-wet flats.	Yes	No	18.9 km NW	Unlikely	Unlikely
Sphaerolobium benetectum	P2			Slender, caespitose shrub, 0.2-1 m high, to 0.45 m wide. Fl. pink & red & yellow, Oct to Nov. White gravelly sandy clay, sandy loam, granite, laterite. Ridges, swamps, undulating rises.	No	Possible	18.9 km ESE	Unlikely	Unlikely
Stylidium korijekup	P2			Perennial, herb, 0.18-0.34 m high. Fl. pale yellow/maroon, Oct. Well-drained grey-brown sandy loam with laterite. Upland ridges.	No	Possible	16.8 km NNW	Unlikely	Unlikely
Stylidium paludicola	P3			Reed-like perennial, herb, 0.35-1 m high, Leaves tufted, linear or subulate or narrowly oblanceolate, apex acute, margin entire, glabrous. Scape mostly glabrous, inflorescence axis glandular. Inflorescence racemose. Fl. pink, Oct to Dec. Peaty sand over clay. Winter wet habitats. Marri and Melaleuca woodland, Melaleuca shrubland.	No	Possible	19.6 km SW	Unlikely	Unlikely
Stylidium perplexum	P1			Perennial multistemmed herb up to 0.4 m high. Fl. cream-yellow with purple tips, Nov-early Dec. Sandy loam over laterite. Upper slopes.	No	Yes	16.4 km SW	Unlikely	Unlikely
Synaphea hians	P3			Prostrate or decumbent shrub, 0.15-0.6 m high, to 1 m wide. Fl. yellow, Jul or Sep to Nov. Sandy soils. Rises.	Adjacent	Possible	10.9 km ESE	Unlikely	Unlikely
Synaphea odocoileops	P1			Tufted, compact shrub, 0.2-0.5 m high. Fl. yellow, Aug to Oct. Brown-orange loam & sandy clay, granite. Swamps, winter-wet areas.	No	No	17.5 km WSW	Unlikely	Unlikely
Synaphea petiolaris subsp. *simplex*	P3			Tufted shrub, 0.1-0.6 m high. Fl. yellow, Sep to Oct. Sandy soils. Flats, winter-wet areas.	No	Yes	34.9 Km SE	Unlikely	Unlikely
Synaphea sp. Fairbridge Farm (D. Papenfus 696)	T	CR	CR	Dense, clumped shrub, to 0.3 m high, to 0.4 m wide. Fl. yellow, Oct. Sandy with lateritic pebbles. Near winter-wet flats, in low woodland with weedy grasses.	No	No	19.6 km SW	Unlikely	Unlikely
Tripterococcus sp. Brachylobus (A.S. George 14234)	P4			Erect, perennial, herb, to 0.8 m high. Fl. green. Grey sand or clay. Plains, winter damp flats.	No	No	17.7 km WNW	Unlikely	Unlikely
Verticordia attenuata	P3			Shrub, 0.4-1 m high. Fl. pink, Dec or Jan to May. White or grey sand. Winter-wet depressions.	No	No	19 km W	Unlikely	Unlikely
Andersonia gracilis	T	VU	EN	Slender erect or open straggly shrub, 0.1-0.5(-1) m high. Fl. white-pink-purple, Sep to Nov. White/grey sand, sandy clay, gravelly loam. Winter-wet areas, near swamps.	No	No	~ 127 km N	Highly Unlikely	Highly Unlikely
Anthocercis gracilis	T	VU	VU	Erect, spindly shrub, to 0.6(-1) m high. Fl. yellow-green, Sep to Oct. Sandy or loamy soils. Granite outcrops.	No	Possible	~ 66 km N	Highly Unlikely	Highly Unlikely

Taxon	Conservation Status			Habit and Habitat	Within Known Distribution?	Within Suitable Habitat?	Distance to Nearest Record	Pre-Survey Likelihood	Post-Survey Likelihood
	DBCA	BC Act	EPBC Act						
Banksia mimica	T	VU	EN	Prostrate, lignotuberous shrub, 0.15-0.4 m high. Fl. yellow-brown, Dec or Jan to Feb. White or grey sand over laterite, sandy loam.	No	No	~ 50 km SW	Highly Unlikely	Highly Unlikely
Banksia squarrosa subsp. *argillacea*	T	VU	VU	Erect, open, non-lignotuberous shrub, 1.2-4 m high. Fl. yellow, Jun to Nov. White/grey sand, gravelly clay or loam. Winter-wet flats, clay flats.	No	No	~ 34 km SW	Highly Unlikely	Highly Unlikely
Blennospora doliiformis	P3			Erect annual, herb, to 0.15 m high. Fl. yellow, Oct to Nov. Grey or red clay soils over ironstone. Seasonally-wet flats.	Yes	No	~42.0 Km SE	Highly Unlikely	Highly Unlikely
Brachyscias verecundus	T	CR	CR	Annual (or ephemeral), herb, 0.012-0.022 m high, entirely glabrous. Fl. white/cream, Oct-Dec. In a moss sward. On a granite outcrop.	No	No	~ 54 km SW	Highly Unlikely	Highly Unlikely
Caladenia hoffmanii	T	EN	EN	Tuberous, perennial, herb, 0.13-0.3 m high. Fl. green & yellow & red, Aug to Oct. Clay, loam, laterite, granite. Rocky outcrops and hillsides, ridges, swamps and gullies.	No	No	~ 510 km N	Highly Unlikely	Highly Unlikely
Caladenia hopperiana	T			Erect, solitary or clumping herb. Fl creamy yellow, Sep to Aug.	No	Possible	~58.5 Km NE	Highly Unlikely	Highly Unlikely
Chamelaucium erythrochlorum	P4			Erect, compact, multistemmed shrub up to 1 m high. Fl. red-pink, Nov-Feb. Clayey-sand, sandy-loam, gravel. Ridge, lower slope, gully, riverbank.	No	No	~ 23 km SW	Highly Unlikely	Highly Unlikely
Chamelaucium roycei	T	VU	VU	Erect dense shrub up to 1 m high. Fl. white-pink, Sept-Jan. Sandy loam over ironstone (outcropping). Plains, seasonally inundated.	No	No	~ 49 km SW	Highly Unlikely	Highly Unlikely
Diuris purdiei	T	EN	EN	Tuberous, perennial, herb, 0.15-0.35 m high. Fl. yellow, Sep to Oct. Grey-black sand, moist. Winter-wet swamps.	No	No	~ 65 km NNW	Highly Unlikely	Highly Unlikely
Hemigenia rigida	P1			Upright or spreading shrub, 0.1-0.6(-1) m high. Fl. blue-purple/violet, Aug to Dec or Jan. Sandy soils, lateritic gravelly soils. Hillslopes, granite outcrops, flats, ironstone ridges.	No	Possible	~ 95 km E	Highly Unlikely	Highly Unlikely
Isopogon buxifolius var. *buxifolius*	P2			Upright shrub, 0.45-1 m high. Fl. pink-cream, Jul to Dec. Grey sand. Swampy areas.	No	Possible	~ 230 km SE	Highly Unlikely	Highly Unlikely
Lambertia echinata subsp. *occidentalis*	T	CR	EN	Prickly, much-branched, non-lignotuberous shrub, to 3 m high. Fl. yellow, Feb or Apr or Dec. White sandy soils over laterite, orange/brown-red clay over ironstone. Flats to foothills, winter-wet sites.	No	No	~ 54 km SW	Highly Unlikely	Highly Unlikely
Lepyrodia heleocharoides	P3			Rhizomatous, slender, tufted perennial, herb (sedge-like), 0.15-0.25 m high. Fl. Dec. Moist peaty sand. Dry or seasonally inundated heath or woodland, swamps.	No	Possible	~ 70 km SW	Highly Unlikely	Highly Unlikely
Leucopogon subsejunctus	P2			Erect, single-stemmed shrub to 0.8 m high. Narrowly ovate or elliptic leaves. Fl. White (pink flower buds), terminal and upper-axillary, Aug to Sep. Lateritic soil.	No	Yes	~54.1 Km SE	Highly Unlikely	Highly Unlikely
Melaleuca grieveana	P1			Compact shrub, to 0.75 m high. Fl. yellow, Jul. Well-drained orange-brown loam, brown clay. Plains, gentle slopes, edge of crop paddocks.	No	No	~ 210 km ENE	Highly Unlikely	Highly Unlikely
Synaphea sp. Pinjarra Plain (A.S. George 17182)	T	EN	EN	Erect, clumped shrub (sub-shrub), to 0.8 m high. Fl. yellow, Sep to Nov. Grey sandy loam or clay, grey-brown clayey sand, brown clayey loam, laterite. Flats, seasonally wet areas, railroad reserves often with wet depressions or drains.	No	No	~ 37 km SW	Highly Unlikely	Highly Unlikely
Synaphea sp. Serpentine (G.R. Brand 103)	T	CR	CR	Erect, compact shrub, 0.3-0.6 m high. Fl. yellow. Brown/grey loamy sand/clay. Coastal plain, winter wet areas,flats.	No	No	~ 33 km NNW	Highly Unlikely	Highly Unlikely
Synaphea stenoloba	T	CR	EN	Caespitose shrub, 0.3-0.45 m high. Fl. yellow, Aug to Oct. Sandy or sandy clay soils. Winter-wet flats, granite.	No	No	~ 34 km NNW	Highly Unlikely	Highly Unlikely

Appendix F: Vegetation structural classification

NVIS Vegetation Structural Classifications

Cover Characteristics							
Foliage cover *	70-100	30-70	10-30	<10	≈0	0-5	unknown
Crown cover **	>80	50-80	20-50	0.25-20	<0.25	0-5	unknown
% Crown cover ***	>80	50-80	20-50	0.25-20	<0.25	0-5	unknown
Cover code	d	c	i	r	bi	bc	unknown

Growth Form	Height ranges (m)	Structural Formation Classes						
tree, palm	>30 Tall	closed forest	open forest	woodland	open woodland	isolated trees	isolated clumps of trees	trees
	10-30 Mid							
	<10 Low							
tree mallee	10-30 Tall	closed mallee forest	open mallee forest	mallee woodland	open mallee woodland	isolated mallee trees	isolated clumps of mallee trees	mallee trees
	<10 Mid							
	<3 Low							
shrub, cycad, grasstree, fern	>2 Tall	closed shrubland	shrubland	open shrubland	sparse shrubland	isolated shrubs	isolated clumps of shrubs	shrubs
	1-2 Mid							
	<1 Low							
mallee shrub	10-30 Tall	closed mallee shrubland	mallee shrubland	open mallee shrubland	sparse mallee shrubland	isolated mallee shrubs	isolated clumps of mallee shrubs	mallee shrubs
	<10 Mid							
	<3 Low							

Growth Form	Height ranges (m)	Structural Formation Classes						
heath shrub	>2 Tall	closed heathland	heathland	open heathland	sparse heathland	isolated heath shrubs	isolated clumps of heath shrubs	heath shrubs
	1-2 Mid							
	<1 Low							
chenopod shrub	>2 Tall	closed chenopod shrubland	chenopod shrubland	open chenopod shrubland	sparse chenopod shrubland	isolated chenopod shrubs	isolated clumps of chenopod shrubs	chenopod shrubs
	1-2 Mid							
	<1 Low							
samphire shrub	>0.5 Low	closed samphire shrubland	samphire shrubland	open samphire shrubland	sparse samphire shrubland	isolated samphire shrubs	isolated clumps of samphire shrubs	samphire shrubs
	<0.5 Low							
hummock grass	>2 Tall	closed hummock grassland	hummock grassland	open hummock grassland	sparse hummock grassland	isolated hummock grasses	isolated clumps of hummock grasses	hummock grasses
	<2 Tall							
tussock grass	>0.5 Mid	closed tussock grassland	tussock grassland	open tussock grassland	sparse tussock grassland	isolated tussock grasses	isolated clumps of tussock grasses	tussock grasses
	<0.5 Low							
other grass	>0.5 Mid	closed grassland	grassland	open grassland	sparse grassland	isolated grasses	isolated clumps of grasses	other grasses
	<0.5 Low							
sedge	>0.5 Mid	closed sedgeland	sedgeland	open sedgeland	sparse sedgeland	isolated sedges	isolated clumps of sedges	sedges
	<0.5 Low							
rush	>0.5 Mid	closed rushland	rushland	open rushland	sparse rushland	isolated rushes	isolated clumps of rushes	rushes
	<0.5 Low							
forb	>0.5 Mid	closed forbland	forbland	open forbland	sparse forbland	isolated forbs	isolated clumps of forbs	forbs
	<0.5 Low							

Growth Form	Height ranges (m)	Structural Formation Classes						
fern	>2 Tall	closed fernland	fernland	open fernland	sparse fernland	isolated ferns	isolated clumpsof ferns	ferns
	1-2 Tall							
	<1 Low							
bryophyte	<0.5	closed bryophyte land	bryophyte land	open bryophyte land	sparse bryophyte land	isolated bryophytes	isolated clumps of bryophytes	bryophytes
lichen	<0.5	closed lichenland	lichenland	open lichenland	sparse lichenland	isolated lichens	isolated clumps of lichens	lichens
vine	>30 Tall	closed vineland	vineland	open vineland	sparse vineland	isolated vines	isolated clumps of vines	vines
	10-30 Med							
	<10 Low							
aquatic	<1 Tall	closed aquatic bed	aquatic bed	open aquatic bed	sparse aquatics	isolated aquatics	isolated clumps of aquatics	aquatics
	0-0.5 Low							
seagrass	<1 Tall	closed seagrass bed	Seagrass bed	open seagrass bed	sparse seagrass bed	isolated seagrasses	isolated clumps of seagrasses	seagrasses
	0-0.5 Low							

From: NVIS Structural Formation Terminology (Australian Vegetation Attribute Manual Version 7.0 November 2017 https://www.environment.gov.au/land/publications/australian-vegetation-attribute-manual-version-7)

* Foliage Cover is defined for each stratum as 'the proportion of the ground, which would be shaded if sunshine came from directly overhead'. It includes branches and leaves and is obtained by multiplying Crown Cover with Crown type (Hnatiuk *et al.*, 2009). It is applied to a stratum in a plot, rather than an individual crown, with the NVIS measure for a vegetation type ideally being a summary of several plots. Foliage Projective Cover, which considers only the vertical projection of photosynthetic components (generally leaves), can be measured by line interception methods for tree, shrub and ground layer vegetation (Specht & Specht, 1999).

** Crown Cover (canopy cover) as per Hnatiuk *et al.* (2009) Although relationships between this attribute and Foliage Cover are dependent on season, species, species age etc., the crown cover category classes have been adopted as the defining measure.

*** The percentage cover is defined as the percentage of a strictly defined plot area, covered by vegetation. This can be an estimate and is a less precise measure than using, for example, a point intercept transect method on ground layer, or overstorey vegetative cover. That is, for precisely measured values (e.g., crown densitometer or point intercept transects) the value measured would be 'foliage' cover. Where less precise or qualitative measures are used these will most probably be recorded as 'percentage' cover.

Appendix G: Vegetation condition scale

Vegetation Condition	South West Botanical Province
Pristine	Pristine or nearly so, no obvious signs of disturbance or damage caused by human activities since European settlement.
Excellent	Vegetation structure intact, disturbance affecting individual species and weeds are non-aggressive species. Damage to trees caused by fire, the presence of non-aggressive weeds and occasional vehicle tracks.
Very Good	Vegetation structure altered, obvious signs of disturbance. Disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and grazing.
Good	Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. Disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and grazing.
Degraded	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. Disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds at high density, partial clearing, dieback and grazing.
Completely Degraded	The structure of the vegetation is no longer intact and the area is completely or almost completely without native species. These areas are often described as 'parkland cleared' with the flora comprising weed or crop species with isolated native trees and shrubs.

Appendix H: Sample site data

South32 Lot 102 **Site FEN-001**

Date	2/08/2023
Described by	Emily Eakin-Busher
Type	Quadrat 10m x 10m
Location	MGA Zone 50
	404186mE; 6322167mN
	115.9716 E -33.235200 S
Veg Condition	Excellent
Soil	Sandy Loam
Rock Type	Laterite
Fire Age	5-10 yrs
Habitat	Undulating Low Hills
Vegetation	*Corymbia calophylla, Eucalyptus marginata* subsp. *marginata mid woodland over Tremandra stelligera, Hypocalymma angustifolium, Hibbertia hypericoides* subsp. *hypericoides low open shrubland.*

SPECIES LIST

Site Taxa	Cover (%)	Height (m)	Specimen #	Phase
?*Dichelachne micrantha*	0.1	0.2	FEN019.03	Phase 1
Acacia drummondii subsp. *candolleana*	0.1	1.8		Phase 2
Acacia drummondii subsp. *candolleana*	0.1	1.8		Phase 1
Acacia pulchella var. *glaberrima*	0.1	1.8		Phase 2
Acacia pulchella var. *glaberrima*	0.1	1.6		Phase 1
Amphipogon amphipogonoides	0.1	0.3	FEN029.05	Phase 2
Austrostipa sp. indet	0.1	0.3	FEN01.02B	Phase 2
Boronia fastigiata	0.1	0.1		Phase 2
Caladenia sp. indet	0.1	0.1		Phase 2
Chamaescilla corymbosa	0.1	0.1		Phase 1
Chorizema rhombeum	0.1	0.1	FEN01.05B	Phase 2
Corymbia calophylla	8	12		Phase 1
Corymbia calophylla	8	12		Phase 2
Daucus glochidiatus	0.1	0.1		Phase 1
Daucus glochidiatus	0.1	0.1		Phase 2
Eriochilis sp. indet	0.1	0.1		Phase 1
Eucalyptus marginata subsp. *marginata*	11	13		Phase 2
Eucalyptus marginata subsp. *marginata*	11	13		Phase 1
Gompholobium marginatum	0.1	0.2		Phase 2
Gompholobium marginatum	0.1	0.2		Phase 1
Hakea amplexicaulis	0.1	0.4		Phase 2
Hakea amplexicaulis	0.1	0.2		Phase 1
Hibbertia hypericoides subsp. *hypericoides*	5	0.3		Phase 2
Hibbertia hypericoides subsp. *hypericoides*	5	0.3		Phase 1
Hypocalymma angustifolium	1	0.3		Phase 2
Hypocalymma angustifolium	1	0.3		Phase 1
**Hypochaeris glabra*	0.1	0.1		Phase 2
**Hypochaeris glabra*	0.1	0.1		Phase 1
Isotropis cuneifolia subsp. *cuneifolia*	0.1	0.2	FEN001.01	Phase 2
Isotropis cuneifolia subsp. *cuneifolia*	0.1	0.2	FEN001.01	Phase 1
Kennedia coccinea subsp. *coccinea*	0.1	0.1		Phase 2
Kennedia coccinea subsp. *coccinea*	0.1	0.1		Phase 1
Lagenophora huegelii	0.1	0.1		Phase 2

Site Taxa	Cover (%)	Height (m)	Specimen #	Phase
Lagenophora huegelii	0.1	0.1		Phase 1
Levenhookia pusilla	0.1	0.1	FEN01.06B	Phase 2
Lomandra brittanii	0.1	0.1	FEN01.03B	Phase 2
Lomandra drummondii	0.1	0.3	FEN011.05	Phase 1
Lomandra drummondii	0.1	0.3	FEN011.05	Phase 2
Lomandra integra	0.1	0.2	FEN003.04	Phase 1
Lomandra integra	0.1	0.2	FEN003.04	Phase 2
Lomandra sericea	0.1	0.1		Phase 1
Lomandra sericea	0.1	0.1		Phase 2
Lysiandra calycina	0.1	0.1		Phase 1
Lysiandra calycina	0.1	0.3		Phase 2
Netrostylis sp. Jarrah Forest (R. Davis 7391)	0.1	0.2	FEN015.01	Phase 1
Netrostylis sp. Jarrah Forest (R. Davis 7391)	0.1	0.3	FEN015.01	Phase 2
Neurachne alopecuroidea	0.1	0.1	FEN017.05	Phase 1
Neurachne alopecuroidea	0.1	0.1	FEN017.05	Phase 2
**Oxalis corniculata*	0.1	0.1		Phase 1
**Oxalis corniculata*	0.1	0.1		Phase 2
Pentapeltis silvatica	0.1	0.1		Phase 1
Pentapeltis silvatica	0.1	0.1		Phase 2
Poaceae sp. indet	0.1	0.1		Phase 2
Pterostylis sp. indet	0.1	0.1		Phase 1
Rytidosperma caespitosum	0.1	0.3	FEN01.07B	Phase 2
Scaevola calliptera	0.1	0.2	FEN01.01B	Phase 2
Stylidium androsaceum	0.1	0.1	FEN029.01	Phase 2
Stylidium rhynchocarpum	0.1	0.1	FEN01.04B	Phase 1
Stylidium rhynchocarpum	0.1	0.2	FEN01.04B	Phase 2
Styphelia propinqua	0.1	0.4	FEN01.03	Phase 1
Styphelia propinqua	0.1	0.4	FEN001.03	Phase 2
Tetrarrhena laevis	0.1	0.1		Phase 1
Thelymitra sp. indet	0.1	0.2		Phase 2
Thelymitra sp. indet	0.1	0.1		Phase 1
Thomasia foliosa	5	0.4		Phase 2
Thomasia foliosa	5	0.4		Phase 1
Thysanotus multiflorus	0.1	0.2		Phase 2
Thysanotus multiflorus	0.1	0.1		Phase 1
Thysanotus tenellus	0.1	0.3		Phase 2
Thysanotus tenellus	0.1	0.2		Phase 1
Xanthosia candida	0.1	0.1		Phase 1

Phase 1	Phase 2
	

South32 Lot 102 **Site FEN-003**

Date	2/08/2023
Described by	E. Eakin-Busher
Type	Quadrat 10m x 10m
Location	MGA Zone 50
	404182 mE; 6321554 mN
	115.9715 E -33.240728 S
Veg Condition	Excellent
Soil	Sandy Loam
Rock Type	Laterite
Fire Age	5-10 yrs
Habitat	Undulating Low Hills
Vegetation	*Eucalyptus marginata* subsp. *marginata*, *Corymbia calophylla* (in landscape) mid open woodland over *Banksia grandis* low woodland over *Pteridium esculentum* subsp. *esculentum*, *Tremandra stelligera*, *Xanthorrhoea gracilis* low sparse shrubland

SPECIES LIST

Site Taxa	Cover (%)	Height (m)	Specimen #	Phase
?*Calothamnus* sp. indet	0.1	0.2		Phase 1
?*Dichelachne micrantha*	0.1	0.2	FEN019.03	Phase 1
Acacia drummondii subsp. *candolleana*	0.1	1.5	FEN004.01	Phase 2
Acacia drummondii subsp. *candolleana*	0.1	1.5	FEN004.01	Phase 1
Amphipogon amphipogonoides	0.1	0.1	FEN029.05	Phase 2
Austrostipa sp. indet	0.1	0.2	FEN001.02B	Phase 2
Banksia grandis	20	4		Phase 1
Banksia grandis	20	4		Phase 2
Boronia fastigiata	0.1	0.1		Phase 2
Bossiaea aquifolium subsp. *aquifolium*	0.1	0.5		Phase 1
Bossiaea aquifolium subsp. *aquifolium*	0.1	0.5		Phase 2
Chorizema rhombeum	0.1	0.1	FEN001.05B	Phase 2
Comesperma virgatum	0.1	0.4	FEN003.03	Phase 1
Comesperma virgatum	0.1	0.4	FEN003.03	Phase 2
Corymbia calophylla	0.1	15		Phase 1
Corymbia calophylla	0.1	15		Phase 2
Eucalyptus marginata subsp. *marginata*	25	13		Phase 1
Eucalyptus marginata subsp. *marginata*	25	13		Phase 2
Gompholobium marginatum	0.1	0.2		Phase 1
Gompholobium marginatum	0.1	0.2		Phase 2
Hemigenia pritzelii	0.1	0.1	FEN020.02B	Phase 2
Hibbertia amplexicaulis	0.1	0.1		Phase 1
Hibbertia amplexicaulis	0.1	0.1		Phase 2
Hibbertia hypericoides subsp. *hypericoides*	1	0.3		Phase 1
Hibbertia hypericoides subsp. *hypericoides*	1	0.3		Phase 2
Hibbertia semipilosa	0.1	0.3	FEN003.01	Phase 1
Hibbertia semipilosa	0.1	0.3	FEN003.01	Phase 2
Hypocalymma angustifolium	0.1	0.1		Phase 2
Lagenophora huegelii	0.1	0.1		Phase 1
Lagenophora huegelii	0.1	0.1		Phase 2
Lasiopetalum floribundum	2.5	0.5	003.01b	Phase 1
Lasiopetalum floribundum	2.5	0.5	003.01b	Phase 2
Leucopogon capitellatus	0.1	0.3	FEN017.04	Phase 1

Site Taxa	Cover (%)	Height (m)	Specimen #	Phase
Leucopogon capitellatus	0.1	0.3	FEN017.04	Phase 2
Leucopogon verticillatus	0.1	0.1		Phase 1
Leucopogon verticillatus	0.1	0.1		Phase 2
Lomandra caespitosa	0.1	0.3	FEN003.03B	Phase 2
Lomandra integra	0.1	0.2	FEN003.04	Phase 1
Lomandra integra	0.1	0.2	FEN003.04	Phase 2
Lomandra sericea	0.1	0.3		Phase 1
Lomandra sericea	0.1	0.3		Phase 2
Lomandra whicherensis (P3)	0.1	0.2	FEN011.02	Phase 1
Lomandra whicherensis (P3)	0.1	0.2	FEN011.02	Phase 2
Mirbelia dilatata	0.1	0.6		Phase 1
Mirbelia dilatata	0.1	0.6		Phase 2
Monotaxis occidentalis	0.1	0.1	FEN003.04b	Phase 1
Monotaxis occidentalis	0.1	0.1	FEN003.04b	Phase 2
Netrostylis sp. Jarrah Forest (R. Davis 7391)	0.1	0.3	FEN015.01	Phase 1
Netrostylis sp. Jarrah Forest (R. Davis 7391)	0.1	0.3	FEN015.01	Phase 2
Neurachne alopecuroidea	0.1	0.1	FEN017.05	Phase 1
Opercularia hispidula	0.1	0.1		Phase 2
Opercularia hispidula	0.1	0.1		Phase 1
Patersonia babianoides	0.1	0.2		Phase 2
Pentapeltis silvatica	0.1	0.1		Phase 1
Pentapeltis silvatica	0.1	0.1		Phase 2
Persoonia longifolia	0.1	0.2		Phase 1
Persoonia longifolia	0.1	0.2		Phase 2
Pteridium esculentum subsp. *esculentum*	2	1.2		Phase 1
Pteridium esculentum subsp. *esculentum*	2	1.2		Phase 2
Senecio hispidulus	0.1	0.1		Phase 1
Stylidium rhynchocarpum	0.1	0.2	FEN001.04B	Phase 2
Stylidium rhynchocarpum	0.1	0.2	FEN001.04B	Phase 1
Styphelia tenuiflora	0.1	0.2	FEN003.02	Phase 1
Tetrarrhena laevis	0.1	0.2		Phase 1
Thysanotus ?multiflorus	0.1	0.05		Phase 2
Thysanotus ?multiflorus	0.1	0.05		Phase 1
Thysanotus tenellus	0.1	0.2		Phase 2
Thysanotus tenellus	0.1	0.2		Phase 1
Xanthorrhoea gracilis	2	0.4		Phase 2
Xanthorrhoea gracilis	2	0.4		Phase 1
Xanthosia huegelii	0.1	0.1		Phase 2
Xanthosia huegelii	0.1	0.1		Phase 1

Phase 1	Phase 2
	

South32 Lot 102 **Site FEN-004**

Date	1/08/2023
Described by	Emily Eakin-Busher
Type	Quadrat 10m x 10m
Location	MGA Zone 50
	404190mE; 6320740mN
	115.9715 E -33.248066 S
Veg Condition	Excellent
Soil	Sandy Loam
Rock Type	Laterite
Fire Age	5-10 yrs
Habitat	Undulating Low Hills
Vegetation	*Eucalyptus marginata* subsp. *marginata*, *Corymbia calophylla* mid open woodland over *Bossiaea aquifolium* subsp. *aquifolium* tall sparse shrubland over *Hibbertia hypericoides* subsp. *hypericoides*, *Lasiopetalum floribundum* mid to low open shrubland.
Notes	Old logging.

SPECIES LIST

Site Taxa	Cover	Height (m)	Specimen #	Phase
?*Thelymitra* sp. indet	0.1	0.1		Phase 1
Acacia drummondii subsp. *candolleana*	0.1	0.3	FEN004.01	Phase 2
Acacia drummondii subsp. *candolleana*	0.1	0.3	FEN004.01	Phase 1
Amphipogon amphipogonoides	0.1	0.1	FEN029.05	Phase 2
Billardiera variifolia	0.1	0.2		Phase 1
Bossiaea aquifolium subsp. *aquifolium*	0.25	2.3		Phase 2
Bossiaea aquifolium subsp. *aquifolium*	0.25	2.2		Phase 1
Burchardia congesta	0.1	0.3		Phase 2
Burchardia congesta	0.1	0.3		Phase 1
Corymbia calophylla	5	12		Phase 2
Corymbia calophylla	5	12		Phase 1
Drosera erythrorhiza	0.1	0.1		Phase 1
Eucalyptus marginata subsp. *marginata*	15	13		Phase 2
Eucalyptus marginata subsp. *marginata*	15	13		Phase 1
Gastrolobium bilobum	0.1	1.7		Phase 2
Gastrolobium bilobum	0.1	1.7		Phase 1
Hibbertia amplexicaulis	0.1	0.3		Phase 2
Hibbertia amplexicaulis	0.1	0.2		Phase 1
Hibbertia hypericoides subsp. *hypericoides*	20	0.5		Phase 2
Hibbertia hypericoides subsp. *hypericoides*	20	0.4		Phase 1
Hibbertia sp. indet	0.1	0.3	FEN004.02	Phase 2
Hibbertia sp. indet	0.1	0.3	FEN004.02	Phase 1
**Hypochaeris glabra*	0.1	0.1		Phase 1
Kennedia coccinea subsp. *coccinea*	0.1	0.1		Phase 2
Kennedia coccinea subsp. *coccinea*	0.1	0.1		Phase 1
Lagenophora huegelii	0.1	0.1		Phase 2
Lagenophora huegelii	0.1	0.1		Phase 1
Lasiopetalum floribundum	2	0.6	003.01b	Phase 2
Lasiopetalum floribundum	1	0.5	003.01b	Phase 1
Leucopogon capitellatus	0.25	0.2	FEN017.04	Phase 2
Leucopogon capitellatus	0.25	0.2	FEN017.04	Phase 1

Site Taxa	Cover	Height (m)	Specimen #	Phase
Leucopogon verticillatus	0.1	0.35		Phase 2
Leucopogon verticillatus	0.1	0.3		Phase 1
Lomandra drummondii	0.5	0.4	FEN011.05	Phase 2
Lomandra drummondii	0.5	0.4	FEN011.05	Phase 1
Lomandra integra	0.1	0.3	FEN011.06	Phase 2
Lomandra integra	0.1	0.3	FEN011.06	Phase 1
Lomandra sericea	0.1	0.3		Phase 2
Lomandra sericea	0.1	0.2		Phase 1
Macrozamia riedlei	1.5	1		Phase 2
Macrozamia riedlei	1.5	1		Phase 1
Netrostylis sp. Jarrah Forest (R. Davis 7391)	0.1	0.4	FEN015.01	Phase 2
Netrostylis sp. Jarrah Forest (R. Davis 7391)	0.1	0.4	FEN015.01	Phase 1
Neurachne alopecuroidea	0.1	0.2	FEN017.05	Phase 1
Patersonia babianoides	0.1	0.2		Phase 2
Persoonia longifolia	0.1	0.2		Phase 1
Pteridium esculentum subsp. *esculentum*	1	0.8		Phase 2
Pteridium esculentum subsp. *esculentum*	1	0.8		Phase 1
Pterostylis sp. indet	0.1	0.01		Phase 1
**Sonchus* sp. indet	0.1	0.01		Phase 1
Stylidium rhynchocarpum	0.1	0.2	FEN001.04B	Phase 2
Stylidium rhynchocarpum	0.1	0.2	FEN001.04B	Phase 1
Styphelia propinqua	0.1	0.2		Phase 2
Styphelia propinqua	0.1	0.4		Phase 1
Tetrarrhena laevis	0.1	0.25		Phase 2
Tetrarrhena laevis	0.1	0.3		Phase 1
Thysanotus multiflorus	0.1	0.2		Phase 2
Thysanotus tenellus	0.1	0.3	FEN029.29	Phase 2
Xanthorrhoea gracilis	0.1	0.3		Phase 1
Xanthorrhoea gracilis	0.1	0.45		Phase 2

Phase 1	Phase 2
	

South32 Lot 102 **Site FEN-005**

Date	1/08/2023
Described by	Emily Eakin-Busher
Type	Quadrat 10m x 10m
Location	MGA Zone 50
	405190mE; 6319790mN
	115.9821 E -33.256729 S
Veg Condition	Excellent
Soil	Sandy Loam
Rock Type	Laterite
Fire Age	>10 yrs
Habitat	Undulating Low Hills
Vegetation	*Corymbia calophylla, Eucalyptus marginata* subsp. *marginata* mid woodland over *Bossiaea aquifolium* subsp. *aquifolium* mid to tall open shrubland over Hibbertia hypericoides subsp. *hypericoides* low sparse shrubland.
Notes	Old logging.

SPECIES LIST

Site Taxa	Cover	Height (m)	Specimen #	Phase
?*Dichelachne micrantha*	0.1	0.2	FEN019.03	Phase 1
?*Dichelachne micrantha*	0.1	0.25	FEN019.03	Phase 2
Amphipogon amphipogonoides	0.1	0.2	FEN029.05	Phase 2
Billardiera variifolia	0.1	0.2		Phase 1
Bossiaea aquifolium subsp. *aquifolium*	12	2.5		Phase 2
Bossiaea aquifolium subsp. *aquifolium*	12	2.5		Phase 1
Burchardia congesta	0.1	0.3		Phase 1
Clematis pubescens	0.1	0.1		Phase 2
Clematis pubescens	0.1	0.1		Phase 1
Corymbia calophylla	20	13		Phase 2
Corymbia calophylla	20	13		Phase 1
Drosera erythrorhiza	0.1	0.05		Phase 1
Eucalyptus marginata subsp. *marginata*	5	12		Phase 2
Eucalyptus marginata subsp. *marginata*	5	12		Phase 1
Hakea amplexicaulis	0.1	0.3		Phase 2
Hakea amplexicaulis	0.1	0.5		Phase 1
Hibbertia hypericoides subsp. *hypericoides*	5	0.25		Phase 2
Hibbertia hypericoides subsp. *hypericoides*	5	0.25		Phase 1
Lagenophora huegelii	0.1	0.1		Phase 2
Lagenophora huegelii	0.1	0.1		Phase 1
Lomandra ?sonderi	0.1	0.2	FEN011.01	Phase 2
Lomandra ?sonderi	0.1	0.25	FEN011.01	Phase 1
Lomandra drummondii	0.1	0.4	FEN011.05	Phase 1
Lomandra integra	0.1	0.3	FEN011.04	Phase 2
Lomandra integra	0.1	0.2	FEN011.04	Phase 1
Lomandra sericea	0.1	0.4		Phase 2
Lomandra sericea	0.1	0.3		Phase 1
Lomandra whicherensis (P3)	0.1	0.2	FEN011.02	Phase 2
Lomandra whicherensis (P3)	0.1	0.2	FEN011.02	Phase 1
Macrozamia riedlei	0.1	0.5		Phase 2
Macrozamia riedlei	0.1	0.5		Phase 1
Neurachne alopecuroidea	0.1	0.2	FEN017.05	Phase 1

Site Taxa	Cover	Height (m)	Specimen #	Phase
Opercularia vaginata	0.1	0.1		Phase 1
Opercularia apiciflora	0.1	0.1	FEN011.03B	Phase 2
Patersonia babianoides	0.1	0.2		Phase 2
Pteridium esculentum subsp. *esculentum*	1	0.6		Phase 1
Pteridium esculentum subsp. *esculentum*	1	1		Phase 2
Stylidium rhynchocarpum	0.1	0.2	FEN001.04B	Phase 2
Styphelia propinqua	0.1	0.3		Phase 1
Styphelia propinqua	0.1	0.3		Phase 2
Tetrarrhena laevis	0.1	0.4		Phase 1
Tetrarrhena laevis	0.1	0.4		Phase 2
Thysanotus tenellus	0.1	0.5	FEN029.29	Phase 1
Thysanotus tenellus	0.1	0.5	FEN029.29	Phase 2
Xanthorrhoea gracilis	0.1	0.6		Phase 1
Xanthorrhoea gracilis	0.1	0.6		Phase 2

Phase 1	Phase 2
	

South32 Lot 102 Site FEN-007

Date	3/08/2023
Described by	Emily Eakin-Busher
Type	Quadrat 10m x 10m
Location	MGA Zone 50
	406646mE; 6319640mN
	115.9977 E -33.258205 S
Veg Condition	Excellent
Soil	Sandy Clay Loam
Rock Type	None Discernible
Fire Age	>10 yrs
Habitat	Minor Drainage Line
Vegetation	*Eucalyptus patens*, *Corymbia calophylla* mid open woodland over *Trymalium odoratissimum* subsp. *odoratissimum* tall shrubland (in patches) over *Pteridium esculentum* subsp. *esculentum* mid open shrubland over *Lepidosperma tetraquetrum* mid sedgeland.

SPECIES LIST

Site Taxa	Cover	Height (m)	Specimen #	Phase
?*Scaevola* sp. indet	0.1	0.2		Phase 1
Adiantum aethiopicum	0.1	0.2		Phase 2
Adiantum aethiopicum	0.1	0.2		Phase 1
Corymbia calophylla	0.1	11		Phase 2
Corymbia calophylla	0.1	11		Phase 1
Cyrtostylis sp. indet	0.1	0.1		Phase 2
Cyrtostylis sp. indet	0.1	0.1		Phase 1
Eucalyptus marginata subsp. *marginata*	0.1	0.7		Phase 2
Eucalyptus marginata subsp. *marginata*	0.1	0.7		Phase 1
Eucalyptus patens	25	22		Phase 2
Eucalyptus patens	25	22		Phase 1
Geraniaceae sp. indet	0.1	0.1	FEN021.02	Phase 2
Geraniaceae sp. indet	0.1	0.1	FEN021.02	Phase 1
Juncus ?amabilis	0.1	0.7	FEN007.01	Phase 2
Juncus ?amabilis	0.1	0.7	FEN007.01	Phase 1
Lamiaceae sp. indet	0.1	0.1	FEN007.02b	Phase 2
Lasiopetalum floribundum	0.1	0.3		Phase 1
Lasiopetalum floribundum	0.1	0.3		Phase 2
Lepidosperma tetraquetrum	65	2.1		Phase 1
Lepidosperma tetraquetrum	65	2.1		Phase 2
Paraserianthes lophantha subsp. *lophantha*	0.1	0.1		Phase 1
Pelargonium littorale	0.1	0.2	FEN007.03	Phase 1
Poa ?drummondiana	10	0.1	FEN-007.01b	Phase 2
Poaceae sp. indet	11	0.4	FEN007.02	Phase 1
Pteridium esculentum subsp. *esculentum*	5	1.8		Phase 2
Pteridium esculentum subsp. *esculentum*	5	1.8		Phase 1
Pterostylis sp. indet	0.1	0.1		Phase 1
Stylidium adnatum	0.1	0.1		Phase 2
Stylidium adnatum	0.1	0.1		Phase 1
Trymalium odoratissimum subsp. *odoratissimum*	6	4.6		Phase 2
Trymalium odoratissimum subsp. *odoratissimum*	6	4.6		Phase 1

Phase 1	Phase 2
	

South32 Lot 102 **Site FEN-009**

Date	3/08/2023
Described by	Emily Eakin-Busher
Type	Quadrat 10m x 10m
Location	MGA Zone 50
	405178mE; 6320928mN
	115.9821 E -33.246458 S
Veg Condition	Excellent
Soil	Sandy Clay Loam
Rock Type	None Discernible
Fire Age	>10 yrs
Habitat	Drainage Area/ Floodplain
Vegetation	*Eucalyptus patens*, *Corymbia calophylla*, *Banksia littoralis* (in landscape) mid woodland over *Trymalium odoratissimum* subsp. *odoratissimum* tall sparse shrubland over *Pteridium esculentum* subsp. *esculentum* mid sparse shrubland over *Lepidosperma tetraquetrum* mid closed sedgeland.

SPECIES LIST

Site Taxa	Cover	Height (m)	Specimen #	Phase
Banksia littoralis	3	12		Phase 2
Banksia littoralis	3	12		Phase 1
Eucalyptus patens	25	16		Phase 2
Eucalyptus patens	25	16		Phase 1
Lasiopetalum floribundum	0.1	0.3		Phase 1
Lepidosperma tetraquetrum	75	2		Phase 2
Lepidosperma tetraquetrum	75	2		Phase 1
Poa ?drummondiana	5	0.6	FEN-007.01b	Phase 2
Poa ?drummondiana	5	0.6	FEN-007.01b	Phase 1
Pteridium esculentum subsp. *esculentum*	8	1.2		Phase 2
Pteridium esculentum subsp. *esculentum*	8	1.2		Phase 1
Taxandria linearifolia	0.1	0.5		Phase 2
Taxandria linearifolia	0.1	0.5		Phase 1
Thomasia paniculata	2	1.5	FEN009.01b	Phase 2
Thomasia paniculata	2	1.5	FEN009.01b	Phase 1
Trymalium odoratissimum subsp. *odoratissimum*	1	2		Phase 2
Trymalium odoratissimum subsp. *odoratissimum*	1	2		Phase 1

Phase 1	Phase 2
	

South32 Lot 102 **Site FEN-011**

Date	1/08/2023
Described by	Emily Eakin-Busher
Type	Quadrat 10m x 10m
Location	MGA Zone 50
	404556mE; 6320299mN
	15.9753 E -33.252079 S
Veg Condition	Excellent
Soil	Sandy Loam
Rock Type	Laterite
Fire Age	>10 yrs
Habitat	Hillcrest/ Upper Hillslope
Vegetation	*Eucalyptus marginata* subsp. *marginata*, *Corymbia calophylla* mid woodland over *Banksia grandis*, *Bossiaea aquifolium* subsp. *aquifolium* tall sparse shrubland over *Pteridium esculentum* subsp. *esculentum*, *Macrozamia riedlei* mid to low sparse shrubland over *Hibbertia hypericoides* subsp. *hypericoides* low sparse shrubland.

SPECIES LIST

Site Taxa	Cover	Height (m)	Specimen #	Phase
Banksia grandis	0.5	2.8		Phase 2
Banksia grandis	0.5	2.8		Phase 1
Bossiaea aquifolium subsp. *aquifolium*	0.1	2.3		Phase 2
Bossiaea aquifolium subsp. *aquifolium*	0.1	2.3		Phase 1
Clematis pubescens	0.1	0.1		Phase 2
Clematis pubescens	0.1	0.1		Phase 1
Comesperma virgatum	0.1	0.2		Phase 2
Corymbia calophylla	2	8		Phase 1
Corymbia calophylla	2	8		Phase 2
Eucalyptus marginata subsp. *marginata*	20	12		Phase 1
Eucalyptus marginata subsp. *marginata*	20	12		Phase 2
Hakea amplexicaulis	0.2	0.3		Phase 1
Hakea amplexicaulis	0.1	0.3		Phase 2
Hibbertia amplexicaulis	0.1	0.3		Phase 1
Hibbertia amplexicaulis	0.1	0.3		Phase 2
Hibbertia hypericoides subsp. *hypericoides*	6	0.3		Phase 1
Hibbertia hypericoides subsp. *hypericoides*	6	0.3		Phase 2
Lagenophora huegelii	0.1	0.1		Phase 1
Lagenophora huegelii	0.1	0.1		Phase 2
Leucopogon verticillatus	0.1	0.4		Phase 1
Leucopogon verticillatus	0.1	0.4		Phase 2
Lomandra ?sonderi	0.1	0.2	FEN011.01	Phase 1
Lomandra ?sonderi	0.1	0.2	FEN011.01	Phase 2
Lomandra drummondii	0.5	0.4	FEN011.05	Phase 1
Lomandra drummondii	0.5	0.4	FEN011.05	Phase 2
Lomandra integra	0.1	0.25	FEN011.06	Phase 1
Lomandra integra	0.1	0.25	FEN011.06	Phase 2
Lomandra sericea	0.1	0.3		Phase 1
Lomandra sericea	0.1	0.3		Phase 2
Lomandra whicherensis (P3)	0.1	0.2	FEN011.02	Phase 1
Lomandra whicherensis (P3)	0.1	0.3	FEN011.02	Phase 2
Macrozamia riedlei	1	0.5		Phase 1

Site Taxa	Cover	Height (m)	Specimen #	Phase
Macrozamia riedlei	1	0.5		Phase 2
Neurachne alopecuroidea	0.1	0.2	FEN017.05	Phase 1
Neurachne alopecuroidea	0.1	0.2	FEN017.05	Phase 2
Opercularia hispidula	0.1	0.1		Phase 1
Opercularia hispidula	0.1	0.3		Phase 2
Opercularia apiciflora	0.1	0.1	FEN011.03B	Phase 2
Patersonia babianoides	0.1	0.2		Phase 2
Persoonia longifolia	0.1	0.2		Phase 1
Persoonia longifolia	0.1	0.2		Phase 2
Pigea debilissima	0.1	0.1	FEN021.01B	Phase 2
Pteridium esculentum subsp. *esculentum*	3	1		Phase 1
Pteridium esculentum subsp. *esculentum*	3	1		Phase 2
Stylidium rhynchocarpum	0.1	0.2	FEN001.04B	Phase 2
Styphelia propinqua	0.1	0.3		Phase 1
Styphelia propinqua	0.1	0.3		Phase 2
Thysanotus thyrsoideus	0.1	0.35	FEN011.01B	Phase 1
Thysanotus thyrsoideus	0.1	0.3	FEN011.01B	Phase 2
Xanthorrhoea gracilis	0.1	1		Phase 1
Xanthorrhoea gracilis	0.1	1		Phase 2

Phase 1	Phase 2
	

South32 Lot 102 **Site FEN-013**

Date	3/08/2023
Described by	Emily Eakin-Busher
Type	Quadrat 10m x 10m
Location	MGA Zone 50
	406848mE; 6320411mN
	15.9999 E -33.251267 S
Veg Condition	Excellent
Soil	Sandy Clay Loam
Rock Type	Laterite
Fire Age	5-10 yrs,>10 yrs
Habitat	Undulating Low Hills
Vegetation	*Corymbia calophylla, Eucalyptus marginata* subsp. *marginata* mid open forest over *Xanthorrhoea preissii* mid to tall open shrubland over *Macrozamia riedlei* mid to low isolated shrubs over *Hibbertia hypericoides* subsp. *hypericoides* low open shrubland.
Notes	Old logging.

SPECIES LIST

Site Taxa	Cover	Height (m)	Specimen #	Phase
?*Scaevola calliptera*	0.1	0.1		Phase 1
?*Tricoryne tenella*	0.1	0.1		Phase 2
Acacia ?varia	0.1	0.2	FEN013.05B	Phase 2
Amphipogon amphipogonoides	0.1	0.1	FEN029.05	Phase 2
Austrostipa sp. indet	0.1	0.2	FEN001.02B	Phase 2
Banksia dallanneyi subsp. *dallanneyi*	0.1	0.2	FEN019.02	Phase 1
Banksia dallanneyi subsp. *dallanneyi*	0.1	0.2	FEN019.02	Phase 2
Bossiaea angustifolia	0.1	0.3	FEN013.01B	Phase 2
Bossiaea eriocarpa	0.25	0.4	FEN013.01	Phase 1
Bossiaea eriocarpa	0.25	0.4	FEN013.01	Phase 2
Burchardia congesta	0.1	0.2		Phase 1
Burchardia congesta	0.1	0.3		Phase 2
Chamaescilla corymbosa	0.1	0.1		Phase 1
Comesperma virgatum	0.1	0.2		Phase 2
Corymbia calophylla	25	15		Phase 1
Corymbia calophylla	25	15		Phase 2
Eucalyptus marginata subsp. *marginata*	10	12		Phase 1
Eucalyptus marginata subsp. *marginata*	10	12		Phase 2
Hibbertia amplexicaulis	0.1	0.2		Phase 1
Hibbertia amplexicaulis	0.1	0.2		Phase 2
Hibbertia hypericoides subsp. *hypericoides*	22	0.2		Phase 1
Hibbertia hypericoides subsp. *hypericoides*	22	0.4		Phase 2
Hypocalymma angustifolium	0.2	0.3		Phase 1
Hypocalymma angustifolium	0.1	0.3		Phase 2
Lagenophora huegelii	0.1	0.1		Phase 1
Lagenophora huegelii	0.1	0.1		Phase 2
Lepidosperma ?leptostachyum	0.1	0.3	FEN013.02B	Phase 2
Leptomeria cunninghamii	0.1	0.3		Phase 1
Leptomeria cunninghamii	0.1	0.3		Phase 2
Leucopogon capitellatus	0.1	0.2	FEN013.02	Phase 1
Leucopogon capitellatus	0.1	0.15	FEN013.02	Phase 2
Leucopogon verticillatus	0.1	0.3		Phase 2

Site Taxa	Cover	Height (m)	Specimen #	Phase
Lomandra drummondii	0.1	0.4	FEN017.02	Phase 1
Lomandra drummondii	0.1	0.4	FEN017.02	Phase 2
Lomandra sericea	0.1	0.2		Phase 1
Lomandra sericea	0.1	0.2		Phase 2
Macrozamia riedlei	0.7	0.9		Phase 1
Macrozamia riedlei	0.7	0.9		Phase 2
Morelotia octandra	0.1	0.2		Phase 1
Morelotia octandra	0.1	0.2		Phase 2
Netrostylis sp. Jarrah Forest (R. Davis 7391)	0.1	0.3	FEN015.01	Phase 1
Netrostylis sp. Jarrah Forest (R. Davis 7391)	0.1	0.3	FEN015.01	Phase 2
Neurachne alopecuroidea	0.1	0.1	FEN017.05	Phase 1
Neurachne alopecuroidea	0.1	0.1	FEN017.05	Phase 2
Opercularia hispidula	0.1	0.2		Phase 2
Patersonia babianoides	0.1	0.25		Phase 2
Stylidium rhynchocarpum	0.1	0.1	FEN001.04B	Phase 1
Stylidium rhynchocarpum	0.1	0.1	FEN001.04B	Phase 2
Stylidium schoenoides	0.1	0.2		Phase 2
Stylidium ciliatum	0.1	0.1	FEN013.03B	Phase 1
Stylidium ciliatum	0.1	0.1	FEN013.03B	Phase 2
Styphelia propinqua	0.1	0.1	FEN001.03	Phase 1
Styphelia propinqua	0.1	0.25	FEN001.03	Phase 2
Thysanotus tenellus	0.1	0.3	FEN013.04B	Phase 1
Thysanotus tenellus	0.1	0.2	FEN013.04B	Phase 2
Wahlenbergia multicaulis	0.1	0.3	FENEM.05	Phase 2
Xanthorrhoea gracilis	0.1	0.4		Phase 1
Xanthorrhoea gracilis	0.1	0.4		Phase 2
Xanthorrhoea preissii	1	1.2		Phase 1
Xanthorrhoea preissii	1	1.2		Phase 2
Xanthosia candida	0.1	0.1		Phase 2

Phase 1	Phase 2
	

South32 Lot 102 **Site FEN-015**

Date	1/08/2023
Described by	Emily Eakin-Busher
Type	Quadrat 10m x 10m
Location	MGA Zone 50
	406864mE; 6318895mN
	116.0000 E -33.264945 S
Veg Condition	Excellent
Soil	Sandy Loam
Rock Type	Laterite
Fire Age	>10 yrs
Habitat	Undulating Low Hills
Vegetation	*Eucalyptus marginata* subsp. *marginata*, *Corymbia calophylla* mid open forest (over *Trymalium odoratissimum* subsp. *odoratissimum* tall shrubs in landscape) over *Bossiaea aquifolium* subsp. *aquifolium*, *Pteridium esculentum* subsp. *esculentum* mid to low shrubs over *Hibbertia hypericoides* subsp. *hypericoides* low shrubland.

SPECIES LIST

Site Taxa	Cover	Height (m)	Specimen #	Phase
?*Eriochilis* sp. indet	0.1	0.04		Phase 1
Amphipogon amphipogonoides	0.1	0.1	FEN029.05	Phase 2
Billardiera variifolia	0.1	0.1		Phase 1
Billardiera variifolia	0.1	0.1		Phase 2
Bossiaea aquifolium subsp. *aquifolium*	0.5	0.7		Phase 1
Bossiaea aquifolium subsp. *aquifolium*	0.5	1		Phase 2
Burchardia congesta	0.1	0.2		Phase 1
Burchardia congesta	0.1	0.2		Phase 2
Caladenia sp. indet	0.1	0.1		Phase 1
Corymbia calophylla	7	15		Phase 2
Corymbia calophylla	7	15		Phase 1
Drosera erythrorhiza	0.1	0.05		Phase 1
Eucalyptus marginata subsp. *marginata*	20	14		Phase 2
Eucalyptus marginata subsp. *marginata*	20	14		Phase 1
Hakea amplexicaulis	0.1	0.4		Phase 2
Hakea amplexicaulis	0.1	0.4		Phase 1
Hibbertia amplexicaulis	0.1	0.2		Phase 2
Hibbertia amplexicaulis	0.1	0.2		Phase 1
Hibbertia hypericoides subsp. *hypericoides*	31	0.3		Phase 2
Hibbertia hypericoides subsp. *hypericoides*	31	0.3		Phase 1
Lagenophora huegelii	0.1	0.1		Phase 2
Lagenophora huegelii	0.1	0.1		Phase 1
Lepidosperma tenue	0.1	0.4	FEN015.02	Phase 2
Lepidosperma tenue	0.1	0.4	FEN015.02	Phase 1
Leucopogon capitellatus	0.1	0.1	FEN017.04	Phase 2
Leucopogon capitellatus	0.1	0.1	FEN017.04	Phase 1
Lomandra ?*sonderi*	0.1	0.2	FEN011.01	Phase 2
Lomandra ?*sonderi*	0.1	0.2	FEN011.01	Phase 1
Lomandra integra	0.1	0.2	FEN011.06	Phase 2
Lomandra integra	0.1	0.2	FEN011.06	Phase 1
Lomandra sericea	0.1	0.2		Phase 2
Lomandra sericea	0.1	0.2		Phase 1

Site Taxa	Cover	Height (m)	Specimen #	Phase
Lomandra whicherensis (P3)	0.1	0.2	FEN011.02	Phase 2
Lomandra whicherensis (P3)	0.1	0.2	FEN011.02	Phase 1
Macrozamia riedlei	0.1	0.5		Phase 2
Macrozamia riedlei	0.1	0.5		Phase 1
Netrostylis sp. Jarrah Forest (R. Davis 7391)	0.1	0.2	FEN015.01	Phase 2
Netrostylis sp. Jarrah Forest (R. Davis 7391)	0.1	0.2	FEN015.01	Phase 1
Neurachne alopecuroidea	0.1	0.2	FEN017.05	Phase 1
Opercularia hispidula	0.1	0.25		Phase 2
Patersonia babianoides	0.1	0.25		Phase 2
Persoonia longifolia	0.1	0.3		Phase 1
Persoonia longifolia	0.1	0.3		Phase 2
Pteridium esculentum subsp. *esculentum*	0.1	1		Phase 1
Pteridium esculentum subsp. *esculentum*	0.1	1		Phase 2
Pterostylis sp. indet	0.1	0.2		Phase 1
Scaevola calliptera	0.1	0.2	FEN001.01B	Phase 2
Stylidium rhynchocarpum	0.1	0.2	FEN001.04B	Phase 2
Styphelia propinqua	0.1	0.3		Phase 1
Styphelia propinqua	0.1	0.3		Phase 2
Xanthorrhoea gracilis	0.1	0.45		Phase 1
Xanthorrhoea gracilis	0.1	0.45		Phase 2

Phase 1	Phase 2
	

South32 Lot 102 **Site FEN-016**

Date	1/08/2023
Described by	Emily Eakin-Busher
Type	Quadrat 10m x 10m
Location	MGA Zone 50
	406116mE; 6319228mN
	115.9920 E -33.261874 S
Veg Condition	Excellent
Soil	Sandy Loam
Rock Type	Laterite
Fire Age	>10 yrs
Habitat	Undulating Low Hills
Vegetation	*Corymbia calophylla*, *Eucalyptus marginata* subsp. *marginata* mid open forest over *Trymalium odoratissimum* subsp. *odoratissimum* tall sparse shrubland over *Hibbertia hypericoides* subsp. *hypericoides* low shrubland.
Notes	Past logging.

SPECIES LIST

Site Taxa	Cover	Height (m)	Specimen #	Phase
?*Tricoryne tenella*	0.1	0.1		Phase 2
Amphipogon amphipogonoides	0.1	0.2	FEN029.05	Phase 2
Billardiera variifolia	0.1	0.1		Phase 1
Burchardia congesta	0.1	0.3		Phase 2
Burchardia congesta	0.1	0.3		Phase 1
Caladenia sp. indet	0.1	0.2		Phase 2
Cassytha sp. indet	0.1	0.1		Phase 1
Cassytha sp. indet	0.1	0.1		Phase 2
Corymbia calophylla	20	13		Phase 1
Corymbia calophylla	20	13		Phase 2
Cyrtostylis sp. indet	0.1	0.05		Phase 1
Drosera erythrorhiza	0.1	0.05		Phase 1
Eucalyptus marginata subsp. *marginata*	15	13		Phase 2
Eucalyptus marginata subsp. *marginata*	15	13		Phase 1
Hakea amplexicaulis	0.1	0.5		Phase 2
Hakea amplexicaulis	0.1	0.5		Phase 1
Hibbertia amplexicaulis	0.1	0.3		Phase 2
Hibbertia amplexicaulis	0.1	0.2		Phase 1
Hibbertia commutata	0.1	0.2	FEN019.01	Phase 2
Hibbertia commutata	0.1	0.2	FEN019.01	Phase 1
Hibbertia hypericoides subsp. *hypericoides*	25	0.3		Phase 2
Hibbertia hypericoides subsp. *hypericoides*	25	0.3		Phase 1
Hovea chorizemifolia	0.1	0.3		Phase 2
Hovea chorizemifolia	0.1	0.3		Phase 1
Lagenophora huegelii	0.1	0.1		Phase 2
Lagenophora huegelii	0.1	0.1		Phase 1
Lamiaceae sp. indet	0.1	0.2	FEN007.02b	Phase 2
Lasiopetalum floribundum	0.1	0.1		Phase 1
Leucopogon capitellatus	0.1	0.1	FEN017.04	Phase 2
Leucopogon capitellatus	0.1	0.1	FEN017.04	Phase 1
Lomandra integra	0.1	0.2	FEN011.06	Phase 2
Lomandra integra	0.1	0.3	FEN011.06	Phase 1

Site Taxa	Cover	Height (m)	Specimen #	Phase
Lysiandra calycina	0.1	0.1		Phase 1
Macrozamia riedlei	0.1	0.3		Phase 2
Macrozamia riedlei	0.1	0.3		Phase 1
Neurachne alopecuroidea	0.1	0.2	FEN017.05	Phase 1
Opercularia hispidula	0.1	0.3		Phase 2
Opercularia hispidula	0.1	0.1		Phase 1
Orchidaceae sp. indet	0.1	0.1		Phase 1
Patersonia babianoides	0.1	0.25		Phase 2
Persoonia longifolia	0.1	1.5		Phase 1
Persoonia longifolia	0.1	1.5		Phase 2
Pterostylis sp. indet	0.1	0.1		Phase 1
Ranunculus colonorum	0.1	0.1		Phase 2
Ranunculus colonorum	0.1	0.1		Phase 1
Stylidium rhynchocarpum	0.1	0.1	FEN001.04B	Phase 2
Styphelia propinqua	0.1	0.3		Phase 1
Styphelia propinqua	0.1	0.3		Phase 2
Tetrarrhena laevis	0.1	0.1		Phase 1
Tetrarrhena laevis	0.1	0.1		Phase 2
Thysanotus manglesianus	0.1	0.1		Phase 1
Thysanotus manglesianus	0.1	0.1		Phase 2
Trymalium odoratissimum subsp. *odoratissimum*	2	5		Phase 1
Trymalium odoratissimum subsp. *odoratissimum*	2	5		Phase 2
Xanthorrhoea gracilis	0.1	0.1		Phase 1
Xanthorrhoea gracilis	0.1	0.5		Phase 2
Xanthosia candida	0.1	0.1		Phase 1
Xanthosia candida	0.1	0.1		Phase 2

Phase 1	Phase 2
	

South32 Lot 102 **Site FEN-017**

Date	31/07/2023
Described by	Emily Eakin-Busher
Type	Quadrat 10m x 10m
Location	MGA Zone 50
	407258mE; 6319991mN
	116.0043 E -33.255091 S
Veg Condition	Excellent
Soil	Sandy Loam
Rock Type	Laterite
Fire Age	>10 yrs
Habitat	Undulating Low Hills
Vegetation	*Corymbia calophylla, Eucalyptus marginata* subsp. *marginata* mid woodland over *Trymalium odoratissimum* subsp. *odoratissimum, Bossiaea aquifolium* tall sparse shrubland over *Hibbertia hypericoides, Xanthorrhoea gracilis, Macrozamia riedlei* low sparse shrubland.
Notes	Quadrat location has slightly more open canopy than surrounds. No *E. patens* here.

SPECIES LIST

Site Taxa	Cover	Height (m)	Specimen #	Phase
Boronia fastigiata	0.1	0.3		Phase 2
Bossiaea angustifolia	0.1	0.3	FEN013.01B	Phase 2
Bossiaea aquifolium subsp. *aquifolium*	0.5	2		Phase 1
Bossiaea aquifolium subsp. *aquifolium*	0.5	2.3		Phase 2
Burchardia congesta	0.1	0.3		Phase 1
Burchardia congesta	0.1	0.3		Phase 2
Cassytha sp. indet	0.1	0.1		Phase 2
Clematis pubescens	0.1	0.1		Phase 1
Clematis pubescens	0.1	0.1		Phase 2
Corymbia calophylla	15	15		Phase 1
Corymbia calophylla	15	15		Phase 2
Eucalyptus marginata subsp. *marginata*	10	15		Phase 1
Eucalyptus marginata subsp. *marginata*	10	15		Phase 2
Hakea amplexicaulis	0.1	0.7		Phase 1
Hakea amplexicaulis	0.1	0.7		Phase 2
Hibbertia amplexicaulis	0.1	0.3		Phase 1
Hibbertia amplexicaulis	0.1	0.2		Phase 2
Hibbertia hypericoides subsp. *hypericoides*	10	0.3		Phase 1
Hibbertia hypericoides subsp. *hypericoides*	10	0.4		Phase 2
Lagenophora huegelii	0.1	0.1		Phase 1
Lagenophora huegelii	0.1	0.1		Phase 2
Leucopogon capitellatus	1.5	0.2	FEN017.04	Phase 1
Leucopogon capitellatus	1.5	0.2	FEN017.04	Phase 2
Leucopogon verticillatus	0.1	0.6		Phase 1
Leucopogon verticillatus	0.1	0.7		Phase 2
Lomandra drummondii	0.1	0.3	FEN017.02	Phase 1
Lomandra drummondii	0.1	0.35	FEN017.02	Phase 2
Lomandra integra	0.1	0.2		Phase 2
Lomandra sericea	0.1	0.3		Phase 1
Lomandra sericea	0.1	0.3		Phase 2
Lysiandra calycina	0.1	0.25		Phase 1

Site Taxa	Cover	Height (m)	Specimen #	Phase
Macrozamia riedlei	0.1	1		Phase 2
Macrozamia riedlei	0.1	1		Phase 1
Neurachne alopecuroidea	0.1	0.2	FEN017.05	Phase 2
Neurachne alopecuroidea	0.1	0.3	FEN017.05	Phase 1
Opercularia hispidula	0.1	0.1		Phase 2
Opercularia hispidula	0.1	0.1		Phase 1
Patersonia babianoides	0.1	0.25		Phase 2
Pentapeltis silvatica	0.1	0.1		Phase 1
Pentapeltis silvatica	0.1	0.1		Phase 2
Persoonia longifolia	0.1	0.2		Phase 1
Persoonia longifolia	0.1	0.2		Phase 2
Poaceae sp. indet	0.1	0.2		Phase 2
Pteridium esculentum subsp. *esculentum*	0.1	1.2		Phase 1
Pteridium esculentum subsp. *esculentum*	0.1	1.2		Phase 2
Stylidium rhynchocarpum	0.1	0.1	FEN001.04B	Phase 1
Stylidium rhynchocarpum	0.1	0.1	FEN001.04B	Phase 2
Tetrarrhena laevis	0.1	0.5		Phase 1
Tetrarrhena laevis	0.1	0.4		Phase 2
Thysanotus sp. indet (twiner)	0.1	0.1		Phase 2
Trymalium odoratissimum subsp. *odoratissimum*	2	3.8		Phase 1
Trymalium odoratissimum subsp. *odoratissimum*	2	3.8		Phase 2
Wahlenbergia multicaulis	0.1	0.25	FENEM.05	Phase 2
Xanthorrhoea gracilis	0.1	0.8		Phase 1
Xanthorrhoea gracilis	0.1	0.8		Phase 2
Xanthosia ?huegelii	0.1	0.1	FEN017.03	Phase 1

Phase 1	Phase 2
	

South32 Lot 102 Site FEN-019

Date	31/07/2023
Described by	Emily Eakin-Busher
Type	Quadrat 10m x 10m
Location	MGA Zone 50
	407292mE; 6321049mN
	116.0048 E -33.245555 S
Veg Condition	Excellent
Soil	Sandy Loam
Rock Type	Laterite
Fire Age	5-10 yrs
Habitat	Undulating Low Hills
Vegetation	*Corymbia calophylla, Eucalyptus marginata* subsp. *marginata* mid woodland over *Pteridium esculentum, Macrozamia riedlei* mid to low sparse shrubland over *Hibbertia hypericoides* subsp. *hypericoides* low open shrubland.

SPECIES LIST

Site Taxa	Cover	Height (m)	Specimen #	Phase
?*Dichelachne micrantha*	0.1	0.2	FEN019.03	Phase 1
Banksia dallanneyi subsp. *dallanneyi*	0.1	0.1	FEN019.02	Phase 2
Banksia dallanneyi subsp. *dallanneyi*	0.1	0.1	FEN019.02	Phase 1
Boronia fastigiata	0.1	0.2		Phase 2
Bossiaea angustifolia	0.1	0.2	FEN013.01B	Phase 1
Bossiaea angustifolia	0.1	0.4	FEN013.01B	Phase 2
Comesperma virgatum	0.1	0.2		Phase 2
Corymbia calophylla	8	10		Phase 1
Corymbia calophylla	8	10		Phase 2
Eucalyptus marginata subsp. *marginata*	5	15		Phase 1
Eucalyptus marginata subsp. *marginata*	5	15		Phase 2
Hakea amplexicaulis	0.1	0.5		Phase 1
Hakea amplexicaulis	0.1	0.3		Phase 2
Hibbertia amplexicaulis	0.1	0.25		Phase 1
Hibbertia amplexicaulis	0.1	0.25		Phase 2
Hibbertia commutata	0.1	0.1	FEN019.01B	Phase 1
Hibbertia commutata	0.1	0.2	FEN019.01B	Phase 2
Hibbertia hypericoides subsp. *hypericoides*	25	0.3		Phase 1
Hibbertia hypericoides subsp. *hypericoides*	25	0.3		Phase 2
Lagenophora huegelii	0.1	0.1		Phase 1
Lagenophora huegelii	0.1	0.1		Phase 2
Leucopogon capitellatus	0.1	0.2	FEN017.04	Phase 1
Leucopogon capitellatus	0.1	0.1	FEN017.04	Phase 2
Leucopogon verticillatus	0.1	1.6		Phase 1
Leucopogon verticillatus	0.1	1.7		Phase 2
Lomandra caespitosa	0.1	0.3		Phase 1
Lomandra caespitosa	0.1	0.3		Phase 2
Lomandra drummondii	0.1	0.3	FEN017.02	Phase 1
Lomandra drummondii	0.1	0.3	FEN017.02	Phase 2
Lomandra sericea	0.1	0.3		Phase 1
Lomandra sericea	0.1	0.3		Phase 2
Lysiandra calycina	0.1	0.2		Phase 1
Macrozamia riedlei	0.3	1		Phase 2

Site Taxa	Cover	Height (m)	Specimen #	Phase
Macrozamia riedlei	0.1	1		Phase 1
Netrostylis sp. Jarrah Forest (R. Davis 7391)	0.1	0.3		Phase 1
Neurachne alopecuroidea	0.1	0.2	FEN017.05	Phase 2
Neurachne alopecuroidea	0.1	0.3	FEN017.05	Phase 1
Opercularia sp. indet	0.1	0.1		Phase 1
Patersonia babianoides	0.1	0.25		Phase 2
Pentapeltis silvatica	0.1	0.1		Phase 1
Pentapeltis silvatica	0.1	0.1		Phase 2
Persoonia longifolia	0.1	0.2		Phase 1
Persoonia longifolia	0.1	0.2		Phase 2
Pteridium esculentum subsp. *esculentum*	2	1.1		Phase 1
Pteridium esculentum subsp. *esculentum*	2	1.1		Phase 2
Rytidosperma caespitosum	0.1	0.2	FEN001.07B	Phase 2
Stylidium rhynchocarpum	0.1	0.1	FEN001.04B	Phase 1
Stylidium rhynchocarpum	0.1	0.1	FEN001.04B	Phase 2
Styphelia propinqua	0.1	0.25		Phase 1
Styphelia propinqua	0.1	0.25		Phase 2
Tetrarrhena laevis	0.1	0.3		Phase 1
Tetrarrhena laevis	0.1	0.3		Phase 2
Thysanotus multiflorus	0.1	0.2		Phase 2
Thysanotus thyrsoideus	0.1	0.2	FEN011.01B	Phase 2
Wahlenbergia multicaulis	0.1	0.2	FENEM.05	Phase 2
Xanthorrhoea gracilis	0.1	0.3		Phase 1
Xanthorrhoea gracilis	0.1	0.3		Phase 2

Phase 1	Phase 2
	

South32 Lot 102 **Site FEN-020**

Date	31/07/2023
Described by	Emily Eakin-Busher
Type	Quadrat 10m x 10m
Location	MGA Zone 50
	407259mE; 6321861mN
	116.0045 E -33.238225 S
Veg Condition	Excellent
Soil	Sandy Loam
Rock Type	Laterite
Fire Age	5-10 yrs
Habitat	Undulating Low Hills
Vegetation	*Eucalyptus marginata* subsp. *marginata*, *Corymbia calophylla* mid open forest over *Bossiaea aquifolium* subsp. *aquifolium* tall shrubland over *Hibbertia hypericoides* subsp. *hypericoides* low sparse shrubland.

SPECIES LIST

Site Taxa	Cover	Height (m)	Specimen #	Phase
Acacia pulchella	0.1	0.2		Phase 1
Acacia pulchella	0.1	0.1		Phase 2
Amphipogon amphipogonoides	0.1	0.2	FEN029.05	Phase 2
Billardiera variifolia	0.1	0.2		Phase 1
Billardiera variifolia	0.1	0.1		Phase 2
Boronia fastigiata	0.1	0.2		Phase 2
Bossiaea aquifolium subsp. *aquifolium*	25	2.3		Phase 1
Bossiaea aquifolium subsp. *aquifolium*	25	2.3		Phase 2
Comesperma virgatum	0.1	0.3		Phase 2
Corymbia calophylla	2	9		Phase 1
Corymbia calophylla	2	9		Phase 2
Eucalyptus marginata subsp. *marginata*	60	15		Phase 1
Eucalyptus marginata subsp. *marginata*	60	15		Phase 2
Hemigenia pritzelii	0.1	0.1	FEN020.02B	Phase 2
Hibbertia amplexicaulis	0.1	0.2		Phase 1
Hibbertia amplexicaulis	0.1	0.3		Phase 2
Hibbertia hypericoides subsp. *hypericoides*	4	0.4		Phase 1
Hibbertia hypericoides subsp. *hypericoides*	4	0.4		Phase 2
Lagenophora huegelii	0.1	0.1		Phase 2
Leucopogon capitellatus	0.1	0.1	FEN017.04	Phase 1
Leucopogon capitellatus	0.1	0.1	FEN017.04	Phase 2
Leucopogon verticillatus	0.1	0.3		Phase 2
Lomandra sericea	0.1	0.3		Phase 1
Lomandra sericea	0.1	0.3		Phase 2
Lomandra preissii	0.1	0.2	FEN020.01B	Phase 2
Lysiandra calycina	0.1	0.1		Phase 1
Macrozamia riedlei	0.5	0.8		Phase 2
Macrozamia riedlei	0.5	0.8		Phase 1
Neurachne alopecuroidea	0.1	0.2	FEN017.05	Phase 1
Opercularia hispidula	0.1	0.1		Phase 2
Opercularia hispidula	0.1	0.1		Phase 1
Patersonia babianoides	0.1	0.2		Phase 2
Persoonia longifolia	0.1	0.3		Phase 1

Site Taxa	Cover	Height (m)	Specimen #	Phase
Persoonia longifolia	0.1	0.3		Phase 2
Pteridium esculentum subsp. *esculentum*	0.1	1.1		Phase 1
Pteridium esculentum subsp. *esculentum*	0.1	1.1		Phase 2
Stylidium rhynchocarpum	0.1	0.1		Phase 1
Stylidium rhynchocarpum	0.1	0.1		Phase 2
Styphelia propinqua	0.1	0.2		Phase 1
Styphelia propinqua	0.1	0.2		Phase 2
Thelymitra sp. indet	0.1	0.6		Phase 2
Thysanotus tenellus	0.1	0.2	FEN029.29	Phase 2
Xanthosia huegelii	0.1	0.1		Phase 2

Phase 1	Phase 2
	

South32 Lot 102 **Site FEN-021**

Date	3/08/2023
Described by	Emily Eakin-Busher
Type	Quadrat 10m x 10m
Location	MGA Zone 50
	407098mE; 6322333mN
	116.0028 E -33.233953 S
Veg Condition	Excellent
Soil	Clay Loam
Rock Type	Laterite
Fire Age	5-10 yrs,>10 yrs
Habitat	Undulating Low Hills
Vegetation	*Corymbia calophylla* mid open forest over *Banksia grandis* low open woodland over *Pteridium esculentum* subsp. *esculentum*, *Tremandra stelligera* mid to low open shrubland over *Hibbertia silvestris*, *Styphelia propinqua* low sparse shrubland.

SPECIES LIST

Site Taxa	Cover	Height (m)	Specimen #	Phase
?*Dichelachne micrantha*	0.1	0.2	FEN019.03	Phase 1
?*Lysiandra calycina*	0.1	0.1	FEN023.02	Phase 1
?*Senecio hispidulus*	0.1	0.1		Phase 1
Acacia pulchella	0.1	0.2		Phase 2
Amperea simulans	0.1	0.1	FEN023.04B	Phase 2
Banksia grandis	8	5		Phase 1
Banksia grandis	8	5		Phase 2
Bossiaea aquifolium subsp. *aquifolium*	0.1	1.5		Phase 1
Bossiaea aquifolium subsp. *aquifolium*	0.1	1.5		Phase 2
Cassytha sp. indet	0.1	0.1		Phase 1
Cassytha sp. indet	0.1	0.1		Phase 2
Clematis pubescens	0.1	0.1		Phase 1
Clematis pubescens	0.1	0.1		Phase 2
Corymbia calophylla	35	14		Phase 1
Corymbia calophylla	35	14		Phase 2
Cyrtostylis sp. indet	0.1	0.15		Phase 1
Daucus glochidiatus	0.1	0.1		Phase 2
Daucus glochidiatus	0.1	0.1		Phase 1
Geraniaceae sp. indet	0.1	0.2	FEN021.02	Phase 2
Geraniaceae sp. indet	0.1	0.1	FEN021.02	Phase 1
**Gomphocarpus fruticosus*	0.1	0.25	FEN021.03B	Phase 2
Hibbertia amplexicaulis	0.1	0.3		Phase 1
Hibbertia amplexicaulis	0.1	0.3		Phase 2
Hibbertia commutata	1	0.2	FEN019.01	Phase 1
Lagenophora huegelii	0.1	0.1		Phase 2
Lagenophora huegelii	0.1	0.1		Phase 1
Lasiopetalum floribundum	5	0.4		Phase 2
Lasiopetalum floribundum	5	0.4		Phase 1
Leucopogon verticillatus	0.1	0.3		Phase 2
Leucopogon verticillatus	0.1	0.3		Phase 1
Lomandra integra	0.1	0.3	FEN023.01	Phase 1
Luzula meridionalis	0.1	0.3	FEN021.02B	Phase 2
Macrozamia riedlei	0.1	0.4		Phase 1

Site Taxa	Cover	Height (m)	Specimen #	Phase
Macrozamia riedlei	0.1	0.4		Phase 2
**Oxalis corniculata*	0.1	0.1		Phase 1
**Oxalis corniculata*	0.1	0.1		Phase 2
Persoonia longifolia	0.1	3.1		Phase 1
Persoonia longifolia	0.1	3.1		Phase 2
Pigea debilissima	0.1	0.2	FEN021.01B	Phase 2
Pteridium esculentum subsp. *esculentum*	5	1.3		Phase 1
Pteridium esculentum subsp. *esculentum*	6	1.3		Phase 2
Ranunculus colonorum	0.1	0.1		Phase 1
Ranunculus colonorum	0.1	0.1		Phase 2
Stylidium adnatum	0.1	0.1		Phase 1
Stylidium adnatum	0.1	0.25		Phase 2
Stylidium rhynchocarpum	0.1	0.1		Phase 1
Stylidium rhynchocarpum	0.1	0.2		Phase 2
Styphelia propinqua	1	0.3	FEN001.03	Phase 1
Styphelia propinqua	1	0.4	FEN001.03	Phase 2
Tetrarrhena laevis	0.1	0.2		Phase 1
Tetrarrhena laevis	0.1	0.2		Phase 2
Thomasia foliosa	4	0.6	FEN021.01	Phase 1
Thomasia foliosa	4	1	FEN021.01	Phase 2
Thysanotus manglesianus	0.1	0.1		Phase 1
Thysanotus manglesianus	0.1	0.1		Phase 2
Thysanotus tenellus	0.1	0.2		Phase 1
Trymalium odoratissimum subsp. *odoratissimum*	0.1	2.5		Phase 2
Trymalium odoratissimum subsp. *odoratissimum*	0.1	2.5		Phase 1

Phase 1	Phase 2
	

South32 Lot 102 **Site FEN-023**

Date	3/08/2023
Described by	Emily Eakin-Busher
Type	Quadrat 10m x 10m
Location	MGA Zone 50
	405990mE; 6322306mN
	15.9909 E -33.234105 S
Veg Condition	Excellent
Soil	Sandy Clay Loam
Rock Type	None Discernible
Fire Age	>10 yrs
Habitat	Hillcrest/ Upper Hillslope
Vegetation	*Eucalyptus marginata* subsp. *marginata*, *Corymbia calophylla* mid open forest over *Bossiaea aquifolium* subsp. *aquifolium* mid to tall shrubland with *Pteridium esculentum* mid shrubs over *Hibbertia hypericoides* subsp. *hypericoides* low open shrubland.
Notes	Soil is a clayey yellow-grey-brown. Small excavation in SE corner.

SPECIES LIST

Site Taxa	Cover	Height (m)	Specimen #	Phase
?*Lysiandra calycina*	0.1	0.1	FEN023.02	Phase 1
Amperea simulans	0.1	0.1	FEN023.04B	Phase 2
Boronia fastigiata	0.1	0.2	FEN023.02B	Phase 2
Bossiaea aquifolium subsp. *aquifolium*	40	2.1		Phase 1
Bossiaea aquifolium subsp. *aquifolium*	40	2.2		Phase 2
Caladenia sp. indet	0.1	0.2		Phase 1
Caladenia sp. indet	0.1	0.2		Phase 2
Clematis pubescens	0.1	0.1		Phase 1
Clematis pubescens	0.1	0.1		Phase 2
Corymbia calophylla	25	20		Phase 1
Corymbia calophylla	25	20		Phase 2
Eucalyptus marginata subsp. *marginata*	30	20		Phase 1
Eucalyptus marginata subsp. *marginata*	30	20		Phase 2
Hakea amplexicaulis	0.1	0.2		Phase 1
Hakea amplexicaulis	0.1	0.3		Phase 2
Hibbertia hypericoides subsp. *hypericoides*	7	0.2		Phase 1
Hibbertia hypericoides subsp. *hypericoides*	7	0.2		Phase 2
Lagenophora huegelii	0.1	0.1		Phase 1
Lagenophora huegelii	0.1	0.1		Phase 2
Lasiopetalum floribundum	0.1	0.1		Phase 1
Lasiopetalum floribundum	0.1	0.1		Phase 2
Lomandra integra	0.1	0.3	FEN023.01	Phase 1
Lomandra integra	0.1	0.3	FEN023.01	Phase 2
Lomandra nigricans	0.1	0.3	FEN023.03B	Phase 2
Lysiandra calycina	0.1	0.2		Phase 1
Lysiandra calycina	0.1	0.2		Phase 2
Morelotia octandra	0.1	0.2		Phase 1
Morelotia octandra	0.1	0.2		Phase 2
Netrostylis sp. Jarrah Forest (R. Davis 7391)	0.1	0.3	FEN015.01	Phase 1
Netrostylis sp. Jarrah Forest (R. Davis 7391)	0.1	0.3	FEN015.01	Phase 2
Pteridium esculentum subsp. *esculentum*	1	1.2		Phase 1

Site Taxa	Cover	Height (m)	Specimen #	Phase
Pteridium esculentum subsp. *esculentum*	1	1.3		Phase 2
Stylidium rhynchocarpum	0.1	0.1		Phase 1
Styphelia propinqua	0.1	0.3	FEN001.03	Phase 2
Styphelia propinqua	0.1	0.2	FEN001.03	Phase 1
Tetrarrhena laevis	0.1	0.2		Phase 2
Tetrarrhena laevis	0.1	0.2		Phase 1
Thysanotus sp. indet (twiner)	0.1	0.1		Phase 1
Xanthosia candida	0.1	0.1		Phase 2
Xanthosia candida	0.1	0.1		Phase 1

Phase 1	Phase 2
	

South32 Lot 102 Site FEN-024

Date	1/08/2023
Described by	Emily Eakin-Busher
Type	Quadrat 10m x 10m i
Location	MGA Zone 50
	407241mE; 6319797mN
	116.0041 E -33.256838 S
Veg Condition	Excellent
Soil	Sandy Loam
Rock Type	None Discernible
Fire Age	>10 yrs
Habitat	Minor Drainage Line
Vegetation	*Eucalyptus patens*, *Corymbia calophylla* mid woodland over *Trymalium odoratissimum* subsp. *odoratissimum* tall open shrubland over *Lepidosperma tetraquetrum* mid open sedgeland.

SPECIES LIST

Site Taxa	Cover	Height (m)	Specimen #	Phase
Amperea simulans	0.1	0.1	FEN24.01b	Phase 2
Bossiaea aquifolium subsp. *aquifolium*	0.1	0.2		Phase 1
Bossiaea aquifolium subsp. *aquifolium*	0.1	0.2		Phase 2
Clematis pubescens	0.1	0.1		Phase 1
Clematis pubescens	0.1	0.1		Phase 2
Corymbia calophylla	5	15		Phase 1
Corymbia calophylla	5	15		Phase 2
Cyrtostylis sp. indet	0.1	0.1		Phase 1
Cyrtostylis sp. indet	0.1	0.1		Phase 2
Eucalyptus patens	20	15		Phase 1
Eucalyptus patens	20	15		Phase 2
Geraniaceae sp. indet	0.1	0.1		Phase 2
Hydrocotyle ?callicarpa	0.1	0.1	FEN024.01	Phase 1
**Hypochaeris glabra*	0.1	0.1		Phase 2
Lepidosperma tetraquetrum	15	1.5		Phase 1
Lepidosperma tetraquetrum	15	1.5		Phase 2
Pigea debilissima	0.1	0.2	FEN21.01B	Phase 2
Poa ?drummondiana	0.2	0.4	FEN07.01b	Phase 2
Pteridium esculentum subsp. *esculentum*	0.1	1		Phase 1
Pteridium esculentum subsp. *esculentum*	0.1	1		Phase 2
Pterostylis sp. indet	0.1	0.1		Phase 1
Pterostylis sp. indet	0.1	0.1		Phase 2
Scaevola calliptera	0.1	0.1	FEN01.01B	Phase 2
**Sonchus oleraceus*	0.1	0.1		Phase 2
Taxandria linearifolia	0.1	2.8		Phase 1
Taxandria linearifolia	0.1	2.8		Phase 2
Tetrarrhena laevis	0.1	0.2		Phase 1
Tetrarrhena laevis	0.1	0.2		Phase 2
Trymalium odoratissimum subsp. *odoratissimum*	20	4.8		Phase 1
Trymalium odoratissimum subsp. *odoratissimum*	20	4.8		Phase 2

Phase 1	Phase 2
	

South32 Lot 102 **Site FEN-029**

Date 2/08/2023
Described by Emily Eakin-Busher
Type Quadrat 10m x 10m
Location MGA Zone 50
405001mE; 6322220mN
115.980 E -33.234797 S
Veg Condition Excellent
Soil Sandy Clay Loam
Rock Type None Discernible
Fire Age >10 yrs
Habitat Drainage Area/ Floodplain
Vegetation *Corymbia calophylla*, *Eucalyptus marginata* subsp. *marginata*, *Eucalyptus patens* mid woodland over *Agonis flexuosa* mid to low open forest over *Bossiaea aquifolium* subsp. *aquifolium*, *Xanthorrhoea preissii* mid to tall sparse shrubland over *Hibbertia hypericoides* subsp. *hypericoides* low open shrubland

SPECIES LIST

Site Taxa	Cover	Height (m)	Specimen #	Phase
?*Orianthera serpyllifolia*	0.1	0.1		Phase 1
?*Tricoryne tenella*	0.1	0.2		Phase 2
Agonis flexuosa var. *flexuosa*	25	12		Phase 1
Agonis flexuosa var. *flexuosa*	25	12		Phase 2
Amphipogon amphipogonoides	0.1	0.2	FEN029.05	Phase 2
Banksia dallanneyi subsp. *dallanneyi*	0.1	0.1	FEN019.02	Phase 1
Banksia dallanneyi subsp. *dallanneyi*	0.1	0.1	FEN019.02	Phase 2
Boronia fastigiata	0.1	0.3		Phase 2
Bossiaea aquifolium subsp. *aquifolium*	1	1.5		Phase 1
Bossiaea aquifolium subsp. *aquifolium*	1	1.5		Phase 2
Burchardia congesta	0.1	0.2		Phase 1
Burchardia congesta	0.1	0.3		Phase 2
Caladenia flava subsp. *flava*	0.1	0.2		Phase 2
Caladenia sp. indet	0.1	0.2		Phase 2
Chamaescilla corymbosa	0.1	0.1		Phase 1
Corymbia calophylla	10	12		Phase 2
Corymbia calophylla	10	12		Phase 1
Drosera erythrorhiza	0.1	0.1		Phase 1
Eriochilis sp. indet	0.1	0.1		Phase 1
Eucalyptus marginata subsp. *marginata*	1	12		Phase 2
Eucalyptus marginata subsp. *marginata*	1	12		Phase 1
Eucalyptus patens	15	14		Phase 2
Eucalyptus patens	15	14		Phase 1
Hibbertia amplexicaulis	0.1	0.1		Phase 1
Hibbertia hypericoides subsp. *hypericoides*	11	0.7		Phase 2
Hibbertia hypericoides subsp. *hypericoides*	11	0.7		Phase 1
Hypocalymma angustifolium	0.1	0.3		Phase 2
Hypocalymma angustifolium	0.1	0.1		Phase 1
Lagenophora huegelii	0.1	0.1		Phase 2
Lagenophora huegelii	0.1	0.1		Phase 1
Lasiopetalum floribundum	0.1	0.5		Phase 2
Lasiopetalum floribundum	0.1	0.5		Phase 1

Site Taxa	Cover	Height (m)	Specimen #	Phase
Leucopogon capitellatus	0.1	0.1	FEN017.04	Phase 1
Lomandra sericea	0.1	0.2		Phase 2
Lomandra sericea	0.1	0.3		Phase 1
Lysiandra calycina	0.1	0.3		Phase 1
Morelotia octandra	0.1	0.3		Phase 2
Morelotia octandra	0.1	0.3		Phase 1
Netrostylis sp. Jarrah Forest (R. Davis 7391)	0.5	0.3	FEN015.01	Phase 2
Netrostylis sp. Jarrah Forest (R. Davis 7391)	0.5	0.3	FEN015.01	Phase 1
Neurachne alopecuroidea	0.1	0.1	FEN017.05	Phase 1
Opercularia hispidula	0.1	0.1		Phase 1
Opercularia apiciflora	0.1	0.2	FEN029.04	Phase 2
Orchidaceae sp. indet	0.1	0.1		Phase 1
Persoonia longifolia	0.1	0.3		Phase 2
Persoonia longifolia	0.1	0.3		Phase 1
Platytheca galioides	0.1	0.2		Phase 2
Platytheca galioides	0.1	0.2		Phase 1
Pterostylis sp. indet	0.1	0.1		Phase 1
Stylidium androsaceum	0.1	0.1	FEN029.01	Phase 2
Stylidium rhynchocarpum	0.1	0.1		Phase 1
Stylidium rhynchocarpum	0.1	0.2		Phase 2
Stylidium schoenoides	0.1	0.2		Phase 2
Styphelia ?pallida	0.1	0.1	FEN029.06	Phase 2
Styphelia propinqua	0.1	0.2	FEN001.03	Phase 1
Tetrarrhena laevis	0.1	0.2		Phase 2
Thelymitra crinita	0.1	0.2		Phase 2
Thysanotus tenellus	0.1	0.3	FEN029.29	Phase 2
Trymalium odoratissimum subsp. *odoratissimum*	0.1	0.3		Phase 1
Trymalium odoratissimum subsp. *odoratissimum*	0.1	0.3		Phase 2
Xanthorrhoea preissii	1	2.2		Phase 1
Xanthorrhoea preissii	1	2.2		Phase 2
Xanthosia candida	0.1	0.1		Phase 2

Phase 1	Phase 2
	

South32 Lot 102 **Site FENR-001**

Date	1/08/2023	
Described by	Emily Eakin-Busher	
Type	Relevé	
Location	MGA Zone 50	
	405653mE;	6319770mN
	115.9871 E	-33.256946 S
Veg Condition	Excellent	
Soil	Clay Loam	
Rock Type	None Discernible	
Fire Age	>10 yrs	
Habitat	Drainage Area/ Floodplain	
Vegetation	*Corymbia calophylla*, *Eucalyptus patens* mid (open) woodland over *Trymalium odoratissimum*, *Taxandria linearifolia* tall open shrubland over *Thomasia paniculata*, *Pteridium esculentum* subsp. *esculentum* mid open shrubland over *Lepidosperma tetraquetrum* mid sedgeland.	

SPECIES LIST

Site Taxa	Cover	Height (m)	Specimen #	Phase
Asteraceae sp. indet	0.1	0.3	FENR01.02	Phase 1
Corymbia calophylla	4	30		Phase 1
Eucalyptus patens	1	10		Phase 1
Lepidosperma tetraquetrum	0.1			Phase 1
Paraserianthes lophantha subsp. *lophantha*	0.1			Phase 1
Pteridium esculentum subsp. *esculentum*	0.1			Phase 1
Taxandria linearifolia	0.1			Phase 1
Tetrarrhena laevis	1	0.3		Phase 1
Thomasia paniculata	0.1		FENR01.01	Phase 1
Trymalium odoratissimum subsp. *odoratissimum*	2	4.5		Phase 1

South32 Lot 102 **Site FENR-002**

Date 4/08/2023
Described by Emily Eakin-Busher
Type Relevé
Location MGA Zone50
404877mE; 6322316mN
115.9790 E -33.233918 S
Veg Condition Excellent
Soil Sandy Clay Loam
Rock Type None Discernible
Fire Age >10 yrs
Habitat Drainage Area/ Floodplain
Vegetation *Eucalyptus patens*, *Agonis flexuosa* (*Corymbia calophylla*, *Eucalyptus marginata* subsp. *marginata* away from water) mid to low woodland over *Trymalium odoratissimum* subsp. *odoratissimum*, *Taxandria linearifolia*, *Bossiaea aquifolium* subsp. *aquifolium*, *Pteridium esculentum* subsp. *esculentum*, *Acacia pulchella* mid to tall (open) shrubland over *Lepidosperma tetraquetrum* mid open sedgeland.

SPECIES LIST

Site Taxa	Cover	Height (m)	Specimen #	Phase
Acacia divergens	0.1		FENR02.02	Phase 1
Acacia pulchella var. *glaberrima*	0.5	2.1		Phase 1
Agonis flexuosa var. *flexuosa*	5	11		Phase 1
Bossiaea aquifolium subsp. *aquifolium*	10	3		Phase 1
Chorizema cordatum	0.1			Phase 1
Eucalyptus patens	10	15		Phase 1
Lagenophora huegelii	0.1			Phase 1
Lasiopetalum floribundum	0.1		FENR03.01	Phase 1
Lepidosperma tetraquetrum	11	2		Phase 1
Pteridium esculentum subsp. *esculentum*	3	1.5		Phase 1
Pterostylis sp. indet	0.1			Phase 1
Stylidium rhynchocarpum	0.1			Phase 1
Taxandria linearifolia	8	2.3		Phase 1
Tetrarrhena laevis	0.1	0.3		Phase 1
Trymalium odoratissimum subsp. *odoratissimum*	2	3.5		Phase 1
Xanthosia candida	0.1			Phase 1

South32 Lot 102 **Site FENR-003**

Date	3/08/2023
Described by	Emily Eakin-Busher
Type	Relevé
Location	MGA Zone 50
	405212mE; 6321952mN
	115.9826 E -33.237230 S
Veg Condition	Excellent
Soil	Clayey Sand
Rock Type	Laterite
Fire Age	>10 yrs
Habitat	Minor Drainage Line
Vegetation	*Eucalyptus patens*, *Corymbia calophylla* mid open forest over *Trymalium odoratissimum* subsp. *odoratissimum* tall open shrubland over *Taxandria linearifolia* mid sparse shrubland over *Hibbertia hypericoides* subsp. *hypericoides*, *Hypocalymma angustifolium* low open shrubland.
Notes	Beside creek.

SPECIES LIST

Site Taxa	Cover	Height (m)	Specimen #	Phase
?*Lysiandra calycina*	0.1		FEN023.02	Phase 1
Acacia pulchella var. *glaberrima*	0.1			Phase 1
Banksia dallanneyi subsp. *dallanneyi*	0.1	0.2	FEN019.02	Phase 2
Banksia dallanneyi subsp. *dallanneyi*	0.1	0.2	FEN019.02	Phase 1
Boronia fastigiata	0.5	0.3		Phase 2
Boronia fastigiata	0.1			Phase 1
Corymbia calophylla	15	2		Phase 2
Corymbia calophylla	15	12		Phase 1
Drosera sp. indet (climber)	0.1			Phase 1
Eriochilis sp. indet	0.1			Phase 1
Eucalyptus marginata subsp. *marginata*	0.1			Phase 1
Eucalyptus patens	25	14		Phase 2
Eucalyptus patens	25	14		Phase 1
Gastrolobium bilobum	0.1			Phase 1
Gompholobium marginatum	0.1			Phase 1
Hakea lissocarpha	0.1			Phase 1
Hibbertia amplexicaulis	0.1	0.3		Phase 2
Hibbertia amplexicaulis	0.1			Phase 1
Hibbertia hypericoides subsp. *hypericoides*	5	0.4		Phase 2
Hibbertia hypericoides subsp. *hypericoides*	5	0.5		Phase 1
Hovea chorizemifolia	0.1			Phase 1
Hypocalymma angustifolium	2	0.3		Phase 1
Lagenophora huegelii	0.1			Phase 1
Leptomeria cunninghamii	0.1	0.2		Phase 2
Leptomeria cunninghamii	0.1			Phase 1
Lobelia anceps	0.1			Phase 1
Lomandra caespitosa	0.1			Phase 1
Lysiandra calycina	0.1	0.3		Phase 2
Lysiandra calycina	0.1	0.3		Phase 1
Netrostylis sp. Jarrah Forest (R. Davis 7391)	0.1		FEN015.01	Phase 1
Persoonia longifolia	0.1	0.3		Phase 2

Site Taxa	Cover	Height (m)	Specimen #	Phase
Persoonia longifolia	0.1			Phase 1
Pimelea sp. indet	0.1			Phase 1
Stylidium androsaceum	0.1		FEN029.01	Phase 1
Taxandria linearifolia	5	1.5		Phase 2
Taxandria linearifolia	5	1.5		Phase 1
Tetrarrhena laevis	0.1	0.3		Phase 2
Tetrarrhena laevis	0.1	0.3		Phase 1
Thelymitra sp. indet	0.1			Phase 1
Thysanotus sp. indet (twiner)	0.1			Phase 1
Thysanotus tenellus	0.1			Phase 1
Trymalium odoratissimum subsp. *odoratissimum*	15	4		Phase 2
Trymalium odoratissimum subsp. *odoratissimum*	15	4		Phase 1
Xanthorrhoea gracilis	0.1			Phase 1
Xanthorrhoea preissii	0.1			Phase 1

Phase 1	Phase 2
	

South32 Lot 102 **Site FENR-004**

Date	25/10/2023
Described by	Emily Eakin-Busher
Type	Relevé
Location	MGA Zone 50
	404844mE; 6320392mN
	115.9784 E -33.251268 S
Veg Condition	Excellent
Soil	Clay Loam
Rock Type	None Discernible
Fire Age	>10 yrs
Habitat	Undulating Low Hills
Vegetation	*Corymbia calophylla*, *Eucalyptus marginata* subsp. *marginata* mid open forest over *Trymalium odoratissimum* subsp. *odoratissimum* tall open shrubland *over Pteridium esculentum* low isolated shrubs over *Hibbertia hypericoides* subsp. *hypericoides* with *Clematis pubescens*.

SPECIES LIST

Site Taxa	Cover	Height (m)	Specimen #	Phase
Agonis flexuosa var. *flexuosa*	0.1	8		Phase 2
Bossiaea aquifolium subsp. *aquifolium*	0.1	1.6		Phase 2
Burchardia congesta	0.1	0.3		Phase 2
Clematis pubescens	0.1	0.1		Phase 2
Corymbia calophylla	15	17		Phase 2
Eucalyptus marginata subsp. *marginata*	15	15		Phase 2
Hibbertia amplexicaulis	0.1	0.2		Phase 2
Hibbertia hypericoides subsp. *hypericoides*	5	0.3		Phase 2
Hypocalymma angustifolium	0.1	0.3		Phase 2
Lagenophora huegelii	0.1	0.1		Phase 2
Lepidosperma drummondii	0.1	0.3		Phase 2
Leucopogon verticillatus	0.1	0.3		Phase 2
Macrozamia riedlei	0.1	0.3		Phase 2
Netrostylis sp. Jarrah Forest (R. Davis 7391)	0.1	0.3		Phase 2
Pteridium esculentum subsp. *esculentum*	1	1		Phase 2
Stylidium rhynchocarpum	0.1	0.1	FEN001.04B	Phase 2
Trymalium odoratissimum subsp. *odoratissimum*	10	4.5		Phase 2

South32 Lot 102 **Site FENR-005**

Date	25/10/2023	
Described by	Emily Eakin-Busher	
Type	Relevé	
Location	MGA Zone50	
	407319mE;	6320009mN
	116.0050 E	-33.254938 S
Veg Condition	Excellent	
Soil	Sandy Loam	
Rock Type	None Discernible	
Fire Age	>10 yrs	
Habitat	Undulating Low Hills	

Vegetation *Eucalyptus marginata* subsp. *marginata*, *Corymbia calophylla* mid woodland over *Banksia grandis* low open woodland over Bossiaea aquifolium subsp. *aquifolium* tall sparse shrubland over *Xanthorrhoea gracilis*, *Macrozamia riedlei*, *Leucopogon capitellatus*, *Hibbertia hypericoides* subsp. *hypericoides* low open shrubland.

SPECIES LIST

Site Taxa	Cover	Height (m)	Specimen #	Phase
Banksia grandis	5	6		Phase 2
Boronia fastigiata	0.1	0.3		Phase 2
Bossiaea aquifolium subsp. *aquifolium*	3	2		Phase 2
Burchardia congesta	0.1	0.1		Phase 2
Clematis pubescens	0.1	0.1		Phase 2
Corymbia calophylla	15	18		Phase 2
Eucalyptus marginata subsp. *marginata*	5	15		Phase 2
Hibbertia hypericoides subsp. *hypericoides*	0.1	0.2		Phase 2
Lagenophora huegelii	0.1	0.1		Phase 2
Leucopogon capitellatus	0.1	0.2		Phase 2
Leucopogon verticillatus	0.1	0.4		Phase 2
Macrozamia riedlei	0.1	0.5		Phase 2
Patersonia babianoides	0.1	0.25		Phase 2
Persoonia longifolia	0.1	0.3		Phase 2
Pteridium esculentum subsp. *esculentum*	0.5	1.2		Phase 2
Tetrarrhena laevis	0.1	0.2		Phase 2
Thysanotus tenellus	0.1	0.2	FEN013.04B	Phase 2
Xanthorrhoea gracilis	5	0.5		Phase 2

South32 Lot 102 **Site FENR-010**

Date	3/08/2023	
Described by	Emily Eakin-Busher	
Type	Relevé	
Location	MGA Zone 50	
	406401mE;	6320049mN
	115.9951 E	-33.254496 S
Veg Condition	Excellent	
Soil	Sandy Clay Loam	
Rock Type	None Discernible	
Fire Age	>10 yrs	
Habitat	Minor Drainage Line	
Vegetation	*Corymbia calophylla*, *Eucalyptus patens* mid open forest over *Trymalium odoratissimum* subsp. *odoratissimum*, *Bossiaea aquifolium* subsp. *aquifolium*, *Tremandra stelligera*, *Pteridium esculentum* subsp. *esculentum* low sparse shrubland.	

SPECIES LIST

Site Taxa	Cover	Height (m)	Specimen #	Phase
Bossiaea aquifolium subsp. *aquifolium*	5	2.5		Phase 1
Clematis pubescens	0.1			Phase 1
Corymbia calophylla	35	20		Phase 1
Cyrtostylis sp. indet	0.1			Phase 1
Eucalyptus patens	5	10		Phase 1
Hakea amplexicaulis	0.1			Phase 1
Hibbertia hypericoides subsp. *hypericoides*	0.1	0.3		Phase 1
Lagenophora huegelii	0.1			Phase 1
Lasiopetalum floribundum	2	0.4		Phase 1
Leucopogon capitellatus	0.1		FEN017.04	Phase 1
Lomandra drummondii	0.1		FEN017.02	Phase 1
Opercularia hispidula	0.1	0.1		Phase 1
**Oxalis corniculata*	0.1			Phase 1
Pteridium esculentum subsp. *esculentum*	0.1			Phase 1
Ranunculus colonorum	0.1			Phase 1
Stylidium adnatum	0.1			Phase 1
Tetrarrhena laevis	0.1	0.3		Phase 1
Thysanotus sp. indet (twiner)	0.1			Phase 1
Trymalium odoratissimum subsp. *odoratissimum*	15	4.5		Phase 1

South32 Lot 102 **Site FENR-019**

Date	25/10/2023
Described by	Emily Eakin-Busher
Type	Relevé
Location	MGA Zone 50
	406667mE; 6322336mN
	15.9982 E -33.233893 S
Veg Condition	Excellent
Soil	Sandy Loam
Rock Type	None Discernible
Fire Age	>10 yrs
Habitat	Hillcrest/ Upper Hillslope
Vegetation	*Corymbia calophylla, Eucalyptus marginata* subsp. *marginata* mid (open) woodland over *Bossiaea aquifolium* subsp. *aquifolium* tall shrubland over *Hibbertia hypericoides* subsp. *hypericoides* low sparse shrubland.

SPECIES LIST

Site Taxa	Cover	Height (m)	Specimen #	Phase
Acacia pulchella	0.1	1		Phase 2
Boronia fastigiata	0.1	0.3		Phase 2
Bossiaea aquifolium subsp. *aquifolium*	50	2.8		Phase 2
Clematis pubescens	0.1	0.1		Phase 2
Corymbia calophylla	11	13		Phase 2
Eucalyptus marginata subsp. *marginata*	15	15		Phase 2
Hibbertia hypericoides subsp. *hypericoides*	5	0.4		Phase 2
Hypocalymma angustifolium	0.1	0.3		Phase 2
Lomandra drummondii	0.1	0.4		Phase 2
Macrozamia riedlei	0.1	0.3		Phase 2
Neurachne alopecuroidea	0.1	0.2		Phase 2
Scaevola calliptera	0.1	0.3	FEN001.01B	Phase 2
Thelymitra sp. indet	0.1			Phase 2
Xanthosia candida	0.1	0.1		Phase 2

Appendix I: Reconciled species list

Original Taxon	Reconciled Taxon	Lifeform
?*Calothamnus* sp. indet	Removed	
?*Dichelachne micrantha*	?*Dichelachne micrantha*	Perennial
?*Eriochilis* sp. indet	Removed	
?*Lysiandra calycina*	Removed	
?*Orianthera serpyllifolia*	Removed	
?*Scaevola calliptera*	Removed	
?*Scaevola* sp. indet	Removed	
?*Senecio hispidulus*	Removed	
?*Thelymitra* sp. indet	Removed	
?*Tricoryne tenella*	?*Tricoryne tenella*	Perennial
Acacia ?varia	*Acacia ?varia*	Perennial
Acacia celastrifolia	*Acacia celastrifolia*	Perennial
Acacia divergens	*Acacia divergens*	Perennial
Acacia drummondii subsp. *candolleana*	*Acacia drummondii* subsp. *candolleana*	Perennial
Acacia extensa	*Acacia extensa*	Perennial
Acacia longifolia subsp. *longifolia*	**Acacia longifolia* subsp. *longifolia*	Perennial
Acacia pulchella	*Acacia pulchella*	Perennial
Acacia pulchella var. *glaberrima*	*Acacia pulchella*	Perennial
Acacia saligna	*Acacia saligna*	Perennial
Acacia urophylla	*Acacia urophylla*	Perennial
Adiantum aethiopicum	*Adiantum aethiopicum*	Perennial
Agonis flexuosa var. *flexuosa*	*Agonis flexuosa* var. *flexuosa*	Perennial
Agrostocrinum hirsutum	*Agrostocrinum hirsutum*	Perennial
Amperea simulans	*Amperea simulans*	Perennial
Amphipogon amphipogonoides	*Amphipogon amphipogonoides*	Perennial
Asteraceae sp. indet	Removed	
Austrostipa sp. indet	Removed	
Banksia dallanneyi subsp. *dallanneyi*	*Banksia dallanneyi* subsp. *dallanneyi*	Perennial
Banksia grandis	*Banksia grandis*	Perennial
Banksia littoralis	*Banksia littoralis*	Perennial
Billardiera variifolia	*Billardiera variifolia*	Perennial
Boronia fastigiata	*Boronia fastigiata*	Perennial
Bossiaea angustifolia	*Bossiaea angustifolia*	Perennial
Bossiaea aquifolium subsp. *aquifolium*	*Bossiaea aquifolium* subsp. *aquifolium*	Perennial
Bossiaea eriocarpa	*Bossiaea eriocarpa*	Perennial
Burchardia congesta	*Burchardia congesta*	Perennial
Caladenia flava subsp. *flava*	*Caladenia flava* subsp. *flava*	Perennial
Caladenia sp. indet	Removed	
Cassytha sp. indet	*Cassytha* sp. indet	Perennial
Chamaescilla corymbosa	*Chamaescilla corymbosa*	Perennial
Chorizema cordatum	*Chorizema cordatum*	Perennial
Chorizema rhombeum	*Chorizema rhombeum*	Perennial
Clematis pubescens	*Clematis pubescens*	Perennial

Original Taxon	Reconciled Taxon	Lifeform
Comesperma virgatum	*Comesperma virgatum*	Perennial
Conospermum capitatum subsp. *glabratum*	*Conospermum capitatum* subsp. *glabratum*	Perennial
Conostylis aculeata	*Conostylis aculeata*	Perennial
Corymbia calophylla	*Corymbia calophylla*	Perennial
Cyrtostylis sp. indet	Removed	
Daucus glochidiatus	*Daucus glochidiatus*	Annual
Desmocladus flexuosus	*Desmocladus flexuosus*	Perennial
Diplolaena drummondii	*Diplolaena drummondii*	Perennial
Drosera erythrorhiza	*Drosera erythrorhiza*	Perennial
Drosera sp. indet *(climber)*	Removed	
Eriochilis sp. indet	Removed	
Eucalyptus marginata subsp. *marginata*	*Eucalyptus marginata* subsp. *marginata*	Perennial
Eucalyptus patens	*Eucalyptus patens*	Perennial
Gahnia decomposita	*Gahnia decomposita*	Perennial
Gastrolobium bilobum	*Gastrolobium bilobum*	Perennial
Geraniaceae sp. indet	Removed	
Gomphocarpus fruticosus	**Gomphocarpus fruticosus*	Perennial
Gompholobium marginatum	*Gompholobium marginatum*	Perennial
Gompholobium preissii	*Gompholobium preissii*	Perennial
Hakea amplexicaulis	*Hakea amplexicaulis*	Perennial
Hakea lissocarpha	*Hakea lissocarpha*	Perennial
Hemigenia pritzelii	*Hemigenia pritzelii*	Perennial
Hibbertia amplexicaulis	*Hibbertia amplexicaulis*	Perennial
Hibbertia commutata	*Hibbertia commutata*	Perennial
Hibbertia hypericoides subsp. *hypericoides*	*Hibbertia hypericoides* subsp. *hypericoides*	Perennial
Hibbertia pilosa	*Hibbertia pilosa*	Perennial
Hibbertia semipilosa	*Hibbertia semipilosa*	Perennial
Hibbertia sp. indet	Removed	
Hordeum leporinum	**Hordeum leporinum*	Annual
Hovea chorizemifolia	*Hovea chorizemifolia*	Perennial
Hydrocotyle ?callicarpa	*Hydrocotyle ?callicarpa*	Annual
Hypocalymma angustifolium	*Hypocalymma angustifolium*	Perennial
Hypochaeris glabra	**Hypochaeris glabra*	Annual
Isotropis cuneifolia subsp. *cuneifolia*	*Isotropis cuneifolia* subsp. *cuneifolia*	Perennial
Johnsonia lupulina	*Johnsonia lupulina*	Perennial
Juncus ?amabilis	*Juncus ?amabilis*	Perennial
Juncus sp. indet	Removed	
Kennedia coccinea subsp. *coccinea*	*Kennedia coccinea* subsp. *coccinea*	Perennial
Kingia australis	*Kingia australis*	Perennial
Lagenophora huegelii	*Lagenophora huegelii*	Perennial
Lamiaceae sp. indet	Removed	

Original Taxon	Reconciled Taxon	Lifeform
Lasiopetalum floribundum	*Lasiopetalum floribundum*	Perennial
Lepidosperma drummondii	*Lepidosperma drummondii*	Perennial
Lepidosperma tenue	*Lepidosperma tenue*	Perennial
Lepidosperma tetraquetrum	*Lepidosperma tetraquetrum*	Perennial
Lepidosperma ?leptostachyum	*Lepidosperma ?leptostachyum*	Perennial
Leptomeria cunninghamii	*Leptomeria cunninghamii*	Perennial
Leucopogon capitellatus	*Leucopogon capitellatus*	Perennial
Leucopogon verticillatus	*Leucopogon verticillatus*	Perennial
Levenhookia pusilla	*Levenhookia pusilla*	Annual
Lobelia anceps	*Lobelia anceps*	Perennial
Lomandra ?sonderi	*Lomandra ?sonderi*	Perennial
Lomandra brittanii	*Lomandra brittanii*	Perennial
Lomandra caespitosa	*Lomandra caespitosa*	Perennial
Lomandra drummondii	*Lomandra drummondii*	Perennial
Lomandra integra	*Lomandra integra*	Perennial
Lomandra sericea	*Lomandra sericea*	Perennial
Lomandra whicherensis	*Lomandra whicherensis* (P3)	Perennial
Lotus subbiflorus	**Lotus subbiflorus*	Annual
Lomandra nigricans	*Lomandra nigricans*	Perennial
Lomandra preissii	*Lomandra preissii*	Perennial
Luzula meridionalis	*Luzula meridionalis*	Perennial
Lysiandra calycina	*Lysiandra calycina*	Perennial
Lysimachia arvensis	**Lysimachia arvensis*	Perennial
Macrozamia riedlei	*Macrozamia riedlei*	Perennial
Mentha pulegium	**Mentha pulegium*	Perennial
Mirbelia dilatata	*Mirbelia dilatata*	Perennial
Monotaxis occidentalis	*Monotaxis occidentalis*	Perennial
Morelotia octandra	*Morelotia octandra*	Perennial
Netrostylis sp. Jarrah Forest (R. Davis 7391)	*Netrostylis* sp. Jarrah Forest (R. Davis 7391)	Perennial
Neurachne alopecuroidea	*Neurachne alopecuroidea*	Perennial
Opercularia hispidula	*Opercularia hispidula*	Perennial
Opercularia sp. indet	Removed	
Opercularia vaginata	*Opercularia vaginata*	Perennial
Opercularia apiciflora	*Opercularia apiciflora*	Perennial
Orchidaceae sp. indet	Removed	
Oxalis corniculata	**Oxalis corniculata*	*Annual
Paraserianthes lophantha subsp. *lophantha*	*Paraserianthes lophantha* subsp. *lophantha*	Perennial
Patersonia babianoides	*Patersonia babianoides*	Perennial
Patersonia sp. indet	Removed	
Patersonia occidentalis var. *occidentalis*	*Patersonia occidentalis* var. *occidentalis*	Perennial
Pelargonium littorale	*Pelargonium littorale*	Perennial
Pentapeltis silvatica	*Pentapeltis silvatica*	Perennial

Original Taxon	Reconciled Taxon	Lifeform
Persoonia longifolia	*Persoonia longifolia*	Perennial
Pigea debilissima	*Pigea debilissima*	Perennial
Pimelea sp. indet	Removed	
Pimelea sylvestris	*Pimelea sylvestris*	Perennial
Pinus radiata	**Pinus radiata*	Perennial
Platytheca galioides	*Platytheca galioides*	Perennial
Poa ?drummondiana	*Poa ?drummondiana*	Perennial
Poaceae sp. indet	Removed	
Pteridium esculentum subsp. *esculentum*	*Pteridium esculentum* subsp. *esculentum*	Perennial
Pterostylis recurva	*Pterostylis recurva*	Perennial
Pterostylis sp. indet	Removed	
Pterostylis vittata	*Pterostylis vittata*	Perennial
Pyrorchis nigricans	*Pyrorchis nigricans*	Perennial
Ranunculus colonorum	*Ranunculus colonorum*	Perennial
Rytidosperma caespitosum	*Rytidosperma caespitosum*	Perennial
Scaevola calliptera	*Scaevola calliptera*	Perennial
Senecio hispidulus	*Senecio hispidulus*	Perennial
Senecio multicaulis	*Senecio multicaulis*	Perennial
Sonchus asper subsp. *asper*	**Sonchus asper* subsp. *asper*	Annual
Sonchus oleraceus	**Sonchus oleraceus*	Annual
Sonchus sp. indet	Removed	
Sphaerolobium medium	*Sphaerolobium medium*	Perennial
Stackhousia monogyna	*Stackhousia monogyna*	Perennial
Stylidium adnatum	*Stylidium adnatum*	Perennial
Stylidium androsaceum	*Stylidium androsaceum*	Annual
Stylidium rhynchocarpum	*Stylidium rhynchocarpum*	Perennial
Stylidium schoenoides	*Stylidium schoenoides*	Perennial
Stylidium ciliatum	*Stylidium ciliatum*	Perennial
Styphelia ?pallida	Removed	
Styphelia propinqua	*Styphelia propinqua*	Perennial
Styphelia tenuiflora	*Styphelia tenuiflora*	Perennial
Taxandria linearifolia	*Taxandria linearifolia*	Perennial
Tetrarrhena laevis	*Tetrarrhena laevis*	Perennial
Thelymitra crinita	*Thelymitra crinita*	Geophyte
Thelymitra sp. indet	Removed	
Thomasia foliosa	*Thomasia foliosa*	Perennial
Thomasia paniculata	*Thomasia paniculata*	Perennial
Thysanotus ?multiflorus	*Thysanotus multiflorus*	Perennial
Thysanotus manglesianus	*Thysanotus manglesianus*	Perennial
Thysanotus multiflorus	*Thysanotus multiflorus*	Perennial
Thysanotus sp. indet *(twiner)*	*Thysanotus manglesianus*	Perennial
Thysanotus tenellus	*Thysanotus tenellus*	Perennial

Original Taxon	Reconciled Taxon	Lifeform
Thysanotus thyrsoideus	*Thysanotus thyrsoideus*	Perennial
Trymalium odoratissimum subsp. *odoratissimum*	*Trymalium odoratissimum* subsp. *odoratissimum*	Perennial
Wahlenbergia multicaulis	*Wahlenbergia multicaulis*	Perennial
Xanthorrhoea gracilis	*Xanthorrhoea gracilis*	Perennial
Xanthorrhoea preissii	*Xanthorrhoea preissii*	Perennial
Xanthosia ?huegelii	Removed	
Xanthosia candida	*Xanthosia candida*	Perennial
Xanthosia huegelii	*Xanthosia huegelii*	Perennial

Appendix J: Species list

Apiaceae

Daucus glochidiatus
Pentapeltis silvatica
Xanthosia candida
Xanthosia huegelii

Apocynaceae

**Gomphocarpus fruticosus*

Araliaceae

Hydrocotyle ?callicarpa

Asparagaceae

Chamaescilla corymbosa
Lomandra brittanii
Lomandra caespitosa
Lomandra drummondii
Lomandra integra
Lomandra nigricans
Lomandra preissii
Lomandra sericea
Lomandra ?sonderi
Lomandra whicherensis (P3)
Thysanotus manglesianus
Thysanotus multiflorus
Thysanotus tenellus
Thysanotus thyrsoideus
Thysanotus sp. indet

Asteraceae

Asteraceae sp. indet
**Hypochaeris glabra*
Lagenophora huegelii
Senecio hispidulus
Senecio multicaulis
**Sonchus asper* subsp. *asper*
**Sonchus oleraceus*
**Sonchus* sp. indet

Campanulaceae

Lobelia anceps
Wahlenbergia multicaulis

Celastraceae

Stackhousia monogyna

Colchicaceae

Burchardia congesta

Cyperaceae

Gahnia decomposita
Lepidosperma drummondii
Lepidosperma ?leptostachyum
Lepidosperma tenue
Lepidosperma tetraquetrum
Morelotia octandra
Netrostylis sp. Jarrah Forest (R. Davis 7391)

Dasypogonaceae

Kingia australis

Dennstaedtiaceae

Pteridium esculentum subsp. *esculentum*

Dilleniaceae

Hibbertia amplexicaulis
Hibbertia commutata
Hibbertia hypericoides subsp. *hypericoides*
Hibbertia pilosa
Hibbertia semipilosa
Hibbertia sp. indet

Droseraceae

Drosera erythrorhiza
Drosera sp. indet

Elaeocarpaceae

Platytheca galioides

Ericaceae

Leucopogon capitellatus
Leucopogon verticillatus
Styphelia ?pallida
Styphelia propinqua
Styphelia tenuiflora

Euphorbiaceae

Amperea simulans
Monotaxis occidentalis

Fabaceae

Acacia ?*varia*
Acacia celastrifolia
Acacia divergens
Acacia drummondii subsp. *candolleana*
Acacia extensa
**Acacia longifolia* subsp. *longifolia*
Acacia pulchella
Acacia pulchella var. *glaberrima*
Acacia saligna
Acacia urophylla
Bossiaea angustifolia
Bossiaea aquifolium subsp. *aquifolium*
Bossiaea eriocarpa
Chorizema cordatum
Chorizema rhombeum
Gastrolobium bilobum
Gompholobium marginatum
Gompholobium preissii
Hovea chorizemifolia
Isotropis cuneifolia subsp. *cuneifolia*
Kennedia coccinea subsp. coccinea
**Lotus subbiflorus*
Mirbelia dilatata
Paraserianthes lophantha subsp. *lophantha*
Sphaerolobium medium

Geraniaceae

Geraniaceae sp. indet
Pelargonium littorale

Goodeniaceae

Scaevola calliptera
?*Scaevola* sp. indet

Haemodoraceae

Conostylis aculeata

Hemerocallidaceae

Agrostocrinum hirsutum
Johnsonia lupulina
?*Tricoryne tenella*

Iridaceae

Patersonia babianoides
Patersonia occidentalis var. *occidentalis*
Patersonia sp. indet

Juncaceae

Juncus ?amabilis
Juncus sp. indet
Luzula meridionalis

Lamiaceae

Hemigenia pritzelii
Lamiaceae sp. indet
**Mentha pulegium*

Lauraceae

Cassytha sp. indet

Loganiacecae

?Orianthera serpyllifolia

Malvaceae

Lasiopetalum floribundum
Thomasia foliosa
Thomasia paniculata

Myrtaceae

Agonis flexuosa var. *flexuosa*
?Calothamnus sp. indet
Corymbia calophylla
Eucalyptus marginata subsp. *marginata*
Eucalyptus patens
Hypocalymma angustifolium
Taxandria linearifolia

Orchidaceae

Caladenia flava subsp. *flava*
Caladenia sp. indet
Cyrtostylis sp. indet
Eriochilus sp. indet
Orchidaceae sp. indet
Pterostylis recurva
Pterostylis sp. indet
Pterostylis vittata
Pyrorchis nigricans

Thelymitra crinita
Thelymitra sp. indet

Oxalidaceae

**Oxalidaceae*Oxalis corniculata*

Phyllanthaceae

Lysiandra calycina

Pinaceae

**Pinus radiata*

Pittosporaceae

Billardiera variifolia

Poaceae

Amphipogon amphipogonoides
Austrostipa sp. indet
?*Dichelachne micrantha*
**Hordeum leporinum*
Neurachne alopecuroidea
Poa ?drummondiana
Poaceae sp. indet
Rytidosperma caespitosum
Tetrarrhena laevis

Polygalaceae

Comesperma virgatum

Primulaceae

**Lysimachia arvensis*

Proteaceae

Banksia dallanneyi subsp. *dallanneyi*
Banksia grandis
Banksia littoralis
Conospermum capitatum subsp. *glabratum*
Hakea amplexicaulis
Hakea lissocarpha
Persoonia longifolia

Pteridaceae

Adiantum aethiopicum

Ranunculaceae

Clematis pubescens
Ranunculus colonorum

Restionaceae

Desmocladus flexuosus

Rhamnaceae

Trymalium odoratissimum subsp. *odoratissimum*

Rubiaceae

Opercularia apiciflora
Opercularia hispidula
Opercularia sp. indet
Opercularia vaginata

Rutaceae

Boronia fastigiata
Diplolaena drummondii

Santalaceae

Leptomeria cunninghamii

Stylidiaceae

Levenhookia pusilla
Stylidium adnatum
Stylidium androsaceum
Stylidium ciliatum
Stylidium rhynchocarpum
Stylidium schoenoides

Thymelaeaceae

Pimelea sp. indet
Pimelea sylvestris

Violaceae

Pigea debilissima

Xanthorrhoeaceae

Xanthorrhoea gracilis
Xanthorrhoea preissii

Zamiaceae

Macrozamia riedlei

Appendix K: Species by site matrix

Family	Taxon	FEN-001	FEN-003	FEN-004	FEN-005	FEN-007	FEN-009	FEN-011	FEN-013	FEN-015	FEN-016	FEN-017	FEN-019	FEN-020	FEN-021	FEN-023	FEN-024	FEN-029	FENR-001	FENR-002	FENR-003	FENR-004	FENR-005	FENR-010	FENR-019	Opps	VMN
Apiaceae	*Daucus glochidiatus*	•													•												
	Pentapeltis silvatica	•	•									•	•														
	Xanthosia ?huegelii											•															
	Xanthosia candida	•							•		•					•		•		•					•		
	Xanthosia huegelii		•											•													
Apocynaceae	*Gomphocarpus fruticosus*														•												
Araliaceae	*Hydrocotyle ?callicarpa*																•										
Asparagaceae	*Chamaescilla corymbosa*	•							•									•									
	Lomandra ?sonderi				•			•		•																	
	Lomandra brittanii	•																									
	Lomandra caespitosa		•										•								•						
	Lomandra drummondii	•		•	•			•	•			•	•											•	•		
	Lomandra integra	•	•	•	•			•		•	•	•			•	•											
	Lomandra nigricans															•											
	Lomandra preissii													•													
	Lomandra sericea	•	•	•	•			•	•	•		•	•	•				•									
	Lomandra whicherensis		•		•			•		•																	
	Thysanotus ?multiflorus		•																								
	Thysanotus manglesianus										•				•												
	Thysanotus multiflorus	•		•									•														
	Thysanotus sp. indet											•				•					•			•			
	Thysanotus tenellus	•	•	•	•				•					•	•			•			•		•				
	Thysanotus thyrsoideus							•					•														
Asteraceae	Asteraceae sp. indet																		•								
	Hypochaeris glabra	•		•													•										
	Lagenophora huegelii	•	•	•	•			•	•	•	•	•	•	•	•	•		•		•	•	•	•	•			
	Senecio hispidulus		•																								
	Senecio multicaulis																									•	
	Sonchus asper subsp. *asper*																										•
	Sonchus oleraceus																•										
	Sonchus sp. indet			•																							
Campanulaceae	*Lobelia anceps*																				•						
	Wahlenbergia multicaulis								•			•	•														

Family	Taxon	FEN-001	FEN-003	FEN-004	FEN-005	FEN-007	FEN-009	FEN-011	FEN-013	FEN-015	FEN-016	FEN-017	FEN-019	FEN-020	FEN-021	FEN-023	FEN-024	FEN-029	FENR-001	FENR-002	FENR-003	FENR-004	FENR-005	FENR-010	FENR-019	Opps	VMN
Celastraceae	*Stackhousia monogyna*																									•	
Colchicaceae	*Burchardia congesta*			•	•				•	•	•	•						•				•	•				
Cyperaceae	*Gahnia decomposita*																									•	
	Lepidosperma ?leptostachyum								•																		
	Lepidosperma drummondii																					•					
	Lepidosperma tenue									•																	
	Lepidosperma tetraquetrum					•	•										•		•	•							
	Morelotia octandra								•							•		•									
	Netrostylis sp. Jarrah Forest (R. Davis 7391)	•	•	•					•	•			•			•		•			•	•					
Dasypogonaceae	*Kingia australis*																									•	
Dennstaedtiaceae	*Pteridium esculentum* subsp. *esculentum*		•	•	•	•	•	•		•		•	•	•	•	•	•		•	•		•	•	•			
Dilleniaceae	*Hibbertia amplexicaulis*		•	•				•	•	•	•	•	•	•	•			•			•	•					
	Hibbertia commutata										•		•		•												
	Hibbertia hypericoides subsp. *hypericoides*	•	•	•	•			•	•	•	•	•	•	•		•		•			•	•	•	•	•		
	Hibbertia pilosa																									•	
	Hibbertia semipilosa		•																								
	Hibbertia sp. indet			•																							
Droseraceae	*Drosera erythrorhiza*			•	•					•	•							•									
	Drosera sp. indet																				•						
Elaeocarpaceae	*Platytheca galioides*																	•									
Ericaceae	*Leucopogon capitellatus*		•	•					•	•	•	•	•	•				•					•	•			
	Leucopogon verticillatus		•	•				•	•			•	•	•	•							•	•				
	Styphelia ?pallida																	•									
	Styphelia propinqua	•		•	•			•	•	•	•		•	•	•	•		•									
	Styphelia tenuiflora		•																								
Euphorbiaceae	*Amperea simulans*														•	•	•										
	Monotaxis occidentalis		•																								
	Acacia ?varia								•																		
	Acacia celastrifolia																									•	
	Acacia divergens																			•							
	Acacia drummondii subsp. *candolleana*	•	•	•																							
	Acacia extensa																									•	
	Acacia longifolia subsp. *longifolia*																									•	

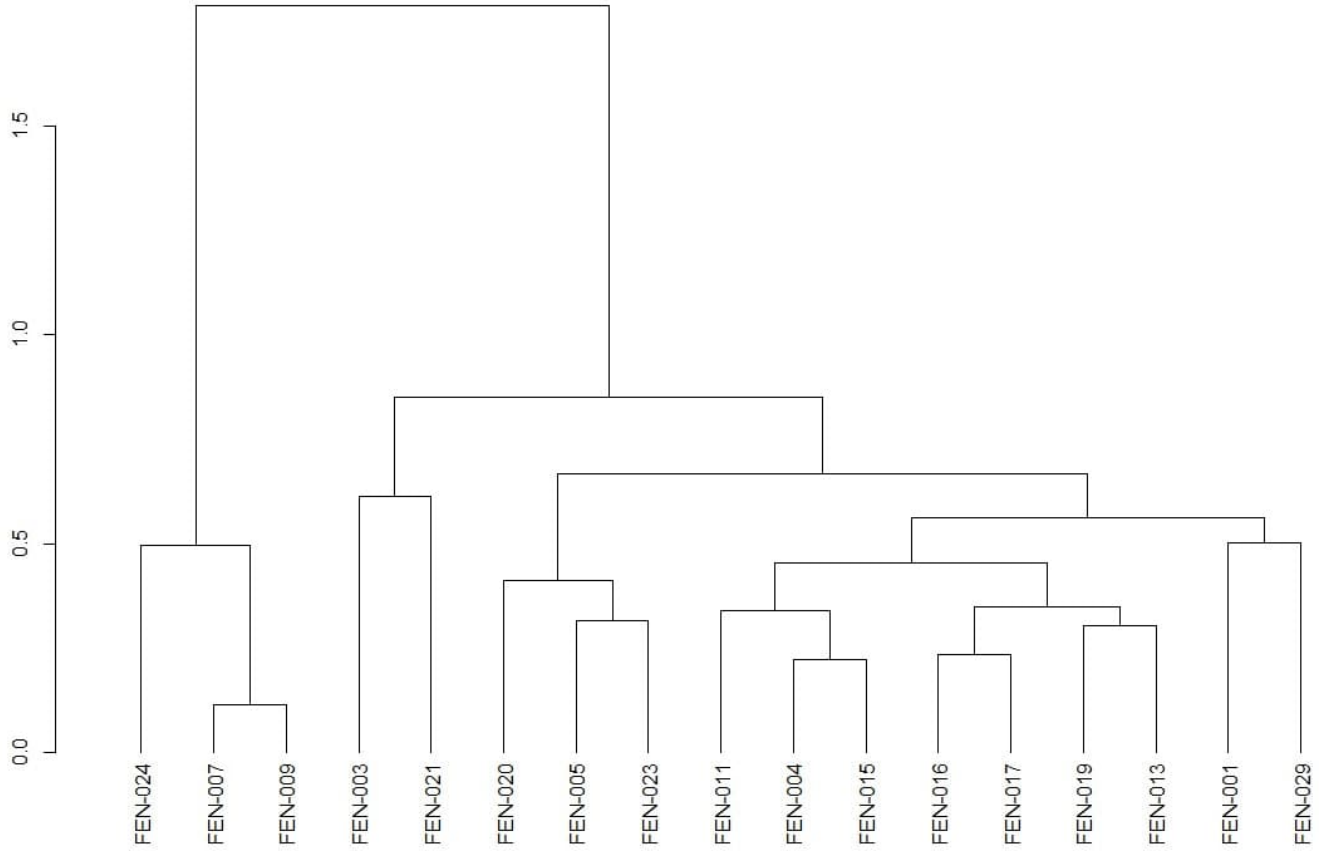
Family	Taxon	FEN-001	FEN-003	FEN-004	FEN-005	FEN-007	FEN-009	FEN-011	FEN-013	FEN-015	FEN-016	FEN-017	FEN-019	FEN-020	FEN-021	FEN-023	FEN-024	FEN-029	FENR-001	FENR-002	FENR-003	FENR-004	FENR-005	FENR-010	FENR-019	Opps	VMN
Fabaceae	*Acacia pulchella*													•	•										•		
	Acacia pulchella var. *glaberrima*	•																		•	•						
	Acacia saligna																										•
	Acacia urophylla																									•	
	Bossiaea angustifolia								•			•	•														
	Bossiaea aquifolium subsp. *aquifolium*		•	•	•			•		•		•		•	•	•	•	•		•		•	•	•	•		
	Bossiaea eriocarpa								•																		
	Chorizema cordatum																			•							
	Chorizema rhombeum	•	•																								
	Gastrolobium bilobum			•																	•						
	Gompholobium marginatum	•	•																		•						
	Gompholobium preissii																									•	
	Hovea chorizemifolia										•										•						
	Isotropis cuneifolia subsp. *cuneifolia*	•																									
	Kennedia coccinea subsp. *coccinea*	•		•																							
	Lotus subbiflorus																										•
	Mirbelia dilatata		•																								
	Paraserianthes lophantha subsp. *lophantha*					•													•								
	Sphaerolobium medium																									•	
Geraniaceae	Geraniaceae sp. indet					•									•		•										
	Pelargonium littorale					•																					
Goodeniaceae	*Scaevola calliptera*	•								•							•								•		
Haemodoraceae	*Conostylis aculeata*																									•	
Hemerocallidaceae	*Agrostocrinum hirsutum*																									•	
	Johnsonia lupulina																									•	
Iridaceae	*Patersonia babianoides*		•	•	•			•	•	•	•	•	•	•									•				
	Patersonia sp. indet																										•
	Patersonia occidentalis var. *occidentalis*																										•
Juncaceae	*Juncus ?amabilis*					•																					
	Juncus sp. indet																										•
	Luzula meridionalis														•												
Lamiaceae	*Hemigenia pritzelii*		•											•													
	Lamiaceae sp. indet					•					•																

Family	Taxon	FEN-001	FEN-003	FEN-004	FEN-005	FEN-007	FEN-009	FEN-011	FEN-013	FEN-015	FEN-016	FEN-017	FEN-019	FEN-020	FEN-021	FEN-023	FEN-024	FEN-029	FENR-001	FENR-002	FENR-003	FENR-004	FENR-005	FENR-010	FENR-019	Opps	VMN
	Mentha pulegium																										•
Lauraceae	*Cassytha* sp. indet										•	•			•												
Malvaceae	*Lasiopetalum floribundum*		•	•		•	•				•				•	•		•		•				•			
	Thomasia foliosa	•													•												
	Thomasia paniculata						•												•								
Myrtaceae	*Agonis flexuosa* var. *flexuosa*																	•		•		•					
	Corymbia calophylla	•	•	•	•	•		•	•	•	•	•	•	•	•	•	•	•	•		•	•	•	•	•		
	Eucalyptus marginata subsp. *marginata*	•	•	•	•	•		•	•	•	•	•	•	•		•		•			•	•	•		•		
	Eucalyptus patens					•	•										•	•	•	•	•			•			
	Hypocalymma angustifolium	•	•						•									•			•	•			•		
	Taxandria linearifolia						•										•		•	•	•						
Orchidaceae	*Caladenia flava* subsp. *flava*																	•									
	Caladenia sp. indet	•								•	•					•		•									
	Cyrtostylis sp. indet					•					•				•		•							•			
	Eriochilus sp. indet	•																									
	Orchidaceae sp. indet										•							•									
	Pterostylis recurva																									•	
	Pterostylis sp. indet	•		•		•				•	•						•	•		•							
	Pterostylis vittata																									•	
	Pyrorchis nigricans																									•	
	Thelymitra crinita																	•									
	Thelymitra sp. indet	•												•							•				•		
Oxalidaceae	*Oxalis corniculata*	•													•									•			
Phyllanthaceae	*Lysiandra calycina*	•									•	•	•	•		•		•			•						
Pinaceae	*Pinus radiata*																									•	
Pittosporaceae	*Billardiera variifolia*			•	•					•	•			•													
Poaceae	*Amphipogon amphipogonoides*	•	•	•	•				•	•	•			•				•									
	Austrostipa sp. indet	•	•						•																		
	Hordeum leporinum																										•
	Neurachne alopecuroidea	•	•	•	•			•	•	•	•	•	•	•				•							•		
	Poa ?drummondiana					•	•										•										
	Poaceae sp. indet	•				•						•															
	Rytidosperma caespitosum	•											•														

Family	Taxon	FEN-001	FEN-003	FEN-004	FEN-005	FEN-007	FEN-009	FEN-011	FEN-013	FEN-015	FEN-016	FEN-017	FEN-019	FEN-020	FEN-021	FEN-023	FEN-024	FEN-029	FENR-001	FENR-002	FENR-003	FENR-004	FENR-005	FENR-010	FENR-019	Opps	VMN
	Tetrarrhena laevis	•	•	•	•						•	•	•		•	•	•	•	•	•	•		•	•			
Polygalaceae	*Comesperma virgatum*		•					•	•				•	•													
Primulaceae	*Lysimachia arvensis*																									•	
Proteaceae	*Banksia dallanneyi* subsp. *dallanneyi*								•				•					•			•						
	Banksia grandis		•					•							•								•				
	Banksia littoralis						•																				
	Conospermum capitatum subsp. *glabratum*																									•	
	Hakea amplexicaulis	•			•			•		•	•	•	•			•								•			
	Hakea lissocarpha																				•						
	Persoonia longifolia		•	•				•		•	•	•	•	•	•			•			•		•				
Pteridaceae	*Adiantum aethiopicum*					•																					
Ranunculaceae	*Clematis pubescens*				•			•				•			•	•	•					•	•	•	•		
	Ranunculus colonorum										•				•									•			
Restionaceae	*Desmocladus flexuosus*																									•	
Rhamnaceae	*Trymalium odoratissimum* subsp. *odoratissimum*					•	•				•	•			•		•	•	•	•	•	•		•			
Rubiaceae	*Opercularia apiciflora*				•			•										•									
	Opercularia hispidula		•					•	•	•	•	•		•				•						•			
	Opercularia sp. indet												•														
	Opercularia vaginata				•																						
Rutaceae	*Boronia fastigiata*	•	•									•	•	•		•		•			•		•		•		
	Diplolaena drummondii																									•	
Santalaceae	*Leptomeria cunninghamii*								•												•						
Stylidiaceae	*Levenhookia pusilla*	•																									
	Stylidium adnatum					•									•									•			
	Stylidium androsaceum	•																•			•						
	Stylidium ciliatum								•																		
	Stylidium rhynchocarpum	•	•	•	•			•	•	•	•	•	•	•	•	•		•		•		•					
	Stylidium schoenoides								•									•									
Thymelaeaceae	*Pimelea* sp. indet																				•						
	Pimelea sylvestris																									•	
Violaceae	*Pigea debilissima*							•							•		•										
Xanthorrhoeaceae	*Xanthorrhoea gracilis*		•	•	•			•	•	•	•	•	•								•		•				
	Xanthorrhoea preissii								•									•			•						

Family	Taxon	FEN-001	FEN-003	FEN-004	FEN-005	FEN-007	FEN-009	FEN-011	FEN-013	FEN-015	FEN-016	FEN-017	FEN-019	FEN-020	FEN-021	FEN-023	FEN-024	FEN-029	FENR-001	FENR-002	FENR-003	FENR-004	FENR-005	FENR-010	FENR-019	Opps	VMN
Zamiaceae	*Macrozamia riedlei*			•	•			•	•	•	•	•	•	•	•							•	•		•		
	?Calothamnus sp. indet		•																								
	?*Dichelachne micrantha*	•	•		•								•		•												
	?*Eriochilis* sp. indet									•								•			•						
	?*Lysiandra calycina*														•	•					•						
	?*Orianthera serpyllifolia*																	•									
	?*Scaevola calliptera*								•																		
	?*Scaevola* sp. indet					•																					
	?*Senecio hispidulus*														•												
	?*Thelymitra* sp. indet			•																							
	?*Tricoryne tenella*								•		•							•									

Appendix L: Dendrogram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0.5
0.0
FEN-024
FEN-007
FEN-009
FEN-003
FEN-021
FEN-020
FEN-005
FEN-023
FEN-011
FEN-004
FEN-015
FEN-016
FEN-017
FEN-019
FEN-013
FEN-001
FEN-029