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TRONOX

TARGETED FLORA AND VEGETATION ASSESSMENT

Osprey Project

FINAL

August 2024

TARGETED FLORA AND VEGETATION ASSESSMENT

Osprey Project

FINAL

Prepared by
Umwelt (Australia) Pty Limited
on behalf of
Tronox Management Pty Limited

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Environmental & Social Consultants

Acknowledgement of Country

Umwelt would like to acknowledge the traditional custodians of the country on which we work and pay respect to their cultural heritage, beliefs, and continuing relationship with the land. We pay our respect to the Elders – past, present, and future.

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Executive Summary

Tronox Management Pty Limited (Tronox) operates a large mineral sands mining operation at the company's Cooljarloo mine at Cataby, 160 kilometres (km) north of Perth in the northern extent of the Swan Coastal Plain (SCP) Region of Western Australia (WA). Tronox is proposing expansion of mining at Cooljarloo to the west of existing mining areas (the Project). The expansion area, named Osprey, is located within a larger area of intact native vegetation surveyed by Woodman Environmental Consulting Pty Limited (Woodman Environmental) (now Umwelt (Australia) Pty Limited (Umwelt)) between 2006 and 2012 as part of the Cooljarloo West project (Woodman Environmental, 2014b). A number of other historical flora and vegetation surveys have also been conducted on behalf of Tronox in the Cooljarloo area.

Umwelt was commissioned by Tronox in 2022 to undertake a Detailed flora and vegetation assessment of the Osprey project area (herein referred to as the 'Detailed Survey Area') (Umwelt, 2024b), to provide Tronox with data and documentation to current Environmental Protection Authority (EPA, 2016b) standards. This assessment included updating vegetation data and mapping previously prepared for the Cooljarloo West project. Tronox subsequently commissioned Umwelt in 2023 to undertake a Targeted flora and vegetation assessment within an area herein referred to as the 'Targeted Survey Area', to support the Environmental Impact Assessment (EIA) process for the Project. The Detailed Survey Area is approximately 1,320 hectares (ha) in size, and the Targeted Survey Area, which is almost entirely contained within the Detailed Survey Area, is approximately 257 ha in size.

The Targeted flora and vegetation field survey involved systematic foot traverses generally conducted in a grid pattern, as described below. Where less conspicuous or cryptic significant flora taxa were encountered, or where traverses intersected habitat of such taxa, survey was undertaken between traverses. Boundaries of dryland and wet heath/wetland areas were determined prior to the field survey using a combination of existing VT mapping (from Woodman Environmental (2014b) and Umwelt (2024b)) and aerial photography interpretation.

- Transects at approximately 10 m spacing used within dryland areas (potential habitat for *Paracaleana dixonii* (T)), in accordance with Draft Survey Guidelines for Australia's Threatened Orchids (DAWE, 2013).
- Transects at approximately 20 m spacing within wet heath/wetland areas. However, transect spacing was reduced where Threated flora taxa were encountered (or suitable habitat for such taxa).

The survey was undertaken across 77 team days over two site visits in 2023:

- 23 to 27 October
- 31 October to 1 November.

A total of 19 significant flora taxa were recorded by the 2023 survey in the Targeted Survey Area, including the Threatened taxon *Macarthuria keigheryi* that is listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and WA *Biodiversity Conservation Act 2016* (BC Act). All 19 taxa had existing records in the Desktop Study Area, and nine had previously been recorded in the Targeted Survey Area.

The 19 significant flora taxa recorded by the 2023 survey were:

- *Anigozanthos humilis* subsp. *chrysanthus* (P4)
- *Babingtonia urbana* (P3)
- *Chordifex reseminans* (P2)
- *Comesperma rhadinocarpum* (P3)
- *Conospermum scaposum* (P3)
- *Desmocladus nodatus* (P3)
- *Grevillea cooljarloo* (P1)
- *Hensmania stoniella* (P3)
- *Hypocalymma quadrangulare* (P3)
- *Isopogon panduratus* subsp. *palustris* (P3)
- *Levenhookia preissii* (P1)
- *Macarthuria keigheryi* (T)
- *Poranthera asybosca* (P1)
- *Poranthera moorokatta* (P2)
- *Schoenus griffinianus* (P4)
- *Schoenus pennisetis* (P3)
- *Stylidium hymenocraspedum* (P3)
- *Thysanotus glaucus* (P4)
- *Verticordia lindleyi* subsp. *lindleyi* (P4).

A likelihood of occurrence assessment was undertaken for the 85 significant flora taxa identified by the desktop assessment but not recorded by the 2023 survey. This assessment determined that three taxa, *Caladenia denticulata* subsp. *albicans* (P1), *Thelymitra apiculata* (P4) and *Thelymitra pulcherrima* (P2), would theoretically not have been identifiable at the time of the 2023 survey. Nevertheless, these three taxa are considered unlikely to occur in the Targeted Survey Area, as habitat is not considered to be present (near-coastal calcareous sandy soils in the case of *Caladenia denticulata* subsp. *albicans* (P1), and for *Thelymitra apiculata* (P4) and *Thelymitra pulcherrima* (P2), areas with greater laterite influence, which generally occur closer to the Dandaragan Scarp). The remaining 82 significant flora taxa were considered likely to be identifiable during the 2023 survey, either because the survey period coincides with the taxon's flowering period, or the taxon can be identified reliably when in fruit or sterile. However, they are considered unlikely to potentially still occur in the Targeted Survey Area; this is generally because the Targeted Survey Area occurs outside the species' known ranges, and/or potential habitat is not considered to be present. This includes *Andersonia gracilis* (T) and *Anigozanthos viridis* subsp. ?*terraspectans* (T), that had purportedly been historically recorded in the Targeted Survey Area, but were not recorded by the 2023 survey. Investigation of these historical records identified that the records are likely erroneous, as both occur within Banksia woodland (VT D-A), which is not appropriate habitat for either taxa. Both taxa were specifically searched for during the 2023 survey but were not recorded, and therefore it is considered unlikely that there are present in the Targeted Survey Area.

While the 2023 survey did not include definition or mapping of VTs, the majority of the Targeted Survey Area had been mapped by the 2022 Detailed Survey. The eastern part of the Targeted Survey Area occurs within the existing Cooljarloo disturbance footprint (M 70/1398), and in terms of assessment of vegetation, requires a Targeted survey only.

A total of six patches of the 'Banksia Woodland of the Swan Coastal Plain' Commonwealth Threatened Ecological Community (TEC)/WA Priority Ecological Community (PEC) were mapped, comprising 55.15 ha, or 21.5 %, of the Targeted Survey Area. All patches of the TEC were considered to be in 'Excellent' condition.

In addition, vegetation resembling VT W-A was recorded in the eastern part of the Targeted Survey Area. VT W-A was identified by the 2022 Detailed Survey as being potentially significant in a local and regional context for reasons other than formal listing, due to occurring on a restricted landform (clay pans). VT W-A was mapped in one occurrence in the Targeted Survey Area, across 0.37 ha.

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1.0 Introduction

1.1 Project Overview

Tronox Management Pty Limited (Tronox) operates a large mineral sands mining operation at the company's Cooljarloo mine at Cataby, 160 kilometres (km) north of Perth in the northern part of the Swan Coastal Plain (SCP) Region of Western Australia (WA). Tronox is investigating expansion of mining at Cooljarloo to the west of existing mining areas (the Project). The expansion area, named Osprey, is located within a larger area of intact native vegetation surveyed by Woodman Environmental Consulting Pty Limited (Woodman Environmental) (now Umwelt (Australia) Pty Limited (Umwelt)) between 2006 and 2012 as part of the Cooljarloo West project (Woodman Environmental, 2014b). A number of other historical flora and vegetation surveys have also been conducted on behalf of Tronox in the Cooljarloo area.

Umwelt was commissioned by Tronox in 2022 to undertake a Detailed flora and vegetation assessment of the Osprey project area (Umwelt, 2024b), to provide Tronox with data and documentation to current Environmental Protection Authority (EPA, 2016b) standards. This assessment included updating vegetation data and mapping previously prepared for the Cooljarloo West project.

Tronox subsequently commissioned Umwelt in 2023 to undertake a Targeted flora and vegetation assessment to support the Environmental Impact Assessment (EIA) process for the Project. This Targeted assessment builds on the desktop and field results of the 2022 Detailed survey, as presented in this report.

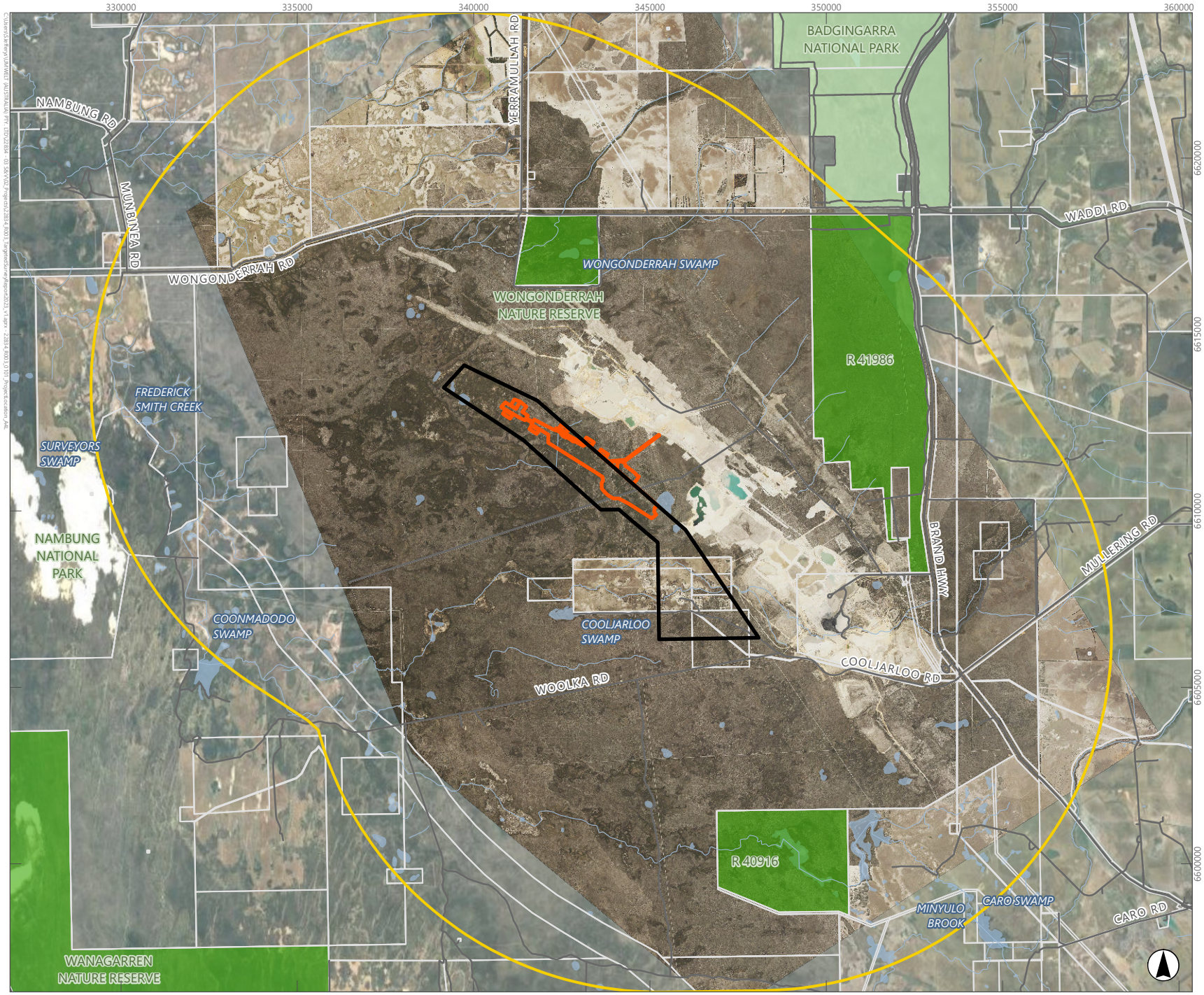
1.2 Project Area Location and Definitions

A survey area was defined for the 2023 Targeted flora and vegetation survey (hereafter referred to as the 'Targeted Survey Area'). The Targeted Survey Area is approximately 257 hectares (ha) in size (**Figure 1.1**).

The area assessed by Umwelt (2024b) for the 2022 Detailed flora and vegetation assessment (i.e. hereafter referred to as the 'Detailed Survey Area') has also been presented in **Figure 1.1**. The Detailed Survey Area is approximately 1,320 ha in size. The Targeted Survey Area is almost entirely contained within the Detailed Survey Area, with small parts in the northeast extending out of the Detailed Survey Area into the existing Cooljarloo disturbance footprint (on M 70/1398).

A Desktop Study Area was defined for elements of the desktop assessment, including interrogation of databases and searches for relevant literature. The Desktop Study Area encompasses the Detailed Survey Area, with a 10 km buffer (**Figure 1.1**).

FIGURE 1.1
Project Location



Legend

- Desktop Study Area
- Detailed Survey Area
- Targeted Survey Area
- Road
- Watercourse
- Waterbody
- Property Boundary
- Nature Reserve
- National Park

0 3 6

Kilometres

Scale 1:150,000 at A4
GDA2020 MGA Zone 50

Image Source: Tronox (2021), ESRI Basemap (2023) | **Data Source:** Landgate (2023), DBCA (2023), Umwelt (2024b), Tronox (2023)

1.3 Aims and Objectives

The primary aim of this assessment was to characterise the key flora and vegetation values of the Targeted Survey Area to the current regulatory standard, to provide relevant information to support the EIA process for the Project. As mentioned in **Section 1.1**, this report builds on the results of the Detailed flora and vegetation assessment prepared by Umwelt (2024b) for the Detailed Survey Area, and the earlier Cooljarloo West project (Woodman Environmental, 2014b).

The overall objectives of the assessment were to:

- Systematically search for the following taxa (hereafter referred to as significant flora taxa) identified as occurring or potentially occurring within the Targeted Survey Area:
    - Threatened flora taxa (T) listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).
    - Threatened flora taxa (T) listed under the WA *Biodiversity Conservation Act 2016* (BC Act).
    - Priority flora taxa (P) classified by the WA Department of Biodiversity, Conservation and Attractions (DBCA).
    - Other significant flora taxa as defined by EPA (2016a, 2016b) (**Section 3.6.1**).
- Identify, map and describe vegetation that occurs within the Survey Area that is one of the following (hereafter referred to as significant vegetation), to provide context for EIA:
    - Threatened Ecological Communities (TECs) listed under the Commonwealth EPBC Act and WA BC Act.
    - Priority Ecological Communities (PECs) classified by DBCA.
    - Other significant vegetation as defined by EPA (2016a, 2016b) (**Section 3.6.2**).
- Prepare a survey report to the requirements of EPA (2016b) that includes location information of all significant flora taxa and vegetation recorded in the Targeted Survey Area.

1.4 Level of Assessment and Relevant Guidance

The assessment of the Targeted Survey Area involved a Targeted survey as defined in Section 4.2 of the *Technical Guidance for Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016b).

As discussed in **Section 1.1**, this survey builds on previous work conducted by Umwelt (including as Woodman Environmental). The key results of relevant previous surveys are presented in **Section 5.1.2**.

The survey and reporting works comply with the following documents:

- *Environmental Factor Guideline – Flora and Vegetation* (EPA, 2016a).
- *Technical Guidance – Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016b).

Considering the location of the Targeted Survey Area and known significant environmental values in the general vicinity of the Survey Area, several other guidance documents were considered in the context of the Targeted flora and vegetation survey, particularly in the context of the EPBC Act:

- Draft Survey Guidelines for Australia's Threatened Orchids (DAWE, 2013).
- Approved Conservation Advice (incorporating listing advice) for the Banksia Woodlands of the Swan Coastal Plain ecological community (DoEE, 2016).
- Approved Conservation Advice (incorporating listing advice) for the Tuart (*Eucalyptus gomphocephala*) woodlands and forests of the Swan Coastal Plain ecological community (DoEE, 2019).
- Approved Conservation Advice for Clay Pans of the Swan Coastal Plain (DSEWPC, 2012).
- Methods for survey and identification of Western Australian Threatened Ecological Communities (DBCA, 2024) (note this latest version was released after the conclusion of the field surveys).

2.0 Background

2.1 Climate

The Targeted Survey Area is located with the SCP Interim Biogeographic Regionalisation for Australia (IBRA) bioregion, specifically within the Perth IBRA subregion (SWA2), approximately 2.8 km from the junction with the Geraldton Sandplains IBRA bioregion / Lesueur Sandplain IBRA subregion (GES02) (DCCEEW, 2023a, 2023b). The SCP IBRA Bioregion (including the Perth IBRA Subregion) generally corresponds with the Drummond Botanical Subdistrict as defined by Beard (2015). The Drummond Botanical Subdistrict experiences a warm Mediterranean climate with predominantly winter rainfall (600–1,000 millimetres (mm) annually) and five to six dry months per year (Beard, 2015).

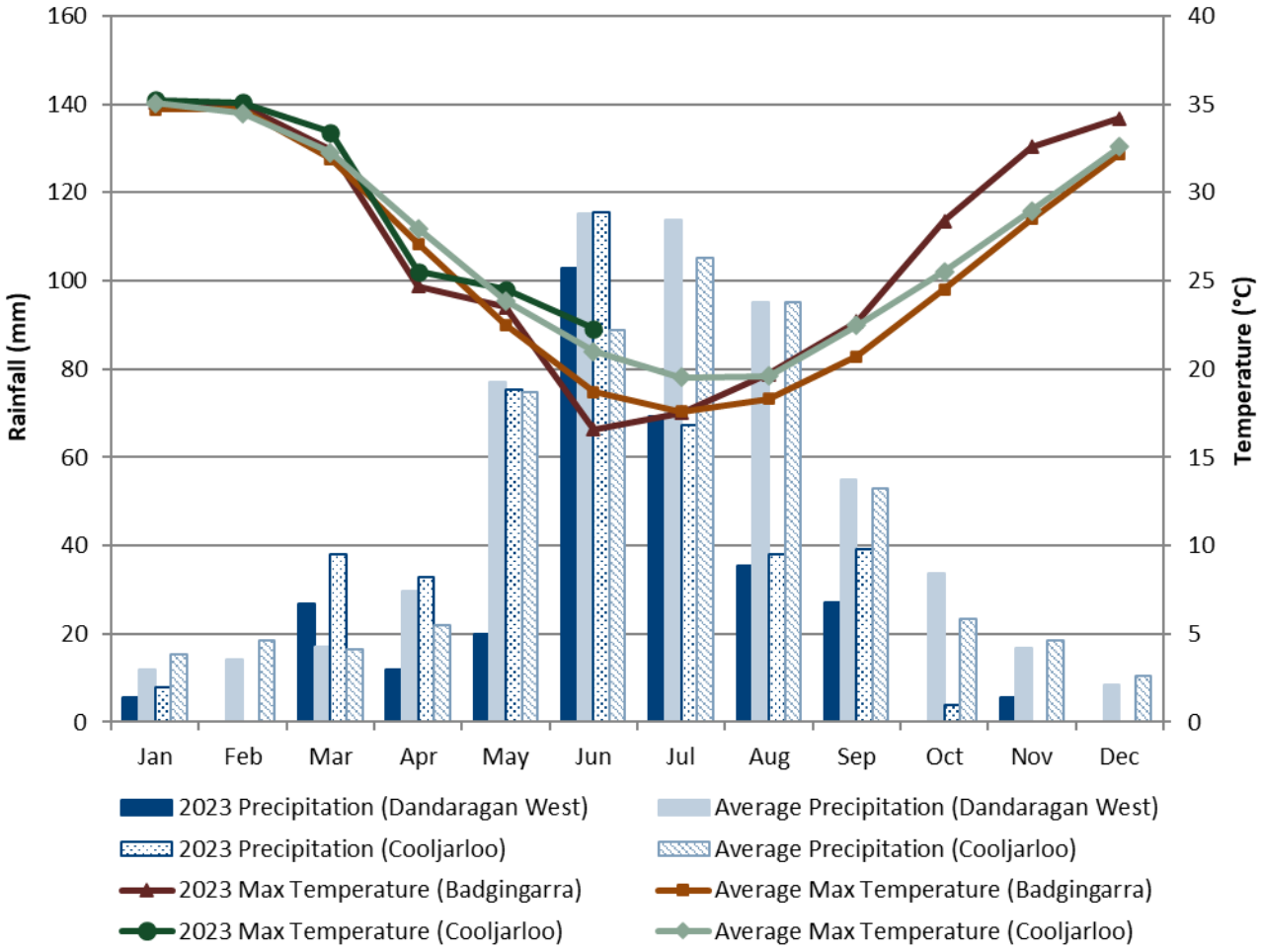
Graph 2.1 displays 2023 and long-term average monthly climate statistics at Bureau of Meteorology (BoM) weather stations closest and most relevant to the Targeted Survey Area; Badgingarra Research Station (mean monthly maximum temperature; station number 9037, long term data averaged from 1962–2023), and Dandaragan West (mean monthly precipitation; station number 9014, data from 1951–2023) (BoM, 2023). **Graph 2.1** also presents 2023 and average monthly climate statistics collected at Tronox Cooljarloo site, from 1990 (precipitation, data to November 2023) and 2015 (dry bulb maximum temperature, data to June 2023) (Tronox, 2022, 2023).

Long-term mean monthly maximum temperatures at Badgingarra Research Station peak in January and February (34.7 °C), while the lowest long-term monthly maximums are experienced in July (17.6 °C). Long-term mean monthly precipitation at Dandaragan West peaks from May to August (total of 401.2 mm received during this period), with the greatest precipitation on average received in June and July (115.2 mm and 113.9 mm, respectively) and the least in December (8.3 mm). Annually, Dandaragan West receives an average of 587.3 mm of precipitation (**Graph 2.1**).

Temperature has been recorded at the Tronox Cooljarloo mine site for nine years. Maximum temperatures peak in January (39.3 °C) and are at their lowest in July (19.5 °C). Similarly to Dandaragan West station, precipitation at Cooljarloo peaks from May to August (on average, a total of 364 mm received during this period), with the most precipitation typically received in July (105 mm) and the least in December (10 mm) (**Graph 2.1**).

Precipitation received at Cooljarloo in the three months prior to the survey (July to September 2023) (144.6 mm) was significantly less than average for this period (108.5 mm less than the long-term average of 253.1 mm), with all three months being unusually dry (37.8 mm, 57.0 mm and 13.7 mm drier than average, respectively). At Dandaragan West, this period was even drier, with 132.3 mm less than the long-term average (264.0 mm) received (**Graph 2.1**).

The mean maximum temperatures recorded at Badgingarra Research Station in July 2023 were similar to the long-term average for this month (0.1 °C less), but August and September 2023 were 1.4 °C and 2.0 °C above the average, respectively (**Graph 2.1**). Note there is no temperature data available for Cooljarloo for this period.



Graph 2.1 Climate Statistics for Badgingarra Research Station, Dandaragan West and Cooljarloo

2.2 Geology, Landform and Soils

The Targeted Survey Area is located within the Perth IBRA subregion, near the junction with the Lesueur Sandplain subregion. The Perth subregion is composed of colluvial and aeolian sands, alluvial river flats and coastal limestone (Mitchell et al., 2002). The Lesueur Sandplain subregion is comprised of coastal Aeolian and limestones, Jurassic siltstones and sandstones (often highly laterised) and alluvials associated with drainage systems (Desmond & Chant, 2002).

The Targeted Survey Area is situated on the Bassendean soil landscape zone (DPIRD, 2022a).
The Bassendean zone consists of mid-Pleistocene Bassendean sand of fixed dunes inland from the coastal dune zone. The zone contains non-calcareous sands and podsolised soils with low-lying wet areas (Schoknecht et al., 2004).

Soil landscape mapping has been prepared across South-West WA by the Department of Agriculture (now the Department of Primary Industries and Regional Development (DPIRD)) as a compilation of the results of a variety of soil and soil-landscape surveys, considering general ecological information, vegetation physiognomy and composition, patterns of variation, conservation status, gradational association and land system representation (DPIRD, 2022b). Data from the North Coastal Plain Land Resources Survey has been used to map soil-landscape units in the region within which the Targeted Survey Area is located (Schoknecht et al., 2004).

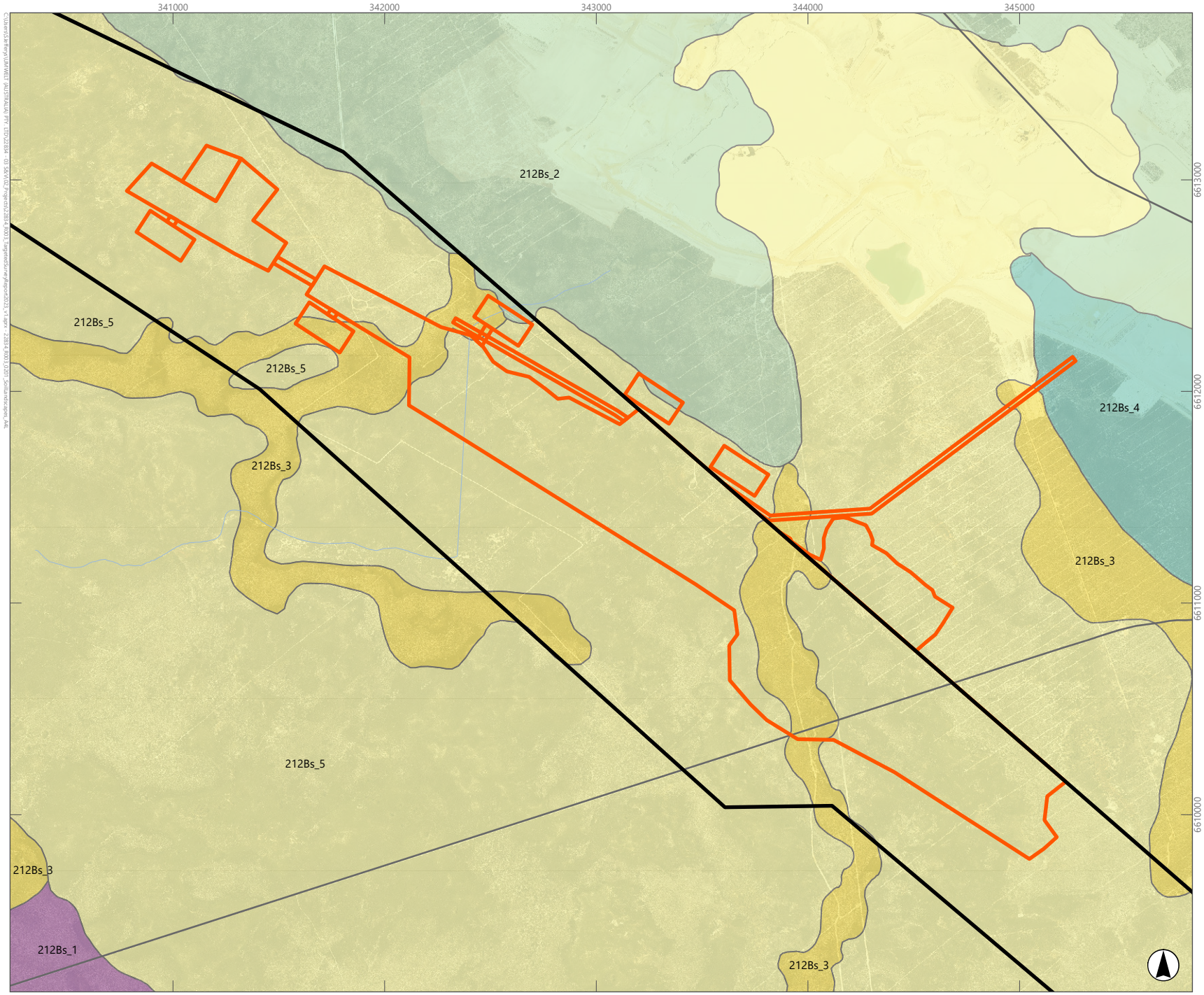
The Targeted Survey Area occurs across four soil landscape subsystems, as summarised in **Table 2.1** and presented in **Figure 2.1**; the dominant soil landscape subsystem (212Bs 5) is characterised by poorly drained plains, consisting of low rises or dunes interspersed with saline depressions and swamps (DPIRD, 2022b).

Table 2.1 Soil Landscape Subsystems of the Targeted Survey Area

Subsystem	Description	Mapped Extent in Targeted Survey Area (ha)
212Bs 2: Bassendean 2	Undulating sandplain (Similar to Bs1, but with ironstone and occasionally poorly drained depressions)	1.4
212Bs 3: Bassendean 3	Low dunefields; deep, pale grey or white sands	33.8
212Bs 4: Bassendean 4	Plain, often poorly drained; semi-wet soil, pale shallow sands over pan, sandy duplexes, wet soil	0.6
212Bs 5: Bassendean 5	Complex pattern of dunes or low sandy rises, poorly drained plains, (Complex of Bs1, Bs4 and Bs6; Bs4 or Bs6 dominant); saline depressions and swamps	221.0

Source: Soil Landscape Mapping - Best Available (DPIRD-027) (DPIRD, 2022b).

FIGURE 2.1
Soil Landscape Subsystems



Legend

- Detailed Survey Area
- Targeted Survey Area
- Road
- Watercourse

Soil Landscape Subsystems

- 212Bs_1
- 212Bs_2
- 212Bs_3
- 212Bs_4
- 212Bs_5

0 0.5 1

Kilometres

Scale 1:25,000 at A4
GDA2020 MGA Zone 50

Image Source: Tronox (2021) | **Data Source:** Landgate (2023), DPIRD (2022b), Umwelt (2024), Tronox (2023)

3.0 Methods

3.1 Desktop Assessment Methods

Prior to commencement of the 2023 field survey, a review of all publicly available flora and vegetation data relevant to the Desktop Study Area was undertaken, as listed in **Table 3.1**; this includes data collated by Umwelt (2024b) for the 2022 Detailed flora and vegetation assessment. The desktop assessment included obtaining and reviewing copies of previous biological survey reports carried out within the vicinity of the Targeted Survey Area (those undertaken in compliance with current or previous EPA Technical Guidance), including via interrogation of the Index of Biodiversity Surveys for Assessments (IBSA) database. Where TECs or PECs were identified by the desktop assessment, appropriate DBCA or Department of Climate Change, Energy, the Environment and Water (DCCEEW) nomination/listing descriptions and recovery plans of the TEC or PEC were also reviewed prior to field survey, as well as the 'Methods for survey and identification of Western Australian threatened ecological communities' report from DBCA (2024).

As listed in **Table 3.1**, also available for interrogation for the desktop assessment was a flora database that covers a large portion of the Northern Sandplains region and northern SCP sub-region (herein referred to as the "Shared Flora Database"). This database is jointly managed by multiple contributors including Tronox and Iluka Resources Limited (Iluka), and contains locations of flora taxa recorded by various historical surveys. The Shared Flora Database (supplied by Iluka, current at July 2021) was utilised to obtain records of significant flora taxa located within the Desktop Study Area.

Table 3.1 Searches Undertaken for the Desktop Assessment of the Targeted Survey Area

Source	Search Attributes	Search Purpose
DCCEEW Species Profile and Threats (SPRAT) Database (interrogated using the Protected Matters Search Tool) (DCCEEW, 2022, 2023c)	Database interrogated using Desktop Study Area boundary, 30 September 2022. Search updated 23 August 2023	Identify Matters of National Environmental Significance (MNES), including Threatened flora and TECs listed under the EPBC Act, that occur or have the potential to occur within the Desktop Study Area
DBCA Significant Flora Databases (WA Herbarium Specimen Database and TPFL Databases) (DBCA, 2021b, 2023d)	Database interrogated using approximate Desktop Study Area boundary, 30 September 2021, reference 86-0921FL. Search updated using approximate Desktop Study Area boundary, 31 August 2023, reference 70-0823FL	Obtain records of DBCA-listed significant flora within the Desktop Study Area
DBCA NatureMap (WA Herbarium and Threatened and Priority Flora (TPFL) Databases) (DBCA, 2022a, 2023e)	Database interrogated using Desktop Study Area boundary, 16 December 2022, reference 52-1222NM. Search updated 23 August 2023, reference 74-0823NM	Obtain records of DBCA-listed significant flora taxa within the Desktop Study Area

Source	Search Attributes	Search Purpose
DBCA Threatened and Priority Ecological Communities Database (DBCA, 2021a, 2023c)	Database interrogated using approximate Desktop Study Area boundary, 28 September 2021, reference 56-0921EC. Search updated using approximate Desktop Study Area boundary, 4 September 2023, reference 55-0823EC	Obtain records of BC Act listed TECs and DBCA-classified PECs within the Desktop Study Area
DBCA TEC and PEC records spatial data (DBCA-038) (DBCA, 2022b)	Review of mapped DBCA TECs and PECs within or in proximity to the Desktop Study Area	Identify whether there are any DBCA BC Act listed TECs and DBCA-classified PECs that could occur within the Desktop Study Area
DBCA TEC and PEC lists (DBCA, 2023f, 2023g)	Review of current DBCA TEC and PEC lists	Identify whether there are any additional BC Act listed TECs and DBCA-classified PECs that could occur within the Desktop Study Area
IBSA database (DWER, 2023)	Approximate Desktop Study Area boundary (exact boundary cannot be used)	Obtain copies of flora and vegetation reports and associated spatial data (where available), undertaken in compliance with current or previous EPA Technical Guidance, to identify records of significant flora and vegetation and introduced flora in the vicinity of the Targeted Survey Area
Shared Flora Database (current at 16 June 2021) (Iluka, 2021)	Desktop Study Area	Identify records of significant flora taxa in the Desktop Study Area
2018 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (DBCA, 2019) (Report 3b) and Pre-European Vegetation spatial database (DPIRD, 2019)	Targeted Survey Area	Identify extent of Vegetation System Associations (pre-European vegetation mapping) within the Targeted Survey Area

3.2 Personnel and Licensing

Table 3.2 lists the personnel involved in fieldwork, plant identifications and report preparation for the Targeted flora and vegetation assessment. The Project Manager and field team leaders have previous experience in all aspects of the assessment, including in conducting flora and vegetation surveys in the region. Other personnel have previous experience in assisting with flora and vegetation surveys in the region.

All plant material was collected under the relevant *Flora Taking (Biological Assessment) Licence* (under Regulation 62 of the Biodiversity Conservation Regulations 2018) and *Authorisation to Take or Disturb Threatened Species* (pursuant to Section 40 of the BC Act) as outlined in **Table 3.2**. Personnel reviewing plant identifications have had extensive previous experience in plant identifications of flora of the Geraldton Sandplains and checked plant identifications undertaken by less experienced personnel for accuracy.

Table 3.2 Personnel and Licensing Information

Personnel and Qualifications	Experience	Flora Collecting Licence/Permit	Role
Bethea Loudon BSc (Biology)	18 years	FB62000049-2 TFL 140-2122	• Plant identifications.
Charlotte Taunton BA (Communications & International Studies)	5 years	-	• Targeted survey.
David Coultas BSc (Environmental Biology) (Hons)	18 years	FB62000051-2 TFL 131-2122	• Targeted survey. • Plant identifications review. • Report review.
Diana Barrie BSc (Agricultural Science & Conservation Biology)	3 years	FB62000443-2 TFL 2223-0143	• Targeted survey.
Georgia Johnsen BSc (Marine Biology & Conservation Biology)	1 year	FB62000470 TFL 2223-0137	• Targeted survey.
Glenn Stuckey BSc (Geography) & BA (Philosophy & Economics)	5 years	-	• Targeted survey.
Jaroslav Hruban Mgr (MSc equivalent; Botany), BSc (Botany) (Hons)	4 years	FB62000251-3 TFL044-2122	• Targeted survey.
Kyler Rowson BSc (Marine Biology & Biological Sciences)	2 years	FB62000399 TFL 2223-0139	• Targeted survey.
Marlee Starcevich BSc (Environmental Science & Chemistry) (Hons)	8 years	FB62000056-2 TFL 155-2122	• Project management. • Desktop assessment. • Plant identifications review. • Report preparation.
Monika Hrubanova Mgr (MSc equivalent; Botany), BSc (Botany) (Hons)	3 years	FB62000375-2	• Targeted survey.
Tom Jones BSc (Botany & Zoology)	1 year	FB62000537	• Targeted survey.

3.3 Survey Design

The design of the 2023 survey complies with the requirements of EPA Technical Guidance (EPA, 2016b) and other relevant guidance as per **Section 1.4**, and is consistent with the methods used for other similar flora and vegetation assessments conducted within the vicinity of the Survey Area (**Section 5.1.2**) and the wider south-west region.

3.4 Field Survey Methods

3.4.1 Survey Timing and Access

The flora and vegetation field survey was undertaken across 77 team days over two site visits in 2023 as outlined below:

- 23 to 27 October
- 31 October to 1 November.

The timing of the field survey was selected to coincide with what is considered to be the most appropriate time to survey in the South West province; as per EPA Technical Guidance (2016b), this is spring (September to November), as most flora taxa in this region flower at this time. This includes the majority of significant flora taxa that were identified by the desktop assessment (**Section 5.1.3**).

The Survey Area was accessed by vehicle using existing tracks and drill lines, and via foot traverses. Appropriate landholder/manager permissions were obtained prior to undertaking the field survey.

3.4.2 Targeted Survey for Significant Flora Taxa and Vegetation

The majority of significant flora taxa identified by the desktop assessment were considered to be theoretically identifiable during the 2023 field survey (**Section 5.1.3**). In addition, all significant vegetation communities identified by the desktop assessment were considered to be identifiable irrespective of time of survey (**Section 5.1.5**). Therefore, all such taxa and vegetation were targeted during the field survey.

Information relating to identifying characteristics, flowering period and habitat of these taxa, and relating to dominant taxa, soil and landform characteristics for significant vegetation, was provided to all field team members prior to undertaking the 2023 survey. In addition, known locations of significant flora taxa were visited prior to survey, where possible, to familiarise personnel with these taxa.

Systematic targeted survey was undertaken across the entirety of the Targeted Survey Area (**Figure 1.1**), generally in a grid pattern, as described below. Where less conspicuous or cryptic significant flora taxa were encountered, or where traverses intersected habitat of such taxa, survey was undertaken between traverses. Boundaries of dryland and wet heath/wetland areas were determined prior to the field survey using a combination of existing VT mapping (from Woodman Environmental (2014b) and Umwelt (2024b)) and aerial photography interpretation.

- Transects at approximately 10 m spacing were used within dryland areas (potential habitat for *Paracaleana dixonii* (T)), in accordance with Draft Survey Guidelines for Australia's Threatened Orchids (DAWE, 2013).
- Transects at approximately 20 m spacing were used within wet heath/wetland areas. However, transect spacing was reduced where Threatened flora taxa were encountered (or suitable habitat for such flora taxa).

The following information was recorded during traverses of the Targeted Survey Area when significant flora taxa or vegetation were encountered opportunistically:

- location (including GPS coordinates and datum, recorded using handheld GPS units), taxon and count of any significant flora encountered at location within a radius of approximately 5 m from GPS coordinates
- location (including GPS coordinates and datum, recorded using handheld GPS units), community name and extent of any significant vegetation encountered within a radius of approximately 5 m from GPS coordinates
- comments on habitat, including landform and soils, dominant or characteristic taxa, vegetation condition, description of disturbances, and any apparent correlation between vegetation and landform features, as necessary.

If new locations of significant flora taxa were identified, a representative collection of material was made (see **Section 3.5**).

Significant flora and vegetation searching was also undertaken opportunistically while traversing the Targeted Survey Area. Information recorded at such locations was the same as that recorded during targeted searching.

All traverses made during the 2023 Targeted survey are mapped as track logs in **Figure 3.1**.

341000 342000 343000 344000 345000

6613000 6612000 6611000 6610000

FIGURE 3.1

Targeted Survey Track Logs

Legend

- Detailed Survey Area
- Targeted Survey Area
- Road
- Watercourse
- Track Logs

0 300 600

Metres

Scale: 1:15,000 at A3
GDA2020 MGA Zone 50

Image Source: Tronox (2021) | **Data Source:** Landgate (2023), Umwelt (2024b), Tronox (2023)

3.5 Plant Collection, Identification and Nomenclature

Specimens of any unknown flora taxa encountered during the field survey were collected and pressed as per Western Australian Herbarium (WA Herbarium) guidelines (WA Herbarium, 2020). Plant identifications were undertaken at the WA Herbarium and were overseen by a Principal Botanist – Ecologist with extensive previous experience (> 18 years) in plant identifications for flora of the SCP and Northern Sandplains (**Section 3.2**). The identification of all flora taxa (including significant taxa) used the most up to date information available, including taxonomic keys published in books, journals and online, comparison with herbarium specimens, and consultation with taxonomic experts. External experts of particular families or genera were consulted for any specimens considered to be difficult to identify or of taxonomic interest, including botanists at the WA Herbarium.

Taxon nomenclature generally follows Florabase (WA Herbarium, 1998-), with all names checked against the current DBCA Max database to ensure their validity. However, in cases where names of plant taxa have been published recently in scientific literature but have not yet been adopted on Florabase, nomenclature in the published literature is followed. The conservation status of each taxon was checked against Florabase, which provides the most up-to-date information regarding the conservation status of flora taxa in WA.

As per section 7.2 of EPA Technical Guidance (2016b), specimens of interest, including significant flora taxa, taxa representing range extensions, potential new taxa, and key species in new occurrences of TECs and PECs, will be sent to the WA Herbarium for consideration for vouchering as soon as practicable. However, this process is via donation, and the WA Herbarium may not voucher all specimens, in accordance with its own requirements. The specimen vouchering will be supported by completed Threatened and Priority Flora Report Forms (TPFRFs) submitted to DBCA (Species and Communities Branch) in the case of listed significant flora (i.e. Threatened and Priority flora taxa).

3.6 Significant Flora and Vegetation Definitions

3.6.1 Significant Flora Taxa

As per EPA definitions (2016a, 2016b), flora taxa may be significant for a range of reasons, including, but not limited to the following:

- being identified as a Threatened or Priority species (formally listed significant taxa – includes taxa listed under both State and Commonwealth legislation, and classified as Priority by DBCA)
- being locally endemic or associated with a restricted habitat type (e.g. surface water or groundwater dependent ecosystems)
- being a new species or having anomalous features that indicate a potential new species
- being representative of the range of a species (particularly at the extremes of range, recently discovered range extensions, or isolated outliers of the main range)
- being an unusual species, including restricted subspecies, varieties or naturally occurring hybrids
- having a relictual status, being representative of taxonomic groups that no longer occur widely in the broader landscape.

Significant flora taxa recorded within the Survey Area are discussed in **Section 5.2.1** with reference to the above categories. Data including point locations and individuals of significant flora taxa recorded in the Survey Area are also presented in this section.

Conservation codes for State-listed taxa are described by DBCA (2023b). Further information about Commonwealth conservation categories is provided in Threatened Species Scientific Committee's (TSSC) 'Guidelines for assessing the conservation status of native species according to the *Environment Protection and Biodiversity Conservation Act 1999* and Environment Protection and Biodiversity Conservation Regulations 2000' (TSSC, 2021).

3.6.2 Significant Vegetation

As per EPA definitions (2016a, 2016b), vegetation may be significant for a range of reasons, including, but not limited to the following:

- being identified as a TEC or PEC (formally listed significant vegetation – includes vegetation listed under Commonwealth or State legislation, or classified as a TEC or PEC by DBCA
- having restricted distribution
- having a degree of historical impact from threatening processes
- playing a role as a refuge
- providing an important function required to maintain ecological integrity of a significant ecosystem.

To determine the presence of TECs and PECs defined from quadrat-derived data, EPA Technical Guidance (2016b) requires comparison of quadrat data with that of the survey from which the TEC or PEC was originally described. However, limited information is often available for TECs and PECs; generally, only broad descriptions are provided in the respective TEC and PEC lists to allow for diagnosis. The vegetation of the Targeted Survey Area was therefore manually compared to such descriptions to determine whether any vegetation may represent a TEC or PEC; specifically, comparisons of dominant taxa, soils, topography and geographical distribution of vegetation types (VTs) (as defined and described by Umwelt (2024b) for the 2022 Detailed Survey) were made to those of any relevant TEC or PEC. A similar process was followed for TECs listed under the EPBC Act, with comparisons made to the appropriate listing and conservation advice for any TECs likely to occur in the Targeted Survey Area. The DBCA publication 'Methods for survey and identification of Western Australian threatened ecological communities' (DBCA, 2024) was also reviewed for TECs listed under the BC Act.

The remaining significant vegetation criteria other than "being identified as a TEC and PEC" were applied to VTs of the Targeted Survey Area to determine whether a VT was significant in a local or regional context. In a regional context, reference has been made to the extent of VTs mapped by Woodman Environmental (2014b) for the Cooljarloo West project (these having been reviewed in the context of the Survey Area by Umwelt (2024b) for the 2022 Detailed Survey).

Definitions, categories and criteria for WA TECs and PECs are available from DBCA (2023a). Further information about Commonwealth conservation categories is provided in TSSC's 'Guidelines for nominating and assessing the eligibility for listing of ecological communities as threatened according to the *Environment Protection and Biodiversity Conservation Act 1999* and the EPBC Regulations 2000' (TSSC, 2017)).

4.0 Limitations of Survey

Table 4.1 presents an assessment of potential limitations of the Targeted flora and vegetation assessment in accordance with EPA Technical Guidance (2016b). There were no significant limitations associated with the Targeted flora and vegetation assessment. However, the low rainfall levels and higher-than-average maximum temperatures recorded in the three months prior to the 2023 survey are considered to be minor limitations of the assessment.

Table 4.1 Assessment of Limitations of the Targeted Flora and Vegetation Survey of the Targeted Survey Area

Limitation	Determination	Comment
Effort and extent	Not a limitation	A Targeted survey was undertaken across the entire Targeted Survey Area over 77 team days. Systematic searching was undertaken via foot transects spaced at 10 m (dryland areas) or 20 m intervals (wet heath/wetland areas). Where less conspicuous or cryptic significant flora taxa were encountered, or where traverses intersected habitat of such taxa, survey was undertaken between traverses. Opportunistic survey was also undertaken while traversing the Targeted Survey Area and wider Survey Area. No constraints to effort or survey extent were experienced.
Competency / experience of the team carrying out the survey	Not a limitation	The Project Manager has previous experience (> 8 years) in managing and undertaking similar assessments in the SCP Bioregion. The Project Director has > 18 years of experience in conducting similar assessments at Cooljarloo and within the wider SCP Bioregion, and provided guidance and input during the field, plant identification, and reporting components. Field team personnel have previous experience assisting in flora and vegetation surveys. Senior personnel provided guidance to less experienced botanists throughout the survey where necessary. Information relating to identifying characteristics, flowering period and habitat of significant flora taxa identified by the desktop assessment as potentially occurring in the Targeted Survey Area was provided to all field team members prior to undertaking the 2023 field survey, and all field personnel observed in situ locations of significant flora taxa known to occur in the Targeted Survey Area prior to surveys commencing, where possible. Personnel undertaking and overseeing plant identifications have > 18 years' experience in plant identification in flora of the SCP Bioregion. Relevant taxonomic experts (including botanists at the WA Herbarium) were consulted for any specimens considered to be difficult to identify or of taxonomic interest.
Proportion of flora recorded and/or collected and identified	Potential minor limitation	This was a Targeted survey, and therefore a full census of all vascular flora taxa present in the Targeted Survey Area was not undertaken. As discussed further below, it likely does not represent an accurate indication of the true population distributions and extents of particularly fragile taxa or disturbance opportunists. At least one reference specimen of all significant flora taxa encountered was collected during the 2023 field survey for verification and identification purposes, excluding taxa that are distinctive and can be confidently identified in the field. All collections could be positively identified. Both site visits for the 2023 field survey were conducted within what is generally considered to be the ideal time to survey in the SCP Bioregion (September to November). However, climatic conditions in the months prior to the Targeted survey were poor, with significantly lower precipitation than average, and higher maximum temperatures than average (**Section 2.1**). While most perennial taxa were able to be positively identified, the hot and dry conditions may have resulted in fewer annual/ephemeral and particularly fragile taxa being present and identifiable (such as *Poranthera moorokatta* (P2)). Therefore, this is a potential minor limitation of the assessment.

Limitation	Determination	Comment
Sources of information e.g. previously available information (whether historic or recent) as distinct from new data	Not a limitation	Good contextual information for the Targeted Survey Area was available prior to the 2023 field survey. Sources of information used included government databases (DCCEEW, DBCA) and numerous general sources pertaining to the climate, geomorphology, and flora and vegetation of the SCP Bioregion, all of which are considered to have high reliability. Previous reports and data from the vicinity of the Targeted Survey Area as summarised in **Section 5.1.2** are also considered to be generally reliable unless where stated. Review of BoM climate data for Dandaragan West and Badgingarra, as well as Tronox Cooljarloo weather data, revealed a small number of gaps in the daily datasets for temperature and precipitation; however, this data was used in an indicative manner only, and therefore this is not considered to be a limitation of this survey.
Survey timing and weather/season/cycle	Potential minor limitation	The survey was conducted in October, corresponding with what is considered to be the optimum time to survey in the SCP Bioregion (Spring). However, as previously discussed, the three months preceding the Targeted survey were warmer and drier than average, and therefore it is possible that some annual or ephemeral significant flora taxa that may occur in the Targeted Survey Area may not have been detectable. Therefore, this is a potential minor limitation of the assessment. Three significant flora taxa identified by the desktop assessment would theoretically not have been identifiable at the time of the 2023 survey; *Caladenia denticulata* subsp. *albicans* (P1), *Thelymitra apiculata* (P4) and *Thelymitra pulcherrima* (P2). The field survey, undertaken in late October to early November 2023, occurs after the known flowering periods of these taxa. However, these taxa are considered unlikely to occur in the Targeted Survey Area, as habitat is not considered to be present. Therefore, this is not considered to be a limitation of the assessment.
Disturbances (e.g. fire, flood, accidental human intervention etc.) that may have affected results of survey	Not a limitation	There were no recent disturbances such as fire or accidental human intervention observed in the Targeted Survey Area. A small number of significant flora taxa in the Cooljarloo area are fire and/or disturbance opportunists, such as *Macarthuria keigheryi* (T), *Comesperma rhadinocarpum* (P3), *Schoenus pennisetis* (P3) and *Thysanotus glaucus* (P4). These taxa typically establish in large numbers following fire or other disturbance, and decline in intervening years, to the point where often no extant plants remain. Consequently, they can be challenging to adequately survey in the absence of fire/disturbance. While not considered to be a limitation of this assessment, it is worthy of note that the records of these taxa from the 2023 survey likely do not represent an accurate indication of their population distribution and extent in the Targeted Survey Area. As is to be expected, vegetation fringing roads and tracks showed minor signs of disturbance, such as minor changes to vegetation structure and slightly greater presence of weeds. This did not affect the detectability or identifiability of significant flora taxa or vegetation, and is therefore not considered to be a limitation of the survey.
Remoteness and/or access restrictions	Not a limitation	There were no access-related constraints, with all areas of native vegetation being relatively easily accessible by vehicle and foot using roads and tracks, allowing high intensity survey across the Targeted Survey Area.

5.0 Results

5.1 Desktop Assessment

5.1.1 Regional Vegetation

The Targeted Survey Area is located within the Perth IBRA subregion (SWA2), near the junction with the Lesueur Sandplain subregion (GES02) (DCCEEW, 2023a, 2023b). The Perth subregion is a low lying coastal plain, mainly covered with woodlands. It is dominated by Banksia or Tuart on sandy soils, *Casuarina obesa* on outwash plains, and paperbark in swampy areas. In the east, the plain rises to duricrusted Mesozoic sediments dominated by Jarrah (*Eucalyptus marginata*) woodland. The outwash plains, once dominated by *Casuarina obesa-Corymbia calophylla* (Marri) woodlands and Melaleuca shrublands, are extensive only in the south (Mitchell et al., 2002). The Lesueur Sandplain subregion comprises shrub-heaths rich in endemics on a mosaic of lateritic mesas, sandplains, coastal sands and limestones. Heath occurs on lateritised sandplains along the subregion's north-eastern margins (Desmond & Chant, 2002).

The vegetation of WA as it was presumed to have existed prior to European settlement has been mapped at a scale of 1:250,000 as vegetation system associations (VSAs), with the pre-European Vegetation spatial database subsequently created (Beard et al., 2013; DPIRD, 2019). The Targeted Survey Area occurs entirely within the Bassendean 1030 VSA, approximately 3 km west of the boundary with the Lesueur 1031 VSA. A summary of information relating to these two VSAs is presented in **Table 5.1**, including the current extent of each VSA in relation to its pre-European extent within the respective IBRA subregion, and the percentage of the current extent of each VSA currently protected for conservation within the respective IBRA subregion (DBCA, 2019). Note that as per DBCA's Statewide Vegetation Statistics Report (DBCA, 2019), protected areas in this context are considered to be any areas listed in DBCA-Legislated Lands and Waters dataset as either Crown reserves or lands managed under Section 8A of the *Conservation and Land Management Act 1984* that have an International Union for Conservation of Nature (IUCN) category of I to IV.

The Bassendean 1030 VSA has almost 70 % of its pre-European extent remaining within the Perth IBRA subregion, however less than 14 % of the current extent within the subregion is protected for conservation. The Lesueur 1031 VSA has much less of its pre-European extent remaining within the Lesueur IBRA subregion (33 %), but a greater proportion of the current extent is protected (almost 40 %) (**Table 5.1**).

Table 5.1 Bioregional Statistics of Vegetation System Associations of the Targeted Survey Area

VSA	Description	Proportion of Targeted Survey Area (%)	Current Extent (ha)	Pre-European Extent Remaining (%)	Current Extent Protected for Conservation (%)
Bassendean 1030	Low woodland; *Banksia attenuata* and *Banksia menziesii*	100	79,561	69.7	13.9
Lesueur 1031	Mosaic: Shrublands; Hakea scrub-heath / Shrublands; Banksia heath	0 (3 km west)	73,457	32.7	37.8

Source: DBCA Statewide Vegetation Statistics: Full Report (DBCA, 2019).

5.1.2 Local Flora and Vegetation Surveys

Numerous flora and vegetation surveys, including Targeted surveys, have been undertaken over many years in the Cooljarloo area. The search of the EPA database returned five relevant flora and vegetation assessments, while the search of the IBSA website did not return any assessments that had the associated report or survey data uploaded to the database. A further 25 assessment reports from previous surveys undertaken by Umwelt (including those as Woodman Environmental), or from reports supplied to Umwelt, were reviewed. In addition, reports from monitoring of rehabilitation at the Tronox Cooljarloo site were reviewed, as the rehabilitation methodology includes application of local topsoil and mulch material, and therefore the rehabilitation contains propagules of taxa from the local area.

A summary of the results of flora and vegetation surveys undertaken since 2011 is presented in **Table 5.2**; this includes the report associated with the 2022 Detailed Survey (Umwelt, 2024b) (the results of this survey are also described in more detail in **Section 5.1.3**). Where required, taxon nomenclature and conservation status of taxa from surveys listed in **Table 5.2** have been updated in line with Florabase (WA Herbarium, 1998-), which provides the most up-to-date information regarding the conservation status of flora taxa in WA. Therefore, taxa that have been delisted since preparation of these survey reports are not included in the numbers of significant flora taxa presented in **Table 5.2**.

The locations of the surveys summarised in **Table 5.2** are shown on **Figure 5.1** (subject to the availability of survey boundary files).

The following significant flora taxa were recorded by survey(s) listed in **Table 5.2** but have since had their taxonomy updated or are likely misidentifications and cannot be confidently resolved. These taxa are therefore not included in **Table 5.2** or discussed further in this report:

- *Chordifex chaunocoleus* (P4) – a review of the concepts of *Chordifex chaunocoleus* and *Chordifex reseminans* resulted in all Northern Sandplains material of the former being re-identified as the latter. Therefore, *Chordifex chaunocoleus* is not considered to occur in the area.

- *Cyanothamnus tenuis* (P4) – presented in Woodman Environmental (2014b), as *Boronia tenuis* (P4). This taxon is likely to have been historically mis-identified, as no specimen associated with this record has been vouchered at the WA Herbarium (1998-), the taxon has not been recorded by surveys in the area, and it is unlikely that habitat for the taxon is present (Umwelt field observations).

- *Desmocladus microcarpus* (P2) – the purported records of this taxon in the Desktop Study Area have been determined to be misidentifications of *Desmocladus nodatus* (P3). *Desmocladus microcarpus* is only known from upland, lateritic habitats (WA Herbarium, 1998-).

- *Diuris* ?*eburnea* (P1) – presented in Woodman Environmental (2014b). The identification of this entity has been updated to *Diuris laxiflora*, which is not listed as significant.

- *Goodenia perryi* (P3) – presented in Mattiske (2017) and Woodman Environmental (2014b). This taxon does not occur in the area according to DBCA databases (WA Herbarium, 1998-). Umwelt has previously searched for this taxon at the historical locations without success, and it is considered that these records likely represent a misidentification of *Goodenia coerulea*, which is not listed as significant.

- *Hibbertia helianthemoides* (P4) – presented in Woodman Environmental (2014b). This taxon is known from a restricted extent in and in close proximity to Stirling Range National Park (WA Herbarium, 1998-), and therefore is not considered to occur in the area. It is considered possible that the purported records of *Hibbertia helianthemoides* (P4) actually represent misidentifications of *Hibbertia sericosepala*, which was published as a new species in 2013 (Thiele, 2013), and is not listed as significant.

- *Ornduffia submersa* (P4) – presented in Mattiske (2017) and Woodman Environmental (2014b). This taxon does not occur in the area according to DBCA databases (WA Herbarium, 1998-), and is likely a misidentification of *Liparophyllum capitatum*, which is not listed as significant.

In addition, the following taxa may represent misidentifications, and require further investigation to confirm their validity. These taxa are presented in **Table 5.2** as a precaution:

- *Babingtonia cherticola* (P3) (presented in **Table 5.2** as '*Babingtonia* aff. *cherticola* (potentially undescribed)') – specimens collected from the Cooljarloo area that were identified as *Babingtonia cherticola* (P3) have since been revised to *Babingtonia* aff. *cherticola* (WA Herbarium, 1998-). The paper within which *Babingtonia cherticola* (P3) was described stated that western specimens of this taxon (i.e. *Babingtonia* aff. *cherticola*) tend to have the hypanthium less obviously pitted and have fewer stamens and ovules, although there is some overlap in all these characters (Rye, 2015). Umwelt (2024b) attempting to resolve this issue, but ultimately the potential taxonomic and conservation significance of *Babingtonia* aff. *cherticola* cannot be resolved until further study is undertaken by Barbara Rye or another Chamelaucieae expert. In the meantime, this entity is still considered to represent a potentially undescribed taxon. However, no taxa resembling this entity were observed in the Survey Area by the 2022 Detailed Survey, and the Survey Area occurs west of all recorded locations of this entity as per lodgements at the WA Herbarium (1998-). Therefore, this taxon was considered unlikely to be present in the Survey Area, but it may occur in the wider Desktop Study Area.

- *Calytrix* aff. *eneabbensis* – presented in Mattiske (2017) and Woodman Environmental (2014b). Specimens lodged at the herbarium with this identification were reviewed, and they did not appear to strongly resemble *Calytrix eneabbensis*; it is possible that they may represent a novel taxon, or variation of another *Calytrix* taxon. However, no individuals that resemble the entity referred to as *Calytrix* aff. *eneabbensis* were recorded in the Survey Area by the 2022 Detailed Survey, nor other previous surveys undertaken in the Osprey area for Tronox. Therefore, this taxon was considered unlikely to be present in the Survey Area, but it may occur in the wider Desktop Study Area.

- *Frankenia glomerata* (P4) – DBCA databases indicate that there are no records of this taxon in the Cooljarloo area (WA Herbarium, 1998-). However, this taxon has been previously recorded by Umwelt west of Cooljarloo (Woodman Environmental, 2015a), and it is possible that habitat for the taxon is present in the area.

- *Haloragis foliosa* (P3) – DBCA databases indicate that there are no records of this taxon in the Cooljarloo area (WA Herbarium, 1998-); however, it is possible that habitat for this taxon is present.

- *Stylidium carnosum* subsp. ?Narrow leaves (J.A. Wege 490) – material of this entity collected from the Cooljarloo area in 2010 was identified as this by *Stylidium* expert Juliet Wege. It is unclear why identification to subspecies level was considered to be tentative. As this collection has not appeared in the Herbarium's collection according to Florabase (WA Herbarium, 1998-), despite being submitted to the WA Herbarium by Umwelt, it is not possible to determine whether the identification has since been confirmed. If so, this record fills a distribution hole for *Stylidium carnosum* subsp. Narrow leaves (J.A. Wege 490). Umwelt (2024b) noted that *Stylidium carnosum* subsp. ?Narrow leaves (J.A. Wege 490) is unlikely to be present in the Survey Area, due to lack of suitable habitat being present; this taxon typically occurs in lateritic areas, while the Survey Area has very little laterite influence. However, it may occur in the wider Desktop Study Area.
- *Stylidium maritimum* (P3) – DBCA databases indicate that there are no records of this taxon in the Cooljarloo area (WA Herbarium, 1998-); however, it is possible that habitat for this taxon is present.

Table 5.2 Summary of Results of Flora and Vegetation Surveys Previously Conducted Within and in the Vicinity of the Survey Area

Project and Source	Location	Survey Timing	Scope and Parameters of Survey	Number of Taxa Recorded	Vegetation	Significant Flora Taxa
Northern Operations Cooljarloo: Assessment of the Impacts of Mulch Harvesting on Floristic Composition of Native Vegetation (Woodman Environmental, 2011)	Partly intersects eastern part of Targeted Survey Area, the rest extending to north, east and south	October 2010	Vegetation monitoring in areas harvested for mulch for use in rehabilitation. 96 monitoring quadrats: 72 in mulched areas, 24 in non-harvested areas. Targeted flora survey in select, previously mulched areas	259 taxa (250 native) 130 genera 44 families	6 plant communities described and mapped. No TECs or PECs identified	7 Priority taxa
Flora Assessment of Drill Lines in Cooljarloo West, Cooljarloo North West and Cooljarloo South West (Mattiske, 2012)	Partly intersects Targeted Survey Area, the rest extending to northwest and southeast	September to November 2011	Targeted flora and vegetation survey along drill lines	NA	Vegetation not assessed, but no TECs or PECs identified	3 Threatened taxa 7 Priority taxa
Atlas Tenement Level 2 Flora and Vegetation Survey – North Perth Mineral Sands Project (Single Phase) (360 Environmental, 2012)	Approx. 5.4 km northwest of Targeted Survey Area	October to November 2011	Detailed flora and vegetation survey. 28 quadrats assessed over 957 ha	364 taxa (318 native)	13 vegetation units described and mapped. No TECs or PECs identified	9 Priority taxa
Targeted Flora Search of Additional Exploration Access Lines Cooljarloo West (Astron, 2012)	Approx. 3.3 km southeast of Targeted Survey Area	December 2012	Targeted flora survey along drill lines	NA	NA	1 Threatened taxon 1 Priority taxon
Cooljarloo North Mine: Search of Mine Path for Conservation Significant Flora (Woodman Environmental, 2013)	Immediately east of Targeted Survey Area	September to October 2013	Targeted flora survey	NA	NA	1 Priority taxon

Project and Source	Location	Survey Timing	Scope and Parameters of Survey	Number of Taxa Recorded	Vegetation	Significant Flora Taxa
Botanical Survey of 2013 Exploration Access Lines Cooljarloo (Astron, 2013)	Approx. 2.5 km southwest of Targeted Survey Area	October to November 2013	Targeted flora and vegetation survey along drill lines	NA	Vegetation not assessed, but no TECs or PECs identified	5 Priority taxa
Waddi Wind Farm Spring Flora and Vegetation Survey and Black Cockatoo Habitat Survey (Outback Ecology, 2014)	Approx. 7.2 km southeast of Targeted Survey Area	October to November 2013	Reconnaissance and Targeted flora and vegetation survey. 15 relevés assessed	191 taxa (183 native) 98 genera 38 families	8 vegetation units described and mapped. 2 units identified as being of conservation significance (Banksia woodland and Kwongan (Proteaceous Heath))	6 Priority taxa
Botanical Survey of 2014/2015 Cooljarloo Drill and Access Lines (Woodman Environmental, 2014a)	Approx. 4.2 km southwest of Targeted Survey Area	October to December 2013	Targeted flora and vegetation survey along drill lines	NA	Vegetation not assessed, but no TECs or PECs identified	2 Threatened taxa 2 Priority taxa
Cooljarloo West Titanium Minerals Project Flora and Vegetation Assessment (Woodman Environmental, 2014b)	Targeted Survey Area entirely contained within Woodman Environmental study area	September to November 2012 and May 2013. Incorporating quadrat data previously collected in October to November 2006, March 2008 and October 2010	Detailed flora and vegetation survey incorporating existing data from previous work. 363 quadrats assessed over 34,424 ha	1,156 taxa (1,063 native) and 1 putative hybrid 318 genera 86 families	19 VTs described and mapped. No TECs or PECs identified. 16 VTs ranked as having 'High' or 'Very High' conservation significance due to restricted distribution and providing habitat for significant flora	5 Threatened taxa 52 Priority taxa 2 potentially undescribed taxa
Botanical Survey of 2015 Cooljarloo Drill and Access Lines (Woodman Environmental, 2015a)	Partly intersects Targeted Survey Area, the rest extending to north and southeast	October to November 2014	Targeted flora and vegetation survey along drill lines	NA	Vegetation not assessed, but no TECs or PECs identified	3 Threatened taxa 18 Priority taxa

Project and Source	Location	Survey Timing	Scope and Parameters of Survey	Number of Taxa Recorded	Vegetation	Significant Flora Taxa
Cooljarloo North Mine: Mine Path Threatened Flora Survey (Woodman Environmental, 2015b)	Multiple study areas; closest approx. 280 m north of Targeted Survey Area	November 2014	Targeted flora survey	NA	NA	1 Threatened taxon
Exploration Environmental Assessment 2016: Desktop Review, Field Survey and Impact Assessment (Woodman Environmental, 2016)	Partly intersects Targeted Survey Area, the rest extending to northwest and southeast	October 2015	Targeted flora and vegetation survey along drill lines	NA	Vegetation not assessed, but no TECs or PECs identified. One VT ranked as having 'Very High' conservation significance recorded	5 Threatened taxa 3 Priority taxa
Conservation Significant Flora Survey and Impact Assessment, Tronox Cooljarloo West Project (Mattiske, 2017)	Multiple study areas; closest approx. 1.6 km west of Targeted Survey Area	July to December 2016	Targeted flora survey. Ground truthing of VT boundaries	NA	VTs groundtruthed and minor changes made to VT mapping	4 Threatened taxa 41 Priority taxa 2 potentially undescribed taxa
Cooljarloo Exploration Area Exploration Environmental Assessment 2017: Desktop Review and Risk Assessment, Field Survey and Impact Assessment (Woodman Environmental, 2017a)	Approx. 2.2 km southeast of Targeted Survey Area	November 2016	Targeted flora and vegetation survey along drill lines	NA	Vegetation communities not assessed. 1 TEC identified	1 Threatened taxon 6 Priority taxa
Second Phase Flora and Vegetation Survey: EP 447 R1 – North Perth Basin, Walyering (360 Environmental, 2017a)	Approx 7.0 km southeast of Targeted Survey Area	August 2016	Targeted flora and vegetation survey	NA	6 vegetation associations and 4 vegetation units described and mapped. 1 TEC identified	3 Priority taxa

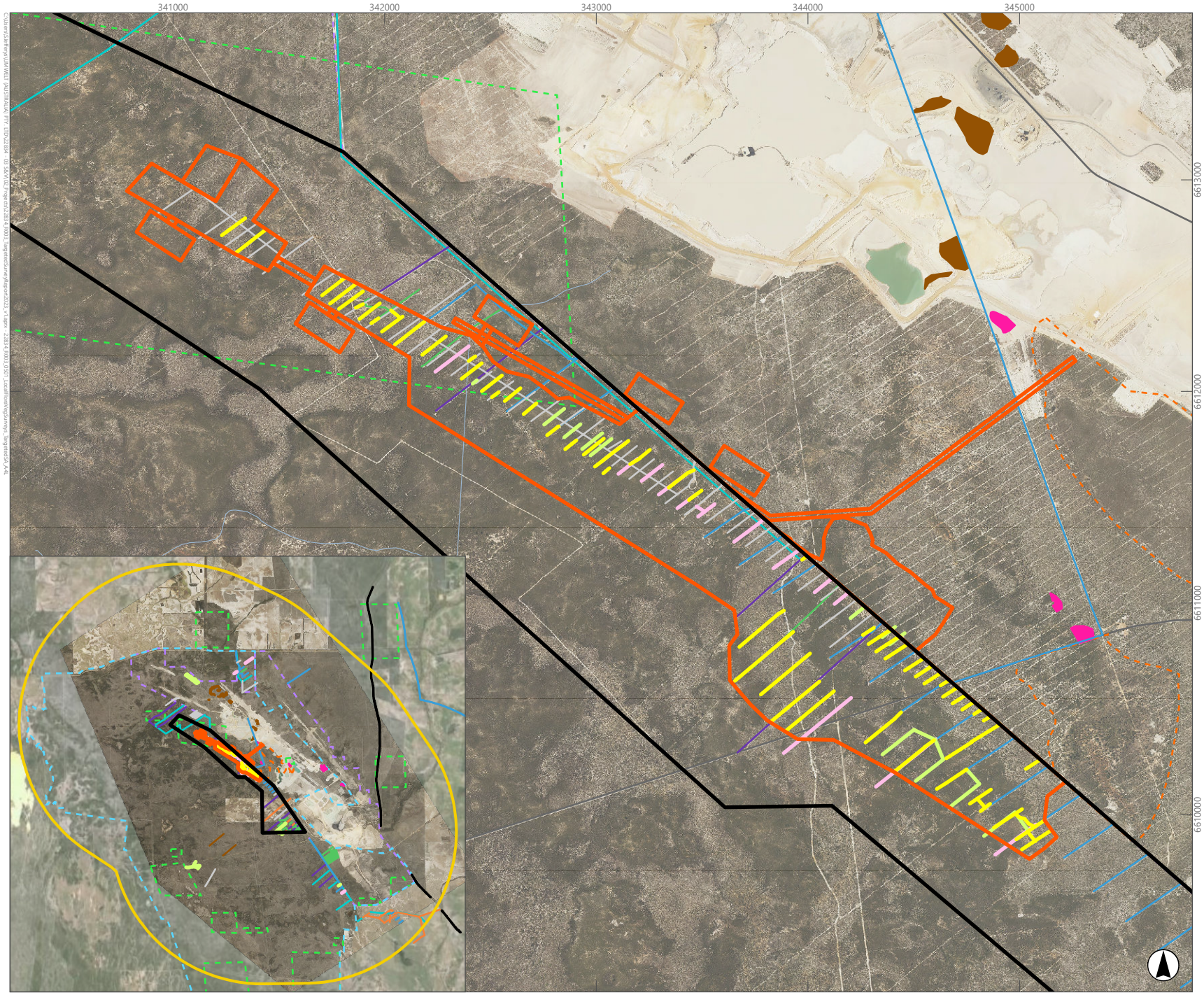
Project and Source	Location	Survey Timing	Scope and Parameters of Survey	Number of Taxa Recorded	Vegetation	Significant Flora Taxa
Threatened & Priority Flora and Vegetation: EP 447 R1 (360 Environmental, 2017b)	Approx 7.0 km southeast of Targeted Survey Area	November 2016	Targeted flora and vegetation survey	56 taxa 34 genera 14 families	6 vegetation associations and 4 vegetation units described and mapped. 1 TEC identified	5 Priority taxa
Cooljarloo Exploration Area Exploration Environmental Assessment 2018: Desktop Review and Risk Assessment, Field Survey and Impact Assessment (Woodman Environmental, 2018b)	Partly intersects Targeted Survey Area, the rest extending to northeast and southeast	August 2017 October 2017	Targeted flora and vegetation survey along drill lines	NA	Vegetation not assessed. 1 TEC identified. 1 VT ranked as having 'Very High' conservation significance recorded	1 Threatened taxon 8 Priority taxa
Cooljarloo Mineral Sands Mine: Survey of Vegetation Polygons for Threatened Flora Taxa (Woodman Environmental, 2017b)	Multiple study areas; closest approx. 640 m north of Targeted Survey Area	October 2017	Targeted flora survey	NA	NA	No significant flora taxa recorded
Further Survey for Significant Flora Taxa: Cooljarloo Area, Including Meadows Road Fire Area (Woodman Environmental, 2018c)	Multiple study areas surrounding Targeted Survey Area; closest approx. 7.8 km to northeast	October 2017	Targeted flora survey	NA	NA	3 Threatened taxa 4 Priority taxa
Brand Highway Passing Lanes Survey for Listed Threatened and Priority Flora Taxa (Woodman Environmental, 2018a)	Multiple study areas; most relevant approx. 7.8 km east of Targeted Survey Area	November 2017	Targeted flora survey	NA	NA	Relevant survey areas only (survey areas 3, 4 and 5): 13 Priority taxa

Project and Source	Location	Survey Timing	Scope and Parameters of Survey	Number of Taxa Recorded	Vegetation	Significant Flora Taxa
Cooljarloo Exploration Area Exploration Environmental Assessment 2019: Desktop Review and Risk Assessment, Field Survey and Impact Assessment (Woodman Environmental, 2019)	Partly intersects Targeted Survey Area, the rest extending to northwest and southeast	October 2018	Targeted flora and vegetation survey along drill lines	NA	Vegetation not assessed. 1 TEC identified. 3 VTs ranked as having 'Very High' conservation significance recorded	1 Threatened taxon 12 Priority taxa
Memorandum: Atlas Project 2020 – Flora and Vegetation (Morgan, 2020)	Approx. 5.4 km northwest of Targeted Survey Area	October to November 2019	Detailed and Targeted flora and vegetation survey. 19 quadrats and 16 relevés assessed (the latter not directly reported, but counted by Umwelt from Figure 3)	Not presented	1 TEC identified	13 Priority taxa
Detailed Flora and Vegetation Survey for the Atlas Project (Morgan, 2022)	Approx. 5.4 km northwest of Targeted Survey Area	October to November 2019 October to November 2020 June 2021 September to October 2021	Detailed and Targeted flora and vegetation survey. 61 quadrats and 23 relevés assessed	304 taxa (487 native). Number of genera and families not directly reported	1 TEC identified	23 Priority taxa

Project and Source	Location	Survey Timing	Scope and Parameters of Survey	Number of Taxa Recorded	Vegetation	Significant Flora Taxa
Raven 2D Seismic Surveys Ecological Assessment (Strategen, 2020)	Partly intersects Targeted Survey Area, the rest extending to southwest	November 2019	Reconnaissance and Targeted flora and vegetation survey. Ground truthing of VT boundaries	NA	13 VTs ground truthed. Minor boundary changes made for the following reasons: • newly cleared areas • availability of higher resolution aerial imagery • where field observations differed from mapping data. 1 TEC identified	3 Threatened taxa 15 Priority taxa
Cooljarloo Exploration Area Exploration Environmental Assessment 2021: Desktop Review and Risk Assessment, Field Survey and Impact Assessment (Woodman Environmental, 2021)	Partly intersects Targeted Survey Area, the rest extending to north and southeast	October 2020	Targeted flora and vegetation survey along drill lines	NA	Vegetation not assessed. 1 TEC identified. 2 VTs ranked as having 'Very High' conservation significance recorded	1 Threatened taxon 10 Priority taxa
2020 Rehabilitation Reference Plot Monitoring: Northern Operations – Cooljarloo (Umwelt, 2022a)	Partly intersects Targeted Survey Area, the rest extending to north and southeast	October to November 2020	Survey of Dry Woodland (VTs 17 and 18) and Wet Heath (VTs 1, 5 and 9a) baseline reference plots for rehabilitation program. 30 plots assessed	304 taxa (296 native) 141 genera 50 families	Vegetation not assessed – existing VT mapping from Woodman Environmental (2014b) utilised	13 Priority taxa
Cooljarloo Exploration Area Exploration Environmental Assessment 2022: Desktop Review and Risk Assessment, Field Survey and Impact Assessment (Umwelt, 2022b)	Partly intersects Targeted Survey Area, the rest extending to north and southeast	October 2021	Targeted flora and vegetation survey along drill lines	NA	Vegetation not assessed. 1 TEC identified. 2 VTs ranked as having 'Very High' conservation significance recorded	13 Priority taxa

Project and Source	Location	Survey Timing	Scope and Parameters of Survey	Number of Taxa Recorded	Vegetation	Significant Flora Taxa
Cooljarloo Exploration Area Exploration Environmental Assessment 2023: Desktop Review and Risk Assessment, Field Survey and Impact Assessment (Umwelt, 2023)	Partly intersects Targeted Survey Area, the rest extending to north and southeast	August 2022 October 2022	Targeted flora and vegetation survey along drill lines	NA	Vegetation not assessed. 1 TEC identified. 1 VT ranked as having 'Very High' conservation significance recorded	2 Threatened taxa 15 Priority taxa
Cooljarloo West Exploration Environmental Assessment 2024: Desktop Review, Field Survey and Impact Assessment (Umwelt, 2024a)	Partly intersects Targeted Survey Area, the rest extending to northwest and southeast	October to November 2023	Targeted flora and vegetation survey along drill lines	NA	Vegetation not assessed. 1 TEC identified. 2 VTs ranked as having 'Very High' conservation significance recorded	16 Priority taxa
Detailed Flora and Vegetation Assessment: Osprey Project (Umwelt, 2024b)	Almost completely contains the Targeted Survey Area	October 2022	Detailed flora and vegetation survey. 60 quadrats and 43 relevés assessed over 1,320 ha (13 and 13 of which were existing quadrats or relevés, respectively)	406 taxa (380 native) 200 genera 65 families	8 vegetation types described and mapped. 1 TEC identified. 2 VTs identified as being of potential local and regional conservation significance (occur on restricted landform types and/or have relatively restricted extents)	1 Threatened taxon 13 Priority taxa
Annual Tronox Cooljarloo rehabilitation monitoring (data from Woodman Environmental/Umwelt, 2001-)	Multiple locations north, east and southeast of Targeted Survey Area	Spring 2001 to present	Monitoring of rehabilitation and targeted flora surveys within rehabilitation	NA	NA	3 Threatened taxa 23 Priority taxa

FIGURE 5.1
Local Flora and Vegetation Surveys



Legend

- Desktop Study Area
- Detailed Survey Area
- Targeted Survey Area
- Road
- Watercourse

Previous Drill Line Surveys

- Umwelt (2024a)
- Umwelt (2023)
- Umwelt (2022b)
- Woodman Environmental (2021)
- Woodman Environmental (2019)
- Woodman Environmental (2018b)
- Woodman Environmental (2017a)
- Woodman Environmental (2016)
- Woodman Environmental (2015a)
- Woodman Environmental (2014a)

Previous Survey Areas

- Woodman Environmental (2018a)
- Woodman Environmental (2018c)
- Woodman Environmental (2017b)
- Woodman Environmental (2015b)
- Woodman Environmental (2014b)
- Woodman Environmental (2013)
- Woodman Environmental (2011)

0 0.5 1
Kilometres

Scale 1:25,000 at A4
GDA2020 MGA Zone 50

Image Source: Tronox (2021) | **Data Source:** Landgate (2023), Umwelt (2024a, 2024b), Tronox (2023), Woodman (2011 - 2018)

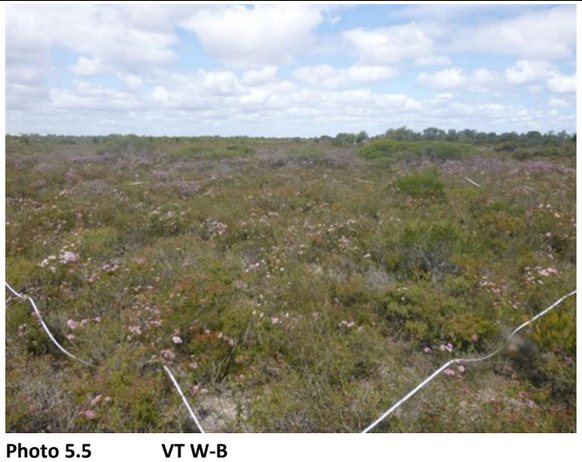
5.1.3 Known Vegetation Values

As mentioned in **Section 1.1**, Umwelt undertook a Detailed flora and vegetation assessment of the Osprey project area (the 'Detailed Survey Area'). This study involved floristic classification analysis of data from 60 quadrats (47 newly established in 2022 and 13 established in the Detailed Survey Area by relevant previous surveys). In addition, data from 43 relevés (30 newly established in 2022 and 13 by previous surveys) was used to aid in the VT mapping process. A total of eight VTs considered to belong to two broad vegetation groups were defined and mapped over the Detailed Survey Area. Of these, VTs D-A and D-B are considered representative of the 'Banksia Woodland of the Swan Coastal Plain' Commonwealth TEC/State PEC, and are consequently considered significant in a regional context. An additional two VTs (VTs D-C and W-A) are considered potentially significant in a local and regional context for reasons other than formal listing, due to occurring on restricted landform types and/or having relatively restricted extents in the Survey Area. The Detailed Survey Area VTs are described in **Table 5.3** and presented in **Figure 5.2**.

All eight VTs described by the 2022 Detailed Survey occur in the Targeted Survey Area, but approximately 11 % of the Targeted Survey Area was not mapped by the assessment. The vegetation within this area occurs within the existing Cooljarloo disturbance footprint (M 70/1398) and within the area covered by Ministerial Statement 1158, which has been previously described and mapped by Woodman Environmental (2014b) for the Cooljarloo West project. A summary of the Cooljarloo West (CLW) VTs that have been mapped within the Targeted Survey Area but outside the 2022 Detailed Survey is presented in **Table 5.4** and presented in **Figure 5.2**. **Table 5.4** also includes the possible relationship between Detailed Survey Area VTs and Cooljarloo West VTs.

Table 5.3 Summary of VTs Described in the Detailed Survey Area by the 2022 Detailed Flora and Vegetation Assessment

VT	Description	Proportion of Detailed Survey Area (%)	Proportion of Targeted Survey Area (%)	Potential Local Significance	Potential Regional Significance	Representative Photo
D-A	**Description:** Low woodland to isolated trees of *Banksia attenuata* and *Banksia menziesii*, occasionally with *Eucalyptus todtiana* and *Nuytsia floribunda*, over mid isolated shrubs of *Xanthorrhoea preissii*, over low shrubland to sparse shrubland of mixed species dominated by *Bossiaea eriocarpa* and *Melaleuca clavifolia* and also *Hibbertia hypericoides* subsp. *hypericoides*, *Jacksonia nutans* and *Eremaea pauciflora* var. *pauciflora*, over low sparse sedgeland and rushland of mixed species including *Lepidosperma* cf. *pubisquameum*, *Alexgeorgea nitens* and *Mesomelaena pseudostygia*, over low sparse forbland of mixed species including *Dasypogon obliquifolius* and *Patersonia occidentalis* var. *occidentalis*, on grey or brown deep sands or sandy loam on plains or flats within undulating plains and slopes of low dunes. **Indicator Taxa:** *Alexgeorgea nitens*, *Amphipogon turbinatus*, *Banksia attenuata*, *Banksia menziesii*, *Bossiaea eriocarpa*, *Conostylis juncea*, *Dasypogon obliquifolius*, *Eremaea asterocarpa* subsp. *asterocarpa*, *Gompholobium tomentosum*, *Hypocalymma xanthopetalum*, *Jacksonia nutans*, *Melaleuca clavifolia*, *Petrophile linearis*, *Synaphea spinulosa* subsp. *spinulosa*, *Xanthosia huegelii*. **Significant Taxa:** *Hypocalymma quadrangulare* (P3), *Poranthera asybosca* (P1).	18.1	12.7	Not considered significant in a local context.	Representative of 'Banksia Woodlands of the Swan Coastal Plain' EPBC TEC/DBCA PEC.	 **Photo 5.1 VT D-A**
D-B	**Description:** Low woodland to isolated trees of *Banksia attenuata* and *Banksia menziesii*, occasionally with *Eucalyptus todtiana* or *Banksia prionotes*, over mid open to sparse shrubland of mixed species dominated by *Allocasuarina humilis*, *Eremaea pauciflora* var. *pauciflora*, *Acacia pulchella* var. *glaberrima* and occasionally *Hakea trifurcata* and *Xanthorrhoea preissii*, over low open to sparse shrubland of mixed species dominated by *Hibbertia hypericoides* subsp. *hypericoides*, *Conospermum stoechadis* subsp. *stoechadis*, *Hibbertia striata*, *Stirlingia latifolia* and occasionally *Petrophile macrostachya*, over low sparse sedgeland and rushland of mixed species including *Lepidobolus preissianus* subsp. *preissianus* and *Mesomelaena pseudostygia*, on yellow-brown or grey deep sands or sandy loam on flats within undulating plains and slopes of low dunes. **Indicator Taxa:** *Acacia pulchella* var. *glaberrima*/var. *reflexa*, *Allocasuarina humilis*, *Anigozanthos humilis* subsp. *humilis*, *Conospermum stoechadis* subsp. *stoechadis*, *Conostylis teretifolia* subsp. *teretifolia*, *Eremaea pauciflora* var. *lonchophylla*/var. *pauciflora*, *Hibbertia hypericoides* subsp. *hypericoides*, *Hibbertia striata*, *Laxmannia sessiliflora* subsp. ?*australis*/subsp. *sessiliflora*, *Lechenaultia linarioides*, *Lepidobolus preissianus* subsp. *preissianus*, *Mesomelaena pseudostygia*, *Petrophile macrostachya*, *Rytidosperma setaceum*, *Schoenus clandestinus*, *Thysanotus spiniger*. **Significant Taxa:** *Hypocalymma quadrangulare* (P3), *Poranthera asybosca* (P1), *Stylidium hymenocraspedum* (P3).	8.3	6.4	Not considered significant in a local context.	Representative of 'Banksia Woodlands of the Swan Coastal Plain' EPBC TEC/DBCA PEC.	 **Photo 5.2 VT D-B**

VT	Description	Proportion of Detailed Survey Area (%)	Proportion of Targeted Survey Area (%)	Potential Local Significance	Potential Regional Significance	Representative Photo
D-C	**Description:** Mid open shrubland of mixed species dominated by *Hakea trifurcata*, *Banksia sessilis* var. *cygnorum*, *Xanthorrhoea preissii* and *Allocasuarina humilis*, over low sparse shrubland of mixed species dominated by *Calothamnus quadrifidus* subsp. *angustifolius* and to a lesser extent *Hibbertia hypericoides* subsp. *hypericoides*, *Hakea prostrata* and *Hibbertia striata*, on red-brown clay loam with ironstone surface stones and outcropping on low rocky hills. **Indicator Taxa:** NA (VT represented by a single quadrat). **Significant Taxa:** None recorded.	0.1	0.3	Considered significant in a local context: • Mapped in two very small occurrences and has a restricted extent in the Detailed Survey Area • Occurs on a restricted landform (ironstone hill).	Potentially significant in a regional context: • No strong similarities to any Cooljarloo West VTs • Landform type is likely to be somewhat restricted regionally.	 **Photo 5.3 VT D-C**
W-A	**Description:** Occasional low isolated trees of *Melaleuca rhaphiophylla* over mid heathland to open heathland of mixed species including *Melaleuca viminea* subsp. *viminea*, *Hakea varia*, *Melaleuca teretifolia* and *Viminaria juncea*, over low sparse heathland of mixed species dominated by *Verticordia densiflora* var. *densiflora*, *Melaleuca seriata* and sometimes *Hakea lissocarpha*, *Petrophile seminuda* and *Banksia telmatiaea*, over low sparse sedgeland and rushland of mixed species dominated by *Leptocarpus canus* and *Schoenus subfascicularis* over low sparse forbland of mixed species including *Patersonia occidentalis* var. *occidentalis*, *Opercularia vaginata* and *Conostylis aculeata* subsp. *breviflora*, on sandy clay loam or clay loam of various colours on seasonally damp to wet lower slopes, open depressions and clay pans. **Indicator Taxa:** *Hakea lissocarpha*, *Leptocarpus canus*, *Opercularia vaginata*, *Verticordia densiflora* var. *densiflora*. **Significant Taxa:** *Anigozanthos viridis* subsp. *terraspectans* (T), *Babingtonia urbana* (P3).	1.3	0.3	Considered significant in a local context: • Mapped in a small number of small occurrences and has a restricted extent in the Detailed Survey Area • Occurs on a restricted landform (clay pans).	Potentially significant in a regional context: • Landform type is likely to be somewhat restricted regionally.	 **Photo 5.4 VT W-A**
W-B	**Description:** Mid sparse heathland of mixed species including *Verticordia plumosa* var. *brachyphylla* and *Melaleuca acutifolia*, over low heathland of mixed species dominated by *Regelia ciliata*, *Calothamnus hirsutus*, *Melaleuca seriata*, *Verticordia densiflora* var. *densiflora* and *Petrophile seminuda*, on brown or grey sandy loam on seasonally damp undulating plains. **Indicator Taxa:** *Acacia dilatata*, *Calothamnus hirsutus*, *Calytrix flavescens*, *Hakea sulcata*, *Lomandra hermaphrodita*, *Melaleuca seriata*, *Petrophile seminuda*, *Regelia ciliata*, *Scaevola anchusifolia*, *Stylidium dichotomum*. **Significant Taxa:** *Isopogon panduratus* subsp. *palustris* (P3).	1.0	0.8	Not considered significant in a local context.	Not considered significant in a regional context.	 **Photo 5.5 VT W-B**

VT	Description	Proportion of Detailed Survey Area (%)	Proportion of Targeted Survey Area (%)	Potential Local Significance	Potential Regional Significance	Representative Photo
W-C	**Description:** Occasional low open woodland to isolated trees of mixed species including *Nuytsia floribunda*, *Banksia menziesii*, *Banksia attenuata*, *Banksia prionotes* and *Melaleuca preissiana*, over mid closed to open heathland of mixed species dominated by *Banksia telmatiaea*, *Regelia ciliata*, *Hakea obliqua* subsp. *parviflora* and occasionally *Beaufortia squarrosa* and *Calytrix aurea*, over low heathland to sparse heathland of mixed species including *Melaleuca seriata*, *Verticordia densiflora* var. *densiflora*, *Isopogon panduratus* subsp. *palustris* (P3), *Acacia lasiocarpa* var. *lasiocarpa* and *Jacksonia hakeoides*, on grey, brown or yellow sandy loam or sand on seasonally damp to wet low-lying plains, flats, open depressions and swamps. **Indicator Taxa:** *Banksia telmatiaea*, *Beaufortia squarrosa*, *Hakea obliqua* subsp. *parviflora*, *Isopogon panduratus* subsp. *palustris* (P3). **Significant Taxa:** *Anigozanthos viridis* subsp. *terraspectans* (T), *Babingtonia urbana* (P3), *Chordifex reseminans* (P2), *Conospermum scaposum* (P3), *Desmocladus nodatus* (P3), *Hypocalymma quadrangulare* (P3), *Isopogon panduratus* subsp. *palustris* (P3), *Lepyrodia curvescens* (P2), *Persoonia rudis* (P3), *Poranthera asybosca* (P1), *Schoenus griffinianus* (P4), *Verticordia lindleyi* subsp. *lindleyi* (P4).	45.0	66.2	Not considered significant in a local context.	Not considered significant in a regional context.	 **Photo 5.6 VT W-C**
W-D	**Description:** Occasional low isolated trees of *Melaleuca rhaphiophylla*, over mid heathland to open heathland of mixed species dominated by *Melaleuca viminea* subsp. *viminea*, *Banksia telmatiaea*, *Regelia ciliata* and occasionally *Melaleuca acutifolia* and *Kunzea micrantha* subsp. *petiolata*, over low open to sparse heathland of mixed species including *Melaleuca brevifolia* and *Hakea varia*, over low sparse sedgeland and rushland of mixed species including *Chaetanthus aristatus* and occasionally *Gahnia trifida*, on brown, grey or black clay loam or sandy loam on damp to wet plains, flats and open depressions. **Indicator Taxa:** *Cassytha aurea* var. *hirta*, *Chaetanthus aristatus*, *Melaleuca brevifolia*, *Melaleuca viminea* subsp. *viminea*. **Significant Taxa:** *Grevillea cooljarloo* (P1).	3.6	0.2	Not considered significant in a local context.	Not considered significant in a regional context.	 **Photo 5.7 VT W-D**
W-E	**Description:** Occasional low isolated trees of *Melaleuca rhaphiophylla*, *Eucalyptus rudis* subsp. *rudis*, *Banksia littoralis* and/or *Banksia menziesii*, over tall sparse to isolated shrubs of mixed species including *Acacia saligna* subsp. Wheatbelt (B.R. Maslin 8602), *Exocarpos sparteus* and occasionally *Viminaria juncea*, *Melaleuca incana* subsp. *incana* and *Hakea varia*, over mid open to sparse heathland of *Banksia telmatiaea* and other species including *Kunzea micrantha* subsp. *petiolata*, *Regelia ciliata*, *Melaleuca teretifolia* and *Hakea trifurcata*, over low sparse shrubland of mixed species including *Xanthorrhoea preissii*, *Hypocalymma balbakiae*, *Melaleuca viminea* subsp. *viminea* and *Acacia lasiocarpa* var. *lasiocarpa*, on brown or grey clay loam or sandy loam on damp to wet flats or plains. **Indicator Taxa:** *Melaleuca rhaphiophylla*. **Significant Taxa:** *Isopogon panduratus* subsp. *palustris* (P3).	1.5	0.6	Not considered significant in a local context.	Not considered significant in a regional context.	 **Photo 5.8 VT W-E**

Source: Detailed Flora and Vegetation Assessment: Osprey Project (Umwelt, 2024b).

Table 5.4 Summary of Cooljarloo West VTs in the Portion of the Targeted Survey Area not Assessed by the 2022 Detailed Survey

VT	Description	Proportion of Targeted Survey Area (%)	Potentially Equivalent Detailed Survey Area VT at Local Scale*	Comment	Representative Photo
1	**Description:** Low Open Heathland to Mid Closed Heathland of *Acacia lasiocarpa* var. *lasiocarpa, Banksia telmatiaea, Melaleuca seriata, Hakea obliqua* subsp. *parviflora, Regelia ciliata* and/or *Verticordia densiflora* var. *densiflora,* often with Mid Isolated Clumps of Shrubs to Mid Sparse Shrubland of *Melaleuca rhaphiophylla* on white-grey to grey-brown sand, sandy loam or sandy clay in broad damp depressions on flat to gently undulating plains. **Indicator Taxa:** None identified. **Significant Taxa:** *Andersonia gracilis* (T), *Anigozanthos viridis* subsp. *terraspectans* (T), *Babingtonia cherticola* (P3), *Babingtonia delicata* (P1), *Babingtonia urbana* (P3), *Banksia dallanneyi* subsp. *pollosta* (P3), *Chordifex reseminans* (P2), *Conospermum scaposum* (P3), *Conostephium magnum* (P4), *Desmocladus nodatus* (P3), *Grevillea cooljarloo* (P1), *Guichenotia alba* (P3), *Hakea longiflora* (P3), *Haloragis ?foliosa* (P3), *Isopogon panduratus* subsp. *palustris* (P3), *Jacksonia carduacea* (P3), *Lepidobolus densus* (P4), *Leucopogon* sp. Yanchep (M. Hislop 1986) (P3), *Loxocarya gigas* (P2), *Lyginia excelsa* (P1), *Macarthuria keigheryi* (T), *Meionectes tenuifolia* (P3), *Platysace ramosissima* (P3), *Schoenus griffinianus* (P4), *Schoenus pennisetis* (P3), *Stylidium hymenocraspedum* (P3), *Stylidium longitubum* (P4), *Verticordia lindleyi* subsp. *lindleyi* (P4).	3.4	W-C	Vegetation mapped as CLW VT 1 in Targeted Survey Area likely to be contiguous with that mapped as W-C in the Detailed Survey Area.	 **Photo 5.9 CLW VT 1**
2	**Description:** Mid Sparse Shrubland to Mid Closed Shrubland of *Melaleuca acutifolia, Melaleuca brevifolia, Melaleuca rhaphiophylla* and/or *Melaleuca viminea* subsp. *viminea* over Low Isolated Clumps of Shrubs to Low Shrubland of *Calothamnus hirsutus*, *Calothamnus sanguineus* and *Grevillea cooljarloo* (P1) on grey to grey-brown sand, sandy loam or sandy clay in broad damp to wet depressions and drainage lines on flat to gently undulating plains. **Indicator Taxa:** *Chaetanthus aristatus*, *Melaleuca brevifolia.* **Significant Taxa:** *Andersonia gracilis* (T), *Angianthus micropodioides* (P3), *Anigozanthos viridis* subsp. *terraspectans* (T), *Babingtonia urbana* (P3), *Byblis gigantea* (P3), *Calectasia palustris* (P2), *Chordifex reseminans* (P2), *Desmocladus nodatus* (P3), *Eryngium pinnatifidum* subsp. Palustre (G.J. Keighery 13459) (P3), *Frankenia glomerata* (P4), *Grevillea cooljarloo* (P1), *Haloragis ?foliosa* (P3), *Isopogon panduratus* subsp. *palustris* (P3), *Jacksonia carduacea* (P3), *Platysace ramosissima* (P3), *Schoenus pennisetis* (P3), *Stylidium aceratum* (P3), and *Verticordia ?lindleyi* subsp. *lindleyi* (P4).	0.1	W-A, W-B, W-D	Based on classification analysis results from Umwelt (2024b) analysis three, vegetation mapped as CLW VT 2 in Targeted Survey Area likely to be similar to (or represented by) VT W-D.	 **Photo 5.10 CLW VT 2**
6	**Description:** Low Isolated Clumps of Trees to Low Woodland of *Banksia attenuata*, *Banksia menziesii* and/or *Banksia ilicifolia* over Low Sparse Shrubland to Mid Closed Shrubland of *Adenanthos cygnorum* subsp. *cygnorum, Banksia telmatiaea*, *Beaufortia squarrosa, Hypocalymma balbakiae*, *Jacksonia nutans* and/or *Melaleuca seriata* over Low Isolated Clumps of Sedges to Mid Sedgeland of *Anarthria laevis* and/or Low Isolated Clumps of Rushes of *Chordifex sinuosus* on white-grey to grey-brown sand in damp depressions. **Indicator Taxa:** *Jacksonia nutans*. **Significant Taxa:** *Andersonia gracilis* (T), *Anigozanthos viridis* subsp. *terraspectans* (T), *Chordifex reseminans* (P2), *Conostephium magnum* (P4), *Desmocladus nodatus* (P3), *Hensmania stoniella* (P3), *Isopogon panduratus* subsp. *palustris* (P3), *Platysace ramosissima* (P3), *Schoenus griffinianus* (P4), *Stylidium hymenocraspedum* (P3), *Thysanotus glaucus* (P4), *Verticordia lindleyi* subsp. *lindleyi* (P4).	0.3	-	Based on classification analysis results from Umwelt (2024b) analysis three, vegetation mapped as CLW VT 6 in Targeted Survey Area likely to be similar to (or represented by) VT W-C.	 **Photo 5.11 CLW VT 6**

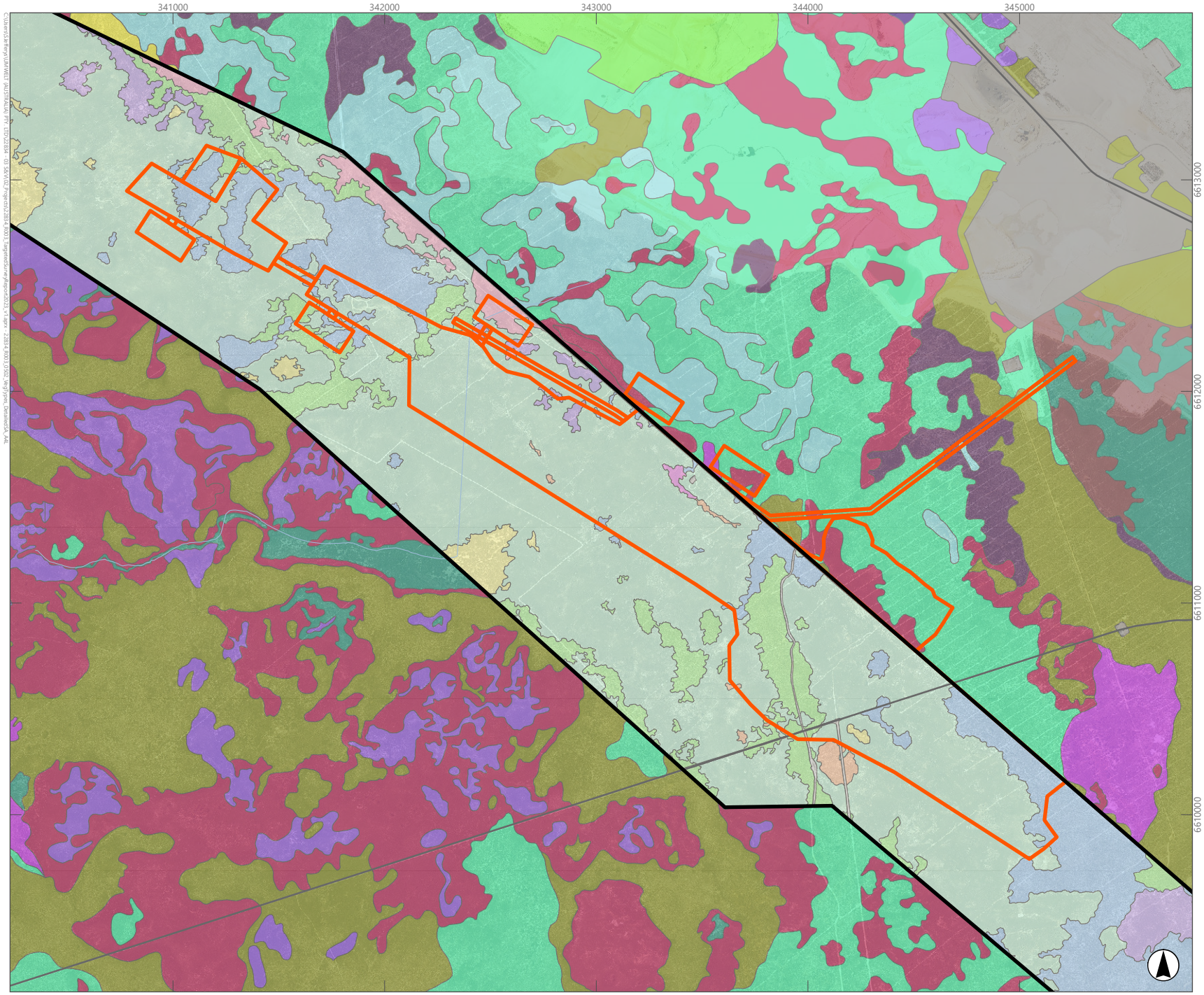
VT	Description	Proportion of Targeted Survey Area (%)	Potentially Equivalent Detailed Survey Area VT at Local Scale*	Comment	Representative Photo
7	**Description:** Low Sparse Heathland to Low Closed Heathland of *Allocasuarina* spp., *Calothamnus quadrifidus*, *Calothamnus sanguineus*, *Hakea incrassata, Hakea lissocarpha, Hibbertia crassifolia* and/or *Melaleuca seriata* over Low Isolated Clumps of Sedges to Mid Sparse Sedgeland of *Mesomelaena pseudostygia* and *Schoenus clandestinus* on white-grey to grey sand or white-grey sandy loam to yellow-brown clay loam with lateritic surface stones in broad dry depressions or gently undulating plains. **Indicator Taxa:** *Allocasuarina microstachya*, *Goodenia coerulea*, *Hakea incrassata*, *Hakea lissocarpha*, *Petrophile brevifolia*, *Schoenus clandestinus*. **Significant Taxa:** *Allocasuarina grevilleoides* (P3), *Andersonia gracilis* (T), *Babingtonia urbana* (P3), *Beaufortia bicolor* (P3), *Beaufortia eriocephala* (P3), *Calectasia palustris* (P2), *Chordifex reseminans* (P2), *Grevillea cooljarloo* (P1), *Guichenotia alba* (P3), *Hypocalymma serrulatum* (P2), *Isopogon panduratus* subsp. *palustris* (P3), *Platysace ramosissima* (P3), *Schoenus pennisetis* (P3) and *Stylidium hymenocraspedum* (P3), *Verticordia huegelii* var. *tridens* (P3), *Verticordia lindleyi* subsp. *lindleyi* (P4).	0.8	-	Vegetation mapped as CLW VT 7 in Targeted Survey Area likely to be contiguous with that mapped as W-B in the Detailed Survey Area.	 **Photo 5.12 CLW VT 7**
9a	**Description:** Mid Open Shrubland to Tall Closed Shrubland of *Melaleuca teretifolia*, *Melaleuca rhaphiophylla* and *Melaleuca viminea* subsp. *viminea*, occasionally with Mid Shrubs of *Melaleuca lateritia* and Low to Tall Sedges and Rushes of *Machaerina juncea*, *Chorizandra enodis*, *Leptocarpus coangustatus* and *Schoenus subfascicularis* on grey to grey-brown sandy loam or clay loam in broad shallow basins, wet flats and drainage lines. **Indicator Taxa:** *Melaleuca teretifolia*, *Melaleuca viminea*. **Significant Taxa:** *Babingtonia urbana* (P3), *Isopogon panduratus* subsp. *palustris* (P3), *Schoenus natans* (P4), *Stylidium longitubum* (P4).	0.02	W-E	Based on classification analysis results from Umwelt (2024b) analysis three, vegetation mapped as CLW VT 9a in Targeted Survey Area likely to be similar to (or represented by) VT W-E.	 **Photo 5.13 CLW VT 9a**
9b	**Description:** Low Woodland to Mid Open Forest of *Eucalyptus rudis* subsp. *rudis* over Low Isolated Clumps of Trees to Low Closed Forest of *Melaleuca rhaphiophylla,* often with Tall Sparse Shrubland to Tall Shrubland of *Acacia saligna* subsp. Wheatbelt (B.R. Maslin 8602), over Low Isolated Clumps of Forbs to Low Closed Forbland of **Galium murale, *Hypochaeris glabra, *Lysimachia arvensis* and *Trachymene pilosa* on grey to grey-black sand, sandy loam, sandy clay or clayey sand in wetlands, broad shallow basins/depressions and drainage lines. **Indicator Taxa:** *Eucalyptus rudis* subsp. *rudis*. **Significant Taxa:** *Andersonia gracilis* (T), *Anigozanthos viridis* subsp. *terraspectans* (T), *Babingtonia urbana* (P3), *Isopogon panduratus* subsp. *palustris* (P3).	0.1	W-E	Vegetation mapped as CLW VT 9b in Targeted Survey Area likely to be contiguous with that mapped as W-C in the Detailed Survey Area (not W-E).	 **Photo 5.14 CLW VT 9b**

VT	Description	Proportion of Targeted Survey Area (%)	Potentially Equivalent Detailed Survey Area VT at Local Scale*	Comment	Representative Photo
17	**Description:** Low Isolated Clumps of Trees to Low Open Forest of *Banksia attenuata, Banksia menziesii* and *Eucalyptus todtiana* over Mid Isolated Clumps of Shrubs to Mid Shrubland of *Adenanthos cygnorum* subsp. *cygnorum, Eremaea pauciflora, Jacksonia floribunda, Jacksonia nutans*, *Stirlingia latifolia* and *Xanthorrhoea preissii* over Low Isolated Clumps of Shrubs to Low Shrubland of *Bossiaea eriocarpa*, *Dasypogon obliquifolius, Eremaea asterocarpa* subsp. *asterocarpa, Eremaea pauciflora*, *Hibbertia crassifolia*, *Hibbertia hypericoides*, *Jacksonia nutans, Melaleuca clavifolia, Patersonia occidentalis* var. ?*occidentalis* and *Petrophile linearis* over Low Isolated Clumps of Sedges to Mid Open Sedgeland of *Mesomelaena pseudostygia* on white or grey sand on undulating plains and low dunes. **Indicator Taxa:** *Alexgeorgea nitens*, *Banksia attenuata*, *Banksia menziesii*, *Conostephium pendulum*, *Dasypogon obliquifolius*, *Eremaea asterocarpa*, *Hibbertia sericosepala*, *Hypocalymma xanthopetalum*, *Patersonia occidentalis*, *Petrophile linearis*. **Significant Taxa:** *Andersonia gracilis* (T), *Anigozanthos humilis* subsp. *chrysanthus* (P4), *Anigozanthos viridis* subsp. *terraspectans* (T), *Arnocrinum gracillimum* (P3), *Babingtonia delicata* (P1), *Babingtonia urbana* (P3), *Banksia dallanneyi* subsp. *pollosta* (P3), *Beaufortia bicolor* (P3), *Calytrix* aff. *eneabbensis* (PU), *Chordifex reseminans* (P2), *Conospermum scaposum* (P3), *Conostephium magnum* (P4), *Desmocladus biformis* (P3), *Desmocladus nodatus* (P3), *Grevillea cooljarloo* (P1), *Hensmania stoniella* (P3), *Hypocalymma* ×*proliferum* (P1), *Isopogon panduratus* subsp. *palustris* (P3), *Jacksonia carduacea* (P3), *Macarthuria keigheryi* (T), *Paracaleana dixonii* (T), *Persoonia rudis* (P3), *Platysace ramosissima* (P3), *Schoenus griffinianus* (P3), *Schoenus pennisetis* (P3), *Stenanthemum sublineare* (P2), *Stylidium hymenocraspedum* (P2), *Stylidium maritimum* (P3), *Thysanotus glaucus* (P4), *Verticordia lindleyi* subsp. *lindleyi* (P4).	5.9	D-A	Vegetation mapped as CLW VT 17 in Targeted Survey Area likely to be contiguous with that mapped as D-A in the Detailed Survey Area.	 **Photo 5.15 CLW VT 17**
18	**Description:** Low Isolated Clumps of Trees to Low Open Forest of *Banksia attenuata* and *Banksia menziesii* over Mid Isolated Clumps of Shrubs to Mid Shrubland of *Allocasuarina humilis*, *Conospermum stoechadis* subsp. *stoechadis, Eremaea pauciflora, Hakea costata* and/or *Xanthorrhoea preissii* over Low Isolated Clumps of Shrubs to Low Closed Shrubland of *Bossiaea eriocarpa, Calothamnus sanguineus, Dasypogon obliquifolius, Eremaea pauciflora, Hibbertia hypericoides, Jacksonia nutans* and/or *Melaleuca clavifolia* over Low Isolated Clumps of Sedges to Mid Open Sedgeland of *Mesomelaena pseudostygia* on grey to yellow-grey sand on undulating plains and low dunes or white-grey to grey-brown sand, sandy loam or sandy clay loam on simple slopes, open depressions or flats within undulating plains. **Indicator Taxa:** *Anigozanthos humilis* subsp. *humilis*, *Conostylis teretifolia* subsp. *teretifolia*, *Eremaea pauciflora*, *Hibbertia striata*, *Hibbertia hypericoides*, *Melaleuca clavifolia*, *Mesomelaena pseudostygia*. **Significant Taxa:** *Andersonia gracilis* (T), *Anigozanthos humilis* subsp. *chrysanthus* (P4), *Anigozanthos viridis* subsp. *terraspectans* (T), *Babingtonia urbana* (P3), *Banksia dallanneyi* subsp. *pollosta* (P3), *Chordifex reseminans* (P2), *Conospermum scaposum* (P3), *Conostephium magnum* (P4), *Eucalyptus macrocarpa* subsp. *elachantha* (P4), *Grevillea saccata* (P4), *Grevillea cooljarloo* (P1), *Hakea longiflora* (P3), *Hensmania stoniella* (P3), *Isopogon panduratus* subsp. *palustris* (P3), *Jacksonia carduacea* (P3), *Lepidobolus densus* (P4), *Macarthuria keigheryi* (T), *Platysace ramosissima* (P3), *Schoenus griffinianus* (P3), *Schoenus pennisetis* (P3), *Stylidium carnosum* subsp. ?Narrow leaves (J.A. Wege 490) (P1), *Stylidium hymenocraspedum* (P3), *Thysanotus glaucus* (P4), *Verticordia amphigia* (P3), *Verticordia lindleyi* subsp. *lindleyi* (P4).	0.4	D-B	Vegetation mapped as CLW VT 18 in Targeted Survey Area likely to be contiguous with that mapped as D-B in the Detailed Survey Area.	 **Photo 5.16 CLW VT 18**

Source: Cooljarloo West Titanium Minerals Project Flora and Vegetation Assessment (Woodman Environmental, 2014b).

** As per Umwelt (2024b).*

FIGURE 5.2
Known Vegetation Values



Legend

- Detailed Survey Area
- Targeted Survey Area
- Road
- Watercourse

Detailed Survey Area VTs

- D-A
- D-B
- D-C
- W-A
- W-B
- W-C
- W-D
- W-E
- Cleared Land

Cooljarloo West Survey VTs

- 1
- 2
- 5
- 6
- 7
- 9a
- 9b
- 10
- 12
- 17
- 18
- C
- R

0 0.5 1
Kilometres

Scale 1:25,000 at A4
GDA2020 MGA Zone 50

Image Source: Tronox (2021) | **Data Source:** Landgate (2023), Umwelt (2024b), Tronox (2023), Woodman Environmental (2014b)

Legend

Detailed Survey Area VTs

D-A	Low woodland to isolated trees of *Banksia attenuata* and *Banksia menziesii*, occasionally with *Eucalyptus todtiana* and *Nuytsia floribunda*, over mid isolated shrubs of *Xanthorrhoea preissii*, over low shrubland to sparse shrubland of mixed species dominated by *Bossiaea eriocarpa* and *Melaleuca clavifolia* and also *Hibbertia hypericoides* subsp. *hypericoides*, *Jacksonia nutans* and *Eremaea pauciflora* var. *pauciflora*, over low sparse sedgeland and rushland of mixed species including *Lepidosperma* cf. *pubisquameum*, *Alexgeorgea nitens* and *Mesomelaena pseudostygia*, over low sparse forbland of mixed species including *Dasypogon obliquifolius* and *Patersonia occidentalis* var. *occidentalis*, on grey or brown deep sands or sandy loam on plains or flats within undulating plains and slopes of low dunes.
D-B	Low woodland to isolated trees of *Banksia attenuata* and *Banksia menziesii*, occasionally with *Eucalyptus todtiana* or *Banksia prionotes*, over mid open to sparse shrubland of mixed species dominated by *Allocasuarina humilis*, *Eremaea pauciflora* var. *pauciflora*, *Acacia pulchella* var. *glaberrima* and occasionally *Hakea trifurcata* and *Xanthorrhoea preissii*, over low open to sparse shrubland of mixed species dominated by *Hibbertia hypericoides* subsp. *hypericoides*, *Conospermum stoechadis* subsp. *stoechadis*, *Hibbertia striata*, *Stirlingia latifolia* and occasionally *Petrophile macrostachya*, over low sparse sedgeland and rushland of mixed species including *Lepidobolus preissianus* subsp. *preissianus* and *Mesomelaena pseudostygia*, on yellow-brown or grey deep sands or sandy loam on flats within undulating plains and slopes of low dunes.
D-C	Mid open shrubland of mixed species dominated by *Hakea trifurcata*, *Banksia sessilis* var. *cygnorum*, *Xanthorrhoea preissii* and *Allocasuarina humilis*, over low sparse shrubland of mixed species dominated by *Calothamnus quadrifidus* subsp. *angustifolius* and to a lesser extent *Hibbertia hypericoides* subsp. *hypericoides*, *Hakea prostrata* and *Hibbertia striata*, on red-brown clay loam with ironstone surface stones and outcropping on low rocky hills.
W-A	Occasional low isolated trees of *Melaleuca rhaphiophylla* over mid heathland to open heathland of mixed species including *Melaleuca viminea* subsp. *viminea*, *Hakea varia*, *Melaleuca teretifolia* and *Viminaria juncea*, over low sparse heathland of mixed species dominated by *Verticordia densiflora* var. *densiflora*, *Melaleuca seriata* and sometimes *Hakea lissocarpha*, *Petrophile seminuda* and *Banksia telmatiaea*, over low sparse sedgeland and rushland of mixed species dominated by *Leptocarpus canus* and *Schoenus subfascicularis* over low sparse forbland of mixed species including *Patersonia occidentalis* var. *occidentalis*, *Opercularia vaginata* and *Conostylis aculeata* subsp. *breviflora*, on sandy clay loam or clay loam of various colours on seasonally damp to wet lower slopes, open depressions and clay pans.
W-B	Mid sparse heathland of mixed species including *Verticordia plumosa* var. *brachyphylla* and *Melaleuca acutifolia*, over low heathland of mixed species dominated by *Regelia ciliata*, *Calothamnus hirsutus*, *Melaleuca seriata*, *Verticordia densiflora* var. *densiflora* and *Petrophile seminuda*, on brown or grey sandy loam on seasonally damp undulating plains.
W-C	Occasional low open woodland to isolated trees of mixed species including *Nuytsia floribunda*, *Banksia menziesii*, *Banksia attenuata*, *Banksia prionotes* and *Melaleuca preissiana*, over mid closed to open heathland of mixed species dominated by *Banksia telmatiaea*, *Regelia ciliata*, *Hakea obliqua* subsp. *parviflora* and occasionally *Beaufortia squarrosa* and *Calytrix aurea*, over low heathland to sparse heathland of mixed species including *Melaleuca seriata*, *Verticordia densiflora* var. *densiflora*, *Isopogon panduratus* subsp. *palustris* (P3), *Acacia lasiocarpa* var. *lasiocarpa* and *Jacksonia hakeoides*, on grey, brown or yellow sandy loam or sand on seasonally damp to wet low-lying plains, flats, open depressions and swamps.
W-D	Occasional low isolated trees of *Melaleuca rhaphiophylla*, over mid heathland to open heathland of mixed species dominated by *Melaleuca viminea* subsp. *viminea*, *Banksia telmatiaea*, *Regelia ciliata* and occasionally *Melaleuca acutifolia* and *Kunzea micrantha* subsp. *petiolata*, over low open to sparse heathland of mixed species including *Melaleuca brevifolia* and *Hakea varia*, over low sparse sedgeland and rushland of mixed species including *Chaetanthus aristatus* and occasionally *Gahnia trifida*, on brown, grey or black clay loam or sandy loam on damp to wet plains, flats and open depressions.
W-E	Occasional low isolated trees of *Melaleuca rhaphiophylla*, *Eucalyptus rudis* subsp. *rudis*, *Banksia littoralis* and/or *Banksia menziesii*, over tall sparse to isolated shrubs of mixed species including *Acacia saligna* subsp. Wheatbelt (B.R. Maslin 8602), *Exocarpos sparteus* and occasionally *Viminaria juncea*, *Melaleuca incana* subsp. *incana* and *Hakea varia*, over mid open to sparse heathland of *Banksia telmatiaea* and other species including *Kunzea micrantha* subsp. *petiolata*, *Regelia ciliata*, *Melaleuca teretifolia* and *Hakea trifurcata*, over low sparse shrubland of mixed species including *Xanthorrhoea preissii*, *Hypocalymma balbakiae*, *Melaleuca viminea* subsp. *viminea* and *Acacia lasiocarpa* var. *lasiocarpa*, on brown or grey clay loam or sandy loam on damp to wet flats or plains.
Cleared Land	Cleared Land

FIGURE 5.2

LEGEND: Known Vegetation Values

Image Source: Tronox (2021) | **Data Source:** Landgate (2023), Umwelt (2024b), Tronox (2023), Woodman Environmental (2014b)

Legend

Cooljarloo West Survey VTs

- 1 Low open heathland to mid closed heathland of *Acacia lasiocarpa* var. *lasiocarpa*, *Banksia telmatiaea*, *Melaleuca seriata*, *Hakea obliqua* subsp. *parviflora*, *Regelia ciliata* and/or *Verticordia densiflora* var. *densiflora*, often with mid isolated clumps of shrubs to mid sparse shrubland of *Melaleuca rhaphiophylla* on white grey to grey brown sand, sandy loam or sandy clay in broad damp depressions on flat to gently undulating plains
- 2 Mid sparse shrubland to mid closed shrubland of *Melaleuca acutifolia*, *Melaleuca brevifolia*, *Melaleuca rhaphiophylla* and/or *Melaleuca viminea* subsp. *viminea* over low isolated clumps of shrubs to low shrubland of *Calothamnus hirsutus*, *Calothamnus sanguineus* and *Grevillea cooljarloo* (P1) on grey to grey brown sand, sandy loam or sandy clay in broad damp to wet depressions and drainage lines on flat to gently undulating plains
- 5 Low heathland to mid closed heathland of *Banksia telmatiaea*, *Hakea obliqua* subsp. *parviflora*, *Melaleuca seriata* and/or *Regelia ciliata* on white grey to grey brown sand, sandy loam, sandy clay or clay loam in broad damp depressions on flat to gently undulating plains
- 6 Low isolated clumps of trees to low woodland of *Banksia attenuata*, *Banksia menziesii* and/or *Banksia ilicifolia* over low sparse shrubland to mid closed shrubland of *Adenanthos cygnorum* subsp. *cygnorum*, *Banksia telmatiaea*, *Beaufortia squarrosa*, *Hypocalymma balbakiae*, *Jacksonia nutans* and/or *Melaleuca seriata* over low isolated clumps of sedges to mid sedgeland of *Anarthria laevis* and/or low isolated clumps of rushes of *Chordifex sinuosus* on white grey to grey brown sand in damp depressions
- 7 Low sparse heathland to low closed heathland of *Allocasuarina* spp., *Calothamnus quadrifidus*, *Calothamnus sanguineus*, *Hakea incrassata*, *Hakea lissocarpha*, *Hibbertia crassifolia* and/or *Melaleuca seriata* over low isolated clumps of sedges to mid sparse sedgeland of *Mesomelaena pseudostygia* and *Schoenus clandestinus* on white grey to grey sand or white grey sandy loam to yellow brown clay loam with lateritic surface stones in broad dry depressions or gently undulating plains
- 9a Mid open shrubland to tall closed shrubland of *Melaleuca teretifolia*, *Melaleuca rhaphiophylla* and *Melaleuca viminea* subsp. *viminea*, occasionally with mid shrubs of *Melaleuca lateritia* and low to tall sedges and rushes of *Machaerina juncea*, *Chorizandra enodis*, *Leptocarpus coangustatus* and *Schoenus subfascicularis* on grey to grey brown sandy loam or clay loam in broad shallow basins, wet flats and drainage lines
- 9b Low woodland to mid open forest of *Eucalyptus rudis* subsp. *rudis* over low isolated clumps of trees to low closed forest of *Melaleuca rhaphiophylla*, often with tall sparse shrubland to tall shrubland of *Acacia saligna* subsp. Wheatbelt (B.R. Maslin 8602), over low isolated clumps of forbs to low closed forbland of **Galium murale*, **Hypochaeris glabra*, **Lysimachia arvensis* and *Trachymene pilosa* on grey to grey black sand, sandy loam, sandy clay or clayey sand in wetlands, broad shallow basins/depressions and drainage lines
- 10 Low isolated clumps of trees to mid woodland of *Banksia littoralis* and *Melaleuca preissiana* over tall isolated clumps of shrubs to *Acacia saligna* subsp. Wheatbelt (B.R. Maslin 8602) and *Viminaria juncea* over mid sparse shrubland to mid shrubland of *Hypocalymma balbakiae* and *Xanthorrhoea preissii* over low open sedgeland to mid sedgeland of *Machaerina juncea*, *Cyathochaeta avenacea* and/or *Lepidosperma longitudinale* on grey to grey black loamy sand in drainage lines, wet plains and edges of damp depressions
- 12 Tall shrubland to tall closed shrubland of *Acacia saligna* ?subsp. Wheatbelt (B.R. Maslin 8602) and *Melaleuca rhaphiophylla* over low isolated clumps of sedges to mid open sedgeland of *Lepidosperma* ?*longitudinale* on grey sand to dark brown loamy sand with ironstone outcropping in shallow basins
- 17 Low isolated clumps of trees to low open forest of *Banksia attenuata*, *Banksia menziesii* and *Eucalyptus todtiana* over mid isolated clumps of shrubs to mid shrubland of *Adenanthos cygnorum* subsp. *cygnorum*, *Eremaea pauciflora*, *Jacksonia floribunda*, *Jacksonia nutans*, *Stirlingia latifolia* and *Xanthorrhoea preissii* over low isolated clumps of shrubs to low shrubland of *Bossiaea eriocarpa*, *Dasypogon obliquifolius*, *Eremaea asterocarpa* subsp. *asterocarpa*, *Eremaea pauciflora*, *Hibbertia crassifolia*, *Hibbertia hypericoides*, *Jacksonia nutans*, *Melaleuca clavifolia*, *Patersonia occidentalis* var. ?*occidentalis* and *Petrophile linearis* over low isolated clumps of sedges to mid open sedgeland of *Mesomelaena pseudostygia* on white or grey sand on undulating plains and low dunes
- 18 Low isolated clumps of trees to low open forest of *Banksia attenuata* and *Banksia menziesii* over mid isolated clumps of shrubs to mid shrubland of *Allocasuarina humilis*, *Conospermum stoechadis* subsp. *stoechadis*, *Eremaea pauciflora*, *Hakea costata* and/or *Xanthorrhoea preissii* over low isolated clumps of shrubs to low closed shrubland of *Bossiaea eriocarpa*, *Calothamnus sanguineus*, *Dasypogon obliquifolius*, *Eremaea pauciflora*, *Hibbertia hypericoides*, *Jacksonia nutans* and/or *Melaleuca clavifolia* over low isolated clumps of sedges to mid open sedgeland of *Mesomelaena pseudostygia* on grey to yellow grey sand on undulating plains and low dunes or white grey to grey brown sand, sandy loam or sandy clay loam on simple slopes, open depressions or flats within undulating plains
- C Cleared land
- R Rehabilitation area

FIGURE 5.2

LEGEND: Known Vegetation Values

Image Source: Tronox (2021) | **Data Source:** Landgate (2023), Umwelt (2024b), Tronox (2023), Woodman Environmental (2014b)

5.1.4 Significant Flora Taxa

The initial interrogation of the DBCA WA Herbarium (WA Herb) Specimen and TPFL Databases (DBCA, 2021b) returned a total of 65 DBCA-listed significant vascular flora taxa that have records in the Desktop Study Area. Of these, six taxa are listed as Threatened under the EPBC Act or BC Act, while the remaining 59 taxa are DBCA-classified Priority flora taxa. The updated search undertaken in 2023 (DBCA, 2023d) identified four additional taxa within the Desktop Study Area, as well as further locations to those initially returned by the 2021 database interrogation. One taxon returned from the DBCA TPFL and WA Herbarium database interrogations (DBCA, 2021b, 2023d) has a record within the Targeted Survey Area, being *Schoenus pennisetis* (P3).

The DCCEEW SPRAT database was initially interrogated in 2022 using the Desktop Study Area boundary. This search identified 17 Threatened flora taxa (or habitat for such taxa) that may occur in the Desktop Study Area (DCCEEW, 2022). However, 10 of these taxa have not been previously recorded in the area according to DBCA databases (2021b, 2023d). This is likely because the SPRAT database search results include intersections with broadly mapped, potentially suitable habitat, rather than point records alone (as per the DBCA database searches); the results therefore include species that 'may occur' or are 'likely to occur', as well as those 'known to occur'. The 2023 DCCEEW SPRAT search did not identify any flora taxa additional to those returned by the 2022 interrogation (DCCEEW, 2023c). The full results of the 2022 and 2023 DCCEEW database searches are presented in **Appendix A**.

An interrogation of DBCA databases using NatureMap (NM) was also undertaken in 2022 and 2023, to check for any recently added records and confirm the records returned from the 2021 and 2023 DBCA WA Herbarium Specimen and TPFL Database searches. The NatureMap searches returned eight additional listed significant flora taxa (DBCA, 2022a, 2023e).

Note that *Chordifex chaunocoleus* (P4), *Cyanothamnus tenuis* (P4) and *Hibbertia helianthemoides* (P4) were returned from the DBCA TPFL and NatureMap database interrogations (DBCA, 2021b, 2022a, 2023d, 2023e), but as discussed in **Section 5.1.2**, these taxa do not occur in the area according to Florabase (WA Herbarium, 1998-). Therefore, these taxa are not discussed further in this report, and records of *Chordifex chaunocoleus* (P4) are presumed to represent *Chordifex reseminans* (P2), as previously discussed.

Appendix B presents a summary of the 104 significant flora taxa known from or potentially occurring within the Desktop Study Area. This list has been compiled from the results of desktop searches of DBCA's Threatened Flora Databases (TPFL and WA Herbarium) (DBCA, 2021b, 2022a, 2023d, 2023e), DCCEEW's SPRAT Database (DCCEEW, 2022, 2023c), the Shared Flora Database (Iluka, 2021), and the results of previous surveys as summarised in **Section 5.1.2**. **Appendix B** also presents information on the flowering period and habitat for each taxon according to specimens lodged at the WA Herbarium (accessed via Florabase) (WA Herbarium, 1998-). Note that taxa with incomplete identifications (e.g. *Stylidium* ?*hymenocraspedum*) have not been presented in **Appendix B** if there are records of that taxon with complete identification (i.e. *Stylidium hymenocraspedum*) in the Desktop Study Area.

In summary, a total of 104 significant flora taxa are known from or have the potential to occur within the Desktop Study Area (**Appendix B**). This total comprises:

- 18 Threatened flora taxa listed under the EPBC Act and/or BC Act
- 84 DBCA-classified Priority flora taxa
- two potentially undescribed taxa.

Of the 104 taxa identified by the desktop assessment, 11 have records within the Targeted Survey Area (shaded in light blue in **Appendix B**):

- *Andersonia gracilis* (T)
- *Anigozanthos viridis* subsp. ?*terraspectans* (T)
- *Babingtonia urbana* (P3)
- *Chordifex reseminans* (P2)
- *Desmocladus nodatus* (P3)
- *Grevillea cooljarloo* (P1)
- *Isopogon panduratus* subsp. *palustris* (P3)
- *Macarthuria keigheryi* (T)
- *Schoenus griffinianus* (P4)
- *Schoenus pennisetis* (P3)
- *Verticordia lindleyi* subsp. *lindleyi* (P4).

Figure 5.3 presents the known historical locations of significant flora taxa within the Desktop Study Area and Targeted Survey Area (subject to the availability of spatial data).

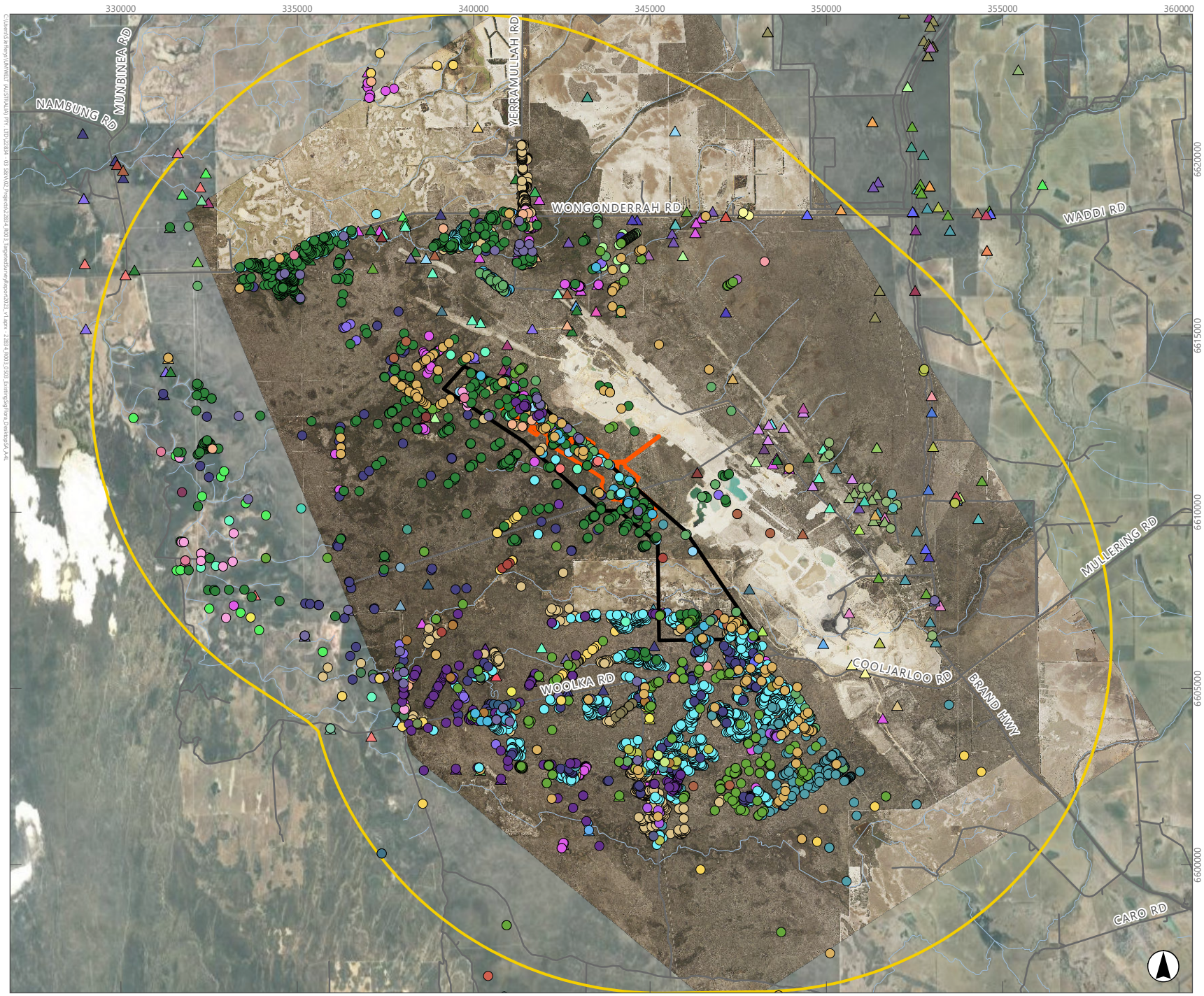


FIGURE 5.3

Existing Significant Flora Records in the Desktop Study Area

Legend

- Desktop Study Area
- Detailed Survey Area
- Targeted Survey Area
- Road
- Watercourse

0 3 6

Kilometres

Scale 1:150,000 at A4
GDA2020 MGA Zone 50

Image Source: Tronox (2021), ESRI Basemap (2023) | **Data Source:** Landgate (2023), Umwelt (2024a, 2024b), Tronox (2023), Woodman (2010-2021), DBCA (2023d), Iluka (2021)

Significant Flora (Umwelt 2024a, 2024b)

- Acben *Acacia benthamii* (P2)
- Accu *Acacia cummingiana* (P3)
- Acdra *Acacia drummondii* subsp. *affinis* (P3)
- Acpur *Acacia pulchella* var. reflexa acuminate bracteole variant (R.J. Cumming 882) (P3)
- Algr *Allocasuarina grevilleoides* (P3)
- Angr *Andersonia gracilis* (T)
- Anmicr *Angianthus micropodioides* (P3)
- Anhuc *Anigozanthos humilis* subsp. *chrysanthus* (P4)
- Anvit *Anigozanthos viridis* subsp. *terraspectans* (T)
- Anvi?t *Anigozanthos viridis* subsp. *?terraspectans* (T)
- Argr *Arnocrinum gracillimum* (P3)
- Bache *Babingtonia* aff. *cherticola* (potentially undescribed)
- Baur *Babingtonia urbana* (P3)
- Badap *Banksia dallanneyi* subsp. *pollosta* (P3)
- Bebi *Beaufortia bicolor* (P3)
- Beer *Beaufortia eriocephala* (P3)
- Becic *Beyeria cinerea* subsp. *cinerea* (P3)
- Cadea *Caladenia denticulata* subsp. *albicans* (P1)
- Capal *Calectasia palustris* (P2)
- Chch *Chordifex chaunocoleus* (P4)
- Chre *Chordifex reseminans* (P2)
- Corh *Comesperma rhadinocarpum* (P3)
- Cosc *Conospermum scaposum* (P3)
- Comag *Conostephium magnum* (P4)
- Debi *Desmocladus biformis* (P3)
- Demi *Desmocladus microcarpus* (P2)
- Deno *Desmocladus nodatus* (P3)
- Erglc *Eremophila glabra* subsp. *chlorella* (T)
- Ergl?ca *Eremophila glabra* subsp. *?carnosa* (C)
- ErpiP *Eryngium pinnatifidum* subsp. Palustre (G.J. Keighery 13459) (P3)
- Eumae *Eucalyptus macrocarpa* subsp. *elachantha* (P4)
- Frgl *Frankenia glomerata* (P4)
- Goar *Goodenia arthrotricha* (T)
- Goxa *Goodenia xanthotricha* (P2)
- Grcoo *Grevillea cooljarloo* (P1)
- Grsa *Grevillea saccata* (P4)
- Gual *Guichenotia alba* (P3)
- Halo *Hakea longiflora* (P3)
- Hafo *Haloragis foliosa* (P3)
- Hest *Hensmania stoniella* (P3)
- Higlg *Hibbertia glomerata* subsp. *ginginensis* (P2)
- Hyqu *Hypocalymma quadrangulare* (P3)
- Hyro *Hypolaena robusta* (P4)
- Ispap *Isopogon panduratus* subsp. *palustris* (P3)
- Iscug *Isotropis cuneifolia* subsp. *glabra* (P3)
- Jaca *Jacksonia carduacea* (P3)
- Lecu *Lepyrodia curvescens* (P2)
- LespY *Leucopogon* sp. Yanchep (M. Hislop 1986) (P3)
- Lyex *Lyginia excelsa* (P2)
- Make *Macarthuria keigheryi* (T)
- Padix *Paracaleana dixonii* (T)
- Peru *Persoonia rudis* (P3)
- Phpip *Phlebocarya pilosissima* subsp. *pilosissima* (P3)
- Plra *Platysace ramosissima* (P3)
- Poas *Poranthera asybosca* (P1)
- Pomoo *Poranthera moorokatta* (P2)
- Scgr *Schoenus griffinianus* (P4)
- Scpe *Schoenus pennisetis* (P3)
- Stsu *Stenanthemum sublineare* (P2)
- Stac *Stylidium aceratum* (P3)
- Stae *Stylidium aeonioides* (P4)
- Sthym *Stylidium hymenocraspedum* (P3)
- St?hym *Stylidium ?hymenocraspedum* (P2)
- Stlo *Stylidium longitubum* (P4)
- Sygr *Synaphea grandis* (P4)
- Thap *Thelymitra apiculata* (P4)
- Thpu *Thelymitra pulcherrima* (P2)
- Thgl *Thysanotus glaucus* (P4)
- Vehut *Verticordia huegelii* var. *tridens* (P3)
- Velil *Verticordia lindleyi* subsp. *lindleyi* (P4)
- Ve?lil *Verticordia ?lindleyi* subsp. *lindleyi* (P4)

Significant Flora (DBCA 2023d)

- Acben *Acacia benthamii* (P2)
- Angr *Andersonia gracilis* (T)
- Anmicr *Angianthus micropodioides* (P3)
- AnhuB *Anigozanthos humilis* subsp. Badgingarra (S.D. Hopper 7114) (P2)
- Anhuc *Anigozanthos humilis* subsp. *chrysanthus* (P4)
- Anvit *Anigozanthos viridis* subsp. *terraspectans* (T)
- Argr *Arnocrinum gracillimum* (P3)
- Baur *Babingtonia urbana* (P3)
- Banan *Banksia nana* (P3)
- Bebi *Beaufortia bicolor* (P3)
- Bega *Beyeria gardneri* (P3)
- Cadea *Caladenia denticulata* subsp. *albicans* (P1)
- Capal *Calectasia palustris* (P2)
- Chre *Chordifex reseminans* (P2)
- Corh *Comesperma rhadinocarpum* (P3)
- Cosc *Conospermum scaposum* (P3)
- Comag *Conostephium magnum* (P4)
- Debi *Desmocladus biformis* (P3)
- Deno *Desmocladus nodatus* (P3)
- Drlei *Drosera leioblastus* (P1)
- Drleu *Drosera leucostigma* (P1)
- Drpr *Drosera prophylla* (P3)
- Erglc *Eremophila glabra* subsp. *chlorella* (T)
- ErpiP *Eryngium pinnatifidum* subsp. Palustre (G.J. Keighery 13459) (P3)
- Eumae *Eucalyptus macrocarpa* subsp. *elachantha* (P4)
- Eupe *Eucalyptus pendens* (P4)
- Grcoo *Grevillea cooljarloo* (P1)
- Grsa *Grevillea saccata* (P4)
- Gual *Guichenotia alba* (P3)
- Hest *Hensmania stoniella* (P3)
- Hoan *Hopkinsia anoectocolea* (P3)
- Hyqu *Hypocalymma quadrangulare* (P3)
- Hyse *Hypocalymma serrulatum* (P2)
- Hyte *Hypocalymma tetrapterum* (P3)
- Hyro *Hypolaena robusta* (P4)
- Isau *Isopogon autumnalis* (P3)
- Ispap *Isopogon panduratus* subsp. *palustris* (P3)
- Iscug *Isotropis cuneifolia* subsp. *glabra* (P3)
- Jaan *Jacksonia anthoclada* (P3)
- Jaca *Jacksonia carduacea* (P3)
- Lecu *Lepyrodia curvescens* (P2)
- Lefo *Leucopogon foliosus* (P3)
- Lepr *Levenhookia preissii* (P1)
- Lyex *Lyginia excelsa* (P2)
- Make *Macarthuria keigheryi* (T)
- Mete *Meionectes tenuifolia* (P3)
- Mymu *Myriophyllum muelleri* (P1)
- Padix *Paracaleana dixonii* (T)
- Pefi *Persoonia filiformis* (P3)
- Peru *Persoonia rudis* (P3)
- Phpip *Phlebocarya pilosissima* subsp. *pilosissima* (P3)
- Poas *Poranthera asybosca* (P1)
- Pomoo *Poranthera moorokatta* (P2)
- Scba *Schoenus badius* (P2)
- Scgr *Schoenus griffinianus* (P4)
- Scpe *Schoenus pennisetis* (P3)
- Stsu *Stenanthemum sublineare* (P2)
- Stac *Stylidium aceratum* (P3)
- Stae *Stylidium aeonioides* (P4)
- Sthym *Stylidium hymenocraspedum* (P3)
- Stlo *Stylidium longitubum* (P4)
- Stti *Stylidium tinkeri* (P2)
- Stto *Stylidium torticarpum* (P3)
- Thap *Thelymitra apiculata* (P4)
- Thpu *Thelymitra pulcherrima* (P2)
- Thst *Thelymitra stellata* (T)
- Thgl *Thysanotus glaucus* (P4)
- Veam *Verticordia amphigia* (P3)
- Velil *Verticordia lindleyi* subsp. *lindleyi* (P4)

umwelt

FIGURE 5.3

LEGEND: Existing Significant Flora Records in the Desktop Study Area

Image Source: Tronox (2021), ESRI Basemap (2023) | **Data Source:** Landgate (2023), Umwelt (2024a, 2024b), Tronox (2023), Woodman (2010-2021), DBCA (2023d), Iluka (2021)

5.1.5 Significant Vegetation

The initial interrogation of DBCA's Threatened and Priority Ecological Communities Database (DBCA, 2021a) returned records of the 'Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region' PEC (P3) (equivalent to the 'Banksia Woodlands of the Swan Coastal Plain ecological community' EPBC listed TEC) within the Desktop Study Area and Targeted Survey Area[1]. The updated search undertaken in 2023 (DBCA, 2023c) also identified an occurrence of the BC Act listed TEC 'Herb rich saline shrublands in clay pans (floristic community type 7 as originally described in Gibson et al. 1994)' within the Desktop Study Area, approximately 11 km northwest of the Targeted Survey Area. This TEC forms a component of the EPBC TEC 'Clay pans of the Swan Coastal Plain' (DBCA, 2023g).

A review of the current DBCA TEC and PEC lists (DBCA, 2023f, 2023g) identified the P1 PEC 'Claypans with mid dense shrublands of *Melaleuca lateritia* over herbs' as having the potential to occur within the Desktop Study Area. This PEC also forms a component of the EPBC TEC 'Clay pans of the Swan Coastal Plain' (DBCA, 2023f).

A review of the DBCA TEC and PEC records spatial dataset (DBCA, 2022b) did not identify any additional TECs or PECs within the Desktop Study Area.

The DCCEEW SPRAT database was initially interrogated in 2022 using the Desktop Study Area boundary. This search identified two Commonwealth-listed TECs that are likely to/may occur within the Desktop Study Area, as listed below (DCCEEW, 2022). The 2023 DCCEEW SPRAT search did not identify any vegetation communities additional to those returned by the 2022 interrogation (DCCEEW, 2023c). The full results of the DCCEEW database searches are presented in **Appendix A**.

- Banksia Woodlands of the Swan Coastal Plain ecological community (Endangered) – 'likely to occur'.
- Tuart (*Eucalyptus gomphocephala*) Woodlands and Forests of the Swan Coastal Plain ecological community (Critically Endangered) – 'may occur'.

Table 5.5 presents a summary of the four listed significant vegetation communities known from or potentially occurring within the Desktop Study Area. This list has been compiled from the results of searches of DBCA's Threatened and Priority Ecological Communities Database (DBCA, 2021a, 2023c), DCCEEW's SPRAT Database (DCCEEW, 2022, 2023c), and the results of previous surveys as summarised in **Section 5.1.2**. Communities that have been previously recorded in the Targeted Survey Area are shaded blue in **Table 5.5**. Note that some EPBC-listed TECs have an equivalent State PEC listing status; these EPBC TECs/State PECs can also provide an umbrella for a variety of individual State-listed TECs/PECs. The relationships between these have been simplified as far as possible in **Table 5.5**.

Indicative locations of the 'Banksia dominated woodlands of the Swan Coastal Plain IBRA region' PEC (P3), as according to DBCA databases, are presented in **Figure 5.4**; these consist of DBCA-applied buffers of 200 m surrounding indicative, broad-scale locations of the community. The DBCA Threatened and Priority Ecological Communities Database indicates that the 'Banksia dominated woodlands of the Swan Coastal

[1] As per the metadata for the DBCA Threatened and Priority Ecological Communities Database interrogation (DBCA, 2021a), the DBCA mapping for the 'Banksia dominated woodlands of the Swan Coastal Plain IBRA region' TEC/PEC is based on the Commonwealth's 'likely to occur' areas and represents the broad-scale vegetation map units most likely to contain the community. Therefore, the mapping represents the indicative present distribution of the Banksia Woodlands ecological community. In addition, a buffer of 200 m has been added by DBCA to these indicative boundaries. Ground-truthing is required to verify if a particular site meets the required diagnostic characteristics and minimum condition and size thresholds to be deemed to be the described TEC/PEC.

Plain IBRA region' PEC (P3) may occur over the majority of the Desktop Study Area (**Figure 5.4**). According to the DBCA metadata (DBCA, 2021a, 2023c), the mapping for the Banksia woodlands PEC is based on the Commonwealth's 'likely to occur' areas, and represents the broad-scale vegetation map units most likely to contain this community. Ground-truthing by DBCA has not been undertaken to confirm occurrences in this dataset in most cases, and they are therefore considered to be indicative only. The 2022 Detailed Survey identified that this TEC/PEC is represented by VTs D-A and D-B in the Detailed Survey Area (where occurrences of these VTs meet the minimum patch size and condition requirements). These VTs were mapped at a minimum scale of 1:10,000, and therefore the occurrences of the TEC as mapped by Umwelt (2024b) are considered to represent a more accurate extent in the Detailed Survey Area than the occurrences contained in DBCA's TEC and PEC database. These boundaries are also presented in **Figure 5.4**.

Table 5.5 Listed Significant Vegetation Known from or Potentially Occurring Within the Desktop Study Area

EPBC TEC	State TEC/PEC	Source*	Comment
Banksia woodlands of the Swan Coastal Plain ecological community (EN)	**Banksia woodlands of the Swan Coastal Plain (P3)**	360 DBCA Database DBCA TEC/PEC lists DCCEEW~ Morgan Strategen Umwelt WEC	Banksia dominated woodlands of the Swan Coastal Plain IBRA region PEC (P3) has DBCA records in the Targeted Survey Area and Desktop Study Area (DBCA, 2021a, 2023c), and it was mapped in the Detailed Survey Area by the 2022 survey (Umwelt, 2024b). Note that there are a number of State-listed TECs and PECs that are components of this EPBC TEC. The majority of these TECs/PECs are considered analogous to SCP FCTs defined by Gibson et al. (1994) on the southern SCP. The area sampled by Gibson et al. extends from Seabird to the foothills of the Whicher Range, and therefore the Targeted Survey Area occurs outside this area; consequently, these significant vegetation communities are not considered to occur in the Targeted Survey Area.
Clay pans of the Swan Coastal Plain (CR)	**Claypans with mid dense shrublands of *Melaleuca lateritia* over herbs (P1)**	DBCA TEC/PEC lists	The main distribution of this ecological community occurs in the central and southern SCP and Jarrah Forest IBRA Bioregions (TSSC, 2012). Clay pans have been recorded within the Desktop Study Area by previous surveys (specifically, Detailed Survey Area VT W-A and Cooljarloo West VTs 4, 9a and 16). VT W-A has been mapped in the Targeted Survey Area. There are four State-listed TECs that form components of this EPBC-listed TEC; these TECs are considered analogous to SCP FCTs defined by Gibson et al. (1994) on the southern SCP. The area sampled by Gibson et al. extends from Seabird to the foothills of the Whicher Range, and therefore the Targeted Survey Area occurs outside this area; consequently, these significant vegetation communities are not considered to occur in the Targeted Survey Area.
	Herb rich saline shrublands in clay pans (floristic community type 7 as originally described in Gibson et al. 1994) (T)	DBCA Database	
Tuart (*Eucalyptus gomphocephala*) woodlands and forests of the Swan Coastal Plain ecological community (CR)	**Tuart (*Eucalyptus gomphocephala*) woodlands of the Swan Coastal Plain) (P3)**	DCCEEW^	This TEC/PEC is strongly associated with calcareous soils of the western part of the SCP, including those very close to the coast (DoEE, 2019); it is mostly confined to Quindalup Dunes and Spearwood Dunes from Jurien Bay to the Sabina River, with outliers along some rivers (DBCA, 2023f). *Eucalyptus gomphocephala* and calcareous soils have both been recorded within the Desktop Study Area (Woodman Environmental, 2014b). However, the taxon and soils were not recorded in the Detailed Survey Area by the 2022 survey (Umwelt, 2024b). Note that this community can intergrade with the 'Banksia woodlands of the Swan Coastal Plain ecological community' TEC, and *Eucalyptus gomphocephala* can occasionally occur as a separate stratum above a woodland dominated by *Banksia* spp., in which case the patches are more likely to meet the diagnostic characteristics of the 'Banksia woodlands of the Swan Coastal Plain ecological community' TEC (DoEE, 2019).

CR = Critically Endangered; EN = Endangered.

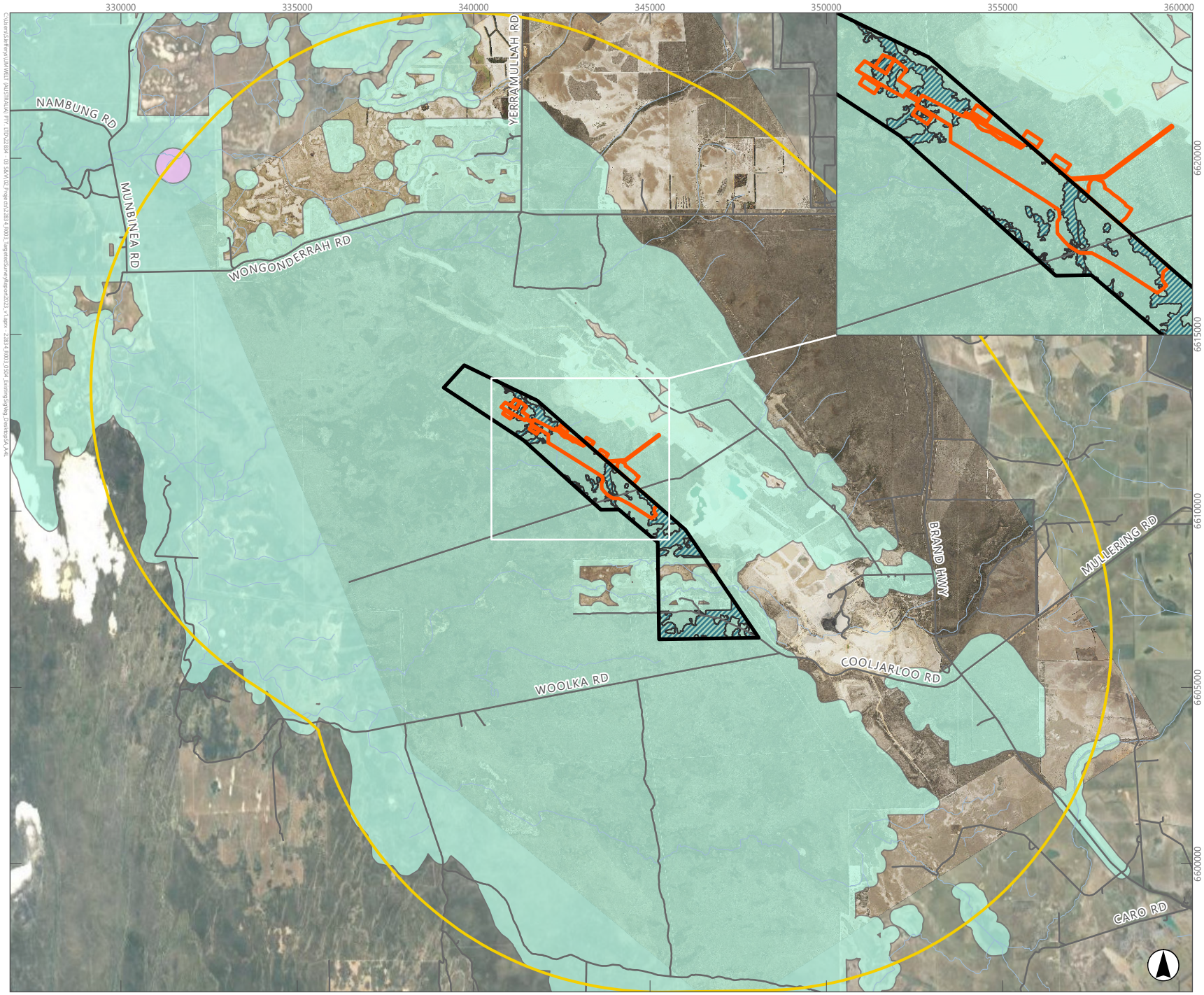
** Sources are:*
360: 360 Environmental (2017a, 2017b)
DCCEEW: Interrogation of DCCEEW SPRAT Database (DCCEEW, 2022, 2023c)
DBCA Database: Interrogation of DBCA Threatened and Priority Ecological Communities Database (DBCA, 2021a, 2023c)
DBCA TEC/PEC lists: DBCA (DBCA, 2023f, 2023g)
Morgan: Morgan (2020, 2022)
Strategen: Strategen (2020)

Umwelt: Umwelt (2022b, 2023, 2024a, 2024b)
WEC: Woodman Environmental (2017a, 2018b, 2019, 2021).

~ Community likely to occur within area (DCCEEW, 2022, 2023c).
^ Community may occur within area (DCCEEW, 2022, 2023c).

FIGURE 5.4

Existing Significant Vegetation Records in the Desktop Study Area



Legend

- Desktop Study Area
- Detailed Survey Area
- Targeted Survey Area
- Road
- Watercourse

Significant Vegetation

- Banksia Woodlands of the Swan Coastal Plain ecological community (WA – P3, EPBC – Endangered)
- Herb rich saline shrublands in clay pans (floristic community type 7 as originally described in Gibson et al. 1994) (WA – Endangered, EPBC – Critically Endangered)
- Banksia Woodlands of the Swan Coastal Plain ecological community (WA – P3, EPBC – Endangered) (Umwelt 2024b)

0 3 6

Kilometres

Scale 1:150,000 at A4
GDA2020 MGA Zone 50

Image Source: Tronox (2021), ESRI Basemap (2023) | **Data Source:** Landgate (2023), Umwelt (2024b), Tronox (2023), DBCA (2023c)

5.2 Field Survey Results

5.2.1 Significant Flora Taxa

5.2.1.1 Significant Flora Taxa of the Targeted Survey Area

Table 5.6 presents a summary of data relating to significant flora taxa recorded by the 2022 and 2023 surveys in and immediately outside the Targeted Survey Area. A total of 19 significant flora taxa were recorded, including one Threatened taxon listed under the BC and EPBC Acts (*Macarthuria keigheryi*). All taxa have records in the Desktop Study Area (**Section 5.1.4**), and the majority were also recorded by the 2022 Detailed Survey of the Detailed Survey Area, with the exception of eight taxa, as listed below:

- *Anigozanthos humilis* subsp. *chrysanthus* (P4)
- *Comesperma rhadinocarpum* (P3)
- *Hensmania stoniella* (P3)
- *Levenhookia preissii* (P1)
- *Macarthuria keigheryi* (T)
- *Poranthera moorokatta* (P2)
- *Schoenus pennisetis* (P3)
- *Thysanotus glaucus* (P4).

Eight locations of five significant flora taxa were recorded by the 2022 Detailed survey in the Targeted Survey Area. Potential duplication of these records in the Targeted Survey Area was avoided by assessment in a GIS environment of the 2022 locations against those recorded in 2023. Of the aforementioned records, four locations of three taxa were considered additional to those recorded by the 2023 Targeted survey in the Targeted Survey Area (**Table 5.6**). Note that for the purposes of **Table 5.6**, where plant counts were not recorded by the 2022 survey (e.g. within quadrats), these records have been attributed an abundance of 1.

Table 5.6 also includes a summary of the VTs within which each significant flora taxon was recorded (VT descriptions as per Umwelt (2024b) and as summarised in **Section 5.1.3**). Preferred habitat for each taxon has been determined based on proportional location representation and landforms/soils and is indicated in **Table 5.6** with '^'. However, it is worthy of note that some taxa recorded by the 2022 and 2023 surveys were recorded from few locations, and therefore there may not be sufficient data to confidently assign preferred habitat for these taxa.

A description and summary of information for each taxon recorded in and immediately outside the Targeted Survey Area is provided in **Table 5.7**, and locations recorded by the 2022 and 2023 surveys are presented in **Figure 5.5**. Location coordinates for the 2023 records are presented in **Appendix D**.

As mentioned in **Section 4.0**, the vegetation of the Targeted Survey Area was relatively long unburnt, and with the exception of some drill lines, undisturbed. A small number of significant flora taxa in the Cooljarloo area are fire and/or disturbance opportunists, such as *Macarthuria keigheryi* (T), *Comesperma rhadinocarpum* (P3), *Schoenus pennisetis* (P3) and *Thysanotus glaucus* (P4). These taxa typically establish in large numbers following fire or other disturbance, and decline in intervening years, to the point where often no extant plants remain. Consequently, they can be challenging to adequately survey in the absence of fire/disturbance. In the case of *Macarthuria keigheryi* (T), all bar one of the records of the taxon were made on recently cleared drill lines. Historical locations of the taxon were revisited but it could not be relocated, although additional locations were found approximately 110 m away. These fire and/or disturbance opportunistic taxa would be expected to be more widespread in the first few years following fire or disturbance, and consequently the records of these taxa from the 2023 survey likely do not represent an accurate indication of their true population distribution and extent in the Targeted Survey Area.

Table 5.6 Summary of Significant Flora Taxa Recorded in the Targeted Survey Area by the 2022 and 2023 Surveys

Taxon	Status (WA)	Status (EPBC)	Inside Targeted Survey Area						Immediately Outside Targeted Survey Area		Grand Total		VTs^
			Locations			Abundance			Locations	Abundance	Locations	Abundance	
			2022	2023	Total	2022	2023	Total	2023	2023			
Anigozanthos humilis* subsp. *chrysanthus	P4		-	8	8	-	10	10	-	-	**8**	**10**	D-A^, D-B, W-C
Babingtonia urbana	P3		-	330	330	-	7,260	7,260	10	257	**340**	**7,517**	D-A, D-B, W-B^, W-C^
Chordifex reseminans	P2		2	132	134	2	310	312	2	7	**136**	**319**	W-B, W-C^
Comesperma rhadinocarpum	P3		-	6	6	-	20	20	-	-	**6**	**20**	W-C^
Conospermum scaposum	P3		-	1	1	-	3	3	1	4	**2**	**7**	W-C^
Desmocladus nodatus	P3		-	54	54	-	106	106	1	1	**55**	**107**	D-A, W-C^
Grevillea cooljarloo	P1		-	42	42	-	264	264	-	-	**42**	**264**	W-A, W-C^
Hensmania stoniella	P3		-	5	5	-	5	5	-	-	**5**	**5**	D-A^, D-B^, W-C
Hypocalymma quadrangulare	P3		1	1,611	1,612	1	7,622	7,623	46	132	**1,658**	**7,755**	D-A^, D-B^, D-C, W-A, W-C
Isopogon panduratus* subsp. *palustris	P3		-	725	725	-	4,725	4,725	21	71	**746**	**4,796**	D-A, D-B, W-B^, W-C^
Levenhookia preissii	P1		-	12	12	-	17	17	4	10	**16**	**27**	D-A, D-B, W-C^ Particularly on the interface between D-A/D-B and W-C
Macarthuria keigheryi	T	EN	-	16	16	-	31	31	-	-	**16**	**31**	D-A^, D-B, W-C
Poranthera asybosca	P1		1	167	168	1	713	714	2	2	**170**	**716**	D-A^, D-B^, W-C
Poranthera moorokatta	P2		-	7	7	-	50	50	-	-	**7**	**50**	D-A^, W-C Particularly on the interface between D-A and W-C
Schoenus griffinianus	P4		-	6	6	-	16	16	-	-	**6**	**16**	W-C^ Including the interface between D-A and W-C
Schoenus pennisetis	P3		-	6	6	-	41	41	1	25	**7**	**66**	W-B^, W-C^
Stylidium hymenocraspedum	P3		-	3	3	-	19	19	-	-	**3**	**19**	D-A^, W-C
Thysanotus glaucus	P4		-	1	1	-	10	10	-	-	**1**	**10**	W-C^
Verticordia lindleyi* subsp. *lindleyi	P4		-	109	109	-	459	459	8	25	**117**	**484**	D-A, D-B, W-B^, W-C^

'^' Designates preferred habitat, based on proportional location representation and landforms/soils. For significant flora locations that occur outside the area mapped by the 2022 Detailed Survey, contiguous vegetation patterning and Cooljarloo West VT mapping was considered when determining preferred habitat.

Table 5.7 Detailed Information of Significant Flora Taxa Recorded in the Targeted Survey Area by the 2022 and 2023 Surveys

Taxon	Status (WA)	Status (EPBC)	Plant Description	Habitat*	Endemic to WA^	Approximate Range*	WA Herbarium Records*	Approx. Regional Populations*~ (based on location records)	Approx. Regional Populations in Conservation Estate*~
Anigozanthos humilis* subsp. *chrysanthus	P4		Small rhizomatous herb to 0.8 m with multiple stems each arising from a leaf joint and golden yellow catspaw flowers	Slopes, plains and winter-wet areas with white, grey or yellow sand. Banksia woodland, low wet heath	Yes	160 km Cooljarloo to Clackline	65	32	3 Mogumber Nature Reserve, Lake Wannamal Nature Reserve
Babingtonia urbana	P3		Shrub to 0.7 m high with erect slender stems and antrorse to widely spreading leaves and pink flowers	Winter-wet depressions, flats and swamps with brown or white clay loam, sometimes peaty. Low wet heath	Yes	200 km Cooljarloo to west of Mundijong; however, taxon is known from three disjunct areas, being the Cooljarloo area, Perth area and near Moora	26	13	0
Chordifex reseminans	P2		Erect, tufted perennial rush to 0.9 m high	Flats and winter-wet depressions with white-grey sand over laterite	Yes	130 km Eneabba to Regans Ford	29	21	5 Badgingarra National Park, Namming Nature Reserve
Comesperma rhadinocarpum	P3		Perennial herb to 0.5 m high with linear-elliptic leaves, and blue flowers on slender racemes	Undulating plains, valley slopes and flats with grey, brown or yellow sandy loam or sand	Yes	Main distribution 550 km north-south from Port Gregory to Kenwick, with disjunct records at Koolyanobbing and Great Victoria Desert extending east-west distribution to 850 km	18	17	3 Lake Logue Nature Reserve, South Eneabba Nature Reserve, Helena and Aurora Ranges National Park
Conospermum scaposum	P3		Erect, spindly shrub with purple flowers, growing to 0.5 m	Winter-wet flats and depressions with white, brown or grey sand	Yes	400 km Eneabba to Toolibin (east of Narrogin)	47	33	6 Wandoo National Park, Lake Wannamal Nature Reserve
Desmocladus nodatus	P3		Erect, tufted perennial rush to 0.2 m	Winter-wet flats, wetlands and edges of wetlands with white, grey or brown sandy clay	Yes	42 km Cooljarloo to Mimegarra	21	18	1 Wongonderrah Nature Reserve
Grevillea cooljarloo	P1		Lignotuberous, spreading, multi-stemmed shrub with red flowers, growing to 0.6 m	Low flats and winter-wet areas with grey or white sand or sandy clay	Yes	80 km Warradarge to Cooljarloo	16	12	1 Nambung National Park
Hensmania stoniella	P3		Tufted, stilt-rooted perennial herb up to 0.2 m high with yellow, creamy white flowers	Sandplains, flats and slopes with white, grey or lateritic sand	Yes	200 km Arrowsmith East to Regans Ford	47	37	10 South Eneabba Nature Reserve, Alexander Morrison National Park, Lesueur National Park, Drovers Cave National Park, Badgingarra National Park
Hypocalymma quadrangulare	P3		Erect, multi-stemmed shrub with square shaped stems and yellow flowers, growing to 0.5 m	Lower slopes with grey or yellow sand, Banksia woodland	Yes	100 km Badgingarra to Yeal	9 (excluding a cultivated record at the WA Herbarium)	7	2 Moore River National Park, State Forest 65
Isopogon panduratus* subsp. *palustris	P3		Spreading shrub to 2 m with pale pink flowers	Low flats and winter-wet areas with sand or sandy clay	Yes	33 km Nambung to Cooljarloo	23	20	1 Wongonderrah Nature Reserve

Taxon	Status (WA)	Status (EPBC)	Plant Description	Habitat*	Endemic to WA^	Approximate Range*	WA Herbarium Records*	Approx. Regional Populations*~ (based on location records)	Approx. Regional Populations in Conservation Estate*~
Levenhookia preissii	P1		Ephemeral herb with pink-red flowers, growing from 3 to 17 cm	Winter-wet flats and wetlands with grey or brown sand	Yes	230 km Cervantes to Pinjarra; however, taxon is known from three disjunct areas, being the Cooljarloo area, Perth area and Pinjarra. Note that Florabase also shows records of this taxon near Augusta and Manjimup; however, according to recent treatment, these records would actually represent *Levenhookia aestiva* (Wege, 2020)	17 (excluding *L. aestiva* records near Augusta and Manjimup)	9 (excluding *L. aestiva* records near Augusta and Manjimup)	1 Canning River Regional Park (excluding *L. aestiva* records in Scott National Park and Greater Kingston National Park)
Macarthuria keigheryi	T	EN	Spreading herb to 0.4 m with hairy, bright yellow to green stems with narrow obovate to elliptic leaves mainly at the base of the stem and on new growth, and green and white membranous flowers	Dunes, plains and low rises above winter-wet areas with white, brown or grey sand or clay loam. Banksia woodland, recently burnt areas	Yes	200 km Badgingarra to Cannington; however, the distribution is relatively disjunct, with the northern populations extending from Badgingarra to Regans Ford, and the southern populations relatively restricted in the Perth area	33	23	3 Badgingarra National Park, Moore River National Park, unnamed reserve R 37997, Canning River Regional Park
Poranthera asybosca	P1		Small annual growing to 2 to 4.5 cm with reddish green stems, narrowly triangular stipules and pink to greenish calyx lobes	White sand over laterite	Yes	100 km Beekeepers Nature Reserve to Wongonderrah; however, according to WA Herbarium (1998-), taxon is only known from two locations. Umwelt has made collections of the taxon from Arrowsmith to Cooljarloo, extending the known range to 150 km[1]	2 (or 110 locations including Umwelt records)	16 (including consideration of Umwelt records)	3 (including consideration of Umwelt records) South Eneabba Nature Reserve, Lesueur National Park, Wongonderrah Nature Reserve
Poranthera moorokatta	P2		Erect annual herb with deeply dissected stipules and slender calyx lobes, growing to 5 cm	White or grey sand	Yes	345 km Nambung National Park to Tutunup; however, taxon is known from three disjunct areas, being the Cooljarloo area, Gingin to Perth area and south of Capel	15	14	2 Kings Park, Millbrook State Forest
Schoenus griffinianus	P4		Small, tufted perennial sedge to 0.1 m high	Sandplains and flats with white-grey sand	Yes	560 km Main distribution from Geraldton to Perth, with disjunct records at Wongan Hills and Lake Grace	44	39	8 Moore River National Park, Fynes Nature Reserve, South Eneabba Nature Reserve, Lake Logue Nature Reserve, Tarin Rock Nature Reserve
Schoenus pennisetis	P3		Tufted annual, grass-like sedge growing to 15 cm with purple-black flowers	Winter-wet flats, wetlands and valley floors with grey, yellow or brown sandy loam	Yes	675 km Near Mullewa to Wamballup Nature Reserve (northwest of Mount Barker)	44	35	5 Indarra Spring Nature Reserve, Wongonderrah Nature Reserve, unnamed reserve 1621/702, Millbrook State Forest, Wamballup Nature Reserve
Stylidium hymenocraspedum	P3		Rosetted perennial herb to 0.7 m with spathulate leaves with a hyaline margin, and yellow flowers	White or grey sand on plains and slopes	Yes	45 km Badgingarra National Park to Eneminga Nature Reserve	33	28	11 Badgingarra National Park, Wongonderrah Nature Reserve
Thysanotus glaucus	P4		Perennial herb growing to 0.2 m with terete basal blue-glaucous leaves and purple flowers	Plains and slopes with white, grey or yellow sand or sandy gravel	Yes	Main distribution 420 km north-south from Eneabba to Yelverton, with disjunct record in Lake King extending east-west distribution to 460 km	29	25	10 South Eneabba Nature Reserve, Lesueur National Park, Badgingarra National Park, Fynes Nature Reserve unnamed reserve R 40916, Korung National Park, Yelverton National Park

Taxon	Status (WA)	Status (EPBC)	Plant Description	Habitat*	Endemic to WA^	Approximate Range*	WA Herbarium Records*	Approx. Regional Populations*~ (based on location records)	Approx. Regional Populations in Conservation Estate*~
Verticordia lindleyi* subsp. *lindleyi	P4		Erect shrub to 0.75 m with pink/purple flowers	Plains, winter-wet depressions and flats with white, brown or grey sand	Yes	340 km Main distribution Dandaragan to Serpentine, with one disjunct location at Ludlow	83	63	7 Namming Nature Reserve, Fynes Nature Reserve, Moore River National Park, Boonanarring Nature Reserve

** Source: DBCA WA Herbarium Specimen Database, accessed via Florabase (WA Herbarium, 1998-). Total number of taxon specimens held at the WA Herbarium presented, which may be lower than the number of unique locations (due to multiple specimens sometimes being lodged from a particular location). However, it is worth noting that the coordinates entered into and stored in the WA Herbarium database do not always fully correspond with the collector's original location description, or the location was not given in sufficient detail, and as such often represent an approximation rather than an exact location.*

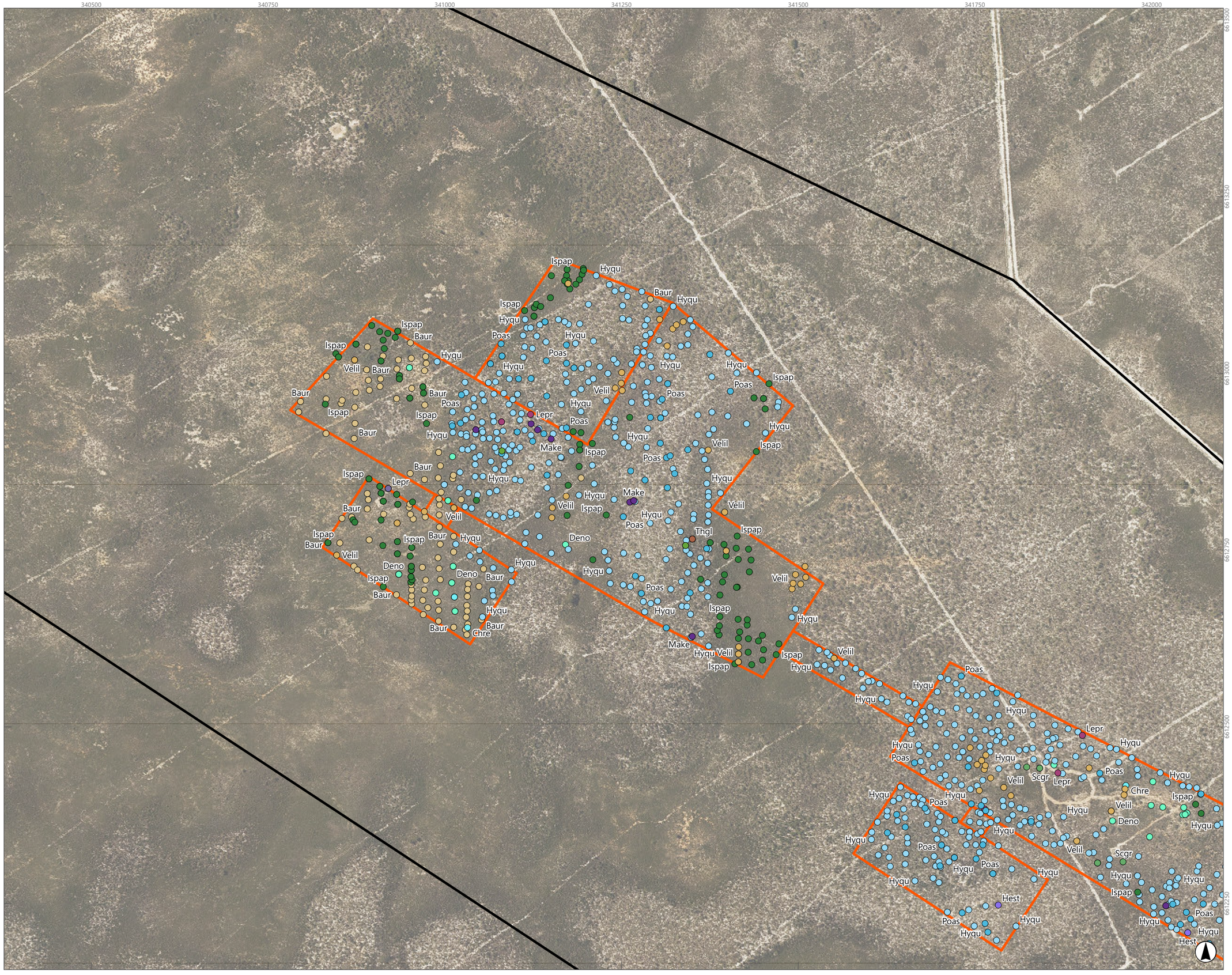
^ Source: Atlas of Living Australia (ALA, 2024).

~ Regional populations in this context use the DBCA (2017) definition as a discrete group of individuals of a taxon separated by more than 500 m from the nearest discrete group of individuals. However, it is worthy of note that this definition can only be tentatively applied if the intervening 500 m has not been surveyed.

[1] *Umwelt has submitted representative specimens and TPFRFs of* Poranthera asybosca *(P1) to the WA Herbarium and DBCA, respectively; however, these records have not yet been uploaded to Florabase.*

FIGURE 5.5

Significant Flora Taxa of the Targeted Survey Area – Sheet 1

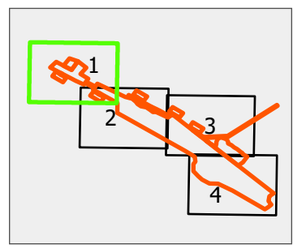


Legend

- Detailed Survey Area
- Targeted Survey Area

Significant Flora (Umwelt 2024)

- Baur *Babingtonia urbana* (P3)
- Chre *Chordifex reseminans* (P2)
- Corh *Comesperma rhadinocarpum* (P3)
- Deno *Desmocladus nodatus* (P3)
- Hest *Hensmania stoniella* (P3)
- Hyqu *Hypocalymma quadrangulare* (P3)
- Ispap *Isopogon panduratus* subsp. *palustris* (P3)
- Lepr *Levenhookia preissii* (P1)
- Make *Macarthuria keigheryi* (T)
- Poas *Poranthera asybosca* (P1)
- Scgr *Schoenus griffinianus* (P4)
- Scpe *Schoenus pennisetis* (P3)
- Sthym *Stylidium hymenocraspedum* (P3)
- Thgl *Thysanotus glaucus* (P4)
- Velil *Verticordia lindleyi* subsp. *lindleyi* (P4)

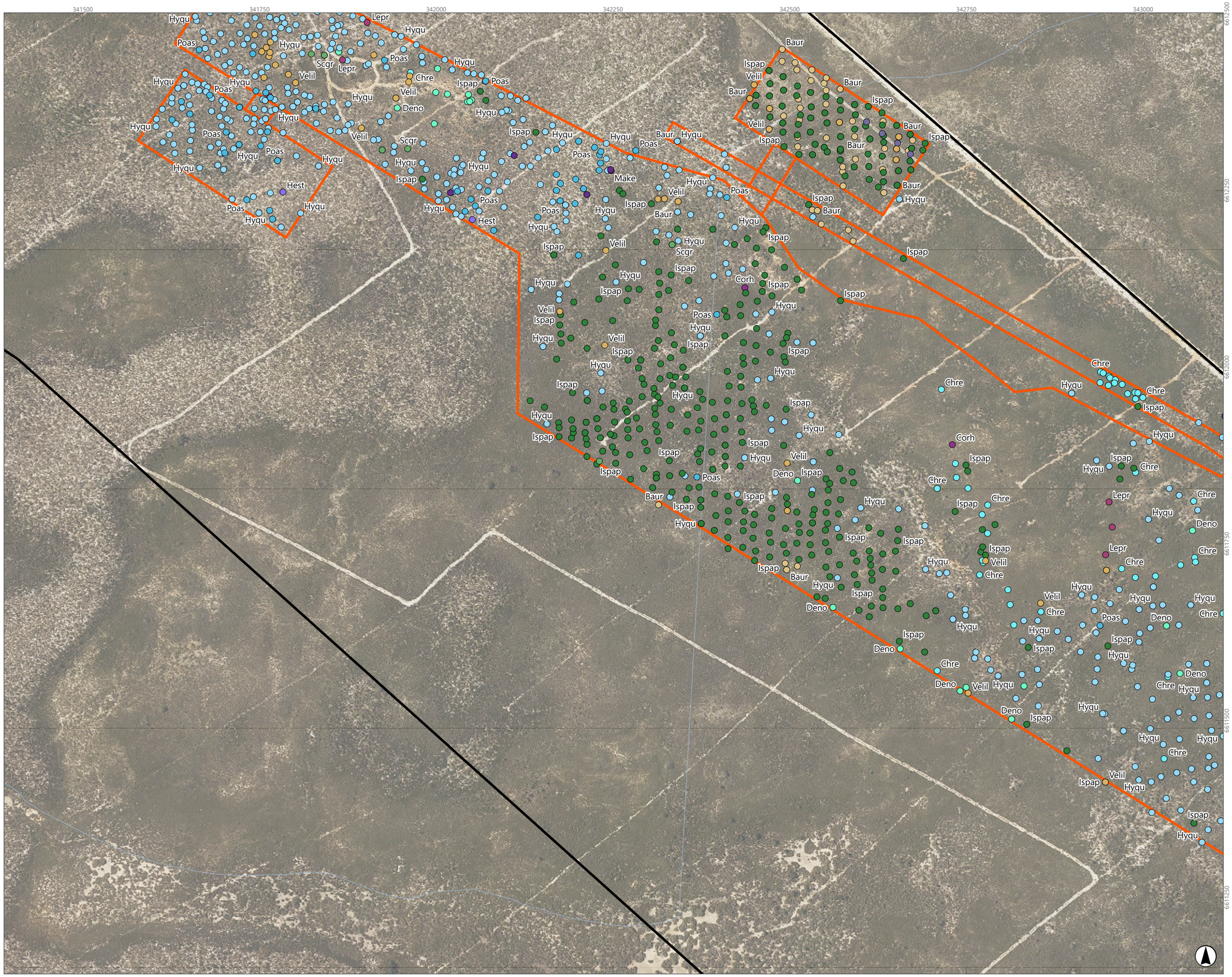


0 100 200

Metres

Scale: 1:5,000 at A3
GDA2020 MGA Zone 50

Image Source: Tronox (2021), ESRI Basemap (2023) | **Data Source:** Landgate (2023), Umwelt (2024), Tronox (2023)



umwelt

FIGURE 5.5

Significant Flora Taxa of the Targeted Survey Area – Sheet 2

Legend

- Detailed Survey Area
- Targeted Survey Area
- Watercourse

Significant Flora (Umwelt 2024)

- Baur *Babingtonia urbana* (P3)
- Chre *Chordifex reseminans* (P2)
- Corh *Comesperma rhadinocarpum* (P3)
- Cosc *Conospermum scaposum* (P3)
- Deno *Desmocladus nodatus* (P3)
- Hest *Hensmania stoniella* (P3)
- Hyqu *Hypocalymma quadrangulare* (P3)
- Ispap *Isopogon panduratus* subsp. *palustris* (P3)
- Lepr *Levenhookia preissii* (P1)
- Make *Macarthuria keigheryi* (T)
- Poas *Poranthera asybosca* (P1)
- Scgr *Schoenus griffinianus* (P4)
- Scpe *Schoenus pennisetis* (P3)
- Velil *Verticordia lindleyi* subsp. *lindleyi* (P4)

0 100 200

Metres

Scale: 1:5,000 at A3
GDA2020 MGA Zone 50

Image Source: Tronox (2021), ESRI Basemap (2023) | **Data Source:** Landgate (2023), Umwelt (2024), Tronox (2023)

FIGURE 5.5

Significant Flora Taxa of the Targeted Survey Area – Sheet 3

343250 343500 343750 344000 344250 344500 344750

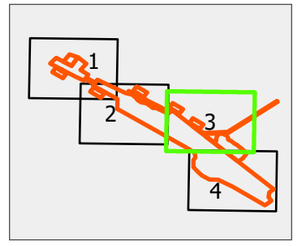
6612250 6612000 6611750 6611500 6611250 6611000

Legend

- Detailed Survey Area
- Targeted Survey Area

Significant Flora (Umwelt 2024)

- Anhuc *Anigozanthos humilis* subsp. *chrysanthus* (P4)
- Baur *Babingtonia urbana* (P3)
- Chre *Chordifex reseminans* (P2)
- Cosc *Conospermum scaposum* (P3)
- Deno *Desmocladus nodatus* (P3)
- Grcoo *Grevillea cooljarloo* (P1)
- Hest *Hensmania stoniella* (P3)
- Hyqu *Hypocalymma quadrangulare* (P3)
- Ispap *Isopogon panduratus* subsp. *palustris* (P3)
- Lepr *Levenhookia preissii* (P1)
- Make *Macarthuria keigheryi* (T)
- Poas *Poranthera asybosca* (P1)
- Pomoo *Poranthera moorokatta* (P2)
- Sthym *Stylidium hymenocraspedum* (P3)
- Velil *Verticordia lindleyi* subsp. *lindleyi* (P4)



0 100 200

Metres

Scale: 1:5,000 at A3
GDA2020 MGA Zone 50

Image Source: Tronox (2021), ESRI Basemap (2023) | **Data Source:** Landgate (2023), Umwelt (2024), Tronox (2023)

FIGURE 5.5

Significant Flora Taxa of the Targeted Survey Area – Sheet 4

343750 344000 344250 344500 344750 345000 345250

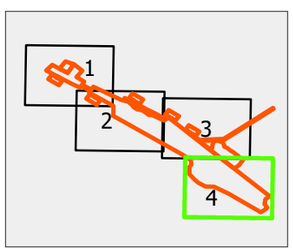
6611000 6610750 6610500 6610250 6610000 6609750

Legend

- Detailed Survey Area
- Targeted Survey Area
- Road

Significant Flora (Umwelt 2024)

- Anhuc *Anigozanthos humilis* subsp. *chrysanthus* (P4)
- Baur *Babingtonia urbana* (P3)
- Chre *Chordifex reseminans* (P2)
- Corh *Comesperma rhadinocarpum* (P3)
- Hest *Hensmania stoniella* (P3)
- Hyqu *Hypocalymma quadrangulare* (P3)
- Ispap *Isopogon panduratus* subsp. *palustris* (P3)
- Lepr *Levenhookia preissii* (P1)
- Poas *Poranthera asybosca* (P1)
- Pomoo *Poranthera moorokatta* (P2)
- Scpe *Schoenus pennisetis* (P3)
- Velil *Verticordia lindleyi* subsp. *lindleyi* (P4)



0 100 200

Metres

Scale: 1:5,000 at A3
GDA2020 MGA Zone 50

Image Source: Tronox (2021), ESRI Basemap (2023) | **Data Source:** Landgate (2023), Umwelt (2024), Tronox (2023)

5.2.1.2 Likelihood of Occurrence of Further Significant Flora Taxa

As discussed in **Section 5.1.4**, a total of 104 significant flora taxa were identified as occurring (or potentially occurring) within the Desktop Study Area prior to survey, comprising 18 taxa listed as Threatened under the EPBC and/or BC Acts, 84 DBCA-classified Priority flora taxa, and two potentially undescribed taxa. Of the 104 taxa identified by the desktop assessment, 19 were recorded within the Targeted Survey Area by the 2022 and 2023 surveys (**Section 5.2.1.1**).

Appendix E presents an assessment of the likelihood of the remaining 85 taxa occurring in the Targeted Survey Area. This assessment considered whether a taxon was identifiable at the time of survey, the known range of the taxon and proximity of known records to the Targeted Survey Area when determining the potential for a taxon to occur.

To assist with determining whether suitable habitat may be present in the Targeted Survey Area, **Appendix E** presents information on 2022 and Cooljarloo West VTs within which known locations of significant flora taxa have been recorded (significant flora locations data from DBCA (2023d) and the Shared Flora Database (Iluka, 2021)). Note that many significant flora records are located within areas that have not been mapped; therefore, this data is not intended to be definitive, but rather is intended to assist where habitat information from specimens lodged at the WA Herbarium (1998-) is insufficient.

It is considered that of the 85 taxa that were returned by the desktop assessment but not recorded in the Targeted Survey Area, three taxa would theoretically not have been identifiable at the time of the 2023 survey; *Caladenia denticulata* subsp. *albicans* (P1), *Thelymitra apiculata* (P4) and *Thelymitra pulcherrima* (P2). These taxa are tuberous geophytes that emerge and flower from August to September, June to August, and July to September, respectively (WA Herbarium, 1998-), while the 2023 survey was undertaken in late October to very early November. Nevertheless, these taxa are considered unlikely to occur in the Targeted Survey Area, as habitat is not considered to be present (near-coastal calcareous sandy soils in the case of *Caladenia denticulata* subsp. *albicans* (P1), and for *Thelymitra apiculata* (P4) and *Thelymitra pulcherrima* (P2), areas with greater laterite influence, which generally occur closer to the Dandaragan Scarp) (**Appendix E**). Note that Mattiske (2017) have recorded *Thelymitra apiculata* (P4) and *Thelymitra pulcherrima* (P2) in wetlands in the Cooljarloo West Study Area, but these records are considered very atypical in a habitat context, and the plants were present in very low abundance.

The remaining 82 significant flora taxa were considered likely to be identifiable during the 2023 survey, either because the survey period coincides with the taxon's flowering period, or the taxon can be identified reliably when in fruit or sterile. However, they are considered unlikely to potentially still occur in the Targeted Survey Area; this is generally because the Targeted Survey Area occurs outside the species' known ranges, and/or potential habitat is not considered to be present (**Appendix E**).

5.2.2 Significant Vegetation

5.2.2.1 Listed Significant Vegetation of the Targeted Survey Area

The desktop assessment identified four listed significant vegetation communities that have records (or could potentially occur) within the Desktop Study Area (**Section 5.1.5**). Of these, the 'Banksia Woodlands of the Swan Coastal Plain' TEC is considered to occur in the Targeted Survey Area. This TEC was also mapped by the 2022 Detailed Survey in the Detailed Survey Area (Umwelt, 2024b).

The 'Banksia Woodlands of the Swan Coastal Plain' is listed as a P3 PEC in WA, and as an Endangered TEC under Commonwealth legislation. DBCA state that the description, area and condition thresholds that apply to the EPBC-listed TEC also apply to the PEC (DBCA, 2023f); therefore, these are discussed together in the context of the EPBC-listed TEC. Note that a number of other DBCA-listed TECs and PECs (based on SCP FCTs from the Gibson et al. (1994) study) also form part of the EPBC-listed TEC on the southern SCP; these other communities are discussed in the **Section 5.2.2.2**.

The 'Banksia Woodland of the Swan Coastal Plain' TEC is an ecological community largely confined to the Perth and Dandaragan Plateau IBRA subregions of the SCP IBRA region, extending from near Jurien in the north to Dunsborough in the south, as well as in immediately adjacent pockets on the Whicher and Darling Scarps. The TEC is mainly located on the deep Bassendean and Spearwood sands, and occasionally Quindalup sands (typically on the eastern edge), on shallow sands overlying more complex stratigraphic sequences on the foothills of the Ridge Hill Shelf, Whicher Scarp and Gingin/Dandaragan Scarp. This TEC occurs within an annual rainfall band of approximately 535 to 900 mm, often with summer droughts and high temperatures. This strong seasonal variation in climate results in the TEC being a fire-prone environment, and therefore supports species with a range of life history traits that allow them to persist in fire-prone environments (DoEE, 2016).

This TEC was once continuously distributed across a large region. Currently, it is fragmented into numerous small and scattered patches. It was ranked under Criterion 1 (Decline in geographic distribution) as eligible for listing as Vulnerable; under Criterion 2 (small geographic distribution coupled with demonstratable threat) as eligible for listing as Endangered; and under Criterion 4 (Reduction in community integrity) as eligible for listing as Endangered (DoEE, 2016). Critical habitat for the TEC includes all patches that meet the diagnostic characteristics and condition thresholds for the community, as well as buffer zones, particularly where these zones contain native vegetation. Areas that do not meet minimum condition threshold may also be critical to the survival of the TEC depending upon factors such as size and shape and linkages. As of March 2019, approximately 22.5 % of the extant extent of the TEC in the Perth IBRA subregion was in lands managed for conservation (IUCN category I-IV reserves) (DoEE, 2016).

The Approved Conservation Advice for this community (DoEE, 2016) stipulates a stepwise process for identifying occurrences of the TEC community, as presented in **Appendix F**. These steps are followed in the context of identifying whether vegetation of the Targeted Survey Area represents this TEC, as outlined below.

The first step involves key diagnostic characteristics (location and physical environment, soils and landform, structure, and composition). The Targeted Survey Area satisfies the first two key diagnostic characteristics, as it occurs within the SCP IBRA bioregion (albeit at the very northern end), and contains areas of well drained, low nutrient soils on sandplain landforms. With regard to the remaining two key diagnostic characteristics, only VTs D-A and D-B (and the equivalent Cooljarloo West VTs 17 and 18, respectively) are considered to possess these characteristics, as these areas almost always has a basic structure that includes a low woodland dominated by *Banksia attenuata* and *Banksia menziesii* (sometimes also with *Banksia prionotes*, and other emergent trees such as *Eucalyptus todtiana* and/or *Nuytsia floribunda*), over a relatively diverse understorey that includes sclerophyllous shrubs and a herbaceous ground layer. It is acknowledged that in some of these areas, *Banksia attenuata* and/or *Banksia menziesii* are not dominant, and may occur as isolated trees only, or may be completely absent. However, as outlined in the Approved Conservation Advice under the fourth step of the identification process (further information to assist in determining the presence of the community), this form variation often occurs in patches of the TEC, and therefore does not preclude such areas from being included as part of a larger occurrence of the TEC.

Note that while *Banksia menziesii* is present in some areas of VTs W-C and W-E, it is not dominant or co-dominant in the upper layer, and these VTs occur on poorly draining soils; these VTs therefore do not satisfy the mandatory criteria 3b and 2a respectively. Therefore, these areas are not considered to be occurrences of the TEC.

The next steps involve applying condition and size (spatial area) thresholds to potential patches of vegetation that meet the key diagnostic characteristics; a patch is defined as a discrete and mostly continuous area of the TEC, typically with any breaks (i.e. tracks, roads, or vegetation that does not represent the TEC, being less than 30 m in distance). Where there is a break in native vegetation cover from the edge of the tree canopy of 30 m or more (e.g. due to permanent artificial structures, wide roads or other barriers; or due to water bodies typically more than 30 m wide) then the gap typically indicates that separate patches are present. Potential patches within the Targeted Survey Area were determined while taking into account any patches of vegetation that are intersected by the Targeted Survey Area boundary but clearly form part of contiguous vegetation outside the Targeted Survey Area (including within the Detailed Survey Area), via both aerial imagery interpretation and boundaries of Cooljarloo West VTs 17 and 18 (which are considered equivalent to VTs D-A and D-B; **Section 5.1.3**). A total of 28 potential patches of the Banksia Woodland TEC were defined by Umwelt (2024b) within the Detailed Survey Area, 12 of which are intersected by the Targeted Survey Area. Extensions to two of these potential patches were identified within the eastern part of the Targeted Survey Area that had not been previously assessed by the 2022 Detailed Survey.

The Approved Conservation Advice then specifies that a patch of the TEC must meet the 'Good' vegetation condition category as per Gibson et al. (1994) to be considered a patch of the TEC under the EPBC Act; this is the same vegetation condition scale presented in EPA Technical Guidance (2016b) and used by the 2022 Detailed Survey and Cooljarloo West Survey. It then defines minimum patch sizes for each condition rating (Good and higher). However, as outlined under the fourth step of the Approved Conservation Advice, it is stipulated that a patch can vary in condition, and can include vegetation with a lower condition rating than Good; such areas may still retain important natural values and may be critical to protecting those portions of a patch that meet the condition threshold. In these cases, the condition rating mapped over the largest portion of the patch has been used when assessing the patch against the minimum patch size requirements. It also stipulates that vegetation occurring outside of the area of study, in this case the Targeted Survey Area, needs to be considered when calculating patch sizes within the area of study, in cases where vegetation outside the area of study is contiguous with that inside. This was also considered when determining the number and size of potential patches.

The assessment of the 12 potential patches in the Targeted Survey Area against the key diagnostic characteristics is presented in **Appendix G**. In summary, six patches of the TEC are considered to occur within the Targeted Survey Area, as presented in **Figure 5.6**. Five of the six patches met both the patch size and vegetation condition criteria, while the sixth patch did not meet the patch size criteria for its mapped extent within the Targeted Survey Area, but forms part of a larger occurrence of contiguous vegetation outside the Targeted Survey Area. The remaining patches do not meet the patch size criteria, and are not considered to contribute significantly to the overall function of the ecological community; they are therefore not considered to be patches of the TEC.

The six patches of the TEC comprise a total area of 55.15 ha, or 21.5 %, of the Targeted Survey Area. All patches of the TEC were considered to be in 'Excellent' condition.

According to DBCA's indicative, broad-scale mapping of the 'Banksia Woodlands of the Swan Coastal Plain' TEC, it is likely to occur within the Targeted Survey Area. As mentioned in **Section 5.1.5**, the records provided by this search are generally polygons that were determined by overlaying broad-scale vegetation over remnant vegetation polygons. Ground-truthing by DBCA has not been undertaken to confirm occurrences in this dataset in most cases, and they are therefore considered to be indicative only, with on-ground assessment required to determine the actual extent of the TEC (if it is present at all). Therefore, the TEC as presented in **Figure 5.6** is considered to represent a more accurate extent than the occurrences contained in DBCA's TEC and PEC database. Consequently, no attempt has been made to correlate the extent of the TEC as defined above and presented in **Figure 5.6** with these occurrences.

5.2.2.2 Floristic Community Types of the Southern Swan Coastal Plain

The vegetation described by the study of the southern SCP by Gibson et al. (1994), together with supplementary vegetation description published by the Government of Western Australia (2000) (with the latter dataset being made available by Keighery et al. (2012)), is the current baseline used when assessing the significance of vegetation on the southern SCP (as per DBCA's *Vegetation survey methods and analysis to determine floristic community types on the southern Swan Coastal Plain* (DBCA, 2024)). The vast majority of terrestrial TECs and PECs that occur on the southern SCP are Floristic Community Types (FCTs) described by the Gibson et al. (1994) study. This includes multiple FCTs that form components of the 'Banksia Woodland of the Swan Coastal Plain' and 'Clay pans of the Swan Coastal Plain' TECs.

The quadrat datasets associated with both of these studies sampled throughout the southern SCP, and included some upland sites associated with the Darling Scarp. However, the studies did not go as far north on the SCP as the Targeted Survey Area, which is located on the very northeastern end of the SCP. Given the SCP and Geraldton Sandplains regions have a very high turnover of species and vegetation communities, it is highly likely the vegetation of the Targeted Survey Area is not represented in the SCP dataset. Therefore, it is not considered appropriate to undertake floristic analyses with the SCP datasets, or otherwise draw comparisons between the vegetation of the Targeted Survey Area and the FCTs of the southern SCP.

5.2.2.3 Other Significant Vegetation of the Targeted Survey Area

As discussed in **Section 5.1.3**, eight VTs (as described by the 2022 Detailed Survey) have been mapped in the Targeted Survey Area. The vegetation in the eastern part of the Targeted Survey Area that was not mapped by the 2022 Detailed Survey are also likely represented by these VTs.

As discussed in **Section 5.2.2.1**, VTs D-A and D-B are considered representative of the 'Banksia Woodland of the Swan Coastal Plain' TEC. In addition, vegetation resembling VT W-A was recorded in the eastern part of the Targeted Survey Area; this area was previously mapped by Woodman Environmental (2014b) for the Cooljarloo West project as VT 2. VT W-A was identified by Umwelt (2024b) as being potentially significant in a local and regional context for reasons other than formal listing, due to occurring on a restricted landform (clay pans) (**Section 5.1.3**). As presented in **Figure 5.6**, VT W-A was mapped in one occurrence in the Targeted Survey Area, across 0.37 ha.

FIGURE 5.6

Significant Vegetation of the Targeted Survey Area

Legend

- Detailed Survey Area
- Targeted Survey Area
- Road
- Watercourse

Significant Vegetation (Umwelt 2024)

- Banksia Woodlands of the Swan Coastal Plain ecological community (WA – P3, EPBC – Endangered)
- VT W-A: Occasional low isolated trees of *Melaleuca rhaphiophylla* over mid heathland to open heathland of mixed species including *Melaleuca viminea* subsp. *viminea*, *Hakea varia*, *Melaleuca teretifolia* and *Viminaria juncea*, over low sparse heathland of mixed species dominated by *Verticordia densiflora* var. *densiflora*, *Melaleuca seriata* and sometimes *Hakea lissocarpha*, *Petrophile seminuda* and *Banksia telmatiaea*, over low sparse sedgeland and rushland of mixed species dominated by *Leptocarpus canus* and *Schoenus subfascicularis* over low sparse forbland of mixed species including *Patersonia occidentalis* var. *occidentalis*, *Opercularia vaginata* and *Conostylis aculeata* subsp. *breviflora*, on sandy clay loam or clay loam of various colours on seasonally damp to wet lower slopes, open depressions and clay pans.
- Preliminary Patches (Not Part of the Banksia Woodland TEC)

0 300 600

Metres

Scale: 1:15,000 at A3
GDA2020 MGA Zone 50

Image Source: Tronox (2021) | **Data Source:** Landgate (2023), Umwelt (2024), Tronox (2023)

5.2.2.4 Likelihood of Occurrence of Further Significant Vegetation

As discussed in **Section 5.1.5**, four listed significant vegetation communities were identified as potentially occurring in the Desktop Study Area. Of these, the 'Banksia Woodlands of the Swan Coastal Plain' TEC is considered to occur in the Targeted Survey Area (**Section 5.2.2.1**). **Table 5.8** presents an assessment of the potential presence of the remaining three significant vegetation communities in the Targeted Survey Area.

In summary, no other listed significant vegetation communities are considered to occur in the Targeted Survey Area.

Table 5.8 Likelihood of Occurrence of Further Significant Vegetation in the Targeted Survey Area

EPBC TEC	State TEC/PEC	Description	Nearest Known Location	Comment
Clay pans of the Swan Coastal Plain (CR)	**Claypans with mid dense shrublands of *Melaleuca lateritia* over herbs (P1)**	Claypans (predominantly deep basin claypans) usually dominated by a shrubland of *Melaleuca lateritia* with dense herbs, occurring both on the coastal plain and the adjacent plateau. The clay pans are characterised by taxa that are adapted to presence of surface water such as *Hydrocotyle lemnoides* (P4), or to a combination of terrestrial and wet phases such as *Glossostigma diandrum*, *Liparophyllum capitatum* and *Eleocharis keigheryi* (T). This community is known from the SCP and Jarrah Forest IBRA regions (DBCA, 2023f; DPaW, 2015). Studies on water relations in a clay pan of this type in Drummond Nature Reserve found that there is little connection between the surface and groundwater systems (Forbes & Vogwill, 2012). This PEC forms a component of the 'Clay pans of the Swan Coastal Plain' EPBC-listed TEC.	28 km south: Bashford Nature Reserve (R 39221), Mimegarra (DPaW, 2015)	**Unlikely to be present** This EPBC-listed TEC corresponds with five separate ecological community types, four of which (SCP07, 08, 09 and 10a) correspond to FCTs on the southern SCP as defined by Gibson et al. (1994), and the fifth being the 'Clay pans with shrubs over herbs' community (117) (DSEWPC, 2012). SCP07 is discussed further below with reference to that State-listed TEC. The Targeted Survey Area occurs within the known range of *Melaleuca lateritia* (WA Herbarium, 1998-), and 28 km north of the most northern known occurrence of this PEC (Bashford Nature Reserve). *Melaleuca lateritia* was not recorded or observed in the Targeted Survey Area. *Melaleuca lateritia* was recorded by Umwelt (2024b) at one location in the Detailed Survey Area (relevé ROMP01 in VT W-A; this relevé is located outside the Targeted Survey Area). However, it was present at low densities at this location, and the vegetation at the location did not represent a 'dense shrubland' of *Melaleuca lateritia*. Some herbs were present, but there were other strata layers including sedges and low shrubs. The landform was not a deep basin as described by the study in which this PEC was first described (Gibson et al., 2005). Of the 129 taxa that commonly occur in this PEC (Appendix 2 of the Interim Recovery Plan (DPaW, 2015)), only five taxa (*Drosera glanduligera*, *Hypochaeris glabra*, *Melaleuca teretifolia*, *Ursinia anthemoides*, and *Wurmbea dioica*) were present in relevé ROMP01, and none of these taxa are restricted only to clay pan communities. The species composition of VT W-A (the only VT in the Detailed Survey Area and Targeted Survey Area that occurs in true clay pans) did not correlate strongly with

EPBC TEC	State TEC/PEC	Description	Nearest Known Location	Comment
				that of the PEC. On average, quadrats in VT W-A had an average annual taxon richness of 16, and a total cover of annual taxa of 6.7 %. Only 21 taxa of the 129 taxa that commonly occur in this PEC were recorded across all quadrats in VT W-A (*Centrolepis aristata*, **Cicendia filiformis*, *Drosera gigantea*, *Drosera menziesii*, *Eryngium pinnatifidum* subsp. *Palustre* (G.J. Keighery 13459) (P3), *Gonocarpus nodulosus*, *Goodenia micrantha*, *Hakea varia*, *Hyalosperma cotula*, *Hydrocotyle alata*, **Juncus capitatus*, *Melaleuca viminea*, *Neurachne alopecuroidea*, *Philydrella pygmaea*, *Podolepis gracilis*, *Siloxerus humifusus*, *Siloxerus multiflorus*, *Stylidium calcaratum*, *Thelymitra vulgaris*, *Utricularia multifida* and *Xanthorrhoea preissii*). As for relevé ROMP01, many of these taxa are not restricted to clay pan communities or this particular PEC and are therefore not considered to be indicators of the PEC. No aquatic or amphibious taxa were recorded, which are apparently characteristic of the vegetation representative of the PEC (Gibson et al., 2005). In summary, the DBCA PEC (and consequently the EPBC TEC) is considered unlikely to be present in the Targeted Survey Area.

EPBC TEC	State TEC/PEC	Description	Nearest Known Location	Comment
Clay pans of the Swan Coastal Plain (CR) cont.	**Herb rich saline shrublands in clay pans (floristic community type 7 as originally described in Gibson et al. 1994) (T)**	This community occurs on heavy clay soils that are generally wet, and may have surface water present, from winter to mid-summer. Many locations hold water up to 30 cm deep in early spring, and early flowering aquatic species are common. It has been recorded between Nambung and Ambergate. The community can occur under a shrub layer comprising *Melaleuca viminea*, *Melaleuca osullivanii*, *Melaleuca cuticularis* or *Casuarina obesa* or other shrubs but can also occur as woodlands or herblands. Some areas such as where *Melaleuca cuticularis* or *Casuarina obesa* occur as an overstorey may be saline for part of the year due to evaporation resulting in increased salinity. **Cotula coronopifolia* sometimes forms yellow floating mats in some pools while others may be dominated by *Ornduffia submersa* (P4). Aquatic species are common in the community early in the growing season. A succession of species including *Centrolepis* spp. and *Stylidium* spp. flower as the clay pans dry over a period of up to three months. A suite of herbs such as *Philydrella pygmaea*, *Brachyscome bellidioides*, *Centrolepis aristata*, *Centrolepis polygyna* and *Pogonolepis stricta* frequently occur in the community. Species such as *Angianthus drummondii*, *Eryngium pinnatifidum* subsp. Palustre (G.J. Keighery 13459) (P3) and *Blennospora drummondii* occur in low frequency and were not recorded in FCTs 8 to 10 (DBCA, 2024; DPaW, 2015; Gibson et al., 1994). This TEC forms a component of the 'Clay pans of the Swan Coastal Plain' EPBC-listed TEC.	11 km northwest: Unallocated Crown Land near intersection of Wongonderrah Rd and Munbinea Rd (DBCA, 2023c). However, this occurrence is outside the geographic range of the Gibson et al. (1994) study from which this TEC was originally defined. Nearest known location within the geographic range of the Gibson et al. study is approx. 87 km southwest, on south side of Lake Muckenburra (CR 25431/ CR 20366) (DPaW, 2015)	**Not considered to be present** Appendix 1 ('Vegetation survey methods and analysis to determine floristic community types on the southern Swan Coastal Plain') of DBCA's 'Methods for survey and identification of Western Australian threatened ecological communities' states that this TEC can be identified via statistical analyses of quadrat data with that from the Gibson et al. (1994) and Keighery et al. (2012) studies. However, these studies were undertaken on the southern SCP, while the Targeted Survey Area is located on the northern SCP. As discussed in **Section 5.2.2.2**, the SCP and Geraldton Sandplains regions have a very high turnover of species and vegetation communities, and it is highly likely the vegetation of the Targeted Survey Area is not represented in the SCP dataset. Therefore, it is not considered appropriate to undertake floristic analyses with the SCP datasets, or otherwise draw comparisons between the vegetation of the Targeted Survey Area and the FCTs of the southern SCP. Furthermore, habitat matching the description of this TEC was not observed in the Targeted Survey Area. None of the clay pans in the Targeted Survey Area are considered likely to be inundated for long periods of time, and none contain the suite of semi-aquatic herbs that characterise this TEC. Therefore, this TEC is not considered to be present.

EPBC TEC	State TEC/PEC	Description	Nearest Known Location	Comment
Tuart (*Eucalyptus gomphocephala*) woodlands and forests of the Swan Coastal Plain ecological community (CR)	**Tuart (*Eucalyptus gomphocephala*) woodlands of the Swan Coastal Plain) (P3)**	This community is largely confined to the Perth IBRA subregion of the SCP, extending from Jurien in the north to the Sabina River near Busselton in the south; however, it is most prominent in the southern part of this distribution. The TEC is associated with calcareous soils on the western side of the SCP, including the coast. It largely occurs on sandy, well-drained soils; however, there are occurrences in other areas such as on protected swales, saline and freshwater wetlands, close to riverbanks and on limestone slopes (B. J. Keighery et al., 2002; G. J. Keighery, 2002; Ruthrof et al., 2002). The TEC is primarily located on Spearwood dune systems, but occurs on the Quindalup and Bassandean dune systems to a lesser extent (DoEE, 2019). Tuart is the key upper canopy species although it may co-occur with trees of other species. Trees commonly co-occurring with Tuart include *Agonis flexuosa*, *Banksia grandis*, *Banksia attenuata*, *Eucalyptus marginata*; and less commonly, *Corymbia calophylla*, *Banksia menziesii* and *Banksia prionotes*. An understorey of native plants is typically present, which may include grasses, herbs and shrubs (DBCA, 2023f; DoEE, 2019). Tuart can occasionally occur as a separate stratum above a woodland dominated by *Banksia* spp., in which case the patches are more likely to meet the Banksia woodlands TEC diagnostic characteristics. The description, area and condition thresholds that apply to the EPBC-listed TEC of the same name, also apply to this PEC.	45 km southeast: near the intersection of Sappers and Cowalla Roads (DBCA, 2022b)	**Not considered to be present** There are no records of this vegetation community in the Desktop Study Area. This TEC/PEC is strongly associated with calcareous soils of the western part of the SCP, including those very close to the coast (DoEE, 2019); soils matching this description were not observed in the Targeted Survey Area, and do not correlate with the soil landscape mapping for the Targeted Survey Area (**Section 2.2**). The Approved Conservation Advice for this community (DoEE, 2019) lists key diagnostic criteria that must be met in order for patches of vegetation to be considered part of this TEC. The first criterion states that the patch of vegetation must occur within the SCP IBRA bioregion; therefore, this criterion is met. The second criterion relates to soils and landform. The community primarily occurs on the Spearwood and Quindalup dune systems, but can also occur on the Bassendean dunes, the Pinjarra Plain, and on the banks of rivers and wetlands. The Targeted Survey Area occurs on the Bassendean system (**Section 2.2**), and therefore this criterion is met. The third criterion, and the primary defining feature of the community, relates to the presence and density of *Eucalyptus gomphocephala* trees. This species was not recorded in the Targeted Survey Area, and the Targeted Survey Area is located outside the native range of the taxon, which typically occurs closer to the coast (WA Herbarium, 1998-). Therefore, this criterion is not met, and the TEC is not considered to occur.

6.0 Discussion and Conclusions

A total of 19 significant flora taxa were recorded by the 2023 survey in the Targeted Survey Area, including one Threatened taxon listed under the BC and EPBC Acts (*Macarthuria keigheryi*). All taxa had existing records in the Desktop Study Area, and nine had previously been recorded in the Targeted Survey Area. An additional two taxa, *Andersonia gracilis* (T) and *Anigozanthos viridis* subsp. ?*terraspectans* (T), had purportedly been historically recorded in the Targeted Survey Area, but were not recorded by the 2023 survey. Investigation of these historical records identified that the records are likely erroneous, as both occur within Banksia woodland (VT D-A), which is not appropriate habitat for either taxa. Both taxa were specifically searched for during the 2023 survey but were not recorded, and therefore it is considered unlikely that there are present in the Targeted Survey Area.

Also revisited in 2023 were historical locations of *Macarthuria keigheryi* (T). The historical locations in the Targeted Survey Area could not be relocated, although the taxon was found in low abundance at a small number of additional locations approximately 110 m away, on recently cleared drill lines. This taxon is a short-lived, known fire and disturbance responder, and therefore has a large temporal variability in population size following fire or disturbance. The taxa *Comesperma rhadinocarpum* (P3), *Schoenus pennisetis* (P3) and *Thysanotus glaucus* (P4) are also disturbance opportunists and have similar responses to fire and soil disturbance, typically establishing in large numbers following fire or other disturbance, and declining in intervening years, to the point where often no extant plants remain. Given the vegetation of the Targeted Survey Area was relatively long unburnt and undisturbed, apart from some recent clearing of drill lines and access tracks, it was expected that these taxa would be present sporadically and at low abundance even in preferred habitat or at previous locations. Consequently, they can be challenging to adequately survey in the absence of fire/disturbance. While not considered to be a limitation of this assessment, it is worthy of note that the records of these taxa from the 2023 survey likely do not represent an accurate indication of their true population distribution and extent in the Targeted Survey Area. Any future impact assessment should therefore use potential impacts to suitable habitat, as opposed to locations or abundance, as a more appropriate measure of predicted impact to these taxa.

The 19 significant flora taxa recorded in the Targeted Survey Area includes three taxa with known ranges (according to Florabase (WA Herbarium, 1998-)) of less than 50 km, being *Desmocladus nodatus* (P3), *Isopogon panduratus* subsp. *palustris* (P3) and *Stylidium hymenocraspedum* (P3). However, these taxa all have at least one regional population located in conservation estate (DBCA Nature Reserve or National Park). In fact, all significant flora taxa recorded by the 2023 survey taxa with the exception of *Babingtonia urbana* (P3) have at least one regional population protected in conservation estate; although *Babingtonia urbana* is known from a relatively large, albeit disjunct, distribution of approximately 200 km from Cooljarloo to west of Mundijong.

A likelihood of occurrence assessment was undertaken for the 85 significant flora taxa identified by the desktop assessment but not recorded by the 2023 survey. This assessment determined that three taxa, *Caladenia denticulata* subsp. *albicans* (P1), *Thelymitra apiculata* (P4) and *Thelymitra pulcherrima* (P2), would theoretically not have been identifiable at the time of the 2023 survey. Nevertheless, these three taxa are considered unlikely to occur in the Targeted Survey Area, as habitat is not considered to be present (near-coastal calcareous sandy soils in the case of *Caladenia denticulata* subsp. *albicans* (P1), and for *Thelymitra apiculata* (P4) and *Thelymitra pulcherrima* (P2), areas with greater laterite influence, which generally occur closer to the Dandaragan Scarp). The remaining 82 significant flora taxa were considered likely to be identifiable during the 2023 survey, either because the survey period coincides with the taxon's flowering period, or the taxon can be identified reliably when in fruit or sterile. However, they are considered unlikely to potentially still occur in the Targeted Survey Area; this is generally because the Targeted Survey Area occurs outside the species' known ranges, and/or potential habitat is not considered to be present.

While the 2023 survey did not include definition or mapping of VTs, the majority of the Targeted Survey Area had been mapped by the 2022 Detailed Survey. The eastern part of the Targeted Survey Area occurs within the existing Cooljarloo disturbance footprint (M 70/1398), and in terms of assessment of vegetation, requires a Targeted survey only.

Following the stepwise process in the Approved Conservation Advice for the 'Banksia Woodland of the Swan Coastal Plain' EPBC TEC/DBCA PEC (DoEE, 2016), a total of six patches of the TEC were mapped in the Targeted Survey Area, comprising 55.15 ha, or 21.5 %, of the Targeted Survey Area. All patches of the TEC were considered to be in 'Excellent' condition.

In addition, vegetation resembling VT W-A was recorded in the eastern part of the Targeted Survey Area. VT W-A was identified by the 2022 Detailed Survey as being potentially significant in a local and regional context for reasons other than formal listing, due to occurring on a restricted landform (clay pans). VT W-A was mapped in one occurrence in the Targeted Survey Area, across 0.37 ha.

There were no survey limitations that are considered to have significantly influenced the results of the 2023 survey. Personnel involved in all aspects of the survey have significant previous experience and guided less experienced personnel throughout the survey where necessary. Reasonable contextual information for the Targeted Survey Area was available prior to the 2023 field survey. There were no access-related constraints, with all areas of native vegetation being relatively easily accessible by vehicle and foot using roads and tracks, allowing high intensity survey across the Targeted Survey Area. At least one reference specimen of all significant flora taxa encountered was collected during the 2023 field survey for verification and identification purposes, excluding taxa that are distinctive and can be confidently identified in the field. Data reliability is therefore considered to be relatively high. However, despite the field survey being conducted within what is generally considered to be the ideal time to survey in the SCP Bioregion (September to November), climatic conditions in the months prior to the survey were poor, with significantly lower precipitation than average, and higher maximum temperatures than average. The hot and dry conditions may have resulted in fewer annual/ephemeral and particularly fragile taxa being present and identifiable, such as *Poranthera moorokatta* (P2). Therefore, this is considered a potential minor limitation of the assessment.

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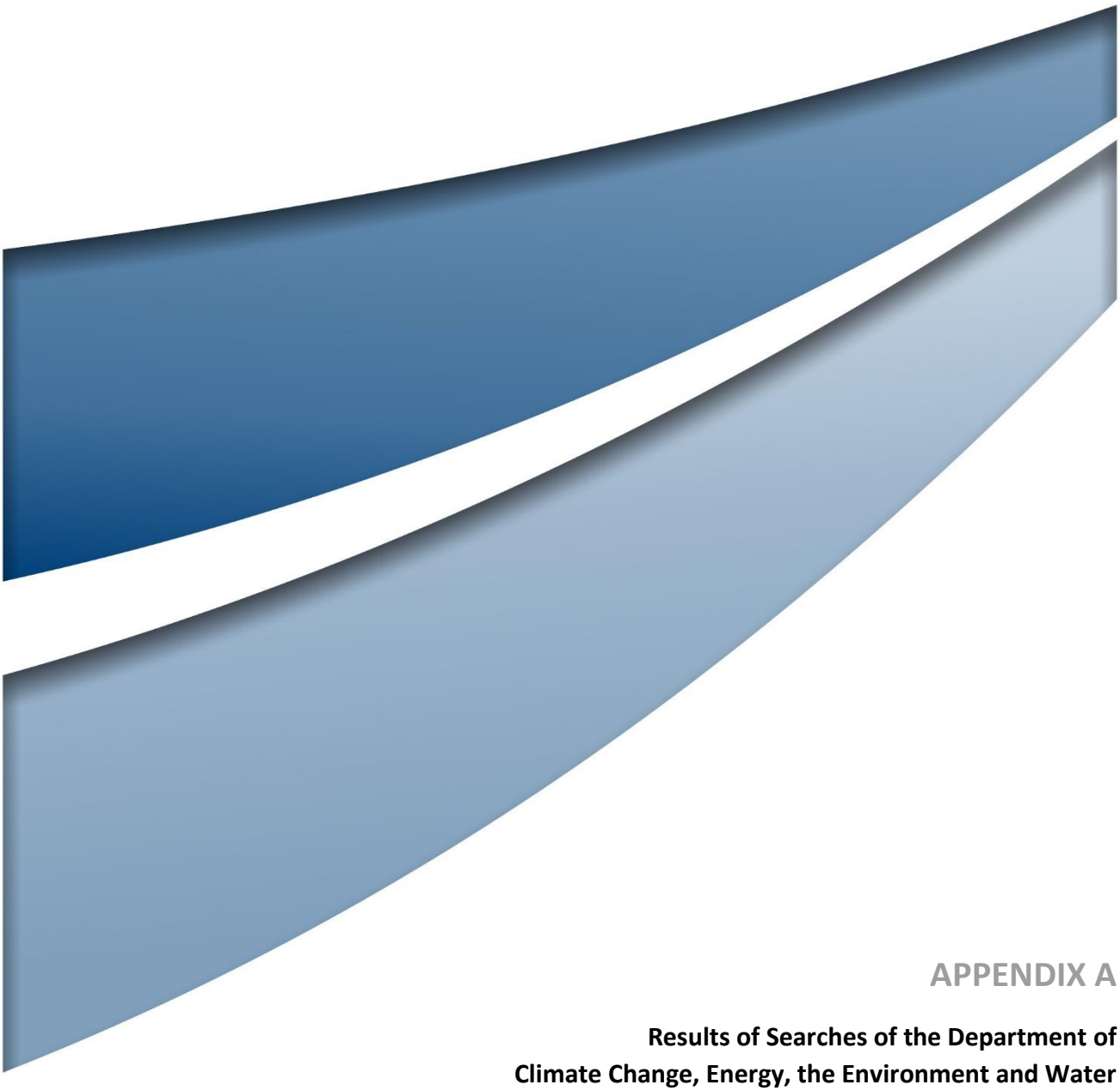

APPENDIX A

Results of Searches of the Department of Climate Change, Energy, the Environment and Water Species Profile and Threats Database (DCCEEW, 2022, 2023c)

Australian Government
Department of Agriculture, Water and the Environment

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 30-Sep-2022

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	2
Listed Threatened Species:	30
Listed Migratory Species:	10

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at http://www.environment.gov.au/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	None
Commonwealth Heritage Places:	1
Listed Marine Species:	14
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	5
Regional Forest Agreements:	None
Nationally Important Wetlands:	1
EPBC Act Referrals:	15
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Listed Threatened Ecological Communities [Resource Information]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.
Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

Community Name	Threatened Category	Presence Text	Buffer Status
Banksia Woodlands of the Swan Coastal Plain ecological community	Endangered	Community likely to occur within area	In feature area
Tuart (Eucalyptus gomphocephala) Woodlands and Forests of the Swan Coastal Plain ecological community	Critically Endangered	Community may occur within area	In feature area

Listed Threatened Species [Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area	In buffer area only
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Leipoa ocellata Malleefowl [934]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Sternula nereis nereis			
Australian Fairy Tern [82950]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Zanda latirostris listed as Calyptorhynchus latirostris			
Carnaby's Black Cockatoo, Short-billed Black-cockatoo [87737]	Endangered	Breeding known to occur within area	In feature area
MAMMAL			
Bettongia penicillata ogilbyi			
Woylie [66844]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Dasyurus geoffroii			
Chuditch, Western Quoll [330]	Vulnerable	Species or species habitat may occur within area	In feature area
Macroderma gigas			
Ghost Bat [174]	Vulnerable	Species or species habitat may occur within area	In feature area
Parantechinus apicalis			
Dibbler [313]	Endangered	Species or species habitat may occur within area	In feature area
PLANT			
Andersonia gracilis			
Slender Andersonia [14470]	Endangered	Species or species habitat known to occur within area	In feature area
Anigozanthos viridis subsp. terraspectans			
Dwarf Green Kangaroo Paw [3435]	Vulnerable	Species or species habitat known to occur within area	In feature area
Banksia catoglypta			
[85021]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Caleana dixonii listed as Paracaleana dixonii			
Sandplain Duck Orchid [87944]	Endangered	Species or species habitat known to occur within area	In feature area
Chamelaucium sp. Gingin (N.G.Marchant 6)			
Gingin Wax [88881]	Endangered	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Drakaea elastica Glossy-leafed Hammer Orchid, Glossy-leaved Hammer Orchid, Warty Hammer Orchid [16753]	Endangered	Species or species habitat may occur within area	In feature area
Eucalyptus dolorosa Dandaragan Mallee, Mount Misery Mallee [56709]	Endangered	Species or species habitat may occur within area	In buffer area only
Eucalyptus leprophloia Scaly Butt Mallee, Scaly-butt Mallee [56712]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Eucalyptus x balanites Cadda Road Mallee, Cadda Mallee [87816]	Endangered	Species or species habitat may occur within area	In buffer area only
Grevillea batrachioides Mt Lesueur Grevillea [21735]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Grevillea calliantha Foote's Grevillea, Cataby Grevillea, Black Magic Grevillea [56339]	Endangered	Species or species habitat may occur within area	In buffer area only
Hakea megalosperma Lesueur Hakea [10505]	Vulnerable	Species or species habitat known to occur within area	In feature area
Hemiandra gardneri Red Snakebush [7945]	Endangered	Species or species habitat may occur within area	In feature area
Leucopogon obtectus Hidden Beard-heath [19614]	Endangered	Species or species habitat may occur within area	In feature area
Macarthuria keigheryi Keighery's Macarthuria [64930]	Endangered	Species or species habitat known to occur within area	In feature area
Ptychosema pusillum Dwarf Pea [11268]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Thelymitra stellata](#) Star Sun-orchid [7060]	Endangered	Species or species habitat may occur within area	In feature area
REPTILE			
[Egernia stokesii badia](#) Western Spiny-tailed Skink, Baudin Island Spiny-tailed Skink [64483]	Endangered	Species or species habitat may occur within area	In feature area
SHARK			
[Pristis pristis](#) Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Listed Migratory Species [Resource Information]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
[Apus pacificus](#) Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Migratory Marine Species			
[Pristis pristis](#) Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Migratory Terrestrial Species			
[Motacilla cinerea](#) Grey Wagtail [642]		Species or species habitat may occur within area	In feature area
Migratory Wetlands Species			
[Actitis hypoleucos](#) Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
[Calidris acuminata](#) Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area	In feature area
[Calidris canutus](#) Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calidris ferruginea			
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Calidris melanotos			
Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area
Numenius madagascariensis			
Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area
Tringa nebularia			
Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area	In buffer area only

Other Matters Protected by the EPBC Act

Commonwealth Heritage Places			[Resource Information]
Name	State	Status	Buffer Status
Natural			
Lancelin Defence Training Area	WA	Listed place	In buffer area only

Listed Marine Species			[Resource Information]
Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos			
Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Apus pacificus			
Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Bubulcus ibis as Ardea ibis			
Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris acuminata			
Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Calidris canutus](#) Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area overfly marine area	In buffer area only
[Calidris ferruginea](#) Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area	In feature area
[Calidris melanotos](#) Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area	In feature area
[Chalcites osculans as Chrysococcyx osculans](#) Black-eared Cuckoo [83425]		Species or species habitat known to occur within area overfly marine area	In feature area
[Haliaeetus leucogaster](#) White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area	In feature area
[Merops ornatus](#) Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
[Motacilla cinerea](#) Grey Wagtail [642]		Species or species habitat may occur within area overfly marine area	In feature area
[Numenius madagascariensis](#) Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area
[Rostratula australis as Rostratula benghalensis (sensu lato)](#) Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area
[Tringa nebularia](#) Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area overfly marine area	In buffer area only

Extra Information

State and Territory Reserves			[Resource Information]
Protected Area Name	Reserve Type	State	Buffer Status
Badgingarra	National Park	WA	In buffer area only
Nambung	National Park	WA	In buffer area only
Unnamed WA40916	Nature Reserve	WA	In buffer area only
Unnamed WA41986	Conservation Park	WA	In buffer area only
Wongonderrah	Nature Reserve	WA	In buffer area only

Nationally Important Wetlands		[Resource Information]
Wetland Name	State	Buffer Status
Lancelin Defence Training Area	WA	In buffer area only

EPBC Act Referrals				[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Controlled action				
Atlas Mineral Sands Mine	2020/8813	Controlled Action	Completed	In buffer area only
Atlas Mineral Sands Project	2021/9056	Controlled Action	Assessment Approach	In buffer area only
Brand Highway Widening and Passing Lanes Project 34.83-164.3 SLK	2017/7864	Controlled Action	Post-Approval	In buffer area only
Cooljarloo West Titanium Minerals mining Project, WA	2013/6895	Controlled Action	Proposed Decision	In feature area
Not controlled action				
Cooljarloo Mine Falcon Extension	2007/3556	Not Controlled Action	Completed	In feature area
Cooljarloo Titanium Sand Mining	2000/23	Not Controlled Action	Completed	In buffer area only
Development of the Dandaragan Wind Farms	2011/6006	Not Controlled Action	Completed	In buffer area only

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area
Waddi Wind and Solar Farm, near Dandaragan, WA	2018/8352	Not Controlled Action	Completed	In buffer area only
Walyering 3D Seismic Survey, Cataby, WA	2017/7982	Not Controlled Action	Completed	In buffer area only
Not controlled action (particular manner)				
Mineral Sands Mine	2005/2001	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Transmission Line Rebuild and Extension	2009/5105	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
UIL Energy 2D Seismic Survey, Perth Basin, WA	2015/7554	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
Referral decision				
Raven 2D Seismic Acquisition Survey	2020/8659	Referral Decision	Referral Publication	In feature area
Transmission Line Rebuild and Extension	2009/4972	Referral Decision	Completed	In buffer area only

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

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-Queensland Herbarium
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-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
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-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact Us page.

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EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 23-Aug-2023

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	8
Listed Migratory Species:	8

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at https://www.dcceew.gov.au/parks-heritage/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	12
Commonwealth Heritage Places:	None
Listed Marine Species:	11
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	1
Regional Forest Agreements:	None
Nationally Important Wetlands:	1
EPBC Act Referrals:	4
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Listed Threatened Species			[Resource Information]
Status of Conservation Dependent and Extinct are not MNES under the EPBC Act. Number is the current name ID.			
Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Aphelocephala leucopsis Southern Whiteface [529]	Vulnerable	Species or species habitat known to occur within area	In feature area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat may occur within area	In feature area
Leipoa ocellata Malleefowl [934]	Vulnerable	Species or species habitat known to occur within area	In feature area
Pezoporus occidentalis Night Parrot [59350]	Endangered	Species or species habitat may occur within area	In feature area
Polytelis alexandrae Princess Parrot, Alexandra's Parrot [758]	Vulnerable	Species or species habitat may occur within area	In feature area
MAMMAL			
Dasyurus geoffroii Chuditch, Western Quoll [330]	Vulnerable	Species or species habitat may occur within area	In feature area
Sminthopsis psammophila Sandhill Dunnart [291]	Endangered	Species or species habitat may occur within area	In feature area
REPTILE			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Liopholis kintorei Great Desert Skink, Tjakura, Warrarna, Mulyamiji [83160]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Listed Migratory Species [Resource Information]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Migratory Terrestrial Species			
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area	In feature area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area	In feature area
Migratory Wetlands Species			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area	In feature area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area	In feature area

Other Matters Protected by the EPBC Act

Commonwealth Lands [Resource Information]

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Commonwealth Land Name	State	Buffer Status
Unknown		
Commonwealth Land - [51984]	WA	In feature area
Commonwealth Land - [52197]	WA	In feature area
Commonwealth Land - [51751]	WA	In feature area
Commonwealth Land - [51058]	WA	In feature area
Commonwealth Land - [52213]	WA	In feature area
Commonwealth Land - [51796]	WA	In feature area
Commonwealth Land - [51756]	WA	In feature area
Commonwealth Land - [51754]	WA	In feature area
Commonwealth Land - [51755]	WA	In feature area
Commonwealth Land - [51752]	WA	In feature area
Commonwealth Land - [52232]	WA	In feature area
Commonwealth Land - [51753]	WA	In feature area

Listed Marine Species [Resource Information]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Calidris melanotos](#) Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area	In feature area
[Chalcites osculans as Chrysococcyx osculans](#) Black-eared Cuckoo [83425]		Species or species habitat known to occur within area overfly marine area	In feature area
[Charadrius veredus](#) Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area overfly marine area	In feature area
[Merops ornatus](#) Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
[Motacilla cinerea](#) Grey Wagtail [642]		Species or species habitat may occur within area overfly marine area	In feature area
[Motacilla flava](#) Yellow Wagtail [644]		Species or species habitat may occur within area overfly marine area	In feature area
[Thinornis cucullatus as Thinornis rubricollis](#) Hooded Plover, Hooded Dotterel [87735]		Species or species habitat known to occur within area overfly marine area	In feature area
[Tringa nebularia](#) Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area overfly marine area	In feature area

Extra Information

State and Territory Reserves [Resource Information]

Protected Area Name	Reserve Type	State	Buffer Status
Unnamed WA46847	Nature Reserve	WA	In feature area

Nationally Important Wetlands [Resource Information]

Wetland Name	State	Buffer Status
Lake Marmion	WA	In buffer area only

EPBC Act Referrals [Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
Redcliffe Gold Project	2023/09452		Completed	In feature area
Eastern Goldfields Gas Pipeline Construction, WA	2014/7284	Not Controlled Action	Completed	In feature area
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area
Murrin Murrin East Nickel and Cobalt Mine Expansion	2008/4140	Not Controlled Action	Completed	In feature area

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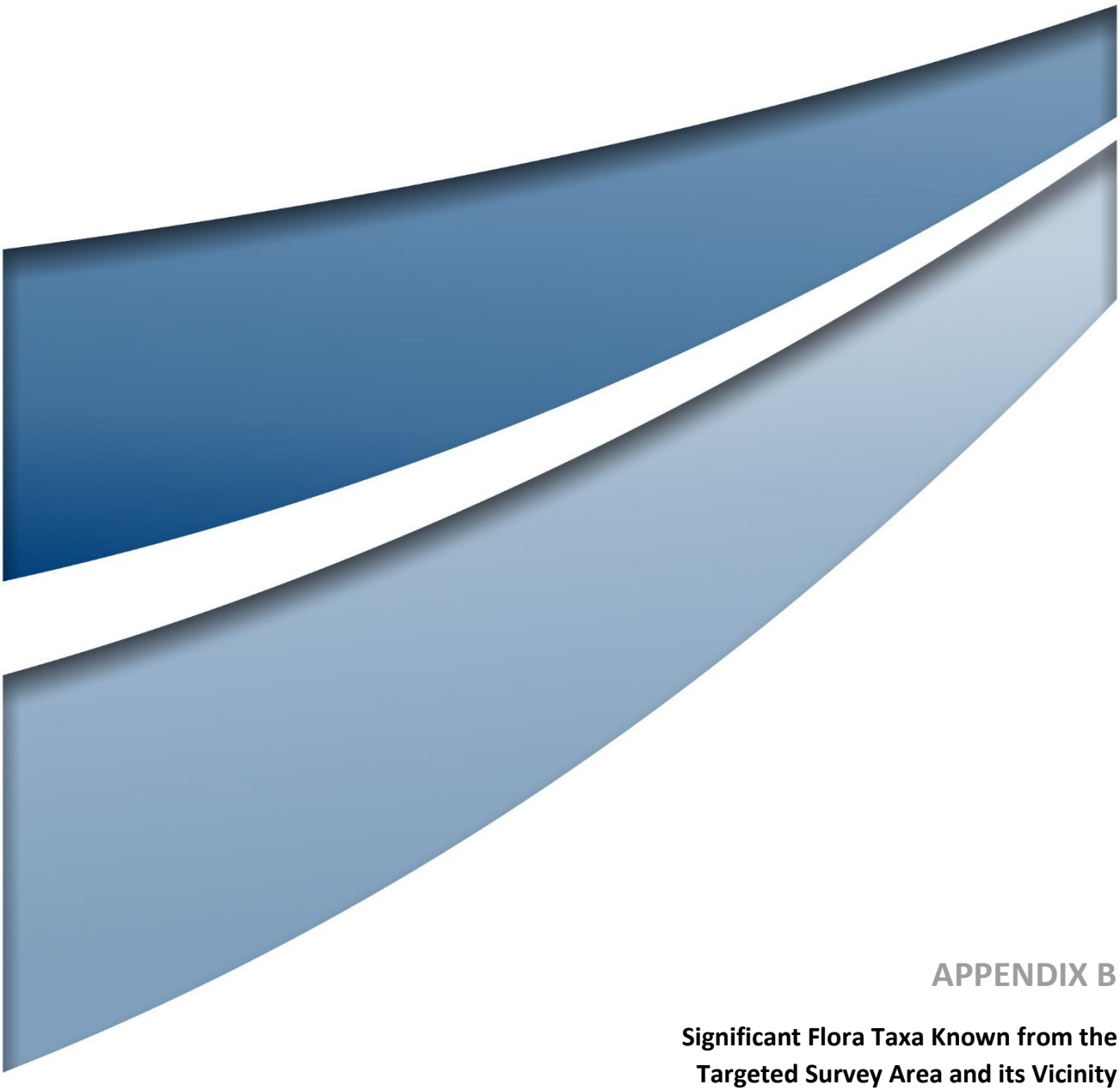


APPENDIX B

Significant Flora Taxa Known from the Targeted Survey Area and its Vicinity

Note: taxa shaded in blue have known records within the Targeted Survey Area, and taxa shaded in grey were returned from the interrogation of the DCCEEW SPRAT Database but have not been previously recorded in the Cooljarloo area according to DBCA databases (WA Herbarium, 1998-).

Symbols and sources are defined at the end of this appendix.

Taxon	Status (WA)	Status (EPBC)	Flowering Period[$]	Habitat[$]	Source*
Acacia benthamii	P2		August to October	Flats and plains, sand dunes, seasonal wetlands with grey or brown sand, often over limestone. Limestone breakaways	NM WA Herb
Allocasuarina grevilleoides	P3		September to November	Slopes, outcrops and plains with rocky or gravelly brown sand or clay loam over laterite or granite	Iluka Mattiske NM WA Herb WEC
Andersonia gracilis	T	EN	August to November	Winter-wet areas, near swamps with white-grey sand, sandy clay and gravelly loam	DCCEEW[#] Iluka Mattiske NM Rehab Strategen TPFL WA Herb WEC
Angianthus micropodioides	P3		September to January	Winter-wet areas, shallow depressions, clay pans, subsaline flats and dunes adjacent to salt lakes with grey or brown clay loam or sand	360 Iluka Mattiske Morgan NM WA Herb WEC
***Anigozanthos humilis* subsp. Badgingarra (S.D. Hopper 7114)**	P2		September to December	Slopes, plains, flats and winter-wet areas with white or grey sand. Banksia woodland, low wet heath	Outback
Anigozanthos humilis* subsp. *chrysanthus	P4		August to November	Slopes, plains and winter-wet areas with white, grey or yellow sand. Banksia woodland, low wet heath	Iluka Mattiske Morgan NM Strategen Umwelt WA Herb WEC

Taxon	Status (WA)	Status (EPBC)	Flowering Period[$]	Habitat[$]	Source*
Anigozanthos viridis* subsp. *terraspectans	T	VU	October to November	Winter-wet flats, wetlands and basins with brown or yellow sand or clay loam. Recently burnt areas	DCCEEW[#] Iluka Mattiske NM Rehab Strategen TPFL Umwelt WA Herb WEC
Arnocrinum gracillimum	P3		October to January	Lower slopes and plains with white or grey sand over laterite, sometimes gravelly	NM Outback Rehab TPFL Umwelt WA Herb WEC
Babingtonia* aff. *cherticola	Potentially undescribed		November to December	Sandplains, slopes and flats with brown or grey sand, sometimes gravelly and over laterite. Low wet heath	Iluka Mattiske WEC
Babingtonia delicata	P1		November	Winter-wet closed depressions, wetlands and lakes with white, yellow or grey clayey sand	360 NM WEC
Babingtonia urbana	P3		December to March	Winter-wet depressions, flats and swamps with brown or white clay loam, sometimes peaty. Low wet heath	Iluka Mattiske Morgan NM Rehab Strategen Umwelt WA Herb WEC
Banksia catoglypta	T	VU	June	Slopes and breakaways with grey or white gravelly sand over laterite	DCCEEW~
Banksia dallanneyi* subsp. *pollosta	P3		August to September	Flats and slopes with grey or yellow sand with laterite or limestone	Astron Iluka Mattiske Strategen WEC

Taxon	Status (WA)	Status (EPBC)	Flowering Period[$]	Habitat[$]	Source*
Beaufortia bicolor	P3		November to December	Upland areas with sandy soils over laterite	Iluka Mattiske NM TPFL Umwelt WA Herb WEC
Beaufortia eriocephala	P3		June, September to December	Ridges, low rises and flats with brown, grey or white sand or sandy clay and lateritic gravel over laterite or sometimes granite	360 Iluka Mattiske NM WA Herb WEC
Beyeria cinerea* subsp. *cinerea	P3		May to October	Slopes and hilltops with brown or grey calcareous sand over limestone	Iluka Mattiske WEC
Beyeria gardneri	P3		August to September	Sandplains and hillsides with yellow sand, often over laterite	NM Rehab WA Herb
Byblis gigantea	P3		October to January	Low plains, flats and swamps with brown or white sand or sandy clay, sometimes peaty	NM WA Herb WEC
Caladenia denticulata* subsp. *albicans	P1		August to September	Near-coastal calcareous sandy soils under tall Acacia species	NM Umwelt WA Herb
Calectasia palustris	P2		September to November	Winter-wet flats and swamps with white sand	Iluka Mattiske Morgan NM TPFL WA Herb WEC
Calytrix* aff. *eneabbensis	Potentially undescribed		-	-	Mattiske WEC
Chamelaucium lullfitzii	T	EN	September to December	Hilltops, slopes and undulating plains with gravelly sand	DCCEEW^

Taxon	Status (WA)	Status (EPBC)	Flowering Period[$]	Habitat[$]	Source*
Chordifex reseminans	P2		March to May	Flats and winter-wet depressions with white-grey sand over laterite	Iluka Mattiske Morgan NM Rehab Strategen TPFL Umwelt WA Herb WEC
Comesperma rhadinocarpum	P2		October to November	Undulating plains, valley slopes and flats with grey, brown or yellow sandy loam or sand	Rehab Umwelt WEC
Conospermum scaposum	P3		September to February	Winter-wet flats and depressions with white, brown or grey sand	360 Astron Iluka Mattiske Morgan NM Rehab Strategen Umwelt WA Herb WEC
Conostephium magnum	P4		July to September	Sand dunes and slopes with white-grey sand	360 Iluka Mattiske NM Outback Rehab Strategen Umwelt WA Herb WEC
Desmocladus biformis	P3		September to October	Hills, slopes and undulating plains with white or brown sand or sandy clay over laterite	Iluka Mattiske NM WA Herb WEC
Desmocladus elongatus	P4		August to December	Slopes, plains and uplands with white or grey sand over laterite	NM

Taxon	Status (WA)	Status (EPBC)	Flowering Period[$]	Habitat[$]	Source*
Desmocladus nodatus	P3		October to January	Winter-wet flats, wetlands and edges of wetlands with white, grey or brown sandy clay	360 Iluka Mattiske Morgan NM Rehab Strategen Umwelt WA Herb WEC
Drakaea elastica	T	EN	October to November	Low plains and flats with grey or white sand	DCCEEW^
Drosera leioblastus	P1		September to October	White siliceous sand with laterite	NM TPFL WA Herb
Drosera leucostigma	P1		November	Sandy margins of winter-wet areas	NM WA Herb
Drosera prophylla	P3		June to July	Hilltops, lateritic breakaways, ridges and slopes with gravelly sand over laterite	NM TPFL WA Herb
Eremophila glabra* subsp. *chlorella	T	EN	July to November	Winter-wet depressions, lake edges and flats with grey-white sandy clay or sand	NM WA Herb WEC
***Eryngium pinnatifidum* subsp. Palustre (G.J. Keighery 13459)**	P3		September to November	Winter-wet flats and depressions and clay pans, sometimes inundated, with grey or brown clay or sandy clay	Astron Iluka Mattiske Morgan WEC
Eucalyptus abdita	P2		February	Slopes and breakaways with laterite, sandy clay with gravel over laterite	NM
Eucalyptus* × *balanites	T	EN	February, June to July	Slopes and plains with white, brown or grey sand or sandy loam, sometimes gravelly and over laterite	DCCEEW^
Eucalyptus dolorosa	T	EN	February	Lateritic slopes and breakaways with gravelly/rocky brown loam	DCCEEW^
Eucalyptus leprophloia	T	EN	July, November	Laterite breakaways with grey or white sand or sandy clay	DCCEEW~
Eucalyptus macrocarpa* subsp. *elachantha	P4		August to December	Hillslopes, ridges, sandplains with white or grey sand over laterite	360 Iluka NM Rehab TPFL WA Herb WEC

Taxon	Status (WA)	Status (EPBC)	Flowering Period[$]	Habitat[$]	Source*
Eucalyptus pendens	P4		August to October	Breakaways and slopes with white, yellow or brown gravelly sand or sandy loam over laterite	NM TPFL WA Herb
Frankenia glomerata	P4		November	Salt lake edges, watercourses and flats with white sand or grey-brown sandy loam	Iluka Mattiske WEC
Grevillea batrachioides	T	EN	October to November	Slopes, plains and sandstone outcrops with brown gravelly sandy loam over sandstone	DCCEEW~
Grevillea calliantha	T	EN	April, August to October	Plains and lower slopes with sandy loam over laterite or occasionally ironstone	DCCEEW^
Grevillea cooljarloo	P1		September to November	Low flats and winter-wet areas with grey or white sand or sandy clay	360 Iluka Mattiske Morgan NM Rehab Umwelt WA Herb WEC
Grevillea saccata	P4		April or June to November	Hilltops and slopes with yellow or brown sand, usually with gravel and over laterite	Iluka NM Rehab TPFL WA Herb WEC
Guichenotia alba	P3		July to August	Flats and lower slopes with white or grey sand or clay with gravel over laterite	Iluka Mattiske NM Strategen WA Herb WEC
Hakea longiflora	P3		June to July	High in landscape; hills, breakaways and plains with white, grey or yellow gravelly sand or sandy loam over laterite or occasionally sandstone	Iluka Mattiske Strategen WEC
Hakea megalosperma	T	VU	April to June	High in landscape; hills, breakaways, slopes and flats with white, grey or brown sand or sandy loam over laterite	DCCEEW~ NM
Haloragis foliosa	P3		December	Dunes, interdunal swales and open depressions with white, brown or grey sand or clay loam over limestone	WEC

Taxon	Status (WA)	Status (EPBC)	Flowering Period[$]	Habitat[$]	Source*
Hemiandra gardneri	T	EN	August to November	Plains with yellow or grey sand or clayey sand	DCCEEW^
Hensmania stoniella	P3		September to November	Sandplains, flats and slopes with white, grey or lateritic sand	360 Iluka Mattiske Morgan NM Rehab Umwelt WA Herb WEC
Hibbertia leptotheca	P3		August to September	Slopes, dunes and limestone ridges and outcrops with white, grey or brown calcareous sand over limestone	Mattiske WEC
Hopkinsia anoectocolea	P3		September to December	Winter-wet depressions, floodplains, salt lakes with white or grey sand, often saline	NM Rehab WA Herb
Hypocalymma ×proliferum	P1		August	Slopes and plains with yellow, grey or brown sand. Margins of watercourses	WEC
Hypocalymma quadrangulare	P3		July to September	Lower slopes with grey or yellow sand, Banksia woodland	NM Umwelt WA Herb WEC
Hypocalymma serrulatum	P2		April to July, November, January	Drainage lines, edges of and slopes above winter-wet depressions with grey sand	NM TPFL WA Herb WEC
Hypocalymma tetrapterum	P3		July to September	Slopes above and edges of drainage lines with brown or grey sandy loam and lateritic gravel. Often in open eucalypt woodlands	NM TPFL
Hypolaena robusta	P4		September to November	Lateritic hills, plains and flats with white or grey sand and lateritic gravel over laterite, Banksia or *Eucalyptus todtiana* woodland	NM WA Herb WEC
Isopogon autumnalis	P3		April to June	Slopes, sandplains and flats with white, yellow or grey sand. Banksia woodland, upland areas	NM WA Herb

Taxon	Status (WA)	Status (EPBC)	Flowering Period[$]	Habitat[$]	Source*
Isopogon panduratus* subsp. *palustris	P3		August to November	Low flats and winter-wet areas with sand or sandy clay	360 Astron Iluka Mattiske Morgan NM Rehab Strategen Umwelt WA Herb WEC
Isotropis cuneifolia* subsp. *glabra	P3		August to October	Low rises and winter-wet depressions and flats with grey or brown sand or clay	Iluka Mattiske NM Strategen Umwelt WA Herb
Jacksonia anthoclada	P3		November	Slopes with brown, yellow or white sand over laterite, upland areas	NM TPFL WEC
Jacksonia carduacea	P3		July, November to December	Plains and flats with white, grey or yellow sand, sometimes over laterite	Iluka Mattiske Morgan NM Rehab WA Herb WEC
Lepidobolus densus	P4		August	Sandplains, lake edges and slopes with brown or yellow sand	WEC
Lepidobolus quadratus	P3		August to September	Dry kwongan, hillslopes and rises with grey-white sand and lateritic gravel, upland areas	NM Outback
Lepyrodia curvescens	P2		September to November	Plains, winter wet flats, depressions and edges of wetlands with grey sandy loam	Iluka Mattiske Morgan NM Umwelt WA Herb WEC
***Leucopogon* sp. Yanchep (M. Hislop 1986)**	P3		April to June	Crests of low rises and plains, often coastal, with yellow, brown or grey sand over limestone. Banksia woodland	Iluka Mattiske Morgan NM WA Herb WEC

Taxon	Status (WA)	Status (EPBC)	Flowering Period[$]	Habitat[$]	Source*
Levenhookia preissii	P1		October to January	Winter-wet flats and wetlands with grey or brown sand	Morgan NM Rehab Umwelt WA Herb WEC
Loxocarya gigas	P2		October to February	Lateritic breakaways, ridges, slopes and flats with white or grey sand over laterite	WEC
Lyginia excelsa	P1		September to October	Slopes, undulating plains and open depressions with white or grey sandy loam	360 Iluka Mattiske NM WA Herb WEC
Macarthuria keigheryi	T	EN	September to October	Dunes, plains and low rises above winter-wet areas with white, brown or grey sand or clay loam. Banksia woodland, recently burnt areas	DCCEEW[#] Iluka Mattiske NM Rehab Strategen TPFL Umwelt WA Herb WEC
Meionectes tenuifolia	P3		October to December	Inundated alluvial, granitic and winter-wet flats and wetlands with grey or brown sandy loam	TPFL WA Herb WEC
Myriophyllum muelleri	P1		November	Inundated winter-wet depressions	NM WA Herb
Paracaleana dixonii	T	EN	October to January	Undulating plains, flats and slopes with gravelly grey sand	Astron DCCEEW[#] Iluka Mattiske NM TPFL WA Herb WEC
Persoonia filiformis	P3		November to December	Sandplains with yellow or white sand over laterite	NM WA Herb

Taxon	Status (WA)	Status (EPBC)	Flowering Period[$]	Habitat[$]	Source*
Persoonia rudis	P3		September to January	Sandplains and flats with white, grey or yellow sand, often over laterite	Iluka Mattiske NM Umwelt WA Herb WEC
Phlebocarya pilosissima* subsp. *pilosissima	P3		August to October	Upland areas with white or grey sand with lateritic gravel	Iluka NM WA Herb WEC
Platysace ramosissima	P3		October to November	Undulating plains and flats with yellow, brown or grey sand	Iluka Mattiske WEC
Poranthera asybosca	P1		September to October	White sand over laterite	NM Rehab Umwelt WA Herb
Poranthera moorokatta	P2		September to November	White or grey sand	NM Rehab Umwelt WA Herb
Ptychosema pusillum	T	VU	September to October	Low plains, slopes and dunes with white or grey sand. Banksia woodland	DCCEEW^ WEC
Schoenus badius	P2		September to October	Slopes, drainage lines and winter-wet flats with grey or brown sand	360 Morgan NM WA Herb
Schoenus griffinianus	P4		September to October	Sandplains and flats with white-grey sand	Iluka Mattiske Morgan NM Rehab Umwelt WA Herb WEC
Schoenus natans	P4		September to December	Inundated winter-wet wetlands, clay pans and drainage lines with brown or grey clay, sometimes with lateritic gravel	Mattiske NM WEC

Taxon	Status (WA)	Status (EPBC)	Flowering Period[$]	Habitat[$]	Source*
Schoenus pennisetis	P3		October to December	Winter-wet flats, wetlands and valley floors with grey, yellow or brown sandy loam	Iluka Mattiske Morgan NM Rehab Umwelt WA Herb WEC
Stenanthemum sublineare	P2		October to December	Slopes and flats with grey or brown sandy loam	Iluka Mattiske NM Rehab WA Herb WEC
Stylidium aceratum	P3		October to November	Winter-wet flats, swamps and wetlands with grey or brown sandy loam	360 Iluka Mattiske Morgan NM WA Herb WEC
Stylidium aeonioides	P4		September to November	Breakaways, slopes and flats with grey gravelly sand or clayey sand over laterite	Iluka NM Outback TPFL WA Herb
***Stylidium carnosum* subsp. ?Narrow leaves (J.A. Wege 490)**	P1		September to October	Lateritic hillslopes and plains with white-grey sand	WEC
Stylidium hymenocraspedum	P3		September to October	White or grey sand on plains and slopes	Astron Iluka Mattiske Morgan NM Rehab Strategen Umwelt WA Herb WEC

Taxon	Status (WA)	Status (EPBC)	Flowering Period[$]	Habitat[$]	Source*
Stylidium longitubum	P4		July, October to December	Winter-wet damplands, flats and wetlands with brown or grey clay loam	360 Iluka Mattiske Morgan NM WA Herb WEC
Stylidium maritimum	P3		September to November	Dune slopes and flats, coastal heath and shrubland, open Banksia woodland with sand over limestone	NM WEC
Stylidium tinkeri	P1		April, October to November	Winter-wet depressions, flats, wetlands and valleys with brown or grey clay loam	NM WA Herb
Stylidium torticarpum	P3		September to November	Adjacent to drainage lines, depressions, and beneath breakaways, heath or mallee shrubland on sandy clay or clay loam over laterite	NM WA Herb
Styphelia obtecta	T	EN	October to November	Plains with white, grey or yellow sand	DCCEEW^
Tetratheca angulata	P3		September to December	Slopes and hilltops with white, grey or brown gravelly sand or loam over laterite, bases of ridges and breakaways	NM Outback WEC
Thelymitra apiculata	P4		June to August	Slopes with grey or brown sand with lateritic gravel	Iluka Mattiske NM TPFL WA Herb
Thelymitra pulcherrima	P2		July to September	Flats and slopes of lateritic hills with white-grey sand or grey-brown sandy clay	Iluka Mattiske NM TPFL WA Herb
Thelymitra stellata	T	EN	October to November	Ridges and tops of lateritic hills with grey or brown sand or loam and lateritic gravel	DCCEEW^ NM TPFL
Thysanotus glaucus	P4		October to January	Plains and slopes with white, grey or yellow sand or sandy gravel	Iluka Mattiske Morgan NM TPFL Rehab WA Herb WEC

Taxon	Status (WA)	Status (EPBC)	Flowering Period[$]	Habitat[$]	Source*
Verticordia amphigia	P3		October to November	Winter-wet depressions with sandy loam, clay and rocky loam, ferricrete	NM WA Herb WEC
Verticordia huegelii* var. *tridens	P3		September to November	Slopes and gullies with brown or cream clay loam, over laterite or sometimes granite or spongolite	NM Strategen WA Herb WEC
Verticordia lindleyi* subsp. *lindleyi	P4		October to May	Plains, winter-wet depressions and flats with white, brown or grey sand	Iluka Mattiske Morgan NM Rehab Strategen Umwelt WA Herb WEC

EN = Endangered; VU = Vulnerable.

[$] Source: Specimen information from specimens lodged at the WA Herbarium (accessed via Florabase) (WA Herbarium, 1998-).

** Sources are:*
360: 360 Environmental (2012, 2017a, 2017b)
Astron: Astron (2012, 2013)
DCCEEW: Interrogation of DCCEEW SPRAT Database (DCCEEW, 2022, 2023c)
Iluka: Shared Flora Database (current at 16 June 2021) (Iluka, 2021)
Mattiske: Mattiske (2012, 2017)
Morgan: Morgan (2020, 2022)
NM: NatureMap, WA Herbarium Specimen and TPFL Databases (DBCA, 2022a, 2023e)
Outback: Outback Ecology (2014)
Rehab: Rehabilitation monitoring (Umwelt/Woodman Environmental, various sources, 2001-)
Strategen: Strategen (2020)
TPFL, WA Herb: Interrogation of DBCA WA Herbarium Specimen and TPFL Databases (DBCA, 2021b, 2023d)
Umwelt: Umwelt (2022a, 2022b, 2023, 2024a, 2024b)
WEC: Woodman Environmental (2011, 2013, 2014a, 2014b, 2015a, 2015b, 2016, 2017a, 2018a, 2018b, 2018c, 2019, 2021).

[#] Species or species habitat known to occur within area (DCCEEW, 2022, 2023c).
~ Species or species habitat likely to occur within area (DCCEEW, 2022, 2023c).
^ Species or species habitat may occur within area (DCCEEW, 2022, 2023c).

APPENDIX C

Photographs of Significant Flora Taxa Recorded in the Targeted Survey Area

***Anigozanthos humilis* subsp. *chrysanthus* (P4)**

Photo source: Umwelt scanned specimen (main), Javier Loidi (inset)

Babingtonia urbana **(P3)**

Photo source: Umwelt

Chordifex reseminans (P2)

Photo source: Umwelt scanned specimen (male left, female right)

Comesperma rhadinocarpum (P3)

Photo source: Umwelt

Conospermum scaposum (P3)

Photo source: Umwelt

Desmocladus nodatus (P3)

Photo source: Umwelt

***Grevillea cooljarloo* (P1)**

Photo source: Umwelt

Hensmania stoniella (P3)

Photo source: Umwelt

Hypocalymma quadrangulare (P3)

Photo source: Umwelt

Isopogon panduratus subsp. *palustris* (P3)

Photo source: Umwelt

Levenhookia preissii **(P1)**

Photo source: Umwelt

Macarthuria keigheryi (T)

Photo source: Umwelt

Poranthera asybosca (P1)

Photo source: Umwelt

Poranthera moorokatta (P2)

Photo source: Umwelt

Schoenus griffinianus (P4)

Photo source: Umwelt

Schoenus pennisetis (P3)

Photo source: Umwelt

Stylidium hymenocraspedum (P3)

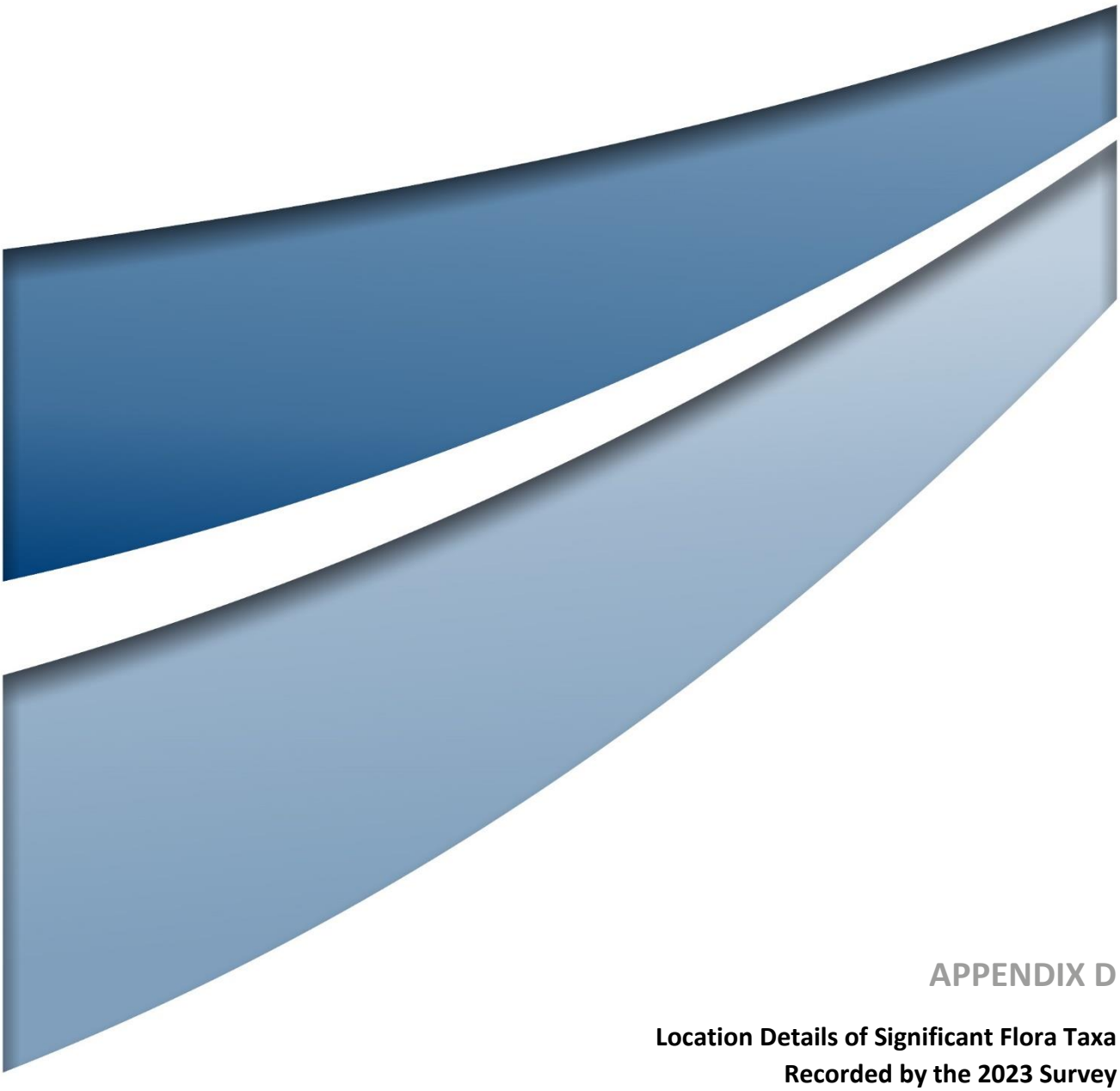
Photo source: Umwelt

Thysanotus glaucus (P4)

Photo source: Umwelt

Verticordia lindleyi subsp. *lindleyi* (P4)

Photo source: Umwelt



APPENDIX D

Location Details of Significant Flora Taxa Recorded by the 2023 Survey

GOVERNMENT AGENCY REFERENCE ONLY
NOT FOR PUBLIC DISSEMINATION
CONTAINS LOCATIONS OF SIGNIFICANT FLORA TAXA

Note: all locations are in GDA2020 Zone 50.

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Anigozanthos humilis* subsp. *chrysanthus	P4		344678	6610535	1	
Anigozanthos humilis* subsp. *chrysanthus	P4		344694	6610580	1	
Anigozanthos humilis* subsp. *chrysanthus	P4		344760	6610456	1	
Anigozanthos humilis* subsp. *chrysanthus	P4		343762	6610985	1	
Anigozanthos humilis* subsp. *chrysanthus	P4		343763	6611143	1	
Anigozanthos humilis* subsp. *chrysanthus	P4		345131	6610139	3	
Anigozanthos humilis* subsp. *chrysanthus	P4		345073	6610159	1	
Anigozanthos humilis* subsp. *chrysanthus	P4		344815	6610322	1	
Babingtonia urbana	P3		345011	6610043	15	
Babingtonia urbana	P3		345012	6610058	5	
Babingtonia urbana	P3		344934	6610066	3	
Babingtonia urbana	P3		344934	6610017	9	
Babingtonia urbana	P3		344930	6609890	5	
Babingtonia urbana	P3		344849	6609997	17	
Babingtonia urbana	P3		344849	6609976	10	
Babingtonia urbana	P3		344850	6609948	15	
Babingtonia urbana	P3		344773	6609974	10	
Babingtonia urbana	P3		344774	6610074	6	
Babingtonia urbana	P3		344688	6610025	18	
Babingtonia urbana	P3		344615	6610077	12	
Babingtonia urbana	P3		344612	6610466	4	
Babingtonia urbana	P3		344514	6610725	2	
Babingtonia urbana	P3		344512	6610745	3	
Babingtonia urbana	P3		340855	6612795	30	
Babingtonia urbana	P3		340852	6612760	20	
Babingtonia urbana	P3		340835	6612760	5	
Babingtonia urbana	P3		340932	6612687	50	
Babingtonia urbana	P3		340935	6612716	50	
Babingtonia urbana	P3		340933	6612745	25	
Babingtonia urbana	P3		340933	6612762	8	
Babingtonia urbana	P3		340933	6612788	30	
Babingtonia urbana	P3		340934	6612815	100	
Babingtonia urbana	P3		340932	6612829	50	Immediately outside Targeted Survey Area
Babingtonia urbana	P3		341005	6612820	20	
Babingtonia urbana	P3		341013	6612810	15	
Babingtonia urbana	P3		341013	6612769	35	
Babingtonia urbana	P3		341013	6612747	30	
Babingtonia urbana	P3		341012	6612727	100	
Babingtonia urbana	P3		341010	6612704	100	
Babingtonia urbana	P3		341014	6612684	150	
Babingtonia urbana	P3		341014	6612663	100	
Babingtonia urbana	P3		341013	6612641	150	
Babingtonia urbana	P3		341023	6612821	5	
Babingtonia urbana	P3		340951	6613043	40	
Babingtonia urbana	P3		340953	6613021	100	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Babingtonia urbana	P3		340950	6613008	50	
Babingtonia urbana	P3		340953	6612979	15	
Babingtonia urbana	P3		340951	6612965	20	
Babingtonia urbana	P3		340951	6612858	10	
Babingtonia urbana	P3		340872	6612908	5	
Babingtonia urbana	P3		340873	6612929	25	
Babingtonia urbana	P3		340873	6612952	45	
Babingtonia urbana	P3		340874	6612973	50	
Babingtonia urbana	P3		340872	6613019	35	
Babingtonia urbana	P3		340874	6613041	100	
Babingtonia urbana	P3		344786	6610084	1	
Babingtonia urbana	P3		344797	6609967	1	
Babingtonia urbana	P3		344721	6610029	1	
Babingtonia urbana	P3		344714	6610030	1	
Babingtonia urbana	P3		344712	6610035	12	
Babingtonia urbana	P3		344633	6610078	5	
Babingtonia urbana	P3		344552	6610490	6	
Babingtonia urbana	P3		344559	6610503	15	
Babingtonia urbana	P3		344482	6610725	2	
Babingtonia urbana	P3		344483	6610737	2	
Babingtonia urbana	P3		340908	6612840	20	
Babingtonia urbana	P3		340910	6612830	10	
Babingtonia urbana	P3		340913	6612819	20	
Babingtonia urbana	P3		340914	6612801	5	
Babingtonia urbana	P3		340991	6612649	10	
Babingtonia urbana	P3		340991	6612665	20	
Babingtonia urbana	P3		340990	6612678	20	
Babingtonia urbana	P3		340994	6612708	20	
Babingtonia urbana	P3		340992	6612724	20	
Babingtonia urbana	P3		340990	6612739	20	
Babingtonia urbana	P3		340994	6612758	20	
Babingtonia urbana	P3		340992	6612783	5	
Babingtonia urbana	P3		340992	6612800	5	
Babingtonia urbana	P3		340993	6612814	5	
Babingtonia urbana	P3		340992	6612822	10	
Babingtonia urbana	P3		340971	6612850	5	
Babingtonia urbana	P3		340972	6612955	2	
Babingtonia urbana	P3		340970	6612972	10	
Babingtonia urbana	P3		340969	6612981	40	
Babingtonia urbana	P3		340971	6613004	10	
Babingtonia urbana	P3		340974	6613014	10	
Babingtonia urbana	P3		340973	6613024	40	
Babingtonia urbana	P3		340891	6613037	20	
Babingtonia urbana	P3		340889	6613005	30	
Babingtonia urbana	P3		340892	6612990	30	
Babingtonia urbana	P3		340893	6612976	15	
Babingtonia urbana	P3		340793	6612945	10	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Babingtonia urbana	P3		340796	6612960	5	
Babingtonia urbana	P3		341193	6612852	3	
Babingtonia urbana	P3		342511	6611718	10	
Babingtonia urbana	P3		344968	6610075	6	
Babingtonia urbana	P3		344901	6610040	5	
Babingtonia urbana	P3		344900	6610031	5	
Babingtonia urbana	P3		344895	6609959	3	
Babingtonia urbana	P3		344897	6609951	50	
Babingtonia urbana	P3		344894	6609939	20	
Babingtonia urbana	P3		344896	6609918	2	
Babingtonia urbana	P3		344814	6610043	100	
Babingtonia urbana	P3		344809	6610029	20	
Babingtonia urbana	P3		344814	6610013	50	
Babingtonia urbana	P3		344816	6609993	100	
Babingtonia urbana	P3		344815	6609977	30	
Babingtonia urbana	P3		344811	6609966	50	
Babingtonia urbana	P3		344814	6609944	10	
Babingtonia urbana	P3		344583	6610264	1	
Babingtonia urbana	P3		344493	6610725	15	
Babingtonia urbana	P3		344206	6610466	1	
Babingtonia urbana	P3		341804	6612375	5	
Babingtonia urbana	P3		342341	6612220	1	
Babingtonia urbana	P3		342314	6611805	30	Immediately outside Targeted Survey Area
Babingtonia urbana	P3		344472	6610765	2	
Babingtonia urbana	P3		344470	6610733	1	
Babingtonia urbana	P3		344470	6610721	2	
Babingtonia urbana	P3		344316	6610430	50	
Babingtonia urbana	P3		344317	6610410	10	
Babingtonia urbana	P3		344311	6610400	2	
Babingtonia urbana	P3		344066	6610332	10	Immediately outside Targeted Survey Area
Babingtonia urbana	P3		340893	6612851	25	
Babingtonia urbana	P3		340890	6612830	5	
Babingtonia urbana	P3		340892	6612821	30	
Babingtonia urbana	P3		340890	6612808	50	
Babingtonia urbana	P3		340893	6612764	25	
Babingtonia urbana	P3		340970	6612659	50	Immediately outside Targeted Survey Area
Babingtonia urbana	P3		340976	6612668	30	
Babingtonia urbana	P3		340969	6612679	30	
Babingtonia urbana	P3		340971	6612694	50	
Babingtonia urbana	P3		340973	6612708	50	
Babingtonia urbana	P3		340968	6612726	20	
Babingtonia urbana	P3		340972	6612797	20	
Babingtonia urbana	P3		341055	6612723	10	
Babingtonia urbana	P3		341048	6612699	30	
Babingtonia urbana	P3		341052	6612651	5	
Babingtonia urbana	P3		340995	6612832	50	
Babingtonia urbana	P3		340999	6612842	50	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Babingtonia urbana	P3		340991	6612852	0	
Babingtonia urbana	P3		340994	6612869	60	
Babingtonia urbana	P3		340991	6612888	20	
Babingtonia urbana	P3		340913	6613024	20	
Babingtonia urbana	P3		340910	6613017	30	
Babingtonia urbana	P3		340909	6612992	30	
Babingtonia urbana	P3		340908	6612981	100	
Babingtonia urbana	P3		340832	6612915	4	Immediately outside Targeted Survey Area
Babingtonia urbana	P3		340832	6612964	2	
Babingtonia urbana	P3		340833	6612996	20	
Babingtonia urbana	P3		341291	6613105	15	
Babingtonia urbana	P3		343355	6611714	1	
Babingtonia urbana	P3		343276	6611220	1	
Babingtonia urbana	P3		344440	6610825	10	
Babingtonia urbana	P3		344372	6610428	2	
Babingtonia urbana	P3		344282	6610272	14	
Babingtonia urbana	P3		344197	6610449	3	
Babingtonia urbana	P3		344192	6610350	2	
Babingtonia urbana	P3		344195	6610334	6	
Babingtonia urbana	P3		344114	6610424	9	
Babingtonia urbana	P3		344104	6610447	7	
Babingtonia urbana	P3		344528	6610276	1	
Babingtonia urbana	P3		344296	6610323	1	
Babingtonia urbana	P3		344202	6610319	2	
Babingtonia urbana	P3		344002	6610937	12	
Babingtonia urbana	P3		343789	6610592	1	
Babingtonia urbana	P3		345070	6609901	1	
Babingtonia urbana	P3		344491	6610762	12	
Babingtonia urbana	P3		344492	6610732	13	
Babingtonia urbana	P3		344489	6610501	5	
Babingtonia urbana	P3		344410	6610833	5	
Babingtonia urbana	P3		344452	6610894	12	
Babingtonia urbana	P3		344451	6610875	20	
Babingtonia urbana	P3		344453	6610853	8	
Babingtonia urbana	P3		344331	6610428	50	
Babingtonia urbana	P3		344333	6610407	23	
Babingtonia urbana	P3		344252	6610288	27	
Babingtonia urbana	P3		344255	6610304	8	
Babingtonia urbana	P3		344250	6610441	17	
Babingtonia urbana	P3		344168	6610473	5	
Babingtonia urbana	P3		344166	6610364	1	
Babingtonia urbana	P3		344174	6610345	5	
Babingtonia urbana	P3		344996	6610051	1	
Babingtonia urbana	P3		344994	6610055	1	
Babingtonia urbana	P3		344993	6610064	1	
Babingtonia urbana	P3		344989	6610066	1	
Babingtonia urbana	P3		344994	6610072	1	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Babingtonia urbana	P3		344995	6610076	2	
Babingtonia urbana	P3		344910	6609962	6	
Babingtonia urbana	P3		344913	6609955	2	
Babingtonia urbana	P3		344830	6610013	2	
Babingtonia urbana	P3		344830	6610011	2	
Babingtonia urbana	P3		344833	6610000	4	
Babingtonia urbana	P3		344833	6609994	3	
Babingtonia urbana	P3		344833	6609977	5	
Babingtonia urbana	P3		344834	6609973	5	
Babingtonia urbana	P3		344833	6609960	3	
Babingtonia urbana	P3		344831	6609952	1	
Babingtonia urbana	P3		344832	6609949	2	
Babingtonia urbana	P3		344832	6609947	2	
Babingtonia urbana	P3		344590	6610290	15	
Babingtonia urbana	P3		344501	6610735	1	
Babingtonia urbana	P3		340920	6612837	50	Immediately outside Targeted Survey Area
Babingtonia urbana	P3		340868	6612797	10	
Babingtonia urbana	P3		340871	6612727	5	
Babingtonia urbana	P3		340877	6612722	4	
Babingtonia urbana	P3		340953	6612674	10	
Babingtonia urbana	P3		340953	6612679	10	
Babingtonia urbana	P3		340953	6612685	20	
Babingtonia urbana	P3		340953	6612694	20	
Babingtonia urbana	P3		340953	6612701	20	
Babingtonia urbana	P3		340952	6612712	20	
Babingtonia urbana	P3		340953	6612721	20	
Babingtonia urbana	P3		340953	6612727	20	
Babingtonia urbana	P3		340953	6612754	20	
Babingtonia urbana	P3		340955	6612794	5	
Babingtonia urbana	P3		340951	6612801	20	
Babingtonia urbana	P3		340950	6612810	20	
Babingtonia urbana	P3		340951	6612815	20	
Babingtonia urbana	P3		341033	6612702	20	
Babingtonia urbana	P3		341032	6612694	20	
Babingtonia urbana	P3		341032	6612684	20	
Babingtonia urbana	P3		341031	6612672	20	
Babingtonia urbana	P3		341032	6612664	20	
Babingtonia urbana	P3		341030	6612655	20	
Babingtonia urbana	P3		341033	6612645	20	
Babingtonia urbana	P3		341029	6612637	20	
Babingtonia urbana	P3		341031	6612630	20	
Babingtonia urbana	P3		341011	6612851	3	
Babingtonia urbana	P3		341012	6612856	20	
Babingtonia urbana	P3		340933	6613060	50	Immediately outside Targeted Survey Area
Babingtonia urbana	P3		340934	6613019	20	
Babingtonia urbana	P3		340932	6613006	10	
Babingtonia urbana	P3		340936	6612997	50	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Babingtonia urbana	P3		340936	6612992	50	
Babingtonia urbana	P3		340932	6612964	5	
Babingtonia urbana	P3		340853	6612957	5	
Babingtonia urbana	P3		340855	6612962	50	
Babingtonia urbana	P3		342311	6611843	6	
Babingtonia urbana	P3		342494	6611723	20	
Babingtonia urbana	P3		342496	6611713	20	
Babingtonia urbana	P3		342508	6612431	30	
Babingtonia urbana	P3		342510	6612421	44	
Babingtonia urbana	P3		342512	6612380	6	
Babingtonia urbana	P3		342515	6612367	15	
Babingtonia urbana	P3		342514	6612350	13	
Babingtonia urbana	P3		342511	6612325	20	
Babingtonia urbana	P3		342511	6612312	8	
Babingtonia urbana	P3		342443	6612380	9	
Babingtonia urbana	P3		342452	6612370	10	
Babingtonia urbana	P3		342452	6612385	3	
Babingtonia urbana	P3		342552	6612409	12	
Babingtonia urbana	P3		342548	6612402	30	
Babingtonia urbana	P3		342551	6612392	40	
Babingtonia urbana	P3		342551	6612372	22	
Babingtonia urbana	P3		342550	6612360	9	
Babingtonia urbana	P3		342553	6612346	30	
Babingtonia urbana	P3		342552	6612324	15	
Babingtonia urbana	P3		342549	6612311	16	
Babingtonia urbana	P3		342553	6612305	20	
Babingtonia urbana	P3		342591	6612283	30	
Babingtonia urbana	P3		342593	6612294	15	
Babingtonia urbana	P3		342592	6612326	24	
Babingtonia urbana	P3		342589	6612348	18	
Babingtonia urbana	P3		342593	6612357	50	
Babingtonia urbana	P3		342592	6612372	55	
Babingtonia urbana	P3		342632	6612348	26	
Babingtonia urbana	P3		342633	6612328	30	
Babingtonia urbana	P3		342634	6612309	13	
Babingtonia urbana	P3		342631	6612299	10	
Babingtonia urbana	P3		342631	6612280	25	
Babingtonia urbana	P3		342633	6612262	6	
Babingtonia urbana	P3		342633	6612247	1	
Babingtonia urbana	P3		342671	6612279	55	
Babingtonia urbana	P3		342670	6612292	23	
Babingtonia urbana	P3		342668	6612306	25	
Babingtonia urbana	P3		342672	6612310	18	
Babingtonia urbana	P3		342674	6612321	8	
Babingtonia urbana	P3		342670	6612329	21	
Babingtonia urbana	P3		342532	6612223	4	
Babingtonia urbana	P3		342539	6612222	8	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Babingtonia urbana	P3		342583	6612194	7	
Babingtonia urbana	P3		343290	6611990	4	
Babingtonia urbana	P3		343289	6611975	30	
Babingtonia urbana	P3		343297	6611963	15	
Babingtonia urbana	P3		343291	6611959	12	
Babingtonia urbana	P3		343332	6611928	18	
Babingtonia urbana	P3		343330	6611971	2	
Babingtonia urbana	P3		343614	6611583	4	Immediately outside Targeted Survey Area
Babingtonia urbana	P3		343613	6611590	2	Immediately outside Targeted Survey Area
Babingtonia urbana	P3		343610	6611597	10	
Babingtonia urbana	P3		343610	6611613	6	
Babingtonia urbana	P3		343631	6611614	7	
Babingtonia urbana	P3		343630	6611596	1	
Babingtonia urbana	P3		343673	6611588	3	
Babingtonia urbana	P3		342489	6612450	35	
Babingtonia urbana	P3		342489	6612433	60	
Babingtonia urbana	P3		342491	6612411	50	
Babingtonia urbana	P3		342491	6612392	15	
Babingtonia urbana	P3		342489	6612369	20	
Babingtonia urbana	P3		342491	6612356	100	
Babingtonia urbana	P3		342490	6612346	50	
Babingtonia urbana	P3		342491	6612333	10	
Babingtonia urbana	P3		342471	6612337	10	
Babingtonia urbana	P3		342472	6612354	50	
Babingtonia urbana	P3		342472	6612366	50	
Babingtonia urbana	P3		342471	6612384	10	
Babingtonia urbana	P3		342472	6612401	10	
Babingtonia urbana	P3		342471	6612420	50	
Babingtonia urbana	P3		342531	6612421	30	
Babingtonia urbana	P3		342530	6612406	40	
Babingtonia urbana	P3		342529	6612389	25	
Babingtonia urbana	P3		342530	6612368	50	
Babingtonia urbana	P3		342530	6612353	35	
Babingtonia urbana	P3		342529	6612333	40	
Babingtonia urbana	P3		342536	6612315	50	
Babingtonia urbana	P3		342532	6612301	50	
Babingtonia urbana	P3		342576	6612256	1	
Babingtonia urbana	P3		342575	6612277	1	
Babingtonia urbana	P3		342575	6612284	2	
Babingtonia urbana	P3		342572	6612293	15	
Babingtonia urbana	P3		342572	6612306	50	
Babingtonia urbana	P3		342572	6612308	30	
Babingtonia urbana	P3		342572	6612326	70	
Babingtonia urbana	P3		342570	6612346	50	
Babingtonia urbana	P3		342572	6612364	35	
Babingtonia urbana	P3		342571	6612377	40	
Babingtonia urbana	P3		342571	6612393	40	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Babingtonia urbana	P3		342611	6612369	45	
Babingtonia urbana	P3		342607	6612341	30	
Babingtonia urbana	P3		342613	6612323	45	
Babingtonia urbana	P3		342612	6612284	30	
Babingtonia urbana	P3		342652	6612258	35	
Babingtonia urbana	P3		342654	6612278	50	
Babingtonia urbana	P3		342651	6612294	35	
Babingtonia urbana	P3		342651	6612309	35	
Babingtonia urbana	P3		342654	6612326	50	
Babingtonia urbana	P3		342651	6612342	50	
Babingtonia urbana	P3		342590	6612178	2	
Babingtonia urbana	P3		342545	6612202	25	
Babingtonia urbana	P3		342341	6612320	2	
Babingtonia urbana	P3		343273	6611993	2	
Babingtonia urbana	P3		343313	6611928	10	
Babingtonia urbana	P3		343312	6611945	40	
Babingtonia urbana	P3		343311	6611960	50	
Babingtonia urbana	P3		343312	6611974	100	
Babingtonia urbana	P3		343624	6611583	7	Immediately outside Targeted Survey Area
Babingtonia urbana	P3		343621	6611598	15	
Babingtonia urbana	P3		343623	6611619	10	
Chordifex reseminans	P2		345095	6609815	5	Immediately outside Targeted Survey Area
Chordifex reseminans	P2		345101	6609829	2	Immediately outside Targeted Survey Area
Chordifex reseminans	P2		345101	6609835	1	
Chordifex reseminans	P2		345091	6609829	4	
Chordifex reseminans	P2		344851	6610273	1	
Chordifex reseminans	P2		344774	6610074	3	
Chordifex reseminans	P2		344769	6610092	2	
Chordifex reseminans	P2		344773	6610220	4	
Chordifex reseminans	P2		344689	6610279	1	
Chordifex reseminans	P2		344688	6610025	3	
Chordifex reseminans	P2		344615	6610077	5	
Chordifex reseminans	P2		344514	6610725	1	
Chordifex reseminans	P2		340935	6612716	1	
Chordifex reseminans	P2		341005	6612820	1	
Chordifex reseminans	P2		341014	6612684	1	
Chordifex reseminans	P2		340950	6613008	5	
Chordifex reseminans	P2		344792	6610012	1	
Chordifex reseminans	P2		344633	6610078	2	
Chordifex reseminans	P2		344813	6610137	4	
Chordifex reseminans	P2		344740	6610270	1	
Chordifex reseminans	P2		344654	6610340	1	
Chordifex reseminans	P2		344651	6610094	2	
Chordifex reseminans	P2		341964	6612417	3	
Chordifex reseminans	P2		342709	6611571	1	
Chordifex reseminans	P2		342709	6611828	3	
Chordifex reseminans	P2		342715	6611969	3	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Chordifex reseminans	P2		343113	6611652	1	
Chordifex reseminans	P2		343035	6611562	1	
Chordifex reseminans	P2		343030	6611446	1	
Chordifex reseminans	P2		343614	6611443	1	
Chordifex reseminans	P2		343161	6611384	3	
Chordifex reseminans	P2		343155	6611771	1	
Chordifex reseminans	P2		343071	6611810	1	
Chordifex reseminans	P2		343073	6611731	1	
Chordifex reseminans	P2		343074	6611724	2	
Chordifex reseminans	P2		342989	6611703	5	
Chordifex reseminans	P2		342989	6611851	3	
Chordifex reseminans	P2		344211	6610438	1	
Chordifex reseminans	P2		344110	6611177	3	
Chordifex reseminans	P2		343601	6611508	1	
Chordifex reseminans	P2		343574	6611204	1	
Chordifex reseminans	P2		343490	6611586	3	
Chordifex reseminans	P2		343413	6611415	1	
Chordifex reseminans	P2		343411	6611354	1	
Chordifex reseminans	P2		343409	6611334	2	
Chordifex reseminans	P2		343408	6611211	1	
Chordifex reseminans	P2		343415	6611192	2	
Chordifex reseminans	P2		343415	6611144	1	
Chordifex reseminans	P2		343334	6611238	3	
Chordifex reseminans	P2		343333	6611424	1	
Chordifex reseminans	P2		343249	6611549	1	
Chordifex reseminans	P2		343171	6611411	1	
Chordifex reseminans	P2		343165	6611437	1	
Chordifex reseminans	P2		343015	6611689	3	
Chordifex reseminans	P2		343017	6611704	6	
Chordifex reseminans	P2		342948	6611713	1	
Chordifex reseminans	P2		342855	6611654	1	
Chordifex reseminans	P2		344492	6610732	5	
Chordifex reseminans	P2		344179	6610520	1	
Chordifex reseminans	P2		344168	6610473	2	
Chordifex reseminans	P2		344088	6610425	8	
Chordifex reseminans	P2		344092	6610442	8	
Chordifex reseminans	P2		344093	6610466	3	
Chordifex reseminans	P2		344091	6610937	2	
Chordifex reseminans	P2		344446	6610827	1	
Chordifex reseminans	P2		344477	6610800	1	
Chordifex reseminans	P2		344317	6610962	3	
Chordifex reseminans	P2		344333	6610977	2	
Chordifex reseminans	P2		343451	6611199	4	
Chordifex reseminans	P2		343447	6611434	2	
Chordifex reseminans	P2		343449	6611347	3	
Chordifex reseminans	P2		343451	6611308	1	
Chordifex reseminans	P2		343449	6611548	1	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Chordifex reseminans	P2		343374	6611357	1	
Chordifex reseminans	P2		343373	6611294	1	
Chordifex reseminans	P2		343369	6611244	3	
Chordifex reseminans	P2		343291	6611202	2	
Chordifex reseminans	P2		343291	6611248	2	
Chordifex reseminans	P2		343292	6611400	2	
Chordifex reseminans	P2		343210	6611562	5	
Chordifex reseminans	P2		343218	6611499	2	
Chordifex reseminans	P2		343209	6611459	3	
Chordifex reseminans	P2		343214	6611408	3	
Chordifex reseminans	P2		343212	6611381	2	
Chordifex reseminans	P2		343133	6611407	8	
Chordifex reseminans	P2		343133	6611424		
Chordifex reseminans	P2		343131	6611460	5	
Chordifex reseminans	P2		343133	6611593	3	
Chordifex reseminans	P2		343133	6611635	2	
Chordifex reseminans	P2		343130	6611675	3	
Chordifex reseminans	P2		343130	6611705	2	
Chordifex reseminans	P2		343128	6611758	10	
Chordifex reseminans	P2		343053	6611720	3	
Chordifex reseminans	P2		342970	6611715	5	
Chordifex reseminans	P2		342817	6611635	4	
Chordifex reseminans	P2		342812	6611664	5	
Chordifex reseminans	P2		342809	6611685	5	
Chordifex reseminans	P2		345071	6609816	1	
Chordifex reseminans	P2		345070	6609812	1	
Chordifex reseminans	P2		345073	6609827	1	
Chordifex reseminans	P2		345072	6609837	1	
Chordifex reseminans	P2		345069	6609844	1	
Chordifex reseminans	P2		345076	6609847	1	
Chordifex reseminans	P2		344995	6609936	1	
Chordifex reseminans	P2		344992	6609954	1	
Chordifex reseminans	P2		344743	6610126	1	
Chordifex reseminans	P2		344745	6610223	1	
Chordifex reseminans	P2		341032	6612640	1	
Chordifex reseminans	P2		342752	6611829	1	
Chordifex reseminans	P2		342769	6611706	2	
Chordifex reseminans	P2		342774	6611724	1	
Chordifex reseminans	P2		342773	6611727	1	
Chordifex reseminans	P2		342772	6611791	4	
Chordifex reseminans	P2		342940	6611993	1	
Chordifex reseminans	P2		342943	6611992	1	
Chordifex reseminans	P2		342952	6611987	2	
Chordifex reseminans	P2		342953	6611985	1	
Chordifex reseminans	P2		342961	6611982	3	
Chordifex reseminans	P2		342959	6611978	4	
Chordifex reseminans	P2		342970	6611976	1	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Chordifex reseminans	P2		342988	6611964	2	
Chordifex reseminans	P2		342992	6611964	1	
Chordifex reseminans	P2		343000	6611957	1	
Chordifex reseminans	P2		344004	6611420	1	
Chordifex reseminans	P2		342572	6612308	4	
Chordifex reseminans	P2		342654	6612278	3	
Chordifex reseminans	P2		342734	6611864	1	
Chordifex reseminans	P2		342736	6611844	1	
Chordifex reseminans	P2		342780	6611765	6	
Chordifex reseminans	P2		342780	6611805	2	
Chordifex reseminans	P2		342989	6611955	4	
Chordifex reseminans	P2		342978	6611963	2	
Chordifex reseminans	P2		342951	6611974	5	
Chordifex reseminans	P2		342939	6611978	7	
Comesperma rhadinocarpum	P3		344852	6609934	1	
Comesperma rhadinocarpum	P3		341842	6612441	1	
Comesperma rhadinocarpum	P3		342436	6612112	15	
Comesperma rhadinocarpum	P3		345011	6609888	1	
Comesperma rhadinocarpum	P3		345020	6609897	1	
Comesperma rhadinocarpum	P3		342730	6611890	1	
Conospermum scaposum	P3		343115	6611931	4	Immediately outside Targeted Survey Area
Conospermum scaposum	P3		343333	6611424	3	
Desmocladus nodatus	P3		340935	6612716	2	
Desmocladus nodatus	P3		341005	6612820	2	
Desmocladus nodatus	P3		341012	6612727	6	
Desmocladus nodatus	P3		341010	6612704	6	
Desmocladus nodatus	P3		341014	6612663	4	
Desmocladus nodatus	P3		340950	6613008	1	
Desmocladus nodatus	P3		340987	6612689	2	
Desmocladus nodatus	P3		341943	6612381	1	
Desmocladus nodatus	P3		341945	6612367	1	
Desmocladus nodatus	P3		341997	6612344	1	
Desmocladus nodatus	P3		341999	6612389	1	
Desmocladus nodatus	P3		342002	6612422	1	
Desmocladus nodatus	P3		341862	6612446	1	
Desmocladus nodatus	P3		342045	6612386	1	
Desmocladus nodatus	P3		342511	6611840	1	
Desmocladus nodatus	P3		342561	6611660	1	
Desmocladus nodatus	P3		342016	6612386	1	
Desmocladus nodatus	P3		342044	6612375	2	
Desmocladus nodatus	P3		342532	6611780	1	
Desmocladus nodatus	P3		342656	6611602	3	
Desmocladus nodatus	P3		341171	6612758	1	
Desmocladus nodatus	P3		343511	6611268	1	
Desmocladus nodatus	P3		343352	6611470	1	
Desmocladus nodatus	P3		343269	6611458	1	
Desmocladus nodatus	P3		343033	6611634	1	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Desmocladus nodatus	P3		343393	6611469	2	
Desmocladus nodatus	P3		343156	6611417	2	
Desmocladus nodatus	P3		343070	6611769	1	
Desmocladus nodatus	P3		342832	6611549	1	
Desmocladus nodatus	P3		343569	6611172	1	
Desmocladus nodatus	P3		343574	6611204	3	
Desmocladus nodatus	P3		343413	6611289	2	
Desmocladus nodatus	P3		343337	6611457	1	
Desmocladus nodatus	P3		343254	6611343	1	
Desmocladus nodatus	P3		343173	6611385	2	
Desmocladus nodatus	P3		343171	6611411	1	
Desmocladus nodatus	P3		343391	6611334	1	
Desmocladus nodatus	P3		343455	6611227	2	
Desmocladus nodatus	P3		343531	6611114	4	
Desmocladus nodatus	P3		343451	6611308	1	
Desmocladus nodatus	P3		343369	6611244	4	
Desmocladus nodatus	P3		343292	6611231	1	
Desmocladus nodatus	P3		343289	6611351	1	
Desmocladus nodatus	P3		343213	6611440	1	
Desmocladus nodatus	P3		343214	6611408	5	
Desmocladus nodatus	P3		343211	6611327	2	
Desmocladus nodatus	P3		343132	6611360	2	
Desmocladus nodatus	P3		343133	6611407	8	
Desmocladus nodatus	P3		343052	6611567	6	
Desmocladus nodatus	P3		342814	6611502	3	
Desmocladus nodatus	P3		341011	6612882	1	
Desmocladus nodatus	P3		342050	6612378	1	
Desmocladus nodatus	P3		342047	6612376	1	
Desmocladus nodatus	P3		342750	6611547	1	
Desmocladus nodatus	P3		342741	6611542	1	Immediately outside Targeted Survey Area
Grevillea cooljarloo	P1		343674	6611298	3	
Grevillea cooljarloo	P1		343649	6611356	15	
Grevillea cooljarloo	P1		343380	6611336	4	
Grevillea cooljarloo	P1		343505	6611351	20	
Grevillea cooljarloo	P1		343431	6611372	6	
Grevillea cooljarloo	P1		343431	6611355	5	
Grevillea cooljarloo	P1		343512	6611506	2	
Grevillea cooljarloo	P1		343436	6611541	3	
Grevillea cooljarloo	P1		343630	6611331	6	
Grevillea cooljarloo	P1		343632	6611360	32	
Grevillea cooljarloo	P1		343634	6611370	8	
Grevillea cooljarloo	P1		343628	6611381	8	
Grevillea cooljarloo	P1		343633	6611406	2	
Grevillea cooljarloo	P1		343610	6611534	5	
Grevillea cooljarloo	P1		343613	6611523	11	
Grevillea cooljarloo	P1		343613	6611491	1	
Grevillea cooljarloo	P1		343552	6611297	1	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Grevillea cooljarloo	P1		343544	6611352	1	
Grevillea cooljarloo	P1		343481	6611359	2	
Grevillea cooljarloo	P1		343496	6611346	1	
Grevillea cooljarloo	P1		343492	6611360	1	
Grevillea cooljarloo	P1		343493	6611455	9	
Grevillea cooljarloo	P1		343472	6611473	15	
Grevillea cooljarloo	P1		343469	6611448	3	
Grevillea cooljarloo	P1		343393	6611393	2	
Grevillea cooljarloo	P1		343392	6611226	1	
Grevillea cooljarloo	P1		343575	6611301	14	
Grevillea cooljarloo	P1		343492	6611486	15	
Grevillea cooljarloo	P1		343493	6611454	8	
Grevillea cooljarloo	P1		343413	6611415	4	
Grevillea cooljarloo	P1		343334	6611238	1	
Grevillea cooljarloo	P1		343588	6611343	3	
Grevillea cooljarloo	P1		343598	6611368	1	
Grevillea cooljarloo	P1		343600	6611391	1	
Grevillea cooljarloo	P1		343590	6611475	2	
Grevillea cooljarloo	P1		343594	6611528	14	
Grevillea cooljarloo	P1		343601	6611550	5	
Grevillea cooljarloo	P1		343530	6611344	20	
Grevillea cooljarloo	P1		343536	6611415	1	
Grevillea cooljarloo	P1		343533	6611436	2	
Grevillea cooljarloo	P1		343534	6611455	3	
Grevillea cooljarloo	P1		343379	6611341	3	
Hensmania stoniella	P3		342183	6612230	1	
Hensmania stoniella	P3		341783	6612248	1	
Hensmania stoniella	P3		342051	6612209	1	
Hensmania stoniella	P3		343769	6611227	1	
Hensmania stoniella	P3		343872	6610687	1	
Hypocalymma quadrangulare	P3		344712	6610501	1	
Hypocalymma quadrangulare	P3		344713	6610441	1	
Hypocalymma quadrangulare	P3		344676	6610488	1	
Hypocalymma quadrangulare	P3		344632	6610566	2	
Hypocalymma quadrangulare	P3		344590	6610606	1	
Hypocalymma quadrangulare	P3		344550	6610724	1	
Hypocalymma quadrangulare	P3		344401	6610324	1	
Hypocalymma quadrangulare	P3		344402	6610305	5	
Hypocalymma quadrangulare	P3		344445	6610289	2	
Hypocalymma quadrangulare	P3		344442	6610309	2	
Hypocalymma quadrangulare	P3		344444	6610423	1	
Hypocalymma quadrangulare	P3		344482	6610290	4	
Hypocalymma quadrangulare	P3		344594	6610929	4	
Hypocalymma quadrangulare	P3		344590	6611058	3	Immediately outside Targeted Survey Area
Hypocalymma quadrangulare	P3		344553	6611089	1	Immediately outside Targeted Survey Area
Hypocalymma quadrangulare	P3		344513	6610853	1	
Hypocalymma quadrangulare	P3		344512	6610911	2	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Hypocalymma quadrangulare	P3		344516	6610944	3	
Hypocalymma quadrangulare	P3		344510	6610990	3	
Hypocalymma quadrangulare	P3		344517	6611071	2	
Hypocalymma quadrangulare	P3		344392	6611213	2	
Hypocalymma quadrangulare	P3		344394	6611197	2	
Hypocalymma quadrangulare	P3		344391	6611000	2	
Hypocalymma quadrangulare	P3		344393	6610941	3	
Hypocalymma quadrangulare	P3		344392	6610924	3	
Hypocalymma quadrangulare	P3		344355	6611090	3	
Hypocalymma quadrangulare	P3		344346	6611215	3	
Hypocalymma quadrangulare	P3		344355	6611233	5	
Hypocalymma quadrangulare	P3		344309	6611263	2	
Hypocalymma quadrangulare	P3		344274	6611294	5	
Hypocalymma quadrangulare	P3		344269	6611322	6	
Hypocalymma quadrangulare	P3		344273	6611361	3	
Hypocalymma quadrangulare	P3		344233	6611381	1	
Hypocalymma quadrangulare	P3		344233	6611349	3	
Hypocalymma quadrangulare	P3		344233	6611322	5	
Hypocalymma quadrangulare	P3		344230	6611268	3	
Hypocalymma quadrangulare	P3		344232	6611210	6	
Hypocalymma quadrangulare	P3		344190	6611238	3	
Hypocalymma quadrangulare	P3		344193	6611276	6	
Hypocalymma quadrangulare	P3		344189	6611352	8	
Hypocalymma quadrangulare	P3		344072	6611121	3	
Hypocalymma quadrangulare	P3		343993	6611069	2	
Hypocalymma quadrangulare	P3		341016	6612758	8	
Hypocalymma quadrangulare	P3		341021	6612838	5	
Hypocalymma quadrangulare	P3		341021	6612860	8	
Hypocalymma quadrangulare	P3		341025	6612893	15	
Hypocalymma quadrangulare	P3		341023	6612914	20	
Hypocalymma quadrangulare	P3		341065	6613013	5	
Hypocalymma quadrangulare	P3		341062	6612987	10	
Hypocalymma quadrangulare	P3		341063	6612908	10	
Hypocalymma quadrangulare	P3		341065	6612875	15	
Hypocalymma quadrangulare	P3		341063	6612831	30	
Hypocalymma quadrangulare	P3		341063	6612801	20	
Hypocalymma quadrangulare	P3		341102	6612800	20	
Hypocalymma quadrangulare	P3		341099	6612850	20	
Hypocalymma quadrangulare	P3		341101	6612890	30	
Hypocalymma quadrangulare	P3		341102	6612917	15	
Hypocalymma quadrangulare	P3		341103	6612970	20	
Hypocalymma quadrangulare	P3		341103	6612970	20	
Hypocalymma quadrangulare	P3		341142	6613073	10	
Hypocalymma quadrangulare	P3		341143	6613044	12	
Hypocalymma quadrangulare	P3		341145	6612856	10	
Hypocalymma quadrangulare	P3		341145	6612838	15	
Hypocalymma quadrangulare	P3		341183	6612971	15	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Hypocalymma quadrangulare	P3		341183	6613008	20	
Hypocalymma quadrangulare	P3		341185	6613042	20	
Hypocalymma quadrangulare	P3		341203	6613098	10	
Hypocalymma quadrangulare	P3		341203	6613013	25	
Hypocalymma quadrangulare	P3		341203	6612988	20	
Hypocalymma quadrangulare	P3		341132	6612800	5	
Hypocalymma quadrangulare	P3		341134	6612769	6	
Hypocalymma quadrangulare	P3		341113	6612759	8	
Hypocalymma quadrangulare	P3		341115	6612775	10	
Hypocalymma quadrangulare	P3		341253	6612746	20	
Hypocalymma quadrangulare	P3		341252	6612701	10	
Hypocalymma quadrangulare	P3		341291	6612675	15	
Hypocalymma quadrangulare	P3		341290	6612788	15	
Hypocalymma quadrangulare	P3		341333	6612776	10	
Hypocalymma quadrangulare	P3		341335	6612705	20	
Hypocalymma quadrangulare	P3		341336	6612671	25	
Hypocalymma quadrangulare	P3		341373	6612614	20	
Hypocalymma quadrangulare	P3		341372	6612684	25	
Hypocalymma quadrangulare	P3		341372	6612704	20	
Hypocalymma quadrangulare	P3		341372	6612731	20	
Hypocalymma quadrangulare	P3		341260	6612896	10	
Hypocalymma quadrangulare	P3		341264	6612959	20	
Hypocalymma quadrangulare	P3		341264	6613013	30	
Hypocalymma quadrangulare	P3		341261	6613075	50	
Hypocalymma quadrangulare	P3		341258	6613109	50	
Hypocalymma quadrangulare	P3		341303	6613046	5	
Hypocalymma quadrangulare	P3		341303	6612992	25	
Hypocalymma quadrangulare	P3		341304	6612960	25	
Hypocalymma quadrangulare	P3		341305	6612937	30	
Hypocalymma quadrangulare	P3		344679	6610524	2	
Hypocalymma quadrangulare	P3		344676	6610486	2	
Hypocalymma quadrangulare	P3		344647	6610485	1	
Hypocalymma quadrangulare	P3		344648	6610508	1	
Hypocalymma quadrangulare	P3		344641	6610533	3	
Hypocalymma quadrangulare	P3		344639	6610572	1	
Hypocalymma quadrangulare	P3		344645	6610593	2	
Hypocalymma quadrangulare	P3		344642	6610600	1	
Hypocalymma quadrangulare	P3		344601	6610645	1	
Hypocalymma quadrangulare	P3		344604	6610614	1	
Hypocalymma quadrangulare	P3		344606	6610563	4	
Hypocalymma quadrangulare	P3		344603	6610558	4	
Hypocalymma quadrangulare	P3		344604	6610530	1	
Hypocalymma quadrangulare	P3		344382	6610379	2	
Hypocalymma quadrangulare	P3		344428	6610245	1	
Hypocalymma quadrangulare	P3		344417	6610316	1	
Hypocalymma quadrangulare	P3		344425	6610425	1	
Hypocalymma quadrangulare	P3		344465	6610287	3	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Hypocalymma quadrangulare	P3		344463	6610283	3	
Hypocalymma quadrangulare	P3		344460	6610261	1	
Hypocalymma quadrangulare	P3		344461	6610222	1	
Hypocalymma quadrangulare	P3		344599	6610982	1	
Hypocalymma quadrangulare	P3		344563	6610952	1	
Hypocalymma quadrangulare	P3		344560	6610963	3	
Hypocalymma quadrangulare	P3		344563	6611000	2	
Hypocalymma quadrangulare	P3		344566	6611055	2	
Hypocalymma quadrangulare	P3		344521	6610971	2	
Hypocalymma quadrangulare	P3		344523	6610908	1	
Hypocalymma quadrangulare	P3		344518	6610885	1	
Hypocalymma quadrangulare	P3		344479	6611109	1	
Hypocalymma quadrangulare	P3		344480	6611129	1	
Hypocalymma quadrangulare	P3		344399	6611206	2	
Hypocalymma quadrangulare	P3		344366	6611141	1	
Hypocalymma quadrangulare	P3		344359	6611065	1	
Hypocalymma quadrangulare	P3		344357	6610978	1	
Hypocalymma quadrangulare	P3		344323	6611265	1	Immediately outside Targeted Survey Area
Hypocalymma quadrangulare	P3		344278	6611344	1	
Hypocalymma quadrangulare	P3		344289	6611304	4	
Hypocalymma quadrangulare	P3		344280	6611302	3	
Hypocalymma quadrangulare	P3		344281	6611258	1	
Hypocalymma quadrangulare	P3		344241	6611197	1	
Hypocalymma quadrangulare	P3		344203	6611302	1	
Hypocalymma quadrangulare	P3		344205	6611278	3	
Hypocalymma quadrangulare	P3		341069	6612725	2	
Hypocalymma quadrangulare	P3		341067	6612693	3	
Hypocalymma quadrangulare	P3		341068	6612685	3	
Hypocalymma quadrangulare	P3		341094	6612705	1	Immediately outside Targeted Survey Area
Hypocalymma quadrangulare	P3		341094	6612722	1	Immediately outside Targeted Survey Area
Hypocalymma quadrangulare	P3		341029	6612987	1	
Hypocalymma quadrangulare	P3		341030	6612973	2	
Hypocalymma quadrangulare	P3		341032	6612949	1	
Hypocalymma quadrangulare	P3		341029	6612934	4	
Hypocalymma quadrangulare	P3		341031	6612914	1	
Hypocalymma quadrangulare	P3		341031	6612911	5	
Hypocalymma quadrangulare	P3		341033	6612892	2	
Hypocalymma quadrangulare	P3		341033	6612831	1	
Hypocalymma quadrangulare	P3		341029	6612811	3	
Hypocalymma quadrangulare	P3		341072	6612799	1	
Hypocalymma quadrangulare	P3		341074	6612834	3	
Hypocalymma quadrangulare	P3		341071	6612865	4	
Hypocalymma quadrangulare	P3		341074	6612889	2	
Hypocalymma quadrangulare	P3		341071	6612895	5	
Hypocalymma quadrangulare	P3		341075	6612906	5	
Hypocalymma quadrangulare	P3		341073	6612916	5	
Hypocalymma quadrangulare	P3		341069	6612932	3	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Hypocalymma quadrangulare	P3		341068	6612940	18	
Hypocalymma quadrangulare	P3		341070	6612971	4	
Hypocalymma quadrangulare	P3		341072	6612988	5	
Hypocalymma quadrangulare	P3		341114	6613076	1	
Hypocalymma quadrangulare	P3		341116	6613064	7	
Hypocalymma quadrangulare	P3		341111	6613054	3	
Hypocalymma quadrangulare	P3		341113	6613037	6	
Hypocalymma quadrangulare	P3		341111	6613023	2	
Hypocalymma quadrangulare	P3		341109	6612943	10	
Hypocalymma quadrangulare	P3		341106	6612934	3	
Hypocalymma quadrangulare	P3		341113	6612920	10	
Hypocalymma quadrangulare	P3		341106	6612895	5	
Hypocalymma quadrangulare	P3		341107	6612848	1	
Hypocalymma quadrangulare	P3		341147	6612873	1	
Hypocalymma quadrangulare	P3		341153	6612914	2	
Hypocalymma quadrangulare	P3		341191	6613070	3	
Hypocalymma quadrangulare	P3		341193	6613007	1	
Hypocalymma quadrangulare	P3		341193	6612977	3	
Hypocalymma quadrangulare	P3		341193	6612946	4	
Hypocalymma quadrangulare	P3		341191	6612891	1	
Hypocalymma quadrangulare	P3		341190	6612828	4	
Hypocalymma quadrangulare	P3		341234	6612703	8	
Hypocalymma quadrangulare	P3		341233	6612721	3	
Hypocalymma quadrangulare	P3		341231	6612736	1	
Hypocalymma quadrangulare	P3		341226	6612748	4	
Hypocalymma quadrangulare	P3		341279	6612710	1	
Hypocalymma quadrangulare	P3		341281	6612677	1	
Hypocalymma quadrangulare	P3		341283	6612663	1	
Hypocalymma quadrangulare	P3		341320	6612695	1	
Hypocalymma quadrangulare	P3		341318	6612752	1	
Hypocalymma quadrangulare	P3		341362	6612739	3	
Hypocalymma quadrangulare	P3		341363	6612695	1	
Hypocalymma quadrangulare	P3		341363	6612631	5	
Hypocalymma quadrangulare	P3		341231	6612931	6	
Hypocalymma quadrangulare	P3		341228	6612961	5	
Hypocalymma quadrangulare	P3		341231	6613000	3	
Hypocalymma quadrangulare	P3		341233	6613125	4	
Hypocalymma quadrangulare	P3		341272	6613035	5	
Hypocalymma quadrangulare	P3		341271	6613030	4	
Hypocalymma quadrangulare	P3		341267	6612982	10	
Hypocalymma quadrangulare	P3		341269	6612819	5	
Hypocalymma quadrangulare	P3		341331	6612815	1	
Hypocalymma quadrangulare	P3		341334	6613038	2	
Hypocalymma quadrangulare	P3		341364	6612890	1	
Hypocalymma quadrangulare	P3		341472	6612959	2	
Hypocalymma quadrangulare	P3		341471	6612952	2	
Hypocalymma quadrangulare	P3		341368	6612878	5	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Hypocalymma quadrangulare	P3		341372	6612864	3	
Hypocalymma quadrangulare	P3		341371	6612844	5	
Hypocalymma quadrangulare	P3		341373	6612832	5	
Hypocalymma quadrangulare	P3		341373	6612825	11	
Hypocalymma quadrangulare	P3		341373	6612814	3	
Hypocalymma quadrangulare	P3		341373	6612800	6	
Hypocalymma quadrangulare	P3		341372	6612790	5	
Hypocalymma quadrangulare	P3		341374	6612752	1	
Hypocalymma quadrangulare	P3		341604	6612341	1	
Hypocalymma quadrangulare	P3		341604	6612351	1	
Hypocalymma quadrangulare	P3		341635	6612395	2	
Hypocalymma quadrangulare	P3		341632	6612344	2	
Hypocalymma quadrangulare	P3		341629	6612316	1	
Hypocalymma quadrangulare	P3		341630	6612303	1	
Hypocalymma quadrangulare	P3		341651	6612306	3	
Hypocalymma quadrangulare	P3		341652	6612321	10	
Hypocalymma quadrangulare	P3		341655	6612336	3	
Hypocalymma quadrangulare	P3		341654	6612343	5	
Hypocalymma quadrangulare	P3		341651	6612371	4	
Hypocalymma quadrangulare	P3		341649	6612384	3	
Hypocalymma quadrangulare	P3		341654	6612403	5	
Hypocalymma quadrangulare	P3		341682	6612380	3	
Hypocalymma quadrangulare	P3		341682	6612362	1	
Hypocalymma quadrangulare	P3		341681	6612311	4	
Hypocalymma quadrangulare	P3		341711	6612238	1	
Hypocalymma quadrangulare	P3		341713	6612309	5	
Hypocalymma quadrangulare	P3		341710	6612327	2	
Hypocalymma quadrangulare	P3		341708	6612348	2	
Hypocalymma quadrangulare	P3		341743	6612366	3	
Hypocalymma quadrangulare	P3		341743	6612351	2	
Hypocalymma quadrangulare	P3		341742	6612344	5	
Hypocalymma quadrangulare	P3		341738	6612333	2	
Hypocalymma quadrangulare	P3		341741	6612241	1	
Hypocalymma quadrangulare	P3		341775	6612292	1	
Hypocalymma quadrangulare	P3		341802	6612299	1	
Hypocalymma quadrangulare	P3		341833	6612285	1	
Hypocalymma quadrangulare	P3		341782	6612368	15	
Hypocalymma quadrangulare	P3		341784	6612441	3	
Hypocalymma quadrangulare	P3		341722	6612472	5	
Hypocalymma quadrangulare	P3		341722	6612424	1	
Hypocalymma quadrangulare	P3		341661	6612490	10	
Hypocalymma quadrangulare	P3		341659	6612496	3	
Hypocalymma quadrangulare	P3		341672	6612508	10	
Hypocalymma quadrangulare	P3		341670	6612475	3	
Hypocalymma quadrangulare	P3		341672	6612465	5	
Hypocalymma quadrangulare	P3		341673	6612451	5	
Hypocalymma quadrangulare	P3		341731	6612418	1	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Hypocalymma quadrangulare	P3		341728	6612457	4	
Hypocalymma quadrangulare	P3		341733	6612465	2	
Hypocalymma quadrangulare	P3		341789	6612396	5	
Hypocalymma quadrangulare	P3		341790	6612387	10	
Hypocalymma quadrangulare	P3		341820	6612366	10	
Hypocalymma quadrangulare	P3		341821	6612383	5	
Hypocalymma quadrangulare	P3		341860	6612353	5	
Hypocalymma quadrangulare	P3		341862	6612333	5	
Hypocalymma quadrangulare	P3		341901	6612427	3	
Hypocalymma quadrangulare	P3		341941	6612470	5	
Hypocalymma quadrangulare	P3		341941	6612313	1	
Hypocalymma quadrangulare	P3		341940	6612304	5	
Hypocalymma quadrangulare	P3		342003	6612235	2	
Hypocalymma quadrangulare	P3		342003	6612245	5	
Hypocalymma quadrangulare	P3		342001	6612269	5	
Hypocalymma quadrangulare	P3		341922	6612459	5	
Hypocalymma quadrangulare	P3		341896	6612493	5	
Hypocalymma quadrangulare	P3		341893	6612458	5	
Hypocalymma quadrangulare	P3		341863	6612452	5	
Hypocalymma quadrangulare	P3		341858	6612468	5	
Hypocalymma quadrangulare	P3		341864	6612485	5	
Hypocalymma quadrangulare	P3		341863	6612502	5	
Hypocalymma quadrangulare	P3		341833	6612516	5	
Hypocalymma quadrangulare	P3		341832	6612503	5	
Hypocalymma quadrangulare	P3		341832	6612470	5	
Hypocalymma quadrangulare	P3		341833	6612454	5	
Hypocalymma quadrangulare	P3		341802	6612484	5	
Hypocalymma quadrangulare	P3		341800	6612502	2	
Hypocalymma quadrangulare	P3		341804	6612536	5	
Hypocalymma quadrangulare	P3		341774	6612554	5	
Hypocalymma quadrangulare	P3		341770	6612512	5	
Hypocalymma quadrangulare	P3		341774	6612492	5	
Hypocalymma quadrangulare	P3		341771	6612474	5	
Hypocalymma quadrangulare	P3		341771	6612465	5	
Hypocalymma quadrangulare	P3		341744	6612494	5	
Hypocalymma quadrangulare	P3		341742	6612524	1	
Hypocalymma quadrangulare	P3		341739	6612544	5	
Hypocalymma quadrangulare	P3		341712	6612567	5	
Hypocalymma quadrangulare	P3		341710	6612490	5	
Hypocalymma quadrangulare	P3		342103	6612363	5	
Hypocalymma quadrangulare	P3		342105	6612384	5	
Hypocalymma quadrangulare	P3		342064	6612414	1	Immediately outside Targeted Survey Area
Hypocalymma quadrangulare	P3		342044	6612416	5	
Hypocalymma quadrangulare	P3		342036	6612283	5	
Hypocalymma quadrangulare	P3		342035	6612275	5	
Hypocalymma quadrangulare	P3		342035	6612251	5	
Hypocalymma quadrangulare	P3		342035	6612213	5	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Hypocalymma quadrangulare	P3		342060	6612221	3	
Hypocalymma quadrangulare	P3		342061	6612255	5	
Hypocalymma quadrangulare	P3		342064	6612296	3	
Hypocalymma quadrangulare	P3		342092	6612291	5	
Hypocalymma quadrangulare	P3		342089	6612249	1	
Hypocalymma quadrangulare	P3		342122	6612284	3	
Hypocalymma quadrangulare	P3		342124	6612312	10	
Hypocalymma quadrangulare	P3		342123	6612350	5	
Hypocalymma quadrangulare	P3		342127	6612381	1	Immediately outside Targeted Survey Area
Hypocalymma quadrangulare	P3		342154	6612333	5	
Hypocalymma quadrangulare	P3		342147	6612259	5	
Hypocalymma quadrangulare	P3		342185	6612118	1	
Hypocalymma quadrangulare	P3		342184	6612207	1	
Hypocalymma quadrangulare	P3		342183	6612218	1	
Hypocalymma quadrangulare	P3		342183	6612230	1	
Hypocalymma quadrangulare	P3		342179	6612317	5	
Hypocalymma quadrangulare	P3		342244	6612197	1	
Hypocalymma quadrangulare	P3		342239	6612210	1	
Hypocalymma quadrangulare	P3		342240	6612237	5	
Hypocalymma quadrangulare	P3		342242	6612278	1	
Hypocalymma quadrangulare	P3		342240	6612295	1	
Hypocalymma quadrangulare	P3		342241	6612317	1	
Hypocalymma quadrangulare	P3		342274	6612296	5	
Hypocalymma quadrangulare	P3		342329	6612187	1	
Hypocalymma quadrangulare	P3		342360	6612216	1	
Hypocalymma quadrangulare	P3		342391	6612268	1	
Hypocalymma quadrangulare	P3		342388	6612252	3	
Hypocalymma quadrangulare	P3		342393	6612129	5	
Hypocalymma quadrangulare	P3		342422	6612198	2	
Hypocalymma quadrangulare	P3		342151	6612029	1	
Hypocalymma quadrangulare	P3		342157	6611920	5	
Hypocalymma quadrangulare	P3		342210	6611907	5	
Hypocalymma quadrangulare	P3		342212	6611922	3	
Hypocalymma quadrangulare	P3		342214	6611953	1	
Hypocalymma quadrangulare	P3		342213	6611964	5	
Hypocalymma quadrangulare	P3		342334	6612174	5	
Hypocalymma quadrangulare	P3		342374	6612044	1	
Hypocalymma quadrangulare	P3		342372	6612094	2	
Hypocalymma quadrangulare	P3		342452	6612075	3	
Hypocalymma quadrangulare	P3		342454	6611982	1	
Hypocalymma quadrangulare	P3		342391	6611855	5	
Hypocalymma quadrangulare	P3		342331	6611816	1	
Hypocalymma quadrangulare	P3		342510	6612035	1	
Hypocalymma quadrangulare	P3		342513	6611904	5	
Hypocalymma quadrangulare	P3		342567	6611702	1	
Hypocalymma quadrangulare	P3		342567	6611772	5	
Hypocalymma quadrangulare	P3		342569	6611905	5	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Hypocalymma quadrangulare	P3		342692	6611714	5	
Hypocalymma quadrangulare	P3		342691	6611776	5	
Hypocalymma quadrangulare	P3		344690	6610557	1	
Hypocalymma quadrangulare	P3		344692	6610504	4	
Hypocalymma quadrangulare	P3		344698	6610449	1	
Hypocalymma quadrangulare	P3		344659	6610472	1	
Hypocalymma quadrangulare	P3		344652	6610478	2	
Hypocalymma quadrangulare	P3		344650	6610505	2	
Hypocalymma quadrangulare	P3		344651	6610528	3	
Hypocalymma quadrangulare	P3		344613	6610628	4	
Hypocalymma quadrangulare	P3		344619	6610617	2	
Hypocalymma quadrangulare	P3		344613	6610560	2	
Hypocalymma quadrangulare	P3		344610	6610534	3	
Hypocalymma quadrangulare	P3		344529	6610732	1	
Hypocalymma quadrangulare	P3		344286	6610465	2	
Hypocalymma quadrangulare	P3		344301	6610468	5	
Hypocalymma quadrangulare	P3		344326	6610464	2	
Hypocalymma quadrangulare	P3		344322	6610503	2	
Hypocalymma quadrangulare	P3		344341	6610478	3	
Hypocalymma quadrangulare	P3		344398	6610511	1	
Hypocalymma quadrangulare	P3		344284	6610666	2	
Hypocalymma quadrangulare	P3		344323	6610747	3	
Hypocalymma quadrangulare	P3		344320	6610710	1	
Hypocalymma quadrangulare	P3		344319	6610696	3	
Hypocalymma quadrangulare	P3		344364	6610693	2	
Hypocalymma quadrangulare	P3		344367	6610730	2	
Hypocalymma quadrangulare	P3		344615	6611005	2	
Hypocalymma quadrangulare	P3		344618	6610882	1	
Hypocalymma quadrangulare	P3		344569	6610977	1	
Hypocalymma quadrangulare	P3		344571	6611059	2	
Hypocalymma quadrangulare	P3		344535	6610962	1	
Hypocalymma quadrangulare	P3		344410	6611185	1	
Hypocalymma quadrangulare	P3		344372	6611143	1	
Hypocalymma quadrangulare	P3		344330	6611219	1	
Hypocalymma quadrangulare	P3		344287	6611325	1	
Hypocalymma quadrangulare	P3		344295	6611295	2	
Hypocalymma quadrangulare	P3		344252	6611198	1	
Hypocalymma quadrangulare	P3		344256	6611277	2	
Hypocalymma quadrangulare	P3		344253	6611333	2	
Hypocalymma quadrangulare	P3		344212	6611319	2	
Hypocalymma quadrangulare	P3		344014	6611197	1	
Hypocalymma quadrangulare	P3		343978	6611215	1	
Hypocalymma quadrangulare	P3		341491	6612655	1	
Hypocalymma quadrangulare	P3		341496	6612667	10	
Hypocalymma quadrangulare	P3		341612	6612365	3	
Hypocalymma quadrangulare	P3		341613	6612319	1	
Hypocalymma quadrangulare	P3		341622	6612329	2	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Hypocalymma quadrangulare	P3		341626	6612374	3	
Hypocalymma quadrangulare	P3		341626	6612381	10	
Hypocalymma quadrangulare	P3		341645	6612415	3	
Hypocalymma quadrangulare	P3		341643	6612399	10	
Hypocalymma quadrangulare	P3		341641	6612367	5	
Hypocalymma quadrangulare	P3		341665	6612282	1	
Hypocalymma quadrangulare	P3		341664	6612391	4	
Hypocalymma quadrangulare	P3		341662	6612401	10	
Hypocalymma quadrangulare	P3		341697	6612377	4	
Hypocalymma quadrangulare	P3		341694	6612355	2	
Hypocalymma quadrangulare	P3		341696	6612341	4	
Hypocalymma quadrangulare	P3		341692	6612317	4	
Hypocalymma quadrangulare	P3		341695	6612303	3	
Hypocalymma quadrangulare	P3		341691	6612286	2	
Hypocalymma quadrangulare	P3		341721	6612315	3	
Hypocalymma quadrangulare	P3		341722	6612368	10	
Hypocalymma quadrangulare	P3		341755	6612379	10	
Hypocalymma quadrangulare	P3		341757	6612364	4	
Hypocalymma quadrangulare	P3		341753	6612348	10	
Hypocalymma quadrangulare	P3		341751	6612333	15	
Hypocalymma quadrangulare	P3		341756	6612322	6	
Hypocalymma quadrangulare	P3		341749	6612218	2	
Hypocalymma quadrangulare	P3		341781	6612198	2	
Hypocalymma quadrangulare	P3		341783	6612332	2	Immediately outside Targeted Survey Area
Hypocalymma quadrangulare	P3		341808	6612218	1	
Hypocalymma quadrangulare	P3		341797	6612369	1	
Hypocalymma quadrangulare	P3		341804	6612375	2	
Hypocalymma quadrangulare	P3		341802	6612390	2	
Hypocalymma quadrangulare	P3		341742	6612455	1	
Hypocalymma quadrangulare	P3		341744	6612412	8	
Hypocalymma quadrangulare	P3		341677	6612437	8	
Hypocalymma quadrangulare	P3		341685	6612461	12	
Hypocalymma quadrangulare	P3		341680	6612502	6	
Hypocalymma quadrangulare	P3		341680	6612513	1	
Hypocalymma quadrangulare	P3		341687	6612528	8	
Hypocalymma quadrangulare	P3		341695	6612472	10	
Hypocalymma quadrangulare	P3		341691	6612443	3	
Hypocalymma quadrangulare	P3		341753	6612417	12	
Hypocalymma quadrangulare	P3		341813	6612385	20	
Hypocalymma quadrangulare	P3		341814	6612361	30	
Hypocalymma quadrangulare	P3		341850	6612335	6	
Hypocalymma quadrangulare	P3		341841	6612362	10	
Hypocalymma quadrangulare	P3		341842	6612372	10	
Hypocalymma quadrangulare	P3		341880	6612345	2	
Hypocalymma quadrangulare	P3		341928	6612287	3	
Hypocalymma quadrangulare	P3		341923	6612307	10	
Hypocalymma quadrangulare	P3		341918	6612322	10	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Hypocalymma quadrangulare	P3		341921	6612348	6	
Hypocalymma quadrangulare	P3		341930	6612425	20	
Hypocalymma quadrangulare	P3		341964	6612278	4	
Hypocalymma quadrangulare	P3		342015	6612237	10	
Hypocalymma quadrangulare	P3		342015	6612260	4	
Hypocalymma quadrangulare	P3		342023	6612227	3	
Hypocalymma quadrangulare	P3		342023	6612249	25	
Hypocalymma quadrangulare	P3		342021	6612274	10	
Hypocalymma quadrangulare	P3		342023	6612421	3	
Hypocalymma quadrangulare	P3		342012	6612435	15	
Hypocalymma quadrangulare	P3		341953	6612450	5	
Hypocalymma quadrangulare	P3		341950	6612468	2	
Hypocalymma quadrangulare	P3		341914	6612469	5	
Hypocalymma quadrangulare	P3		341882	6612497	10	
Hypocalymma quadrangulare	P3		341879	6612447	2	
Hypocalymma quadrangulare	P3		341850	6612450	20	
Hypocalymma quadrangulare	P3		341860	6612483	10	
Hypocalymma quadrangulare	P3		341852	6612491	20	
Hypocalymma quadrangulare	P3		341822	6612468	3	
Hypocalymma quadrangulare	P3		341792	6612477	10	
Hypocalymma quadrangulare	P3		341761	6612547	10	
Hypocalymma quadrangulare	P3		341764	6612495	5	
Hypocalymma quadrangulare	P3		341757	6612471	4	
Hypocalymma quadrangulare	P3		341732	6612484	20	
Hypocalymma quadrangulare	P3		341732	6612552	10	
Hypocalymma quadrangulare	P3		341701	6612570	2	Immediately outside Targeted Survey Area
Hypocalymma quadrangulare	P3		341704	6612520	25	
Hypocalymma quadrangulare	P3		341700	6612504	5	
Hypocalymma quadrangulare	P3		341695	6612522	10	
Hypocalymma quadrangulare	P3		341697	6612550	3	
Hypocalymma quadrangulare	P3		342109	6612346	2	
Hypocalymma quadrangulare	P3		342099	6612364	20	
Hypocalymma quadrangulare	P3		342067	6612303	3	
Hypocalymma quadrangulare	P3		342038	6612286	20	
Hypocalymma quadrangulare	P3		342074	6612264	3	
Hypocalymma quadrangulare	P3		342105	6612302	20	
Hypocalymma quadrangulare	P3		342101	6612262	5	
Hypocalymma quadrangulare	P3		342096	6612226	4	
Hypocalymma quadrangulare	P3		342134	6612110	2	
Hypocalymma quadrangulare	P3		342133	6612284	10	
Hypocalymma quadrangulare	P3		342132	6612318	20	
Hypocalymma quadrangulare	P3		342164	6612342	5	
Hypocalymma quadrangulare	P3		342158	6612306	5	
Hypocalymma quadrangulare	P3		342165	6612234	1	
Hypocalymma quadrangulare	P3		342167	6612199	8	
Hypocalymma quadrangulare	P3		342311	6612192	1	
Hypocalymma quadrangulare	P3		342315	6612254	2	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Hypocalymma quadrangulare	P3		342344	6612279	1	
Hypocalymma quadrangulare	P3		342341	6612220	1	
Hypocalymma quadrangulare	P3		342342	6612179	1	
Hypocalymma quadrangulare	P3		342401	6612244	1	
Hypocalymma quadrangulare	P3		342403	6612215	1	
Hypocalymma quadrangulare	P3		342433	6612139	1	
Hypocalymma quadrangulare	P3		342174	6612104	1	
Hypocalymma quadrangulare	P3		342174	6612095	2	
Hypocalymma quadrangulare	P3		342227	6611927	1	
Hypocalymma quadrangulare	P3		342234	6611966	5	
Hypocalymma quadrangulare	P3		342233	6611992	3	
Hypocalymma quadrangulare	P3		342293	6612148	3	
Hypocalymma quadrangulare	P3		342289	6612010	4	
Hypocalymma quadrangulare	P3		342349	6612000	1	
Hypocalymma quadrangulare	P3		342351	6612086	1	
Hypocalymma quadrangulare	P3		342475	6612078	1	
Hypocalymma quadrangulare	P3		342471	6612047	1	
Hypocalymma quadrangulare	P3		342473	6611984	3	
Hypocalymma quadrangulare	P3		342474	6611927	2	
Hypocalymma quadrangulare	P3		342475	6611911	5	
Hypocalymma quadrangulare	P3		342480	6611823	4	
Hypocalymma quadrangulare	P3		342409	6611874	2	
Hypocalymma quadrangulare	P3		342409	6611890	3	
Hypocalymma quadrangulare	P3		342410	6611933	5	
Hypocalymma quadrangulare	P3		342351	6611971	2	
Hypocalymma quadrangulare	P3		342352	6611846	5	
Hypocalymma quadrangulare	P3		342533	6612034	5	
Hypocalymma quadrangulare	P3		342530	6611933	2	
Hypocalymma quadrangulare	P3		342533	6611866	8	
Hypocalymma quadrangulare	P3		342532	6611826	8	
Hypocalymma quadrangulare	P3		342593	6611784	3	
Hypocalymma quadrangulare	P3		342600	6611801	8	
Hypocalymma quadrangulare	P3		342654	6611799	1	
Hypocalymma quadrangulare	P3		342707	6611655	1	
Hypocalymma quadrangulare	P3		342712	6611708	3	
Hypocalymma quadrangulare	P3		345097	6610064	9	
Hypocalymma quadrangulare	P3		345100	6610033	10	
Hypocalymma quadrangulare	P3		345100	6610019	15	
Hypocalymma quadrangulare	P3		345102	6609959	4	
Hypocalymma quadrangulare	P3		345103	6609952	3	
Hypocalymma quadrangulare	P3		345106	6609862	2	
Hypocalymma quadrangulare	P3		345060	6609948	4	
Hypocalymma quadrangulare	P3		345054	6609962	12	
Hypocalymma quadrangulare	P3		345058	6609966	4	
Hypocalymma quadrangulare	P3		345061	6609973	3	
Hypocalymma quadrangulare	P3		345063	6609993	2	
Hypocalymma quadrangulare	P3		345063	6610082	4	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Hypocalymma quadrangulare	P3		345061	6610092	1	
Hypocalymma quadrangulare	P3		345059	6610106	2	
Hypocalymma quadrangulare	P3		345058	6610189	1	
Hypocalymma quadrangulare	P3		345057	6610204	1	
Hypocalymma quadrangulare	P3		345061	6610219	1	
Hypocalymma quadrangulare	P3		345060	6610227	5	
Hypocalymma quadrangulare	P3		345061	6610248	2	
Hypocalymma quadrangulare	P3		345018	6610288	6	
Hypocalymma quadrangulare	P3		345022	6610254	2	
Hypocalymma quadrangulare	P3		345019	6610212	4	
Hypocalymma quadrangulare	P3		345024	6610177	6	
Hypocalymma quadrangulare	P3		345019	6610163	3	
Hypocalymma quadrangulare	P3		345005	6610182	2	
Hypocalymma quadrangulare	P3		345007	6610210	2	
Hypocalymma quadrangulare	P3		345012	6610281	5	
Hypocalymma quadrangulare	P3		345012	6610326	1	
Hypocalymma quadrangulare	P3		344919	6610379	1	
Hypocalymma quadrangulare	P3		344921	6610341	3	
Hypocalymma quadrangulare	P3		344922	6610334	2	
Hypocalymma quadrangulare	P3		344923	6610275	1	
Hypocalymma quadrangulare	P3		344884	6610321	5	
Hypocalymma quadrangulare	P3		344883	6610415	2	
Hypocalymma quadrangulare	P3		344880	6610424	5	
Hypocalymma quadrangulare	P3		344842	6610470	1	
Hypocalymma quadrangulare	P3		344836	6610457	3	
Hypocalymma quadrangulare	P3		344846	6610381	2	
Hypocalymma quadrangulare	P3		344839	6610368	3	
Hypocalymma quadrangulare	P3		344842	6610310	1	
Hypocalymma quadrangulare	P3		344825	6610308	2	
Hypocalymma quadrangulare	P3		344805	6610309	3	
Hypocalymma quadrangulare	P3		344806	6610319	2	
Hypocalymma quadrangulare	P3		344802	6610333	5	
Hypocalymma quadrangulare	P3		344803	6610348	3	
Hypocalymma quadrangulare	P3		344806	6610452	2	
Hypocalymma quadrangulare	P3		344759	6610332	1	
Hypocalymma quadrangulare	P3		344725	6610364	4	
Hypocalymma quadrangulare	P3		344724	6610399	4	
Hypocalymma quadrangulare	P3		344717	6610530	2	
Hypocalymma quadrangulare	P3		344723	6610552	2	
Hypocalymma quadrangulare	P3		344471	6610419	2	
Hypocalymma quadrangulare	P3		344472	6610410	3	
Hypocalymma quadrangulare	P3		344474	6610400	2	
Hypocalymma quadrangulare	P3		344476	6610364	3	
Hypocalymma quadrangulare	P3		344467	6610262	2	
Hypocalymma quadrangulare	P3		344389	6610471	1	
Hypocalymma quadrangulare	P3		344393	6610742	1	
Hypocalymma quadrangulare	P3		344390	6610863	6	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Hypocalymma quadrangulare	P3		344427	6610876	3	
Hypocalymma quadrangulare	P3		344312	6610816	1	
Hypocalymma quadrangulare	P3		344318	6610479	1	
Hypocalymma quadrangulare	P3		344310	6610456	1	
Hypocalymma quadrangulare	P3		344310	6610295	3	
Hypocalymma quadrangulare	P3		344070	6610432	4	
Hypocalymma quadrangulare	P3		344067	6611168	4	
Hypocalymma quadrangulare	P3		341049	6612750	2	
Hypocalymma quadrangulare	P3		341050	6612733	1	
Hypocalymma quadrangulare	P3		341056	6612678	2	
Hypocalymma quadrangulare	P3		341053	6612655	4	
Hypocalymma quadrangulare	P3		340999	6612842	2	
Hypocalymma quadrangulare	P3		340989	6613016	3	
Hypocalymma quadrangulare	P3		341041	6612964	1	
Hypocalymma quadrangulare	P3		341042	6612953	2	
Hypocalymma quadrangulare	P3		341039	6612937	1	
Hypocalymma quadrangulare	P3		341044	6612920	3	
Hypocalymma quadrangulare	P3		341043	6612914	5	
Hypocalymma quadrangulare	P3		341040	6612896	2	
Hypocalymma quadrangulare	P3		341043	6612880	3	
Hypocalymma quadrangulare	P3		341043	6612871	5	
Hypocalymma quadrangulare	P3		341043	6612854	5	
Hypocalymma quadrangulare	P3		341046	6612828	5	
Hypocalymma quadrangulare	P3		341038	6612809	1	
Hypocalymma quadrangulare	P3		341083	6612796	1	
Hypocalymma quadrangulare	P3		341083	6612863	3	
Hypocalymma quadrangulare	P3		341085	6612870	4	
Hypocalymma quadrangulare	P3		341084	6612897	3	
Hypocalymma quadrangulare	P3		341083	6612918	15	
Hypocalymma quadrangulare	P3		341080	6612931	3	
Hypocalymma quadrangulare	P3		341084	6612972	10	
Hypocalymma quadrangulare	P3		341077	6613000	3	
Hypocalymma quadrangulare	P3		341081	6613024	3	
Hypocalymma quadrangulare	P3		341121	6613064	1	
Hypocalymma quadrangulare	P3		341124	6613035	3	
Hypocalymma quadrangulare	P3		341121	6612956	2	
Hypocalymma quadrangulare	P3		341122	6612912	2	
Hypocalymma quadrangulare	P3		341122	6612867	2	
Hypocalymma quadrangulare	P3		341161	6612857	3	
Hypocalymma quadrangulare	P3		341165	6612881	2	
Hypocalymma quadrangulare	P3		341179	6612890	1	
Hypocalymma quadrangulare	P3		341175	6612909	5	
Hypocalymma quadrangulare	P3		341173	6612987	1	
Hypocalymma quadrangulare	P3		341175	6613069	1	
Hypocalymma quadrangulare	P3		341161	6613076	2	
Hypocalymma quadrangulare	P3		341165	6612956	5	
Hypocalymma quadrangulare	P3		341166	6612922	2	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Hypocalymma quadrangulare	P3		341164	6612881	1	
Hypocalymma quadrangulare	P3		341175	6612751	3	
Hypocalymma quadrangulare	P3		341151	6612746	2	
Hypocalymma quadrangulare	P3		341152	6612821	1	
Hypocalymma quadrangulare	P3		341273	6612742	2	
Hypocalymma quadrangulare	P3		341313	6612737	1	
Hypocalymma quadrangulare	P3		341316	6612792	2	
Hypocalymma quadrangulare	P3		341350	6612766	20	
Hypocalymma quadrangulare	P3		341347	6612745	10	
Hypocalymma quadrangulare	P3		341352	6612729	3	
Hypocalymma quadrangulare	P3		341348	6612659	1	
Hypocalymma quadrangulare	P3		341253	6612901	1	
Hypocalymma quadrangulare	P3		341252	6613077	2	
Hypocalymma quadrangulare	P3		341252	6613096	14	
Hypocalymma quadrangulare	P3		341251	6613119	10	
Hypocalymma quadrangulare	P3		341291	6613057	10	
Hypocalymma quadrangulare	P3		341291	6613025	5	
Hypocalymma quadrangulare	P3		341292	6613008	2	
Hypocalymma quadrangulare	P3		341293	6612967	4	
Hypocalymma quadrangulare	P3		341312	6612944	2	
Hypocalymma quadrangulare	P3		341314	6613024	5	
Hypocalymma quadrangulare	P3		341344	6613056	2	
Hypocalymma quadrangulare	P3		341344	6613040	10	
Hypocalymma quadrangulare	P3		341374	6612914	1	
Hypocalymma quadrangulare	P3		341401	6613029	2	
Hypocalymma quadrangulare	P3		341400	6612940	5	
Hypocalymma quadrangulare	P3		341427	6612929	1	
Hypocalymma quadrangulare	P3		344036	6610533	2	
Hypocalymma quadrangulare	P3		344037	6610521	1	
Hypocalymma quadrangulare	P3		344042	6610412	2	
Hypocalymma quadrangulare	P3		344006	6610467	2	
Hypocalymma quadrangulare	P3		344026	6610702	1	
Hypocalymma quadrangulare	P3		344030	6610669	3	
Hypocalymma quadrangulare	P3		343979	6610451	4	
Hypocalymma quadrangulare	P3		343941	6610401	8	
Hypocalymma quadrangulare	P3		343938	6610455	5	
Hypocalymma quadrangulare	P3		343939	6610739	4	
Hypocalymma quadrangulare	P3		343942	6610789	3	
Hypocalymma quadrangulare	P3		343898	6610875	5	
Hypocalymma quadrangulare	P3		343895	6610755	2	
Hypocalymma quadrangulare	P3		343899	6610528	2	
Hypocalymma quadrangulare	P3		343902	6610434	4	
Hypocalymma quadrangulare	P3		343863	6610625	10	
Hypocalymma quadrangulare	P3		343865	6610678	5	
Hypocalymma quadrangulare	P3		343860	6610786	2	
Hypocalymma quadrangulare	P3		343864	6610851	3	
Hypocalymma quadrangulare	P3		343868	6611036	4	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Hypocalymma quadrangulare	P3		343858	6611184	10	
Hypocalymma quadrangulare	P3		343821	6611363	6	
Hypocalymma quadrangulare	P3		343822	6610832	8	
Hypocalymma quadrangulare	P3		343822	6610588	5	
Hypocalymma quadrangulare	P3		343778	6610878	3	
Hypocalymma quadrangulare	P3		343777	6610754	4	
Hypocalymma quadrangulare	P3		343777	6610665	8	
Hypocalymma quadrangulare	P3		343739	6610653	5	
Hypocalymma quadrangulare	P3		343741	6610788	6	
Hypocalymma quadrangulare	P3		343740	6610826	5	
Hypocalymma quadrangulare	P3		343739	6610975	5	
Hypocalymma quadrangulare	P3		343740	6611171	10	
Hypocalymma quadrangulare	P3		343742	6611276	4	
Hypocalymma quadrangulare	P3		343726	6611428	2	
Hypocalymma quadrangulare	P3		343683	6611207	4	
Hypocalymma quadrangulare	P3		343675	6611151	5	
Hypocalymma quadrangulare	P3		343665	6611060	8	
Hypocalymma quadrangulare	P3		343672	6610978	15	
Hypocalymma quadrangulare	P3		343667	6610859	10	
Hypocalymma quadrangulare	P3		343671	6610769	5	
Hypocalymma quadrangulare	P3		343670	6610728	10	
Hypocalymma quadrangulare	P3		343673	6610676	10	
Hypocalymma quadrangulare	P3		343670	6610630	20	
Hypocalymma quadrangulare	P3		343659	6610756	5	
Hypocalymma quadrangulare	P3		343631	6610760	10	
Hypocalymma quadrangulare	P3		343664	6610953	8	
Hypocalymma quadrangulare	P3		343620	6611013	10	
Hypocalymma quadrangulare	P3		343654	6610962	5	
Hypocalymma quadrangulare	P3		343655	6611091	4	
Hypocalymma quadrangulare	P3		343651	6611202	8	
Hypocalymma quadrangulare	P3		343431	6611297	5	
Hypocalymma quadrangulare	P3		343434	6611142	5	
Hypocalymma quadrangulare	P3		343513	6611062	5	
Hypocalymma quadrangulare	P3		343509	6611090	20	
Hypocalymma quadrangulare	P3		343511	6611119	20	
Hypocalymma quadrangulare	P3		343511	6611157	25	
Hypocalymma quadrangulare	P3		343429	6611469	5	
Hypocalymma quadrangulare	P3		343438	6611520	2	
Hypocalymma quadrangulare	P3		343349	6611682	5	
Hypocalymma quadrangulare	P3		343350	6611605	7	
Hypocalymma quadrangulare	P3		343340	6611512	2	
Hypocalymma quadrangulare	P3		343348	6611200	15	
Hypocalymma quadrangulare	P3		343276	6611220	8	
Hypocalymma quadrangulare	P3		343266	6611298	5	
Hypocalymma quadrangulare	P3		343276	6611377	4	
Hypocalymma quadrangulare	P3		343275	6611520	10	
Hypocalymma quadrangulare	P3		343280	6611706	12	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Hypocalymma quadrangulare	P3		343275	6611813	6	
Hypocalymma quadrangulare	P3		343188	6611897	5	
Hypocalymma quadrangulare	P3		343181	6611511	10	
Hypocalymma quadrangulare	P3		343188	6611333	15	
Hypocalymma quadrangulare	P3		343191	6611280	25	
Hypocalymma quadrangulare	P3		343110	6611358	10	
Hypocalymma quadrangulare	P3		343101	6611437	25	
Hypocalymma quadrangulare	P3		343113	6611478	18	
Hypocalymma quadrangulare	P3		343108	6611536	5	
Hypocalymma quadrangulare	P3		343118	6611812	10	
Hypocalymma quadrangulare	P3		343112	6611901	15	
Hypocalymma quadrangulare	P3		343037	6611828	10	
Hypocalymma quadrangulare	P3		343028	6611664	10	
Hypocalymma quadrangulare	P3		343035	6611565	10	
Hypocalymma quadrangulare	P3		343034	6611503	8	
Hypocalymma quadrangulare	P3		343029	6611466	20	
Hypocalymma quadrangulare	P3		343025	6611421	20	
Hypocalymma quadrangulare	P3		343033	6611390	15	
Hypocalymma quadrangulare	P3		342946	6611510	10	
Hypocalymma quadrangulare	P3		342939	6611634	20	
Hypocalymma quadrangulare	P3		342953	6611666	30	
Hypocalymma quadrangulare	P3		342952	6611860	7	
Hypocalymma quadrangulare	P3		342879	6611626	10	
Hypocalymma quadrangulare	P3		342795	6611563	8	
Hypocalymma quadrangulare	P3		345078	6609971	3	
Hypocalymma quadrangulare	P3		345076	6609981	4	
Hypocalymma quadrangulare	P3		345082	6610175	11	
Hypocalymma quadrangulare	P3		345075	6610218	3	
Hypocalymma quadrangulare	P3		345042	6610256	1	
Hypocalymma quadrangulare	P3		345001	6610222	4	
Hypocalymma quadrangulare	P3		344999	6610238	7	
Hypocalymma quadrangulare	P3		344998	6610290	6	
Hypocalymma quadrangulare	P3		344997	6610316	6	
Hypocalymma quadrangulare	P3		344942	6610387	3	
Hypocalymma quadrangulare	P3		344947	6610319	7	
Hypocalymma quadrangulare	P3		344943	6610267	4	
Hypocalymma quadrangulare	P3		344935	6610188	3	
Hypocalymma quadrangulare	P3		344858	6610454	2	
Hypocalymma quadrangulare	P3		344862	6610298	4	
Hypocalymma quadrangulare	P3		344824	6610328	3	
Hypocalymma quadrangulare	P3		344823	6610442	3	
Hypocalymma quadrangulare	P3		344774	6610525	4	
Hypocalymma quadrangulare	P3		344783	6610417	8	
Hypocalymma quadrangulare	P3		344787	6610392	4	
Hypocalymma quadrangulare	P3		344784	6610342	2	
Hypocalymma quadrangulare	P3		344743	6610437	3	
Hypocalymma quadrangulare	P3		344743	6610553	5	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Hypocalymma quadrangulare	P3		344509	6610382	3	
Hypocalymma quadrangulare	P3		344513	6610362	1	
Hypocalymma quadrangulare	P3		344504	6610343	2	
Hypocalymma quadrangulare	P3		344513	6610333	4	
Hypocalymma quadrangulare	P3		344507	6610320	8	
Hypocalymma quadrangulare	P3		344427	6610300	4	
Hypocalymma quadrangulare	P3		344431	6610421	9	
Hypocalymma quadrangulare	P3		344378	6610913	1	
Hypocalymma quadrangulare	P3		344344	6610998	2	
Hypocalymma quadrangulare	P3		344348	6610979	1	
Hypocalymma quadrangulare	P3		344368	6610884	2	
Hypocalymma quadrangulare	P3		344369	6610703	6	
Hypocalymma quadrangulare	P3		344368	6610588	3	
Hypocalymma quadrangulare	P3		344375	6610561	11	
Hypocalymma quadrangulare	P3		344370	6610463	3	
Hypocalymma quadrangulare	P3		344372	6610379	7	
Hypocalymma quadrangulare	P3		344362	6610301	2	
Hypocalymma quadrangulare	P3		344372	6610202	3	Immediately outside Targeted Survey Area
Hypocalymma quadrangulare	P3		344276	6610478	5	
Hypocalymma quadrangulare	P3		344270	6610504	3	
Hypocalymma quadrangulare	P3		344278	6610516	1	
Hypocalymma quadrangulare	P3		344271	6610532	3	
Hypocalymma quadrangulare	P3		344267	6610649	1	
Hypocalymma quadrangulare	P3		344271	6610706	2	
Hypocalymma quadrangulare	P3		344029	6610649	2	
Hypocalymma quadrangulare	P3		344032	6610874	4	
Hypocalymma quadrangulare	P3		343991	6610895	2	
Hypocalymma quadrangulare	P3		343988	6610888	3	
Hypocalymma quadrangulare	P3		343990	6610812	1	
Hypocalymma quadrangulare	P3		343959	6610361	2	
Hypocalymma quadrangulare	P3		343958	6610455	3	
Hypocalymma quadrangulare	P3		343961	6610502	2	
Hypocalymma quadrangulare	P3		343960	6610880	1	
Hypocalymma quadrangulare	P3		343915	6610788	1	
Hypocalymma quadrangulare	P3		343920	6610505	3	
Hypocalymma quadrangulare	P3		343923	6610490	2	
Hypocalymma quadrangulare	P3		343920	6610442	1	
Hypocalymma quadrangulare	P3		343876	6610371	2	Immediately outside Targeted Survey Area
Hypocalymma quadrangulare	P3		343878	6610390	3	Immediately outside Targeted Survey Area
Hypocalymma quadrangulare	P3		343878	6610403	5	
Hypocalymma quadrangulare	P3		343882	6610410	2	
Hypocalymma quadrangulare	P3		343876	6610498	3	
Hypocalymma quadrangulare	P3		343881	6610564		
Hypocalymma quadrangulare	P3		343880	6610590	2	
Hypocalymma quadrangulare	P3		343883	6610631	1	
Hypocalymma quadrangulare	P3		343884	6610668	4	
Hypocalymma quadrangulare	P3		343878	6610942	1	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Hypocalymma quadrangulare	P3		343881	6611197	2	
Hypocalymma quadrangulare	P3		343882	6611231	1	
Hypocalymma quadrangulare	P3		343841	6610653	2	
Hypocalymma quadrangulare	P3		343846	6610617	3	
Hypocalymma quadrangulare	P3		343846	6610507	2	
Hypocalymma quadrangulare	P3		343800	6611097	3	
Hypocalymma quadrangulare	P3		343800	6610774	2	
Hypocalymma quadrangulare	P3		343803	6610672	6	
Hypocalymma quadrangulare	P3		343799	6610635	2	
Hypocalymma quadrangulare	P3		343762	6610645	1	
Hypocalymma quadrangulare	P3		343761	6610670	6	
Hypocalymma quadrangulare	P3		343755	6610739	3	
Hypocalymma quadrangulare	P3		343765	6610762	3	
Hypocalymma quadrangulare	P3		343764	6610870	4	
Hypocalymma quadrangulare	P3		343762	6610897	7	
Hypocalymma quadrangulare	P3		343759	6611275	3	
Hypocalymma quadrangulare	P3		343763	6611363	8	
Hypocalymma quadrangulare	P3		343947	6611134	3	
Hypocalymma quadrangulare	P3		343932	6611257	7	
Hypocalymma quadrangulare	P3		343931	6611147	3	
Hypocalymma quadrangulare	P3		343921	6611259	4	
Hypocalymma quadrangulare	P3		343709	6611255	5	
Hypocalymma quadrangulare	P3		343712	6611230	2	
Hypocalymma quadrangulare	P3		343714	6611157	4	
Hypocalymma quadrangulare	P3		343714	6611066	3	
Hypocalymma quadrangulare	P3		343714	6610946	7	
Hypocalymma quadrangulare	P3		343711	6610907	1	
Hypocalymma quadrangulare	P3		343710	6610852	2	
Hypocalymma quadrangulare	P3		343710	6610747	2	
Hypocalymma quadrangulare	P3		343710	6610727	6	
Hypocalymma quadrangulare	P3		343709	6610699	2	
Hypocalymma quadrangulare	P3		343712	6610667	2	
Hypocalymma quadrangulare	P3		343713	6610620	8	
Hypocalymma quadrangulare	P3		343648	6610643	3	
Hypocalymma quadrangulare	P3		343646	6610659	2	
Hypocalymma quadrangulare	P3		343639	6610719	4	
Hypocalymma quadrangulare	P3		343641	6610732	6	
Hypocalymma quadrangulare	P3		343628	6610675	3	Immediately outside Targeted Survey Area
Hypocalymma quadrangulare	P3		343679	6610777	2	
Hypocalymma quadrangulare	P3		343681	6610793	3	
Hypocalymma quadrangulare	P3		343682	6610819	2	
Hypocalymma quadrangulare	P3		343684	6610865	4	
Hypocalymma quadrangulare	P3		343686	6610895	3	
Hypocalymma quadrangulare	P3		343680	6610910	3	
Hypocalymma quadrangulare	P3		343681	6610937	4	
Hypocalymma quadrangulare	P3		343682	6610977	5	
Hypocalymma quadrangulare	P3		343646	6611087	3	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Hypocalymma quadrangulare	P3		343620	6611139	4	
Hypocalymma quadrangulare	P3		343634	6611043	1	
Hypocalymma quadrangulare	P3		343473	6611296	5	
Hypocalymma quadrangulare	P3		343473	6611256	3	
Hypocalymma quadrangulare	P3		343470	6611235	4	
Hypocalymma quadrangulare	P3		343471	6611117	2	
Hypocalymma quadrangulare	P3		343550	6611085	15	
Hypocalymma quadrangulare	P3		343494	6611288	1	
Hypocalymma quadrangulare	P3		343550	6611470	1	
Hypocalymma quadrangulare	P3		343554	6611511	1	
Hypocalymma quadrangulare	P3		343556	6611522	3	
Hypocalymma quadrangulare	P3		343387	6611459	6	
Hypocalymma quadrangulare	P3		343387	6611459	2	
Hypocalymma quadrangulare	P3		343395	6611441	2	
Hypocalymma quadrangulare	P3		343388	6611190	2	
Hypocalymma quadrangulare	P3		343394	6611172	3	
Hypocalymma quadrangulare	P3		343390	6611137	2	Immediately outside Targeted Survey Area
Hypocalymma quadrangulare	P3		343312	6611236	1	
Hypocalymma quadrangulare	P3		343313	6611435	2	
Hypocalymma quadrangulare	P3		343310	6611450	1	
Hypocalymma quadrangulare	P3		343312	6611485	2	
Hypocalymma quadrangulare	P3		343314	6611588	2	
Hypocalymma quadrangulare	P3		343314	6611698	1	
Hypocalymma quadrangulare	P3		343229	6611582	5	
Hypocalymma quadrangulare	P3		343232	6611424	2	
Hypocalymma quadrangulare	P3		343233	6611356	1	
Hypocalymma quadrangulare	P3		343233	6611294	10	
Hypocalymma quadrangulare	P3		343227	6611282	3	
Hypocalymma quadrangulare	P3		343153	6611284	2	Immediately outside Targeted Survey Area
Hypocalymma quadrangulare	P3		343154	6611378	6	
Hypocalymma quadrangulare	P3		343152	6611400	11	
Hypocalymma quadrangulare	P3		343156	6611417	8	
Hypocalymma quadrangulare	P3		343154	6611503	3	
Hypocalymma quadrangulare	P3		343077	6611798	2	
Hypocalymma quadrangulare	P3		343067	6611664	2	
Hypocalymma quadrangulare	P3		343064	6611580	3	
Hypocalymma quadrangulare	P3		343071	6611533	2	
Hypocalymma quadrangulare	P3		343072	6611503	6	
Hypocalymma quadrangulare	P3		343068	6611432	14	
Hypocalymma quadrangulare	P3		343072	6611413	18	
Hypocalymma quadrangulare	P3		342994	6611416	3	
Hypocalymma quadrangulare	P3		342989	6611435	6	
Hypocalymma quadrangulare	P3		342992	6611548	3	
Hypocalymma quadrangulare	P3		342984	6611573	2	
Hypocalymma quadrangulare	P3		342985	6611578	4	
Hypocalymma quadrangulare	P3		342994	6611611	7	
Hypocalymma quadrangulare	P3		342995	6611624	12	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Hypocalymma quadrangulare	P3		342994	6611657	3	
Hypocalymma quadrangulare	P3		342986	6611892	18	
Hypocalymma quadrangulare	P3		342913	6611678	6	
Hypocalymma quadrangulare	P3		342914	6611635	11	
Hypocalymma quadrangulare	P3		342911	6611597	3	
Hypocalymma quadrangulare	P3		342820	6611531	3	
Hypocalymma quadrangulare	P3		342829	6611565	4	
Hypocalymma quadrangulare	P3		342830	6611612	8	
Hypocalymma quadrangulare	P3		342831	6611642	4	
Hypocalymma quadrangulare	P3		345133	6609907	12	
Hypocalymma quadrangulare	P3		345135	6609866	5	
Hypocalymma quadrangulare	P3		345166	6609904	3	
Hypocalymma quadrangulare	P3		345142	6609895	8	
Hypocalymma quadrangulare	P3		345098	6609888	12	
Hypocalymma quadrangulare	P3		345093	6609913	2	
Hypocalymma quadrangulare	P3		345087	6610018	13	
Hypocalymma quadrangulare	P3		345095	6610061	4	
Hypocalymma quadrangulare	P3		345046	6610171	2	
Hypocalymma quadrangulare	P3		345046	6609967	15	
Hypocalymma quadrangulare	P3		345043	6609976	6	
Hypocalymma quadrangulare	P3		344997	6610198	5	
Hypocalymma quadrangulare	P3		344994	6610243	7	
Hypocalymma quadrangulare	P3		344951	6610377	4	
Hypocalymma quadrangulare	P3		344950	6610262	6	
Hypocalymma quadrangulare	P3		344949	6610204	11	
Hypocalymma quadrangulare	P3		344945	6610190	13	
Hypocalymma quadrangulare	P3		344911	6610268	2	
Hypocalymma quadrangulare	P3		344917	6610317	5	
Hypocalymma quadrangulare	P3		344913	6610358	10	
Hypocalymma quadrangulare	P3		344867	6610423	2	
Hypocalymma quadrangulare	P3		344871	6610370	14	
Hypocalymma quadrangulare	P3		344833	6610342	3	
Hypocalymma quadrangulare	P3		344835	6610434	16	
Hypocalymma quadrangulare	P3		344786	6610323	12	
Hypocalymma quadrangulare	P3		344751	6610445	8	
Hypocalymma quadrangulare	P3		344750	6610528	13	
Hypocalymma quadrangulare	P3		344531	6610486	1	
Hypocalymma quadrangulare	P3		344352	6610484	3	
Hypocalymma quadrangulare	P3		344350	6610574	1	
Hypocalymma quadrangulare	P3		344354	6610688	3	
Hypocalymma quadrangulare	P3		344418	6610876	4	
Hypocalymma quadrangulare	P3		344451	6610303	2	
Hypocalymma quadrangulare	P3		344446	6610283	3	
Hypocalymma quadrangulare	P3		344301	6610271	1	
Hypocalymma quadrangulare	P3		344294	6610270	3	
Hypocalymma quadrangulare	P3		344292	6610295	6	
Hypocalymma quadrangulare	P3		344298	6610312	3	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Hypocalymma quadrangulare	P3		344297	6610461	16	
Hypocalymma quadrangulare	P3		344291	6610509	9	
Hypocalymma quadrangulare	P3		344296	6610540	7	
Hypocalymma quadrangulare	P3		344294	6610571	3	
Hypocalymma quadrangulare	P3		344294	6610784	9	
Hypocalymma quadrangulare	P3		344082	6610509	6	
Hypocalymma quadrangulare	P3		344021	6610515	4	
Hypocalymma quadrangulare	P3		344006	6610468	5	
Hypocalymma quadrangulare	P3		344005	6610706	9	
Hypocalymma quadrangulare	P3		344020	6610710	6	
Hypocalymma quadrangulare	P3		344026	6610679	8	
Hypocalymma quadrangulare	P3		344028	6610649	3	
Hypocalymma quadrangulare	P3		343988	6610705	4	
Hypocalymma quadrangulare	P3		343991	6610454	12	
Hypocalymma quadrangulare	P3		343973	6610445	14	
Hypocalymma quadrangulare	P3		343975	6610894	7	
Hypocalymma quadrangulare	P3		343933	6610783	6	
Hypocalymma quadrangulare	P3		343933	6610765	3	
Hypocalymma quadrangulare	P3		343940	6610737	2	
Hypocalymma quadrangulare	P3		343936	6610446	4	
Hypocalymma quadrangulare	P3		343895	6610407	6	
Hypocalymma quadrangulare	P3		343892	6610445	3	
Hypocalymma quadrangulare	P3		343897	6610610	2	
Hypocalymma quadrangulare	P3		343896	6610626	8	
Hypocalymma quadrangulare	P3		343893	6610882	3	
Hypocalymma quadrangulare	P3		343893	6610907	4	
Hypocalymma quadrangulare	P3		343893	6611290	5	
Hypocalymma quadrangulare	P3		343853	6611237	16	
Hypocalymma quadrangulare	P3		343851	6611191	11	
Hypocalymma quadrangulare	P3		343856	6611169	2	
Hypocalymma quadrangulare	P3		343856	6611112	5	
Hypocalymma quadrangulare	P3		343852	6611066	6	
Hypocalymma quadrangulare	P3		343848	6611049	10	
Hypocalymma quadrangulare	P3		343857	6611029	4	
Hypocalymma quadrangulare	P3		343853	6610974	2	
Hypocalymma quadrangulare	P3		343847	6610869	5	
Hypocalymma quadrangulare	P3		343851	6610853	2	
Hypocalymma quadrangulare	P3		343852	6610784	13	
Hypocalymma quadrangulare	P3		343856	6610687	1	
Hypocalymma quadrangulare	P3		343853	6610673	7	
Hypocalymma quadrangulare	P3		343851	6610618	12	
Hypocalymma quadrangulare	P3		343852	6610601	3	
Hypocalymma quadrangulare	P3		343849	6610575	4	
Hypocalymma quadrangulare	P3		343854	6610548	1	
Hypocalymma quadrangulare	P3		343859	6610508	5	
Hypocalymma quadrangulare	P3		343811	6611303	3	
Hypocalymma quadrangulare	P3		343807	6611243	8	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Hypocalymma quadrangulare	P3		343812	6611158	1	
Hypocalymma quadrangulare	P3		343817	6611093	3	
Hypocalymma quadrangulare	P3		343810	6611073	10	
Hypocalymma quadrangulare	P3		343810	6611055	5	
Hypocalymma quadrangulare	P3		343809	6610887	2	
Hypocalymma quadrangulare	P3		343813	6610811	14	
Hypocalymma quadrangulare	P3		343809	6610753	5	
Hypocalymma quadrangulare	P3		343809	6610753	5	
Hypocalymma quadrangulare	P3		343807	6610604	2	
Hypocalymma quadrangulare	P3		343778	6610666	8	
Hypocalymma quadrangulare	P3		343774	6610727	4	
Hypocalymma quadrangulare	P3		343775	6610761	3	
Hypocalymma quadrangulare	P3		343774	6610901	9	
Hypocalymma quadrangulare	P3		343776	6610963	1	
Hypocalymma quadrangulare	P3		343773	6611146	6	
Hypocalymma quadrangulare	P3		343770	6611194	6	
Hypocalymma quadrangulare	P3		343769	6611227	3	
Hypocalymma quadrangulare	P3		343767	6611254	7	
Hypocalymma quadrangulare	P3		343774	6611359	3	
Hypocalymma quadrangulare	P3		343733	6611306	3	
Hypocalymma quadrangulare	P3		343731	6611269	6	
Hypocalymma quadrangulare	P3		343732	6611102	12	
Hypocalymma quadrangulare	P3		343729	6611078	3	
Hypocalymma quadrangulare	P3		343707	6610934	10	
Hypocalymma quadrangulare	P3		343702	6610967	5	
Hypocalymma quadrangulare	P3		343496	6611292	5	
Hypocalymma quadrangulare	P3		343485	6611260	4	
Hypocalymma quadrangulare	P3		343488	6611245	10	
Hypocalymma quadrangulare	P3		343487	6611169	3	
Hypocalymma quadrangulare	P3		343491	6611159	5	
Hypocalymma quadrangulare	P3		343482	6611144	2	
Hypocalymma quadrangulare	P3		343489	6611126	10	
Hypocalymma quadrangulare	P3		343485	6611112	5	
Hypocalymma quadrangulare	P3		343489	6611095	8	
Hypocalymma quadrangulare	P3		343490	6611080	5	
Hypocalymma quadrangulare	P3		343580	6611037	2	
Hypocalymma quadrangulare	P3		343568	6611067	15	
Hypocalymma quadrangulare	P3		343572	6611090	20	
Hypocalymma quadrangulare	P3		343574	6611110	15	
Hypocalymma quadrangulare	P3		343574	6611134	15	
Hypocalymma quadrangulare	P3		343736	6611060	6	
Hypocalymma quadrangulare	P3		343733	6610952	4	
Hypocalymma quadrangulare	P3		343725	6610896	2	
Hypocalymma quadrangulare	P3		343731	6610824	6	
Hypocalymma quadrangulare	P3		343727	6610796	2	
Hypocalymma quadrangulare	P3		343729	6610749	2	
Hypocalymma quadrangulare	P3		343728	6610733	3	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Hypocalymma quadrangulare	P3		343729	6610719	5	
Hypocalymma quadrangulare	P3		343734	6610686	3	
Hypocalymma quadrangulare	P3		343735	6610651	1	
Hypocalymma quadrangulare	P3		343735	6610635	1	
Hypocalymma quadrangulare	P3		343730	6610550	1	
Hypocalymma quadrangulare	P3		343726	6610522	1	Immediately outside Targeted Survey Area
Hypocalymma quadrangulare	P3		343800	6610478	2	
Hypocalymma quadrangulare	P3		343801	6610541	4	
Hypocalymma quadrangulare	P3		343820	6610446	10	
Hypocalymma quadrangulare	P3		343814	6610500	12	
Hypocalymma quadrangulare	P3		343814	6610580	1	
Hypocalymma quadrangulare	P3		343789	6610615	5	
Hypocalymma quadrangulare	P3		343793	6610599	6	
Hypocalymma quadrangulare	P3		343791	6610578	8	
Hypocalymma quadrangulare	P3		343789	6610543	2	
Hypocalymma quadrangulare	P3		343792	6610526	14	
Hypocalymma quadrangulare	P3		343789	6610484	9	
Hypocalymma quadrangulare	P3		343773	6610490	12	
Hypocalymma quadrangulare	P3		343776	6610511	30	
Hypocalymma quadrangulare	P3		343778	6610563	5	
Hypocalymma quadrangulare	P3		343778	6610603	15	
Hypocalymma quadrangulare	P3		343774	6610629	8	
Hypocalymma quadrangulare	P3		343699	6610775	5	
Hypocalymma quadrangulare	P3		343699	6610845	3	
Hypocalymma quadrangulare	P3		343704	6610910	5	
Hypocalymma quadrangulare	P3		343573	6611230	15	
Hypocalymma quadrangulare	P3		343571	6611546	6	
Hypocalymma quadrangulare	P3		343438	6611678	5	
Hypocalymma quadrangulare	P3		343398	6611695	3	
Hypocalymma quadrangulare	P3		343415	6611474	1	
Hypocalymma quadrangulare	P3		343411	6611276	3	
Hypocalymma quadrangulare	P3		343415	6611192	4	
Hypocalymma quadrangulare	P3		343410	6611172	5	
Hypocalymma quadrangulare	P3		343325	6611356	5	
Hypocalymma quadrangulare	P3		343331	6611482	3	
Hypocalymma quadrangulare	P3		343335	6611508	5	
Hypocalymma quadrangulare	P3		343334	6611659	5	
Hypocalymma quadrangulare	P3		343255	6611614	10	
Hypocalymma quadrangulare	P3		343247	6611581	4	
Hypocalymma quadrangulare	P3		343246	6611400	5	
Hypocalymma quadrangulare	P3		343253	6611386	2	
Hypocalymma quadrangulare	P3		343251	6611361	10	
Hypocalymma quadrangulare	P3		343255	6611306	2	
Hypocalymma quadrangulare	P3		343255	6611258	10	
Hypocalymma quadrangulare	P3		343251	6611242	8	
Hypocalymma quadrangulare	P3		343173	6611385	12	
Hypocalymma quadrangulare	P3		343165	6611437	5	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Hypocalymma quadrangulare	P3		343173	6611478	6	
Hypocalymma quadrangulare	P3		343176	6611517	10	
Hypocalymma quadrangulare	P3		343175	6611802	4	
Hypocalymma quadrangulare	P3		343164	6611834	5	
Hypocalymma quadrangulare	P3		343178	6611896	9	
Hypocalymma quadrangulare	P3		343079	6611922	10	
Hypocalymma quadrangulare	P3		343090	6611581	3	
Hypocalymma quadrangulare	P3		343090	6611554	10	
Hypocalymma quadrangulare	P3		343091	6611533	5	
Hypocalymma quadrangulare	P3		343093	6611507	8	
Hypocalymma quadrangulare	P3		343097	6611486	6	
Hypocalymma quadrangulare	P3		343093	6611449	2	
Hypocalymma quadrangulare	P3		343092	6611432	7	
Hypocalymma quadrangulare	P3		343091	6611403	15	
Hypocalymma quadrangulare	P3		343092	6611346	1	
Hypocalymma quadrangulare	P3		343083	6611328	3	Immediately outside Targeted Survey Area
Hypocalymma quadrangulare	P3		343012	6611370	10	Immediately outside Targeted Survey Area
Hypocalymma quadrangulare	P3		343012	6611413	7	
Hypocalymma quadrangulare	P3		343010	6611489	2	
Hypocalymma quadrangulare	P3		343013	6611530	1	
Hypocalymma quadrangulare	P3		343010	6611631	12	
Hypocalymma quadrangulare	P3		343014	6611662	30	
Hypocalymma quadrangulare	P3		343015	6611689	1	
Hypocalymma quadrangulare	P3		343022	6611755	5	
Hypocalymma quadrangulare	P3		343007	6611785	3	
Hypocalymma quadrangulare	P3		343009	6611895	9	
Hypocalymma quadrangulare	P3		342934	6611868	10	
Hypocalymma quadrangulare	P3		342931	6611675	10	
Hypocalymma quadrangulare	P3		342931	6611656	20	
Hypocalymma quadrangulare	P3		342933	6611624	6	
Hypocalymma quadrangulare	P3		342936	6611590	3	
Hypocalymma quadrangulare	P3		342935	6611573	7	
Hypocalymma quadrangulare	P3		342932	6611555	10	
Hypocalymma quadrangulare	P3		342943	6611510	4	
Hypocalymma quadrangulare	P3		342936	6611446	15	
Hypocalymma quadrangulare	P3		342852	6611521	4	
Hypocalymma quadrangulare	P3		342853	6611551	6	
Hypocalymma quadrangulare	P3		342851	6611572	5	
Hypocalymma quadrangulare	P3		342853	6611616	3	
Hypocalymma quadrangulare	P3		342851	6611641	10	
Hypocalymma quadrangulare	P3		345112	6610017	5	
Hypocalymma quadrangulare	P3		345114	6609997	4	
Hypocalymma quadrangulare	P3		345112	6609884	6	
Hypocalymma quadrangulare	P3		345111	6609852	3	
Hypocalymma quadrangulare	P3		345074	6609870	2	
Hypocalymma quadrangulare	P3		345071	6609966	16	
Hypocalymma quadrangulare	P3		345073	6610020	8	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Hypocalymma quadrangulare	P3		345072	6610089	7	
Hypocalymma quadrangulare	P3		345073	6610242	3	
Hypocalymma quadrangulare	P3		345035	6610213	4	
Hypocalymma quadrangulare	P3		345031	6609979	5	
Hypocalymma quadrangulare	P3		344983	6610186	2	
Hypocalymma quadrangulare	P3		344979	6610217	2	
Hypocalymma quadrangulare	P3		344983	6610256	5	
Hypocalymma quadrangulare	P3		344983	6610279	4	
Hypocalymma quadrangulare	P3		344996	6610347	1	
Hypocalymma quadrangulare	P3		344973	6610212	6	
Hypocalymma quadrangulare	P3		344960	6610215	2	
Hypocalymma quadrangulare	P3		344961	6610273	5	
Hypocalymma quadrangulare	P3		344960	6610293	4	
Hypocalymma quadrangulare	P3		344971	6610374	6	Immediately outside Targeted Survey Area
Hypocalymma quadrangulare	P3		344932	6610377	2	
Hypocalymma quadrangulare	P3		344931	6610306	1	
Hypocalymma quadrangulare	P3		344933	6610282	6	
Hypocalymma quadrangulare	P3		344933	6610266	5	
Hypocalymma quadrangulare	P3		344930	6610199	2	
Hypocalymma quadrangulare	P3		344934	6610181	3	
Hypocalymma quadrangulare	P3		344856	6610471	1	
Hypocalymma quadrangulare	P3		344850	6610453	2	
Hypocalymma quadrangulare	P3		344849	6610315	2	
Hypocalymma quadrangulare	P3		344815	6610322	4	
Hypocalymma quadrangulare	P3		344811	6610433	2	
Hypocalymma quadrangulare	P3		344805	6610514	1	
Hypocalymma quadrangulare	P3		344785	6610532	3	
Hypocalymma quadrangulare	P3		344768	6610521	3	
Hypocalymma quadrangulare	P3		344773	6610455	4	
Hypocalymma quadrangulare	P3		344771	6610425	2	
Hypocalymma quadrangulare	P3		344772	6610392	8	
Hypocalymma quadrangulare	P3		344771	6610337	5	
Hypocalymma quadrangulare	P3		344483	6610397	2	
Hypocalymma quadrangulare	P3		344492	6610387	7	
Hypocalymma quadrangulare	P3		344498	6610318	6	
Hypocalymma quadrangulare	P3		344502	6610357	3	
Hypocalymma quadrangulare	P3		344501	6610381	7	
Hypocalymma quadrangulare	P3		344490	6610283	2	
Hypocalymma quadrangulare	P3		344409	6610396	2	
Hypocalymma quadrangulare	P3		344410	6610458	2	
Hypocalymma quadrangulare	P3		344412	6610561	1	
Hypocalymma quadrangulare	P3		344409	6610657	1	
Hypocalymma quadrangulare	P3		344410	6610713	2	
Hypocalymma quadrangulare	P3		344416	6610747	4	
Hypocalymma quadrangulare	P3		344491	6610855	2	
Hypocalymma quadrangulare	P3		344489	6610883	2	
Hypocalymma quadrangulare	P3		344489	6610908	2	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Hypocalymma quadrangulare	P3		344453	6610930	1	
Hypocalymma quadrangulare	P3		344331	6610696	5	
Hypocalymma quadrangulare	P3		344330	6610677	4	
Hypocalymma quadrangulare	P3		344332	6610655	3	
Hypocalymma quadrangulare	P3		344334	6610569	4	
Hypocalymma quadrangulare	P3		344334	6610497	3	
Hypocalymma quadrangulare	P3		344329	6610357	1	
Hypocalymma quadrangulare	P3		344331	6610243	3	
Hypocalymma quadrangulare	P3		344254	6610515	4	
Hypocalymma quadrangulare	P3		344089	6610518	2	
Hypocalymma quadrangulare	P3		344050	6610426	2	
Hypocalymma quadrangulare	P3		344054	6610503	4	
Hypocalymma quadrangulare	P3		343983	6610881	2	
Hypocalymma quadrangulare	P3		344022	6610850	3	
Hypocalymma quadrangulare	P3		344017	6610834	2	
Hypocalymma quadrangulare	P3		343953	6610459	3	
Hypocalymma quadrangulare	P3		343951	6610497	3	
Hypocalymma quadrangulare	P3		343952	6610726	1	
Hypocalymma quadrangulare	P3		343911	6610536	1	
Hypocalymma quadrangulare	P3		343875	6610587	1	
Hypocalymma quadrangulare	P3		343874	6610651	1	
Hypocalymma quadrangulare	P3		343871	6610679	2	
Hypocalymma quadrangulare	P3		343873	6610975	3	
Hypocalymma quadrangulare	P3		343874	6611035	4	
Hypocalymma quadrangulare	P3		343867	6611195	3	
Hypocalymma quadrangulare	P3		343838	6611360	1	
Hypocalymma quadrangulare	P3		343833	6610629	1	
Hypocalymma quadrangulare	P3		343829	6610528	2	
Hypocalymma quadrangulare	P3		343791	6611392	3	
Hypocalymma quadrangulare	P3		343789	6611180	1	
Hypocalymma quadrangulare	P3		343789	6611127	1	
Hypocalymma quadrangulare	P3		343793	6610807	2	
Hypocalymma quadrangulare	P3		343784	6610645	1	
Hypocalymma quadrangulare	P3		343791	6610630	1	
Hypocalymma quadrangulare	P3		343751	6610661	3	
Hypocalymma quadrangulare	P3		343751	6611058	1	
Hypocalymma quadrangulare	P3		343748	6611206	1	
Hypocalymma quadrangulare	P3		343753	6611240	1	
Hypocalymma quadrangulare	P3		343750	6611314	2	
Hypocalymma quadrangulare	P3		343900	6611234	2	
Hypocalymma quadrangulare	P3		343688	6611238	1	
Hypocalymma quadrangulare	P3		343693	6611206	3	
Hypocalymma quadrangulare	P3		343694	6611168	6	
Hypocalymma quadrangulare	P3		343692	6610983	5	
Hypocalymma quadrangulare	P3		343692	6610910	2	
Hypocalymma quadrangulare	P3		343694	6610744	3	
Hypocalymma quadrangulare	P3		343691	6610713	1	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Hypocalymma quadrangulare	P3		343687	6610655	1	
Hypocalymma quadrangulare	P3		343693	6610627	5	
Hypocalymma quadrangulare	P3		343758	6610512	4	
Hypocalymma quadrangulare	P3		343753	6610526	20	
Hypocalymma quadrangulare	P3		343755	6610616	1	
Hypocalymma quadrangulare	P3		343722	6610617	3	
Hypocalymma quadrangulare	P3		343721	6610652	5	
Hypocalymma quadrangulare	P3		343724	6610670	6	
Hypocalymma quadrangulare	P3		343721	6610691	7	
Hypocalymma quadrangulare	P3		343722	6610717	4	
Hypocalymma quadrangulare	P3		343720	6610762	1	
Hypocalymma quadrangulare	P3		343721	6610789	2	
Hypocalymma quadrangulare	P3		343723	6610832	3	
Hypocalymma quadrangulare	P3		343699	6611105	2	
Hypocalymma quadrangulare	P3		343591	6611013	2	
Hypocalymma quadrangulare	P3		343595	6611061	5	
Hypocalymma quadrangulare	P3		343590	6611106	3	
Hypocalymma quadrangulare	P3		343593	6611123	5	
Hypocalymma quadrangulare	P3		343592	6611171	3	
Hypocalymma quadrangulare	P3		343594	6611194	3	
Hypocalymma quadrangulare	P3		343594	6611214	4	
Hypocalymma quadrangulare	P3		343452	6611292	6	
Hypocalymma quadrangulare	P3		343452	6611273	8	
Hypocalymma quadrangulare	P3		343449	6611242	5	
Hypocalymma quadrangulare	P3		343450	6611145	2	
Hypocalymma quadrangulare	P3		343532	6611153	8	
Hypocalymma quadrangulare	P3		343529	6611186	25	
Hypocalymma quadrangulare	P3		343532	6611214	8	
Hypocalymma quadrangulare	P3		343451	6611308	4	
Hypocalymma quadrangulare	P3		343369	6611172	4	
Hypocalymma quadrangulare	P3		343292	6611231	3	
Hypocalymma quadrangulare	P3		343293	6611531	2	
Hypocalymma quadrangulare	P3		343289	6611596	3	
Hypocalymma quadrangulare	P3		343289	6611642	3	
Hypocalymma quadrangulare	P3		343213	6611901	2	
Hypocalymma quadrangulare	P3		343213	6611877	3	
Hypocalymma quadrangulare	P3		343210	6611838	2	
Hypocalymma quadrangulare	P3		343210	6611781	1	
Hypocalymma quadrangulare	P3		343213	6611354	2	
Hypocalymma quadrangulare	P3		343209	6611300	5	
Hypocalymma quadrangulare	P3		343215	6611279	3	
Hypocalymma quadrangulare	P3		343132	6611360	2	
Hypocalymma quadrangulare	P3		343131	6611442	2	
Hypocalymma quadrangulare	P3		343133	6611505	5	
Hypocalymma quadrangulare	P3		343143	6611514	5	
Hypocalymma quadrangulare	P3		343133	6611522	16	
Hypocalymma quadrangulare	P3		343129	6611817	5	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Hypocalymma quadrangulare	P3		343051	6611819	13	
Hypocalymma quadrangulare	P3		343050	6611635	2	
Hypocalymma quadrangulare	P3		343051	6611512	3	
Hypocalymma quadrangulare	P3		343051	6611474	4	
Hypocalymma quadrangulare	P3		343047	6611426	3	
Hypocalymma quadrangulare	P3		343053	6611373	5	
Hypocalymma quadrangulare	P3		342972	6611485	3	
Hypocalymma quadrangulare	P3		342972	6611581	2	
Hypocalymma quadrangulare	P3		342975	6611641	2	
Hypocalymma quadrangulare	P3		342966	6611686	5	
Hypocalymma quadrangulare	P3		342899	6611963	3	Immediately outside Targeted Survey Area
Hypocalymma quadrangulare	P3		342894	6611615	5	
Hypocalymma quadrangulare	P3		344700	6610580	2	
Hypocalymma quadrangulare	P3		344703	6610555	1	
Hypocalymma quadrangulare	P3		344708	6610514	1	
Hypocalymma quadrangulare	P3		344709	6610482	1	
Hypocalymma quadrangulare	P3		344706	6610370	1	
Hypocalymma quadrangulare	P3		344703	6610370	2	
Hypocalymma quadrangulare	P3		344700	6610357	2	
Hypocalymma quadrangulare	P3		344661	6610475	2	
Hypocalymma quadrangulare	P3		344658	6610480	3	
Hypocalymma quadrangulare	P3		344663	6610515	1	
Hypocalymma quadrangulare	P3		344620	6610673	1	
Hypocalymma quadrangulare	P3		344621	6610625	2	
Hypocalymma quadrangulare	P3		344621	6610620	2	
Hypocalymma quadrangulare	P3		344625	6610586	1	
Hypocalymma quadrangulare	P3		344623	6610557	2	
Hypocalymma quadrangulare	P3		344623	6610549	1	
Hypocalymma quadrangulare	P3		344621	6610545	1	
Hypocalymma quadrangulare	P3		344624	6610522	1	
Hypocalymma quadrangulare	P3		344622	6610516	1	
Hypocalymma quadrangulare	P3		344620	6610510	1	
Hypocalymma quadrangulare	P3		344541	6610736	1	
Hypocalymma quadrangulare	P3		344543	6610731	2	
Hypocalymma quadrangulare	P3		344545	6610718	1	
Hypocalymma quadrangulare	P3		344318	6610549	1	
Hypocalymma quadrangulare	P3		344343	6610555	1	
Hypocalymma quadrangulare	P3		344345	6610559	1	
Hypocalymma quadrangulare	P3		344361	6610571	1	
Hypocalymma quadrangulare	P3		344381	6610547	1	
Hypocalymma quadrangulare	P3		344300	6610605	1	
Hypocalymma quadrangulare	P3		344300	6610699	1	
Hypocalymma quadrangulare	P3		344305	6610790	1	
Hypocalymma quadrangulare	P3		344341	6610687	2	
Hypocalymma quadrangulare	P3		344345	6610674	4	
Hypocalymma quadrangulare	P3		344382	6610675	2	
Hypocalymma quadrangulare	P3		344402	6610758	1	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Hypocalymma quadrangulare	P3		344623	6610895	2	
Hypocalymma quadrangulare	P3		344585	6611019	1	
Hypocalymma quadrangulare	P3		344499	6610988	1	
Hypocalymma quadrangulare	P3		344499	6611013	1	
Hypocalymma quadrangulare	P3		344502	6611053	1	
Hypocalymma quadrangulare	P3		344501	6611099	2	
Hypocalymma quadrangulare	P3		344458	6610992	1	
Hypocalymma quadrangulare	P3		344422	6610911	1	
Hypocalymma quadrangulare	P3		344425	6610994	2	
Hypocalymma quadrangulare	P3		344383	6611071	1	
Hypocalymma quadrangulare	P3		344382	6610991	1	
Hypocalymma quadrangulare	P3		344340	6611024	1	
Hypocalymma quadrangulare	P3		344340	6611034	1	
Hypocalymma quadrangulare	P3		344341	6611216	1	
Hypocalymma quadrangulare	P3		344342	6611231	2	
Hypocalymma quadrangulare	P3		344302	6611304	3	
Hypocalymma quadrangulare	P3		344300	6611294	1	
Hypocalymma quadrangulare	P3		344261	6611205	2	
Hypocalymma quadrangulare	P3		344260	6611286	1	
Hypocalymma quadrangulare	P3		344183	6611231	1	
Hypocalymma quadrangulare	P3		344184	6611272	1	
Hypocalymma quadrangulare	P3		344043	6611198	1	
Hypocalymma quadrangulare	P3		341036	6612742	3	
Hypocalymma quadrangulare	P3		341012	6612916	1	
Hypocalymma quadrangulare	P3		341010	6612929	1	
Hypocalymma quadrangulare	P3		341011	6612945	2	
Hypocalymma quadrangulare	P3		341053	6612971	4	
Hypocalymma quadrangulare	P3		341056	6612961	5	
Hypocalymma quadrangulare	P3		341053	6612931	5	
Hypocalymma quadrangulare	P3		341053	6612920	4	
Hypocalymma quadrangulare	P3		341053	6612917	2	
Hypocalymma quadrangulare	P3		341054	6612908	4	
Hypocalymma quadrangulare	P3		341050	6612884	1	
Hypocalymma quadrangulare	P3		341054	6612854	3	
Hypocalymma quadrangulare	P3		341093	6612799	1	
Hypocalymma quadrangulare	P3		341093	6612803	1	
Hypocalymma quadrangulare	P3		341092	6612874	4	
Hypocalymma quadrangulare	P3		341086	6612883	3	
Hypocalymma quadrangulare	P3		341091	6612892	2	
Hypocalymma quadrangulare	P3		341095	6612899	4	
Hypocalymma quadrangulare	P3		341097	6612944	2	
Hypocalymma quadrangulare	P3		341091	6612956	3	
Hypocalymma quadrangulare	P3		341096	6612963	2	
Hypocalymma quadrangulare	P3		341091	6612992	2	
Hypocalymma quadrangulare	P3		341126	6613081	7	
Hypocalymma quadrangulare	P3		341127	6613093	1	
Hypocalymma quadrangulare	P3		341134	6613069	4	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Hypocalymma quadrangulare	P3		341130	6613053	3	
Hypocalymma quadrangulare	P3		341133	6612922	1	
Hypocalymma quadrangulare	P3		341171	6612999	1	
Hypocalymma quadrangulare	P3		341170	6613073	1	
Hypocalymma quadrangulare	P3		341214	6613138	4	
Hypocalymma quadrangulare	P3		341210	6613046	1	
Hypocalymma quadrangulare	P3		341219	6613009	1	
Hypocalymma quadrangulare	P3		341210	6612992	3	
Hypocalymma quadrangulare	P3		341209	6612870	1	
Hypocalymma quadrangulare	P3		341211	6612844	8	
Hypocalymma quadrangulare	P3		341240	6612822	5	
Hypocalymma quadrangulare	P3		341263	6612698	2	
Hypocalymma quadrangulare	P3		341301	6612678	2	
Hypocalymma quadrangulare	P3		341342	6612764	4	
Hypocalymma quadrangulare	P3		341341	6612756	5	
Hypocalymma quadrangulare	P3		341341	6612750	5	
Hypocalymma quadrangulare	P3		341344	6612718	4	
Hypocalymma quadrangulare	P3		341343	6612682	5	
Hypocalymma quadrangulare	P3		341343	6612670	5	
Hypocalymma quadrangulare	P3		341349	6612626	5	
Hypocalymma quadrangulare	P3		341242	6612910	4	
Hypocalymma quadrangulare	P3		341240	6612923	5	
Hypocalymma quadrangulare	P3		341240	6612932	2	
Hypocalymma quadrangulare	P3		341241	6612935	2	
Hypocalymma quadrangulare	P3		341244	6613014	3	
Hypocalymma quadrangulare	P3		341239	6613020	4	
Hypocalymma quadrangulare	P3		341241	6613116	1	
Hypocalymma quadrangulare	P3		341279	6613116	4	
Hypocalymma quadrangulare	P3		341283	6613095	2	
Hypocalymma quadrangulare	P3		341287	6613076	2	
Hypocalymma quadrangulare	P3		341283	6613068	2	
Hypocalymma quadrangulare	P3		341284	6613053	1	
Hypocalymma quadrangulare	P3		341283	6613041	3	
Hypocalymma quadrangulare	P3		341281	6613030	6	
Hypocalymma quadrangulare	P3		341280	6613012	3	
Hypocalymma quadrangulare	P3		341287	6612988	5	
Hypocalymma quadrangulare	P3		341283	6612972	6	
Hypocalymma quadrangulare	P3		341285	6612967	2	
Hypocalymma quadrangulare	P3		341285	6612958	4	
Hypocalymma quadrangulare	P3		341287	6612922	4	
Hypocalymma quadrangulare	P3		341286	6612895	2	
Hypocalymma quadrangulare	P3		341320	6612804	3	
Hypocalymma quadrangulare	P3		341323	6612865	2	
Hypocalymma quadrangulare	P3		341322	6613023	3	
Hypocalymma quadrangulare	P3		341323	6613095	5	
Hypocalymma quadrangulare	P3		341347	6613076	2	
Hypocalymma quadrangulare	P3		341351	6613066	2	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Hypocalymma quadrangulare	P3		341358	6612941	2	
Hypocalymma quadrangulare	P3		341355	6612901	1	
Hypocalymma quadrangulare	P3		341380	6612921	1	
Hypocalymma quadrangulare	P3		341378	6612945	3	
Hypocalymma quadrangulare	P3		341378	6612995	1	
Hypocalymma quadrangulare	P3		341413	6613000	1	
Hypocalymma quadrangulare	P3		341441	6613001	2	Immediately outside Targeted Survey Area
Hypocalymma quadrangulare	P3		341451	6612964	6	
Hypocalymma quadrangulare	P3		341454	6612916	4	
Hypocalymma quadrangulare	P3		341390	6612831	2	
Hypocalymma quadrangulare	P3		341352	6612800	3	
Hypocalymma quadrangulare	P3		341352	6612794	6	
Hypocalymma quadrangulare	P3		341676	6612521	4	
Hypocalymma quadrangulare	P3		341666	6612533	2	
Hypocalymma quadrangulare	P3		341657	6612535	2	
Hypocalymma quadrangulare	P3		341648	6612544	5	
Hypocalymma quadrangulare	P3		341615	6612561	4	
Hypocalymma quadrangulare	P3		341604	6612565	2	
Hypocalymma quadrangulare	P3		341599	6612564	6	
Hypocalymma quadrangulare	P3		341590	6612575	4	
Hypocalymma quadrangulare	P3		341581	6612582	4	
Hypocalymma quadrangulare	P3		341567	6612590	6	
Hypocalymma quadrangulare	P3		341555	6612590	8	
Hypocalymma quadrangulare	P3		341551	6612597	6	
Hypocalymma quadrangulare	P3		341545	6612601	8	
Hypocalymma quadrangulare	P3		341541	6612605	10	
Hypocalymma quadrangulare	P3		341529	6612609	10	
Hypocalymma quadrangulare	P3		341527	6612588	6	
Hypocalymma quadrangulare	P3		341537	6612587	10	
Hypocalymma quadrangulare	P3		341546	6612580	6	
Hypocalymma quadrangulare	P3		341563	6612569	10	
Hypocalymma quadrangulare	P3		341592	6612555	8	
Hypocalymma quadrangulare	P3		341618	6612540	6	
Hypocalymma quadrangulare	P3		341626	6612535	8	
Hypocalymma quadrangulare	P3		341655	6612515	8	
Hypocalymma quadrangulare	P3		341660	6612511	8	
Hypocalymma quadrangulare	P3		341672	6612400	4	
Hypocalymma quadrangulare	P3		341676	6612396	3	
Hypocalymma quadrangulare	P3		341674	6612390	6	
Hypocalymma quadrangulare	P3		341699	6612280	1	
Hypocalymma quadrangulare	P3		341701	6612302	2	
Hypocalymma quadrangulare	P3		341699	6612309	1	
Hypocalymma quadrangulare	P3		341704	6612351	1	
Hypocalymma quadrangulare	P3		341699	6612366	4	
Hypocalymma quadrangulare	P3		341701	6612373	16	
Hypocalymma quadrangulare	P3		341731	6612352	4	
Hypocalymma quadrangulare	P3		341765	6612247	4	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Hypocalymma quadrangulare	P3		341762	6612338	1	
Hypocalymma quadrangulare	P3		341758	6612352	4	
Hypocalymma quadrangulare	P3		341766	6612363	4	
Hypocalymma quadrangulare	P3		341758	6612377	8	
Hypocalymma quadrangulare	P3		341772	6612365	2	
Hypocalymma quadrangulare	P3		341765	6612381	4	
Hypocalymma quadrangulare	P3		341763	6612384	4	
Hypocalymma quadrangulare	P3		341764	6612396	10	
Hypocalymma quadrangulare	P3		341761	6612424	6	
Hypocalymma quadrangulare	P3		341701	6612447	4	
Hypocalymma quadrangulare	P3		341701	6612427	2	
Hypocalymma quadrangulare	P3		341713	6612417	4	
Hypocalymma quadrangulare	P3		341708	6612432	4	
Hypocalymma quadrangulare	P3		341711	6612458	6	
Hypocalymma quadrangulare	P3		341771	6612378	4	
Hypocalymma quadrangulare	P3		341830	6612345	4	
Hypocalymma quadrangulare	P3		341830	6612364	5	
Hypocalymma quadrangulare	P3		341829	6612369	3	
Hypocalymma quadrangulare	P3		341854	6612375	4	
Hypocalymma quadrangulare	P3		341871	6612335	3	
Hypocalymma quadrangulare	P3		341875	6612343	4	
Hypocalymma quadrangulare	P3		341875	6612373	3	
Hypocalymma quadrangulare	P3		341911	6612322	3	
Hypocalymma quadrangulare	P3		341932	6612355	2	
Hypocalymma quadrangulare	P3		341983	6612252	2	
Hypocalymma quadrangulare	P3		341982	6612262	1	
Hypocalymma quadrangulare	P3		341986	6612280	4	
Hypocalymma quadrangulare	P3		341980	6612289	6	
Hypocalymma quadrangulare	P3		341981	6612317	1	
Hypocalymma quadrangulare	P3		341981	6612430	2	
Hypocalymma quadrangulare	P3		341980	6612440	2	
Hypocalymma quadrangulare	P3		341972	6612456	2	
Hypocalymma quadrangulare	P3		341903	6612473	1	
Hypocalymma quadrangulare	P3		341904	6612429	1	
Hypocalymma quadrangulare	P3		341874	6612434	1	
Hypocalymma quadrangulare	P3		341870	6612474	1	
Hypocalymma quadrangulare	P3		341854	6612479	1	
Hypocalymma quadrangulare	P3		341853	6612458	2	
Hypocalymma quadrangulare	P3		341810	6612444	1	
Hypocalymma quadrangulare	P3		341812	6612467	1	
Hypocalymma quadrangulare	P3		341811	6612545	1	Immediately outside Targeted Survey Area
Hypocalymma quadrangulare	P3		341780	6612533	1	
Hypocalymma quadrangulare	P3		341784	6612516	1	
Hypocalymma quadrangulare	P3		341782	6612494	1	
Hypocalymma quadrangulare	P3		341782	6612494	1	
Hypocalymma quadrangulare	P3		341785	6612487	1	
Hypocalymma quadrangulare	P3		341780	6612480	1	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Hypocalymma quadrangulare	P3		341750	6612483	1	
Hypocalymma quadrangulare	P3		341751	6612516	2	
Hypocalymma quadrangulare	P3		341752	6612544	2	
Hypocalymma quadrangulare	P3		341723	6612561	3	
Hypocalymma quadrangulare	P3		341725	6612547	1	
Hypocalymma quadrangulare	P3		341724	6612526	2	
Hypocalymma quadrangulare	P3		341721	6612503	1	
Hypocalymma quadrangulare	P3		342093	6612361	2	
Hypocalymma quadrangulare	P3		342092	6612384	2	
Hypocalymma quadrangulare	P3		342069	6612405	4	
Hypocalymma quadrangulare	P3		342053	6612415	1	Immediately outside Targeted Survey Area
Hypocalymma quadrangulare	P3		342028	6612296	1	
Hypocalymma quadrangulare	P3		342025	6612280	1	
Hypocalymma quadrangulare	P3		342025	6612272	4	
Hypocalymma quadrangulare	P3		342028	6612254	2	
Hypocalymma quadrangulare	P3		342028	6612217	1	
Hypocalymma quadrangulare	P3		342082	6612272	1	
Hypocalymma quadrangulare	P3		342115	6612378	5	
Hypocalymma quadrangulare	P3		342144	6612296	1	
Hypocalymma quadrangulare	P3		342171	6612192	4	
Hypocalymma quadrangulare	P3		342323	6612283	1	
Hypocalymma quadrangulare	P3		342326	6612271	1	
Hypocalymma quadrangulare	P3		342387	6612245	4	
Hypocalymma quadrangulare	P3		342413	6612133	3	
Hypocalymma quadrangulare	P3		342410	6612147	4	
Hypocalymma quadrangulare	P3		342410	6612176	1	
Hypocalymma quadrangulare	P3		342254	6612121	1	
Hypocalymma quadrangulare	P3		342436	6611872	2	
Hypocalymma quadrangulare	P3		342426	6611821	1	
Hypocalymma quadrangulare	P3		342375	6611779	3	
Hypocalymma quadrangulare	P3		342374	6611812	4	
Hypocalymma quadrangulare	P3		342493	6611923	1	
Hypocalymma quadrangulare	P3		342748	6611657	1	
Hypocalymma quadrangulare	P3		342749	6611649	1	
Hypocalymma quadrangulare	P3		342408	6612301	4	
Hypocalymma quadrangulare	P3		343173	6611950	1	Immediately outside Targeted Survey Area
Hypocalymma quadrangulare	P3		343175	6611971	1	
Hypocalymma quadrangulare	P3		343176	6612012	2	
Hypocalymma quadrangulare	P3		343208	6612031	1	
Hypocalymma quadrangulare	P3		343208	6612019	3	
Hypocalymma quadrangulare	P3		343213	6612015	1	
Hypocalymma quadrangulare	P3		343213	6611927	1	Immediately outside Targeted Survey Area
Hypocalymma quadrangulare	P3		343255	6611940	2	
Hypocalymma quadrangulare	P3		343253	6611962	1	
Hypocalymma quadrangulare	P3		343248	6612019	1	
Hypocalymma quadrangulare	P3		343254	6612029	2	
Hypocalymma quadrangulare	P3		343253	6612052	1	Immediately outside Targeted Survey Area

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Hypocalymma quadrangulare	P3		343295	6611883	6	
Hypocalymma quadrangulare	P3		343289	6611853	2	Immediately outside Targeted Survey Area
Hypocalymma quadrangulare	P3		343331	6611828	2	Immediately outside Targeted Survey Area
Hypocalymma quadrangulare	P3		343333	6611834	2	Immediately outside Targeted Survey Area
Hypocalymma quadrangulare	P3		343332	6611865	2	
Hypocalymma quadrangulare	P3		343332	6611894	1	
Hypocalymma quadrangulare	P3		343329	6611977	2	
Hypocalymma quadrangulare	P3		343265	6611885	1	Immediately outside Targeted Survey Area
Hypocalymma quadrangulare	P3		343263	6611921	1	
Hypocalymma quadrangulare	P3		343237	6611940	2	
Hypocalymma quadrangulare	P3		343240	6611921	2	
Hypocalymma quadrangulare	P3		343591	6611711	3	
Hypocalymma quadrangulare	P3		343595	6611702	1	
Hypocalymma quadrangulare	P3		343590	6611700	1	
Hypocalymma quadrangulare	P3		343589	6611686	1	
Hypocalymma quadrangulare	P3		343590	6611606	1	Immediately outside Targeted Survey Area
Hypocalymma quadrangulare	P3		344350	6611482	5	
Hypocalymma quadrangulare	P3		344342	6611470	6	
Hypocalymma quadrangulare	P3		344329	6611465	1	
Hypocalymma quadrangulare	P3		343632	6611720	2	
Hypocalymma quadrangulare	P3		343633	6611698	3	
Hypocalymma quadrangulare	P3		343634	6611689	1	
Hypocalymma quadrangulare	P3		343634	6611631	2	
Hypocalymma quadrangulare	P3		343631	6611614	1	
Hypocalymma quadrangulare	P3		343632	6611582	1	Immediately outside Targeted Survey Area
Hypocalymma quadrangulare	P3		343674	6611623	3	
Hypocalymma quadrangulare	P3		343672	6611629	3	
Hypocalymma quadrangulare	P3		343670	6611637	1	
Hypocalymma quadrangulare	P3		343671	6611663	2	
Hypocalymma quadrangulare	P3		343708	6611665	1	
Hypocalymma quadrangulare	P3		343710	6611635	1	
Hypocalymma quadrangulare	P3		343713	6611616	1	
Hypocalymma quadrangulare	P3		343749	6611542	1	
Hypocalymma quadrangulare	P3		343791	6611589	1	
Hypocalymma quadrangulare	P3		343790	6611583	1	
Hypocalymma quadrangulare	P3		342655	6612238	3	Immediately outside Targeted Survey Area
Hypocalymma quadrangulare	P3		342722	6611709	1	
Hypocalymma quadrangulare	P3		342728	6611677	1	
Hypocalymma quadrangulare	P3		342731	6611643	5	
Hypocalymma quadrangulare	P3		342784	6611572	5	
Hypocalymma quadrangulare	P3		342780	6611587	3	
Hypocalymma quadrangulare	P3		342763	6611597	5	
Hypocalymma quadrangulare	P3		342762	6611588	10	
Hypocalymma quadrangulare	P3		342533	6612213	5	
Hypocalymma quadrangulare	P3		342410	6612283	8	
Hypocalymma quadrangulare	P3		342341	6612320	3	
Hypocalymma quadrangulare	P3		343155	6611986	2	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Hypocalymma quadrangulare	P3		343153	6611998	5	
Hypocalymma quadrangulare	P3		343194	6612085	5	Immediately outside Targeted Survey Area
Hypocalymma quadrangulare	P3		343193	6611976	5	
Hypocalymma quadrangulare	P3		343185	6611957	6	
Hypocalymma quadrangulare	P3		343233	6611902	8	Immediately outside Targeted Survey Area
Hypocalymma quadrangulare	P3		343232	6611922	5	
Hypocalymma quadrangulare	P3		343231	6611947	7	
Hypocalymma quadrangulare	P3		343231	6612037	2	
Hypocalymma quadrangulare	P3		343312	6611916	5	
Hypocalymma quadrangulare	P3		343350	6612002	3	Immediately outside Targeted Survey Area
Hypocalymma quadrangulare	P3		343349	6611905	5	
Hypocalymma quadrangulare	P3		343350	6611890	9	
Hypocalymma quadrangulare	P3		343339	6611850	4	Immediately outside Targeted Survey Area
Hypocalymma quadrangulare	P3		343340	6611862	7	
Hypocalymma quadrangulare	P3		343320	6611844	5	Immediately outside Targeted Survey Area
Hypocalymma quadrangulare	P3		343299	6611840	8	Immediately outside Targeted Survey Area
Hypocalymma quadrangulare	P3		343306	6611861	6	Immediately outside Targeted Survey Area
Hypocalymma quadrangulare	P3		343281	6611890	5	
Hypocalymma quadrangulare	P3		343282	6611867	6	Immediately outside Targeted Survey Area
Hypocalymma quadrangulare	P3		343751	6611445	5	
Hypocalymma quadrangulare	P3		343876	6611401	7	
Hypocalymma quadrangulare	P3		344072	6611414	8	
Hypocalymma quadrangulare	P3		344104	6611419	10	
Hypocalymma quadrangulare	P3		344130	6611418	12	
Hypocalymma quadrangulare	P3		344238	6611425	5	
Hypocalymma quadrangulare	P3		344328	6611454	3	
Hypocalymma quadrangulare	P3		344350	6611466	4	
Hypocalymma quadrangulare	P3		344427	6611523	5	
Hypocalymma quadrangulare	P3		343621	6611677	8	
Hypocalymma quadrangulare	P3		343650	6611645	4	
Hypocalymma quadrangulare	P3		343690	6611639	4	
Hypocalymma quadrangulare	P3		343732	6611540	5	
Hypocalymma quadrangulare	P3		343733	6611512	8	Immediately outside Targeted Survey Area
Hypocalymma quadrangulare	P3		343728	6611470	2	
Hypocalymma quadrangulare	P3		343757	6611504	3	Immediately outside Targeted Survey Area
Hypocalymma quadrangulare	P3		343771	6611541	1	Immediately outside Targeted Survey Area
Hypocalymma quadrangulare	P3		343761	6611641	4	Immediately outside Targeted Survey Area
Hypocalymma quadrangulare	P3		343742	6611650	2	
Hypocalymma quadrangulare	P3		343739	6611624	2	
Hypocalymma quadrangulare	P3		343704	6611632	4	
Hypocalymma quadrangulare	P3		343679	6611644	5	
Hypocalymma quadrangulare	P3		343641	6611720	1	Immediately outside Targeted Survey Area
Isopogon panduratus **subsp. *palustris***	P3		344930	6609897	1	
Isopogon panduratus **subsp. *palustris***	P3		344851	6610214	2	
Isopogon panduratus **subsp. *palustris***	P3		344852	6610193	10	
Isopogon panduratus **subsp. *palustris***	P3		344850	6610167	15	
Isopogon panduratus **subsp. *palustris***	P3		344854	6610150	1	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Isopogon panduratus subsp. *palustris*	P3		344853	6610107	1	
Isopogon panduratus subsp. *palustris*	P3		344853	6610078	1	
Isopogon panduratus subsp. *palustris*	P3		344854	6610022	4	
Isopogon panduratus subsp. *palustris*	P3		344856	6610008	8	
Isopogon panduratus subsp. *palustris*	P3		344849	6609976	1	
Isopogon panduratus subsp. *palustris*	P3		344850	6609922	3	
Isopogon panduratus subsp. *palustris*	P3		344773	6609974	2	
Isopogon panduratus subsp. *palustris*	P3		344774	6609990	3	
Isopogon panduratus subsp. *palustris*	P3		344773	6610027	1	
Isopogon panduratus subsp. *palustris*	P3		344773	6610063	1	
Isopogon panduratus subsp. *palustris*	P3		344769	6610092	5	
Isopogon panduratus subsp. *palustris*	P3		344773	6610109	4	
Isopogon panduratus subsp. *palustris*	P3		344773	6610143	2	
Isopogon panduratus subsp. *palustris*	P3		344688	6610025	2	
Isopogon panduratus subsp. *palustris*	P3		344613	6610360	1	
Isopogon panduratus subsp. *palustris*	P3		344613	6610509	1	
Isopogon panduratus subsp. *palustris*	P3		344153	6611404	1	Immediately outside Targeted Survey Area
Isopogon panduratus subsp. *palustris*	P3		344103	6611364	2	
Isopogon panduratus subsp. *palustris*	P3		340835	6612760	2	
Isopogon panduratus subsp. *palustris*	P3		340933	6612745	1	
Isopogon panduratus subsp. *palustris*	P3		340933	6612762	10	
Isopogon panduratus subsp. *palustris*	P3		340934	6612815	2	
Isopogon panduratus subsp. *palustris*	P3		340932	6612829	2	Immediately outside Targeted Survey Area
Isopogon panduratus subsp. *palustris*	P3		340951	6612965	1	
Isopogon panduratus subsp. *palustris*	P3		340874	6613041	2	
Isopogon panduratus subsp. *palustris*	P3		341262	6612938	1	
Isopogon panduratus subsp. *palustris*	P3		345034	6609841	4	
Isopogon panduratus subsp. *palustris*	P3		344949	6610096	1	
Isopogon panduratus subsp. *palustris*	P3		344953	6610108	1	
Isopogon panduratus subsp. *palustris*	P3		344872	6610213	4	
Isopogon panduratus subsp. *palustris*	P3		344791	6610105	5	
Isopogon panduratus subsp. *palustris*	P3		344788	6610049	1	
Isopogon panduratus subsp. *palustris*	P3		344792	6610012	2	
Isopogon panduratus subsp. *palustris*	P3		344792	6610005	2	
Isopogon panduratus subsp. *palustris*	P3		344791	6609957	1	
Isopogon panduratus subsp. *palustris*	P3		344714	6610030	1	
Isopogon panduratus subsp. *palustris*	P3		344713	6610045	2	
Isopogon panduratus subsp. *palustris*	P3		344712	6610074	1	
Isopogon panduratus subsp. *palustris*	P3		344714	6610217	1	
Isopogon panduratus subsp. *palustris*	P3		344633	6610078	1	
Isopogon panduratus subsp. *palustris*	P3		344633	6610061	1	
Isopogon panduratus subsp. *palustris*	P3		344564	6610109	1	
Isopogon panduratus subsp. *palustris*	P3		340908	6612840	2	
Isopogon panduratus subsp. *palustris*	P3		340910	6612830	7	
Isopogon panduratus subsp. *palustris*	P3		340913	6612819	7	
Isopogon panduratus subsp. *palustris*	P3		340910	6612793	2	
Isopogon panduratus subsp. *palustris*	P3		340912	6612756	6	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Isopogon panduratus* subsp. *palustris	P3		340913	6612698	1	
Isopogon panduratus* subsp. *palustris	P3		340974	6612929	2	
Isopogon panduratus* subsp. *palustris	P3		340970	6612972	1	
Isopogon panduratus* subsp. *palustris	P3		340969	6612981	1	
Isopogon panduratus* subsp. *palustris	P3		340897	6613068	2	
Isopogon panduratus* subsp. *palustris	P3		341113	6613089	11	
Isopogon panduratus* subsp. *palustris	P3		341149	6613107	10	
Isopogon panduratus* subsp. *palustris	P3		341151	6613138	5	
Isopogon panduratus* subsp. *palustris	P3		341173	6613147	5	
Isopogon panduratus* subsp. *palustris	P3		341172	6613138	6	
Isopogon panduratus* subsp. *palustris	P3		341177	6613119	1	
Isopogon panduratus* subsp. *palustris	P3		341196	6613148	1	Immediately outside Targeted Survey Area
Isopogon panduratus* subsp. *palustris	P3		341194	6613140	3	
Isopogon panduratus* subsp. *palustris	P3		341191	6613132	2	
Isopogon panduratus* subsp. *palustris	P3		341193	6612916	3	
Isopogon panduratus* subsp. *palustris	P3		341191	6612900	2	
Isopogon panduratus* subsp. *palustris	P3		341191	6612891	3	
Isopogon panduratus* subsp. *palustris	P3		341190	6612868	1	
Isopogon panduratus* subsp. *palustris	P3		341229	6612800	1	
Isopogon panduratus* subsp. *palustris	P3		341362	6612709	1	
Isopogon panduratus* subsp. *palustris	P3		341434	6612588	30	
Isopogon panduratus* subsp. *palustris	P3		341429	6612605	10	
Isopogon panduratus* subsp. *palustris	P3		341430	6612625	10	
Isopogon panduratus* subsp. *palustris	P3		341428	6612644	2	
Isopogon panduratus* subsp. *palustris	P3		341428	6612651	2	
Isopogon panduratus* subsp. *palustris	P3		341431	6612719	2	
Isopogon panduratus* subsp. *palustris	P3		341459	6612985	1	Immediately outside Targeted Survey Area
Isopogon panduratus* subsp. *palustris	P3		341375	6612761	1	
Isopogon panduratus* subsp. *palustris	P3		341415	6612737	11	
Isopogon panduratus* subsp. *palustris	P3		341412	6612753	5	
Isopogon panduratus* subsp. *palustris	P3		341414	6612770	2	
Isopogon panduratus* subsp. *palustris	P3		341430	6612751	5	
Isopogon panduratus* subsp. *palustris	P3		341433	6612736	2	
Isopogon panduratus* subsp. *palustris	P3		342062	6612390	1	
Isopogon panduratus* subsp. *palustris	P3		342305	6612231	1	
Isopogon panduratus* subsp. *palustris	P3		342391	6612195	1	
Isopogon panduratus* subsp. *palustris	P3		342422	6612174	1	
Isopogon panduratus* subsp. *palustris	P3		342453	6612168	1	
Isopogon panduratus* subsp. *palustris	P3		342451	6612146	1	
Isopogon panduratus* subsp. *palustris	P3		342153	6611944	1	
Isopogon panduratus* subsp. *palustris	P3		342213	6611891	2	
Isopogon panduratus* subsp. *palustris	P3		342212	6611899	8	
Isopogon panduratus* subsp. *palustris	P3		342210	6611907	3	
Isopogon panduratus* subsp. *palustris	P3		342212	6611922	4	
Isopogon panduratus* subsp. *palustris	P3		342214	6611953	3	
Isopogon panduratus* subsp. *palustris	P3		342213	6612027	1	
Isopogon panduratus* subsp. *palustris	P3		342210	6612063	1	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Isopogon panduratus subsp. *palustris*	P3		342272	6612111	2	
Isopogon panduratus subsp. *palustris*	P3		342270	6612094	1	
Isopogon panduratus subsp. *palustris*	P3		342271	6612010	1	
Isopogon panduratus subsp. *palustris*	P3		342273	6611952	1	
Isopogon panduratus subsp. *palustris*	P3		342267	6611941	4	
Isopogon panduratus subsp. *palustris*	P3		342270	6611937	3	
Isopogon panduratus subsp. *palustris*	P3		342331	6611988	20	
Isopogon panduratus subsp. *palustris*	P3		342331	6612013	10	
Isopogon panduratus subsp. *palustris*	P3		342337	6612032	3	
Isopogon panduratus subsp. *palustris*	P3		342333	6612049	2	
Isopogon panduratus subsp. *palustris*	P3		342329	6612109	10	
Isopogon panduratus subsp. *palustris*	P3		342332	6612131	10	
Isopogon panduratus subsp. *palustris*	P3		342408	6612080	1	
Isopogon panduratus subsp. *palustris*	P3		342411	6612071	3	
Isopogon panduratus subsp. *palustris*	P3		342408	6612044	1	
Isopogon panduratus subsp. *palustris*	P3		342454	6612093	5	
Isopogon panduratus subsp. *palustris*	P3		342453	6612055	1	
Isopogon panduratus subsp. *palustris*	P3		342452	6612031	3	
Isopogon panduratus subsp. *palustris*	P3		342452	6612009	5	
Isopogon panduratus subsp. *palustris*	P3		342446	6611954	1	
Isopogon panduratus subsp. *palustris*	P3		342448	6611945	1	
Isopogon panduratus subsp. *palustris*	P3		342450	6611937	5	
Isopogon panduratus subsp. *palustris*	P3		342450	6611792	10	
Isopogon panduratus subsp. *palustris*	P3		342449	6611777	10	
Isopogon panduratus subsp. *palustris*	P3		342448	6611758	10	
Isopogon panduratus subsp. *palustris*	P3		342452	6611740	10	
Isopogon panduratus subsp. *palustris*	P3		342450	6611726	10	
Isopogon panduratus subsp. *palustris*	P3		342393	6611769	10	
Isopogon panduratus subsp. *palustris*	P3		342396	6611790	10	
Isopogon panduratus subsp. *palustris*	P3		342394	6611821	10	
Isopogon panduratus subsp. *palustris*	P3		342391	6611855	5	
Isopogon panduratus subsp. *palustris*	P3		342390	6611880	5	
Isopogon panduratus subsp. *palustris*	P3		342393	6611905	10	
Isopogon panduratus subsp. *palustris*	P3		342394	6611927	10	
Isopogon panduratus subsp. *palustris*	P3		342391	6611950	20	
Isopogon panduratus subsp. *palustris*	P3		342334	6611974	10	
Isopogon panduratus subsp. *palustris*	P3		342332	6611940	3	
Isopogon panduratus subsp. *palustris*	P3		342331	6611918	3	
Isopogon panduratus subsp. *palustris*	P3		342330	6611868	6	
Isopogon panduratus subsp. *palustris*	P3		342330	6611847	3	
Isopogon panduratus subsp. *palustris*	P3		342333	6611823	3	
Isopogon panduratus subsp. *palustris*	P3		342275	6611841	3	
Isopogon panduratus subsp. *palustris*	P3		342274	6611876	3	
Isopogon panduratus subsp. *palustris*	P3		342271	6611900	3	
Isopogon panduratus subsp. *palustris*	P3		342271	6611912	5	
Isopogon panduratus subsp. *palustris*	P3		342271	6611924	10	
Isopogon panduratus subsp. *palustris*	P3		342517	6612109	1	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Isopogon panduratus subsp. *palustris*	P3		342510	6611795	3	
Isopogon panduratus subsp. *palustris*	P3		342513	6611778	5	
Isopogon panduratus subsp. *palustris*	P3		342514	6611766	5	
Isopogon panduratus subsp. *palustris*	P3		342510	6611751	10	
Isopogon panduratus subsp. *palustris*	P3		342513	6611728	5	
Isopogon panduratus subsp. *palustris*	P3		342573	6611689	20	
Isopogon panduratus subsp. *palustris*	P3		342570	6611721	20	
Isopogon panduratus subsp. *palustris*	P3		342570	6611760	5	
Isopogon panduratus subsp. *palustris*	P3		342569	6611792	5	
Isopogon panduratus subsp. *palustris*	P3		342572	6611813	5	
Isopogon panduratus subsp. *palustris*	P3		342576	6611840	5	
Isopogon panduratus subsp. *palustris*	P3		342571	6611857	10	
Isopogon panduratus subsp. *palustris*	P3		342572	6612094	3	
Isopogon panduratus subsp. *palustris*	P3		342629	6611765	10	
Isopogon panduratus subsp. *palustris*	P3		342632	6611736	10	
Isopogon panduratus subsp. *palustris*	P3		342631	6611714	20	
Isopogon panduratus subsp. *palustris*	P3		342632	6611686	5	
Isopogon panduratus subsp. *palustris*	P3		342632	6611674	5	
Isopogon panduratus subsp. *palustris*	P3		342632	6611660	5	
Isopogon panduratus subsp. *palustris*	P3		342691	6611597	5	
Isopogon panduratus subsp. *palustris*	P3		342693	6611648	1	
Isopogon panduratus subsp. *palustris*	P3		345050	6609829	3	
Isopogon panduratus subsp. *palustris*	P3		344976	6610021	1	
Isopogon panduratus subsp. *palustris*	P3		344969	6610153	1	
Isopogon panduratus subsp. *palustris*	P3		344895	6609995	1	
Isopogon panduratus subsp. *palustris*	P3		344896	6609918	1	
Isopogon panduratus subsp. *palustris*	P3		344815	6610158	3	
Isopogon panduratus subsp. *palustris*	P3		344811	6610097	1	
Isopogon panduratus subsp. *palustris*	P3		344810	6610084	2	
Isopogon panduratus subsp. *palustris*	P3		344734	6610014	1	
Isopogon panduratus subsp. *palustris*	P3		344734	6610041	3	
Isopogon panduratus subsp. *palustris*	P3		344728	6610053	3	
Isopogon panduratus subsp. *palustris*	P3		344584	6610082	1	Immediately outside Targeted Survey Area
Isopogon panduratus subsp. *palustris*	P3		344577	6610088	3	Immediately outside Targeted Survey Area
Isopogon panduratus subsp. *palustris*	P3		344586	6610367	1	
Isopogon panduratus subsp. *palustris*	P3		344568	6610428	2	
Isopogon panduratus subsp. *palustris*	P3		344572	6610484	1	
Isopogon panduratus subsp. *palustris*	P3		341398	6612742	4	
Isopogon panduratus subsp. *palustris*	P3		341449	6612629	4	
Isopogon panduratus subsp. *palustris*	P3		341444	6612621	25	
Isopogon panduratus subsp. *palustris*	P3		341451	6612609	25	
Isopogon panduratus subsp. *palustris*	P3		341450	6612594	10	
Isopogon panduratus subsp. *palustris*	P3		342166	6612159	1	
Isopogon panduratus subsp. *palustris*	P3		342341	6612195	1	
Isopogon panduratus subsp. *palustris*	P3		342466	6612197	1	
Isopogon panduratus subsp. *palustris*	P3		342462	6612192	1	
Isopogon panduratus subsp. *palustris*	P3		342465	6612130	2	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Isopogon panduratus subsp. *palustris*	P3		342462	6612119	1	
Isopogon panduratus subsp. *palustris*	P3		342461	6612107	10	
Isopogon panduratus subsp. *palustris*	P3		342176	6612074	1	
Isopogon panduratus subsp. *palustris*	P3		342175	6612060	1	
Isopogon panduratus subsp. *palustris*	P3		342176	6612047	1	
Isopogon panduratus subsp. *palustris*	P3		342177	6612034	1	
Isopogon panduratus subsp. *palustris*	P3		342170	6612011	1	
Isopogon panduratus subsp. *palustris*	P3		342173	6611921	1	
Isopogon panduratus subsp. *palustris*	P3		342174	6611914	3	
Isopogon panduratus subsp. *palustris*	P3		342174	6611902	1	
Isopogon panduratus subsp. *palustris*	P3		342213	6611874	2	Immediately outside Targeted Survey Area
Isopogon panduratus subsp. *palustris*	P3		342227	6611863	4	Immediately outside Targeted Survey Area
Isopogon panduratus subsp. *palustris*	P3		342235	6611881	1	
Isopogon panduratus subsp. *palustris*	P3		342232	6611900	4	
Isopogon panduratus subsp. *palustris*	P3		342229	6611913	6	
Isopogon panduratus subsp. *palustris*	P3		342227	6611927	10	
Isopogon panduratus subsp. *palustris*	P3		342236	6611944	2	
Isopogon panduratus subsp. *palustris*	P3		342230	6612096	1	
Isopogon panduratus subsp. *palustris*	P3		342235	6612128	3	
Isopogon panduratus subsp. *palustris*	P3		342287	6612110	1	
Isopogon panduratus subsp. *palustris*	P3		342289	6612010	2	
Isopogon panduratus subsp. *palustris*	P3		342286	6611999	3	
Isopogon panduratus subsp. *palustris*	P3		342291	6611984	3	
Isopogon panduratus subsp. *palustris*	P3		342294	6611976	20	
Isopogon panduratus subsp. *palustris*	P3		342291	6611958	20	
Isopogon panduratus subsp. *palustris*	P3		342339	6611986	10	
Isopogon panduratus subsp. *palustris*	P3		342349	6612000	25	
Isopogon panduratus subsp. *palustris*	P3		342349	6612024	5	
Isopogon panduratus subsp. *palustris*	P3		342357	6612123	1	
Isopogon panduratus subsp. *palustris*	P3		342475	6612101	1	
Isopogon panduratus subsp. *palustris*	P3		342474	6612166	2	
Isopogon panduratus subsp. *palustris*	P3		342493	6612141	3	
Isopogon panduratus subsp. *palustris*	P3		342511	6612124	2	
Isopogon panduratus subsp. *palustris*	P3		342473	6612021	1	
Isopogon panduratus subsp. *palustris*	P3		342467	6611946	2	
Isopogon panduratus subsp. *palustris*	P3		342475	6611800	1	
Isopogon panduratus subsp. *palustris*	P3		342475	6611787	10	
Isopogon panduratus subsp. *palustris*	P3		342471	6611765	10	
Isopogon panduratus subsp. *palustris*	P3		342473	6611752	10	
Isopogon panduratus subsp. *palustris*	P3		342472	6611732	15	
Isopogon panduratus subsp. *palustris*	P3		342413	6611743	20	Immediately outside Targeted Survey Area
Isopogon panduratus subsp. *palustris*	P3		342412	6611759	20	
Isopogon panduratus subsp. *palustris*	P3		342413	6611781	15	
Isopogon panduratus subsp. *palustris*	P3		342413	6611797	20	
Isopogon panduratus subsp. *palustris*	P3		342412	6611817	15	
Isopogon panduratus subsp. *palustris*	P3		342409	6611860	4	
Isopogon panduratus subsp. *palustris*	P3		342409	6611874	1	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Isopogon panduratus subsp. *palustris*	P3		342409	6611890	10	
Isopogon panduratus subsp. *palustris*	P3		342408	6611912	15	
Isopogon panduratus subsp. *palustris*	P3		342410	6611933	10	
Isopogon panduratus subsp. *palustris*	P3		342412	6611952	20	
Isopogon panduratus subsp. *palustris*	P3		342414	6611973	20	
Isopogon panduratus subsp. *palustris*	P3		342412	6611994	25	
Isopogon panduratus subsp. *palustris*	P3		342353	6611986	10	
Isopogon panduratus subsp. *palustris*	P3		342351	6611971	10	
Isopogon panduratus subsp. *palustris*	P3		342356	6611933	4	
Isopogon panduratus subsp. *palustris*	P3		342355	6611909	10	
Isopogon panduratus subsp. *palustris*	P3		342348	6611850	4	
Isopogon panduratus subsp. *palustris*	P3		342358	6611829	10	
Isopogon panduratus subsp. *palustris*	P3		342354	6611813	3	
Isopogon panduratus subsp. *palustris*	P3		342293	6611856	3	
Isopogon panduratus subsp. *palustris*	P3		342298	6611882	6	
Isopogon panduratus subsp. *palustris*	P3		342295	6611894	4	
Isopogon panduratus subsp. *palustris*	P3		342288	6611913	8	
Isopogon panduratus subsp. *palustris*	P3		342283	6611928	10	
Isopogon panduratus subsp. *palustris*	P3		342531	6611820	8	
Isopogon panduratus subsp. *palustris*	P3		342535	6611799	2	
Isopogon panduratus subsp. *palustris*	P3		342533	6611791	10	
Isopogon panduratus subsp. *palustris*	P3		342532	6611780	10	
Isopogon panduratus subsp. *palustris*	P3		342529	6611765	10	
Isopogon panduratus subsp. *palustris*	P3		342529	6611749	5	
Isopogon panduratus subsp. *palustris*	P3		342531	6611734	7	
Isopogon panduratus subsp. *palustris*	P3		342539	6611675	10	
Isopogon panduratus subsp. *palustris*	P3		342598	6611656	12	
Isopogon panduratus subsp. *palustris*	P3		342596	6611693	3	
Isopogon panduratus subsp. *palustris*	P3		342592	6611706	5	
Isopogon panduratus subsp. *palustris*	P3		342595	6611726	5	
Isopogon panduratus subsp. *palustris*	P3		342590	6611737	12	
Isopogon panduratus subsp. *palustris*	P3		342590	6611837	3	
Isopogon panduratus subsp. *palustris*	P3		342588	6611852	4	
Isopogon panduratus subsp. *palustris*	P3		342654	6611771	25	
Isopogon panduratus subsp. *palustris*	P3		342653	6611755	25	
Isopogon panduratus subsp. *palustris*	P3		342650	6611740	15	
Isopogon panduratus subsp. *palustris*	P3		342650	6611711	5	
Isopogon panduratus subsp. *palustris*	P3		342653	6611658	5	
Isopogon panduratus subsp. *palustris*	P3		342655	6611612	2	
Isopogon panduratus subsp. *palustris*	P3		342707	6611655	1	
Isopogon panduratus subsp. *palustris*	P3		344471	6610858	3	
Isopogon panduratus subsp. *palustris*	P3		344469	6610881	2	
Isopogon panduratus subsp. *palustris*	P3		344468	6610895	7	
Isopogon panduratus subsp. *palustris*	P3		344471	6610909	2	
Isopogon panduratus subsp. *palustris*	P3		344470	6610915	4	
Isopogon panduratus subsp. *palustris*	P3		344311	6610388	1	
Isopogon panduratus subsp. *palustris*	P3		344309	6610373	1	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Isopogon panduratus subsp. *palustris*	P3		344230	6610431	2	
Isopogon panduratus subsp. *palustris*	P3		344151	6611406	1	Immediately outside Targeted Survey Area
Isopogon panduratus subsp. *palustris*	P3		340893	6612851	6	
Isopogon panduratus subsp. *palustris*	P3		340919	6613056	10	
Isopogon panduratus subsp. *palustris*	P3		340908	6613059	4	
Isopogon panduratus subsp. *palustris*	P3		340913	6613047	4	
Isopogon panduratus subsp. *palustris*	P3		340914	6613035	4	
Isopogon panduratus subsp. *palustris*	P3		340910	6613017	2	
Isopogon panduratus subsp. *palustris*	P3		340831	6612956	1	
Isopogon panduratus subsp. *palustris*	P3		341045	6612820	1	
Isopogon panduratus subsp. *palustris*	P3		341175	6612842	1	
Isopogon panduratus subsp. *palustris*	P3		341173	6612799	1	
Isopogon panduratus subsp. *palustris*	P3		341410	6612589	1	Immediately outside Targeted Survey Area
Isopogon panduratus subsp. *palustris*	P3		341415	6612592	4	
Isopogon panduratus subsp. *palustris*	P3		341416	6612603	4	
Isopogon panduratus subsp. *palustris*	P3		341415	6612625	2	
Isopogon panduratus subsp. *palustris*	P3		341417	6612634	15	
Isopogon panduratus subsp. *palustris*	P3		341415	6612652	10	
Isopogon panduratus subsp. *palustris*	P3		341414	6612698	3	
Isopogon panduratus subsp. *palustris*	P3		341413	6612697	3	
Isopogon panduratus subsp. *palustris*	P3		341437	6612965	3	
Isopogon panduratus subsp. *palustris*	P3		341395	6612758	4	
Isopogon panduratus subsp. *palustris*	P3		341398	6612749	4	
Isopogon panduratus subsp. *palustris*	P3		343641	6611150	25	
Isopogon panduratus subsp. *palustris*	P3		343651	6611177	35	
Isopogon panduratus subsp. *palustris*	P3		343651	6611202	10	
Isopogon panduratus subsp. *palustris*	P3		343434	6611281	10	
Isopogon panduratus subsp. *palustris*	P3		343432	6611233	5	
Isopogon panduratus subsp. *palustris*	P3		343430	6611176	20	
Isopogon panduratus subsp. *palustris*	P3		343434	6611142	15	
Isopogon panduratus subsp. *palustris*	P3		343435	6611124	10	
Isopogon panduratus subsp. *palustris*	P3		343513	6611062	20	
Isopogon panduratus subsp. *palustris*	P3		343509	6611090	30	
Isopogon panduratus subsp. *palustris*	P3		343511	6611119	40	
Isopogon panduratus subsp. *palustris*	P3		343511	6611157	40	
Isopogon panduratus subsp. *palustris*	P3		343511	6611211	2	
Isopogon panduratus subsp. *palustris*	P3		343505	6611351	1	
Isopogon panduratus subsp. *palustris*	P3		343344	6611495	3	
Isopogon panduratus subsp. *palustris*	P3		343352	6611470	1	
Isopogon panduratus subsp. *palustris*	P3		343351	6611344	3	
Isopogon panduratus subsp. *palustris*	P3		343341	6611280	1	
Isopogon panduratus subsp. *palustris*	P3		343347	6611185	1	
Isopogon panduratus subsp. *palustris*	P3		343266	6611298	10	
Isopogon panduratus subsp. *palustris*	P3		342947	6611413	1	Immediately outside Targeted Survey Area
Isopogon panduratus subsp. *palustris*	P3		342950	6611606	3	
Isopogon panduratus subsp. *palustris*	P3		342790	6611777	1	
Isopogon panduratus subsp. *palustris*	P3		344512	6610308	4	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Isopogon panduratus subsp. *palustris*	P3		344424	6610190	9	Immediately outside Targeted Survey Area
Isopogon panduratus subsp. *palustris*	P3		344275	6610415	6	
Isopogon panduratus subsp. *palustris*	P3		344279	6610425	3	
Isopogon panduratus subsp. *palustris*	P3		344270	6610787	2	
Isopogon panduratus subsp. *palustris*	P3		343882	6610462	9	
Isopogon panduratus subsp. *palustris*	P3		343639	6611140	7	
Isopogon panduratus subsp. *palustris*	P3		343618	6611163	3	
Isopogon panduratus subsp. *palustris*	P3		343618	6611144	17	
Isopogon panduratus subsp. *palustris*	P3		343618	6611125	8	
Isopogon panduratus subsp. *palustris*	P3		343631	6611076	8	
Isopogon panduratus subsp. *palustris*	P3		343632	6611112	7	
Isopogon panduratus subsp. *palustris*	P3		343635	6611128	6	
Isopogon panduratus subsp. *palustris*	P3		343633	6611146	11	
Isopogon panduratus subsp. *palustris*	P3		343632	6611163	13	
Isopogon panduratus subsp. *palustris*	P3		343633	6611177	9	
Isopogon panduratus subsp. *palustris*	P3		343636	6611195	21	
Isopogon panduratus subsp. *palustris*	P3		343631	6611224	6	
Isopogon panduratus subsp. *palustris*	P3		343471	6611155	14	
Isopogon panduratus subsp. *palustris*	P3		343469	6611137	14	
Isopogon panduratus subsp. *palustris*	P3		343469	6611123	8	
Isopogon panduratus subsp. *palustris*	P3		343471	6611110	13	
Isopogon panduratus subsp. *palustris*	P3		343471	6611092	9	
Isopogon panduratus subsp. *palustris*	P3		343549	6611039	1	
Isopogon panduratus subsp. *palustris*	P3		343555	6611059	6	
Isopogon panduratus subsp. *palustris*	P3		343552	6611077	10	
Isopogon panduratus subsp. *palustris*	P3		343546	6611108	31	
Isopogon panduratus subsp. *palustris*	P3		343551	6611127	14	
Isopogon panduratus subsp. *palustris*	P3		343551	6611147	11	
Isopogon panduratus subsp. *palustris*	P3		343552	6611160	4	
Isopogon panduratus subsp. *palustris*	P3		343549	6611169	7	
Isopogon panduratus subsp. *palustris*	P3		343550	6611180	14	
Isopogon panduratus subsp. *palustris*	P3		343550	6611195	13	
Isopogon panduratus subsp. *palustris*	P3		343554	6611218	4	
Isopogon panduratus subsp. *palustris*	P3		343548	6611249	1	
Isopogon panduratus subsp. *palustris*	P3		343549	6611259	1	
Isopogon panduratus subsp. *palustris*	P3		343485	6611340	1	
Isopogon panduratus subsp. *palustris*	P3		343393	6611403	3	
Isopogon panduratus subsp. *palustris*	P3		343391	6611146	9	
Isopogon panduratus subsp. *palustris*	P3		343390	6611137	1	Immediately outside Targeted Survey Area
Isopogon panduratus subsp. *palustris*	P3		343311	6611501	1	
Isopogon panduratus subsp. *palustris*	P3		343233	6611364	1	
Isopogon panduratus subsp. *palustris*	P3		343233	6611356	4	
Isopogon panduratus subsp. *palustris*	P3		343233	6611303	16	
Isopogon panduratus subsp. *palustris*	P3		343233	6611294	6	
Isopogon panduratus subsp. *palustris*	P3		343156	6611359	12	
Isopogon panduratus subsp. *palustris*	P3		343072	6611355	3	
Isopogon panduratus subsp. *palustris*	P3		342987	6611857	4	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Isopogon panduratus subsp. *palustris*	P3		342835	6611495	2	
Isopogon panduratus subsp. *palustris*	P3		342837	6611604	1	
Isopogon panduratus subsp. *palustris*	P3		344530	6610345	2	
Isopogon panduratus subsp. *palustris*	P3		344285	6610391	2	
Isopogon panduratus subsp. *palustris*	P3		344293	6610431	3	
Isopogon panduratus subsp. *palustris*	P3		344221	6610583	2	
Isopogon panduratus subsp. *palustris*	P3		344103	6611381	9	Immediately outside Targeted Survey Area
Isopogon panduratus subsp. *palustris*	P3		343614	6611037	20	
Isopogon panduratus subsp. *palustris*	P3		343609	6611072	20	
Isopogon panduratus subsp. *palustris*	P3		343615	6611106	30	
Isopogon panduratus subsp. *palustris*	P3		343609	6611147	15	
Isopogon panduratus subsp. *palustris*	P3		343612	6611180	20	
Isopogon panduratus subsp. *palustris*	P3		343615	6611232	15	
Isopogon panduratus subsp. *palustris*	P3		343495	6611188	5	
Isopogon panduratus subsp. *palustris*	P3		343488	6611173	10	
Isopogon panduratus subsp. *palustris*	P3		343491	6611159	5	
Isopogon panduratus subsp. *palustris*	P3		343498	6611151	20	
Isopogon panduratus subsp. *palustris*	P3		343482	6611144	15	
Isopogon panduratus subsp. *palustris*	P3		343489	6611126	30	
Isopogon panduratus subsp. *palustris*	P3		343485	6611112	35	
Isopogon panduratus subsp. *palustris*	P3		343489	6611095	20	
Isopogon panduratus subsp. *palustris*	P3		343490	6611080	15	
Isopogon panduratus subsp. *palustris*	P3		343580	6611037	5	
Isopogon panduratus subsp. *palustris*	P3		343568	6611067	20	
Isopogon panduratus subsp. *palustris*	P3		343572	6611090	10	
Isopogon panduratus subsp. *palustris*	P3		343574	6611110	10	
Isopogon panduratus subsp. *palustris*	P3		343574	6611134	10	
Isopogon panduratus subsp. *palustris*	P3		343730	6610550	3	
Isopogon panduratus subsp. *palustris*	P3		343754	6610491	3	Immediately outside Targeted Survey Area
Isopogon panduratus subsp. *palustris*	P3		343814	6610566	1	
Isopogon panduratus subsp. *palustris*	P3		343793	6610599	2	
Isopogon panduratus subsp. *palustris*	P3		343791	6610578	2	
Isopogon panduratus subsp. *palustris*	P3		343791	6610556	6	
Isopogon panduratus subsp. *palustris*	P3		343775	6610539	3	
Isopogon panduratus subsp. *palustris*	P3		343778	6610563	10	
Isopogon panduratus subsp. *palustris*	P3		343777	6610596	4	
Isopogon panduratus subsp. *palustris*	P3		343575	6611158	10	
Isopogon panduratus subsp. *palustris*	P3		343569	6611172	5	
Isopogon panduratus subsp. *palustris*	P3		343574	6611204	10	
Isopogon panduratus subsp. *palustris*	P3		343569	6611172	8	
Isopogon panduratus subsp. *palustris*	P3		343573	6611230	15	
Isopogon panduratus subsp. *palustris*	P3		343415	6611238	15	
Isopogon panduratus subsp. *palustris*	P3		343409	6611158	8	
Isopogon panduratus subsp. *palustris*	P3		343415	6611144	5	
Isopogon panduratus subsp. *palustris*	P3		343337	6611457	1	
Isopogon panduratus subsp. *palustris*	P3		343248	6611329	10	
Isopogon panduratus subsp. *palustris*	P3		343255	6611306	7	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Isopogon panduratus subsp. *palustris*	P3		344488	6610591	1	
Isopogon panduratus subsp. *palustris*	P3		344453	6610906	7	
Isopogon panduratus subsp. *palustris*	P3		344452	6610894	2	
Isopogon panduratus subsp. *palustris*	P3		344171	6610922	2	
Isopogon panduratus subsp. *palustris*	P3		344172	6610669	1	
Isopogon panduratus subsp. *palustris*	P3		344308	6610974	1	
Isopogon panduratus subsp. *palustris*	P3		344049	6610754	1	
Isopogon panduratus subsp. *palustris*	P3		343872	6610468	2	
Isopogon panduratus subsp. *palustris*	P3		343749	6610502	3	
Isopogon panduratus subsp. *palustris*	P3		343758	6610512	2	
Isopogon panduratus subsp. *palustris*	P3		343754	6610582	2	
Isopogon panduratus subsp. *palustris*	P3		343590	6611021	3	
Isopogon panduratus subsp. *palustris*	P3		343594	6611038	28	
Isopogon panduratus subsp. *palustris*	P3		343595	6611061	17	
Isopogon panduratus subsp. *palustris*	P3		343594	6611082	13	
Isopogon panduratus subsp. *palustris*	P3		343590	6611106	18	
Isopogon panduratus subsp. *palustris*	P3		343593	6611123	29	
Isopogon panduratus subsp. *palustris*	P3		343595	6611147	30	
Isopogon panduratus subsp. *palustris*	P3		343592	6611171	24	
Isopogon panduratus subsp. *palustris*	P3		343594	6611194	12	
Isopogon panduratus subsp. *palustris*	P3		343594	6611214	3	
Isopogon panduratus subsp. *palustris*	P3		343594	6611290	1	
Isopogon panduratus subsp. *palustris*	P3		343451	6611199	1	
Isopogon panduratus subsp. *palustris*	P3		343453	6611167	12	
Isopogon panduratus subsp. *palustris*	P3		343450	6611145	9	
Isopogon panduratus subsp. *palustris*	P3		343450	6611134	24	
Isopogon panduratus subsp. *palustris*	P3		343452	6611110	17	
Isopogon panduratus subsp. *palustris*	P3		343540	6611045	2	
Isopogon panduratus subsp. *palustris*	P3		343532	6611061	8	
Isopogon panduratus subsp. *palustris*	P3		343531	6611083	17	
Isopogon panduratus subsp. *palustris*	P3		343531	6611114	9	
Isopogon panduratus subsp. *palustris*	P3		343533	6611138	23	
Isopogon panduratus subsp. *palustris*	P3		343532	6611153	30	
Isopogon panduratus subsp. *palustris*	P3		343529	6611186	12	
Isopogon panduratus subsp. *palustris*	P3		343371	6611725	1	
Isopogon panduratus subsp. *palustris*	P3		343374	6611357	1	
Isopogon panduratus subsp. *palustris*	P3		343373	6611294	3	
Isopogon panduratus subsp. *palustris*	P3		343369	6611172	5	
Isopogon panduratus subsp. *palustris*	P3		343291	6611269	1	
Isopogon panduratus subsp. *palustris*	P3		343211	6611750	1	
Isopogon panduratus subsp. *palustris*	P3		343214	6611408	1	
Isopogon panduratus subsp. *palustris*	P3		343212	6611381	1	
Isopogon panduratus subsp. *palustris*	P3		343211	6611327	2	
Isopogon panduratus subsp. *palustris*	P3		342993	6611944	1	
Isopogon panduratus subsp. *palustris*	P3		342967	6611842	2	
Isopogon panduratus subsp. *palustris*	P3		342969	6611860	1	
Isopogon panduratus subsp. *palustris*	P3		342892	6611457	1	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Isopogon panduratus subsp. *palustris*	P3		344906	6610018	3	
Isopogon panduratus subsp. *palustris*	P3		344910	6609969	1	
Isopogon panduratus subsp. *palustris*	P3		344909	6609961	1	
Isopogon panduratus subsp. *palustris*	P3		344915	6609962	1	
Isopogon panduratus subsp. *palustris*	P3		344832	6610071	2	
Isopogon panduratus subsp. *palustris*	P3		344838	6610038	4	
Isopogon panduratus subsp. *palustris*	P3		344839	6610033	1	
Isopogon panduratus subsp. *palustris*	P3		344837	6610026	4	
Isopogon panduratus subsp. *palustris*	P3		344830	6610019	4	
Isopogon panduratus subsp. *palustris*	P3		344830	6610013	1	
Isopogon panduratus subsp. *palustris*	P3		344830	6610011	2	
Isopogon panduratus subsp. *palustris*	P3		344833	6610009	1	
Isopogon panduratus subsp. *palustris*	P3		344835	6610011	10	
Isopogon panduratus subsp. *palustris*	P3		344832	6610005	5	
Isopogon panduratus subsp. *palustris*	P3		344834	6609965	2	
Isopogon panduratus subsp. *palustris*	P3		344753	6610045	2	
Isopogon panduratus subsp. *palustris*	P3		344750	6610048	1	
Isopogon panduratus subsp. *palustris*	P3		344750	6610059	3	
Isopogon panduratus subsp. *palustris*	P3		344754	6610073	1	
Isopogon panduratus subsp. *palustris*	P3		344592	6610078	2	Immediately outside Targeted Survey Area
Isopogon panduratus subsp. *palustris*	P3		344592	6610084	1	
Isopogon panduratus subsp. *palustris*	P3		344588	6610102	1	
Isopogon panduratus subsp. *palustris*	P3		344586	6610220	1	
Isopogon panduratus subsp. *palustris*	P3		344592	6610405	1	
Isopogon panduratus subsp. *palustris*	P3		344595	6610475	2	
Isopogon panduratus subsp. *palustris*	P3		344615	6610512	1	
Isopogon panduratus subsp. *palustris*	P3		344499	6610954	1	
Isopogon panduratus subsp. *palustris*	P3		344339	6611063	1	
Isopogon panduratus subsp. *palustris*	P3		344337	6611067	1	
Isopogon panduratus subsp. *palustris*	P3		340870	6612793	1	
Isopogon panduratus subsp. *palustris*	P3		340873	6612789	1	
Isopogon panduratus subsp. *palustris*	P3		340952	6612705	1	
Isopogon panduratus subsp. *palustris*	P3		340954	6612708	1	
Isopogon panduratus subsp. *palustris*	P3		340952	6612712	1	
Isopogon panduratus subsp. *palustris*	P3		340953	6612721	1	
Isopogon panduratus subsp. *palustris*	P3		340953	6612727	6	
Isopogon panduratus subsp. *palustris*	P3		340951	6612741	1	
Isopogon panduratus subsp. *palustris*	P3		340953	6612754	1	
Isopogon panduratus subsp. *palustris*	P3		340954	6612818	1	Immediately outside Targeted Survey Area
Isopogon panduratus subsp. *palustris*	P3		340933	6613060	2	Immediately outside Targeted Survey Area
Isopogon panduratus subsp. *palustris*	P3		340930	6613051	1	
Isopogon panduratus subsp. *palustris*	P3		340936	6612997	1	
Isopogon panduratus subsp. *palustris*	P3		340936	6612992	4	
Isopogon panduratus subsp. *palustris*	P3		340846	6613028	1	Immediately outside Targeted Survey Area
Isopogon panduratus subsp. *palustris*	P3		340850	6613023	1	
Isopogon panduratus subsp. *palustris*	P3		341126	6613081	1	
Isopogon panduratus subsp. *palustris*	P3		341127	6613093	1	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Isopogon panduratus subsp. *palustris*	P3		341129	6613098	1	
Isopogon panduratus subsp. *palustris*	P3		341136	6613094	1	
Isopogon panduratus subsp. *palustris*	P3		341182	6612917	1	
Isopogon panduratus subsp. *palustris*	P3		341173	6613126	1	
Isopogon panduratus subsp. *palustris*	P3		341175	6613131	1	
Isopogon panduratus subsp. *palustris*	P3		341170	6613131	1	
Isopogon panduratus subsp. *palustris*	P3		341185	6613126	5	
Isopogon panduratus subsp. *palustris*	P3		341196	6613146	1	
Isopogon panduratus subsp. *palustris*	P3		341209	6612901	2	
Isopogon panduratus subsp. *palustris*	P3		341209	6612736	1	
Isopogon panduratus subsp. *palustris*	P3		341388	6612630	1	
Isopogon panduratus subsp. *palustris*	P3		341385	6612636	3	
Isopogon panduratus subsp. *palustris*	P3		341388	6612643	3	
Isopogon panduratus subsp. *palustris*	P3		341389	6612656	1	
Isopogon panduratus subsp. *palustris*	P3		341389	6612686	1	
Isopogon panduratus subsp. *palustris*	P3		341393	6612705	2	
Isopogon panduratus subsp. *palustris*	P3		341396	6612715	1	
Isopogon panduratus subsp. *palustris*	P3		341451	6612964	6	
Isopogon panduratus subsp. *palustris*	P3		341453	6612950	5	
Isopogon panduratus subsp. *palustris*	P3		341441	6612889	1	
Isopogon panduratus subsp. *palustris*	P3		341473	6612617	1	
Isopogon panduratus subsp. *palustris*	P3		341469	6612602	1	
Isopogon panduratus subsp. *palustris*	P3		341980	6612266	1	
Isopogon panduratus subsp. *palustris*	P3		342070	6612378	1	
Isopogon panduratus subsp. *palustris*	P3		342141	6612332	1	
Isopogon panduratus subsp. *palustris*	P3		342233	6612186	1	
Isopogon panduratus subsp. *palustris*	P3		342259	6612250	2	
Isopogon panduratus subsp. *palustris*	P3		342264	6612245	1	
Isopogon panduratus subsp. *palustris*	P3		342440	6612182	3	
Isopogon panduratus subsp. *palustris*	P3		342133	6611953	2	
Isopogon panduratus subsp. *palustris*	P3		342191	6611900	1	
Isopogon panduratus subsp. *palustris*	P3		342194	6611907	2	
Isopogon panduratus subsp. *palustris*	P3		342193	6611913	2	
Isopogon panduratus subsp. *palustris*	P3		342191	6611925	4	
Isopogon panduratus subsp. *palustris*	P3		342193	6611964	1	
Isopogon panduratus subsp. *palustris*	P3		342190	6612041	1	
Isopogon panduratus subsp. *palustris*	P3		342195	6612092	1	
Isopogon panduratus subsp. *palustris*	P3		342253	6612145	1	
Isopogon panduratus subsp. *palustris*	P3		342249	6612066	8	
Isopogon panduratus subsp. *palustris*	P3		342250	6611949	8	
Isopogon panduratus subsp. *palustris*	P3		342251	6611940	10	
Isopogon panduratus subsp. *palustris*	P3		342252	6611922	10	
Isopogon panduratus subsp. *palustris*	P3		342309	6611962	8	
Isopogon panduratus subsp. *palustris*	P3		342308	6611970	8	
Isopogon panduratus subsp. *palustris*	P3		342316	6611984	15	
Isopogon panduratus subsp. *palustris*	P3		342317	6612005	10	
Isopogon panduratus subsp. *palustris*	P3		342309	6612027	5	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Isopogon panduratus subsp. *palustris*	P3		342314	6612038	4	
Isopogon panduratus subsp. *palustris*	P3		342310	6612059	1	
Isopogon panduratus subsp. *palustris*	P3		342310	6612067	3	
Isopogon panduratus subsp. *palustris*	P3		342315	6612081	10	
Isopogon panduratus subsp. *palustris*	P3		342315	6612103	5	
Isopogon panduratus subsp. *palustris*	P3		342316	6612119	6	
Isopogon panduratus subsp. *palustris*	P3		342315	6612135	4	
Isopogon panduratus subsp. *palustris*	P3		342312	6612177	4	
Isopogon panduratus subsp. *palustris*	P3		342438	6612105	4	
Isopogon panduratus subsp. *palustris*	P3		342430	6612089	2	
Isopogon panduratus subsp. *palustris*	P3		342431	6612073	3	
Isopogon panduratus subsp. *palustris*	P3		342435	6612035	4	
Isopogon panduratus subsp. *palustris*	P3		342434	6612014	2	
Isopogon panduratus subsp. *palustris*	P3		342435	6612004	5	
Isopogon panduratus subsp. *palustris*	P3		342431	6611987	10	
Isopogon panduratus subsp. *palustris*	P3		342431	6611972	15	
Isopogon panduratus subsp. *palustris*	P3		342432	6611948	15	
Isopogon panduratus subsp. *palustris*	P3		342430	6611927	6	
Isopogon panduratus subsp. *palustris*	P3		342432	6611908	6	
Isopogon panduratus subsp. *palustris*	P3		342433	6611893	8	
Isopogon panduratus subsp. *palustris*	P3		342430	6611860	1	
Isopogon panduratus subsp. *palustris*	P3		342429	6611809	8	
Isopogon panduratus subsp. *palustris*	P3		342436	6611796	10	
Isopogon panduratus subsp. *palustris*	P3		342435	6611781	6	
Isopogon panduratus subsp. *palustris*	P3		342434	6611769	10	
Isopogon panduratus subsp. *palustris*	P3		342434	6611745	8	
Isopogon panduratus subsp. *palustris*	P3		342375	6611779	6	
Isopogon panduratus subsp. *palustris*	P3		342374	6611802	2	
Isopogon panduratus subsp. *palustris*	P3		342374	6611812	4	
Isopogon panduratus subsp. *palustris*	P3		342372	6611830	8	
Isopogon panduratus subsp. *palustris*	P3		342372	6611866	2	
Isopogon panduratus subsp. *palustris*	P3		342370	6611877	6	
Isopogon panduratus subsp. *palustris*	P3		342374	6611885	4	
Isopogon panduratus subsp. *palustris*	P3		342371	6611911	8	
Isopogon panduratus subsp. *palustris*	P3		342374	6611924	15	
Isopogon panduratus subsp. *palustris*	P3		342369	6611943	6	
Isopogon panduratus subsp. *palustris*	P3		342377	6611955	6	
Isopogon panduratus subsp. *palustris*	P3		342373	6611965	25	
Isopogon panduratus subsp. *palustris*	P3		342314	6611958	6	
Isopogon panduratus subsp. *palustris*	P3		342317	6611949	8	
Isopogon panduratus subsp. *palustris*	P3		342309	6611942	6	
Isopogon panduratus subsp. *palustris*	P3		342310	6611933	4	
Isopogon panduratus subsp. *palustris*	P3		342310	6611919	10	
Isopogon panduratus subsp. *palustris*	P3		342312	6611909	10	
Isopogon panduratus subsp. *palustris*	P3		342315	6611896	4	
Isopogon panduratus subsp. *palustris*	P3		342311	6611849	2	
Isopogon panduratus subsp. *palustris*	P3		342311	6611843	10	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Isopogon panduratus subsp. *palustris*	P3		342306	6611830	1	
Isopogon panduratus subsp. *palustris*	P3		342254	6611864	1	
Isopogon panduratus subsp. *palustris*	P3		342254	6611879	4	
Isopogon panduratus subsp. *palustris*	P3		342249	6611887	10	
Isopogon panduratus subsp. *palustris*	P3		342251	6611903	3	
Isopogon panduratus subsp. *palustris*	P3		342246	6611905	1	
Isopogon panduratus subsp. *palustris*	P3		342497	6612048	1	
Isopogon panduratus subsp. *palustris*	P3		342495	6612042	6	
Isopogon panduratus subsp. *palustris*	P3		342491	6612034	8	
Isopogon panduratus subsp. *palustris*	P3		342492	6612015	2	
Isopogon panduratus subsp. *palustris*	P3		342494	6612007	6	
Isopogon panduratus subsp. *palustris*	P3		342495	6611941	1	
Isopogon panduratus subsp. *palustris*	P3		342491	6611889	1	
Isopogon panduratus subsp. *palustris*	P3		342495	6611816	6	
Isopogon panduratus subsp. *palustris*	P3		342497	6611806	2	
Isopogon panduratus subsp. *palustris*	P3		342497	6611797	1	
Isopogon panduratus subsp. *palustris*	P3		342494	6611772	10	
Isopogon panduratus subsp. *palustris*	P3		342491	6611749	8	
Isopogon panduratus subsp. *palustris*	P3		342495	6611737	2	
Isopogon panduratus subsp. *palustris*	P3		342550	6611673	1	
Isopogon panduratus subsp. *palustris*	P3		342557	6611704	6	
Isopogon panduratus subsp. *palustris*	P3		342551	6611717	3	
Isopogon panduratus subsp. *palustris*	P3		342555	6611739	8	
Isopogon panduratus subsp. *palustris*	P3		342551	6611752	6	
Isopogon panduratus subsp. *palustris*	P3		342550	6611769	1	
Isopogon panduratus subsp. *palustris*	P3		342554	6611779	5	
Isopogon panduratus subsp. *palustris*	P3		342551	6611795	8	
Isopogon panduratus subsp. *palustris*	P3		342554	6611808	4	
Isopogon panduratus subsp. *palustris*	P3		342554	6611826	5	
Isopogon panduratus subsp. *palustris*	P3		342557	6611836	8	
Isopogon panduratus subsp. *palustris*	P3		342551	6611842	6	
Isopogon panduratus subsp. *palustris*	P3		342557	6611879	2	
Isopogon panduratus subsp. *palustris*	P3		342612	6611773	1	
Isopogon panduratus subsp. *palustris*	P3		342612	6611740	4	
Isopogon panduratus subsp. *palustris*	P3		342614	6611729	6	
Isopogon panduratus subsp. *palustris*	P3		342615	6611720	6	
Isopogon panduratus subsp. *palustris*	P3		342616	6611709	8	
Isopogon panduratus subsp. *palustris*	P3		342617	6611699	10	
Isopogon panduratus subsp. *palustris*	P3		342615	6611662	10	
Isopogon panduratus subsp. *palustris*	P3		342613	6611647	5	
Isopogon panduratus subsp. *palustris*	P3		342671	6611665	5	
Isopogon panduratus subsp. *palustris*	P3		342511	6612398	23	
Isopogon panduratus subsp. *palustris*	P3		342510	6612384	11	
Isopogon panduratus subsp. *palustris*	P3		342515	6612357	14	
Isopogon panduratus subsp. *palustris*	P3		342512	6612344	34	
Isopogon panduratus subsp. *palustris*	P3		342511	6612329	25	
Isopogon panduratus subsp. *palustris*	P3		342513	6612301	1	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Isopogon panduratus subsp. *palustris*	P3		342443	6612380	16	
Isopogon panduratus subsp. *palustris*	P3		342452	6612370	4	
Isopogon panduratus subsp. *palustris*	P3		342452	6612385	9	
Isopogon panduratus subsp. *palustris*	P3		342551	6612383	5	
Isopogon panduratus subsp. *palustris*	P3		342550	6612360	26	
Isopogon panduratus subsp. *palustris*	P3		342553	6612346	28	
Isopogon panduratus subsp. *palustris*	P3		342549	6612311	8	
Isopogon panduratus subsp. *palustris*	P3		342553	6612305	7	
Isopogon panduratus subsp. *palustris*	P3		342591	6612283	2	
Isopogon panduratus subsp. *palustris*	P3		342592	6612337	9	
Isopogon panduratus subsp. *palustris*	P3		342593	6612357	24	
Isopogon panduratus subsp. *palustris*	P3		342592	6612372	4	
Isopogon panduratus subsp. *palustris*	P3		342630	6612360	5	Immediately outside Targeted Survey Area
Isopogon panduratus subsp. *palustris*	P3		342631	6612343	23	
Isopogon panduratus subsp. *palustris*	P3		342633	6612328	11	
Isopogon panduratus subsp. *palustris*	P3		342633	6612318	16	
Isopogon panduratus subsp. *palustris*	P3		342631	6612299	4	
Isopogon panduratus subsp. *palustris*	P3		342633	6612276	19	
Isopogon panduratus subsp. *palustris*	P3		342633	6612262	1	
Isopogon panduratus subsp. *palustris*	P3		342625	6612255	1	
Isopogon panduratus subsp. *palustris*	P3		342671	6612279	21	
Isopogon panduratus subsp. *palustris*	P3		342670	6612292	12	
Isopogon panduratus subsp. *palustris*	P3		342672	6612310	3	
Isopogon panduratus subsp. *palustris*	P3		342670	6612329	1	
Isopogon panduratus subsp. *palustris*	P3		342692	6612317	1	
Isopogon panduratus subsp. *palustris*	P3		342688	6612307	1	
Isopogon panduratus subsp. *palustris*	P3		342749	6611862	1	
Isopogon panduratus subsp. *palustris*	P3		342752	6611853	2	
Isopogon panduratus subsp. *palustris*	P3		342770	6611739	11	
Isopogon panduratus subsp. *palustris*	P3		342773	6611746	12	
Isopogon panduratus subsp. *palustris*	P3		342773	6611770	2	
Isopogon panduratus subsp. *palustris*	P3		342527	6612230	1	
Isopogon panduratus subsp. *palustris*	P3		342661	6612154	1	
Isopogon panduratus subsp. *palustris*	P3		344060	6611423	1	
Isopogon panduratus subsp. *palustris*	P3		344050	6611423	4	
Isopogon panduratus subsp. *palustris*	P3		344041	6611418	2	
Isopogon panduratus subsp. *palustris*	P3		344028	6611422	4	
Isopogon panduratus subsp. *palustris*	P3		344024	6611421	2	
Isopogon panduratus subsp. *palustris*	P3		344017	6611418	6	
Isopogon panduratus subsp. *palustris*	P3		342491	6612411	10	
Isopogon panduratus subsp. *palustris*	P3		342491	6612392	3	
Isopogon panduratus subsp. *palustris*	P3		342489	6612369	15	
Isopogon panduratus subsp. *palustris*	P3		342490	6612346	10	
Isopogon panduratus subsp. *palustris*	P3		342491	6612333	12	
Isopogon panduratus subsp. *palustris*	P3		342492	6612312	5	
Isopogon panduratus subsp. *palustris*	P3		342471	6612337	3	
Isopogon panduratus subsp. *palustris*	P3		342472	6612354	8	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Isopogon panduratus* subsp. *palustris	P3		342472	6612366	8	
Isopogon panduratus* subsp. *palustris	P3		342471	6612384	2	
Isopogon panduratus* subsp. *palustris	P3		342472	6612401	9	
Isopogon panduratus* subsp. *palustris	P3		342471	6612420	12	
Isopogon panduratus* subsp. *palustris	P3		342529	6612389	11	
Isopogon panduratus* subsp. *palustris	P3		342530	6612368	6	
Isopogon panduratus* subsp. *palustris	P3		342530	6612353	25	
Isopogon panduratus* subsp. *palustris	P3		342529	6612333	35	
Isopogon panduratus* subsp. *palustris	P3		342536	6612315	7	
Isopogon panduratus* subsp. *palustris	P3		342532	6612301	5	
Isopogon panduratus* subsp. *palustris	P3		342578	6612271	3	
Isopogon panduratus* subsp. *palustris	P3		342572	6612293	8	
Isopogon panduratus* subsp. *palustris	P3		342572	6612306	12	
Isopogon panduratus* subsp. *palustris	P3		342572	6612308	5	
Isopogon panduratus* subsp. *palustris	P3		342572	6612326	5	
Isopogon panduratus* subsp. *palustris	P3		342570	6612346	35	
Isopogon panduratus* subsp. *palustris	P3		342572	6612364	25	
Isopogon panduratus* subsp. *palustris	P3		342571	6612377	8	
Isopogon panduratus* subsp. *palustris	P3		342611	6612369	15	
Isopogon panduratus* subsp. *palustris	P3		342607	6612341	12	
Isopogon panduratus* subsp. *palustris	P3		342613	6612323	12	
Isopogon panduratus* subsp. *palustris	P3		342611	6612302	15	
Isopogon panduratus* subsp. *palustris	P3		342612	6612284	11	
Isopogon panduratus* subsp. *palustris	P3		342612	6612266	2	
Isopogon panduratus* subsp. *palustris	P3		342652	6612258	13	
Isopogon panduratus* subsp. *palustris	P3		342654	6612278	18	
Isopogon panduratus* subsp. *palustris	P3		342651	6612294	20	
Isopogon panduratus* subsp. *palustris	P3		342651	6612309	20	
Isopogon panduratus* subsp. *palustris	P3		342654	6612326	12	
Isopogon panduratus* subsp. *palustris	P3		342651	6612342	9	
Isopogon panduratus* subsp. *palustris	P3		342734	6611796	1	
Isopogon panduratus* subsp. *palustris	P3		342777	6611734	3	
Isopogon panduratus* subsp. *palustris	P3		344016	6611411	1	
Isopogon panduratus* subsp. *palustris	P3		344051	6611414	6	
Isopogon panduratus* subsp. *palustris	P3		344063	6611418	4	
Isopogon panduratus* subsp. *palustris	P3		344072	6611414	7	
Levenhookia preissii	P1		341902	6612488	1	
Levenhookia preissii	P1		341867	6612435	1	
Levenhookia preissii	P1		341080	6612931	1	
Levenhookia preissii	P1		341121	6612942	2	
Levenhookia preissii	P1		344013	6610456	1	
Levenhookia preissii	P1		344035	6610680	1	
Levenhookia preissii	P1		343868	6610574	4	
Levenhookia preissii	P1		342947	6611735	1	
Levenhookia preissii	P1		342956	6611774	1	
Levenhookia preissii	P1		342952	6611809	2	
Levenhookia preissii	P1		343331	6611482	1	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Levenhookia preissii	P1		343126	6611975	4	Immediately outside Targeted Survey Area
Levenhookia preissii	P1		343190	6611917	1	Immediately outside Targeted Survey Area
Levenhookia preissii	P1		340920	6612837	4	Immediately outside Targeted Survey Area
Levenhookia preissii	P1		341763	6612384	1	
Levenhookia preissii	P1		343191	6611918	1	Immediately outside Targeted Survey Area
Macarthuria keigheryi	T	EN	344190	6611218	1	
Macarthuria keigheryi	T	EN	344193	6611249	1	
Macarthuria keigheryi	T	EN	341150	6612907	1	
Macarthuria keigheryi	T	EN	341262	6612818	1	
Macarthuria keigheryi	T	EN	341267	6612820	2	
Macarthuria keigheryi	T	EN	342020	6612247	5	
Macarthuria keigheryi	T	EN	342213	6612244	5	
Macarthuria keigheryi	T	EN	342247	6612278	1	
Macarthuria keigheryi	T	EN	341044	6612920	2	
Macarthuria keigheryi	T	EN	341122	6612929	2	
Macarthuria keigheryi	T	EN	341350	6612766	1	
Macarthuria keigheryi	T	EN	341350	6612628	2	
Macarthuria keigheryi	T	EN	341131	6612920	1	
Macarthuria keigheryi	T	EN	342110	6612300	3	
Macarthuria keigheryi	T	EN	342247	6612280	1	
Macarthuria keigheryi	T	EN	342208	6612253	2	
Poranthera asybosca	P1		344554	6610704	28	
Poranthera asybosca	P1		344632	6610916	2	
Poranthera asybosca	P1		344591	6610885	1	
Poranthera asybosca	P1		344592	6610891	3	
Poranthera asybosca	P1		344596	6610998	50	
Poranthera asybosca	P1		344593	6611044	5	
Poranthera asybosca	P1		344554	6611067	5	
Poranthera asybosca	P1		344552	6611035	20	
Poranthera asybosca	P1		344552	6610856	5	
Poranthera asybosca	P1		344515	6610891	2	
Poranthera asybosca	P1		344513	6610946	5	
Poranthera asybosca	P1		344514	6610972	5	
Poranthera asybosca	P1		344433	6611131	5	
Poranthera asybosca	P1		344433	6611155	5	
Poranthera asybosca	P1		344391	6611171	2	
Poranthera asybosca	P1		344355	6611080	10	
Poranthera asybosca	P1		344350	6611139	10	
Poranthera asybosca	P1		344274	6611329	10	
Poranthera asybosca	P1		344273	6611361	10	
Poranthera asybosca	P1		344230	6611332	15	
Poranthera asybosca	P1		343955	6611096	8	
Poranthera asybosca	P1		341022	6612930	5	
Poranthera asybosca	P1		341024	6612969	10	
Poranthera asybosca	P1		341065	6613013	10	
Poranthera asybosca	P1		341102	6612917	10	
Poranthera asybosca	P1		341105	6612992	3	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Poranthera asybosca	P1		341142	6613073	2	
Poranthera asybosca	P1		341144	6613018	5	
Poranthera asybosca	P1		341144	6612968	5	
Poranthera asybosca	P1		341140	6612915	10	
Poranthera asybosca	P1		341145	6612856	5	
Poranthera asybosca	P1		341183	6613008	5	
Poranthera asybosca	P1		341253	6612797	5	
Poranthera asybosca	P1		341370	6612752	2	
Poranthera asybosca	P1		341263	6612862	10	
Poranthera asybosca	P1		341304	6613090	20	
Poranthera asybosca	P1		341305	6612937	5	
Poranthera asybosca	P1		341305	6612901	5	
Poranthera asybosca	P1		344524	6610700	1	
Poranthera asybosca	P1		344563	6610866	1	
Poranthera asybosca	P1		344556	6610922	1	
Poranthera asybosca	P1		344520	6611100	2	
Poranthera asybosca	P1		344400	6611025	2	
Poranthera asybosca	P1		341651	6612358	1	
Poranthera asybosca	P1		341679	6612385	1	
Poranthera asybosca	P1		341775	6612292	1	
Poranthera asybosca	P1		341665	6612449	1	
Poranthera asybosca	P1		344617	6611014	5	
Poranthera asybosca	P1		344610	6610991	10	
Poranthera asybosca	P1		344569	6610845	3	
Poranthera asybosca	P1		344578	6611006	2	
Poranthera asybosca	P1		344531	6611037	10	
Poranthera asybosca	P1		344496	6611103	2	
Poranthera asybosca	P1		344451	6611033	2	
Poranthera asybosca	P1		344410	6611032	1	
Poranthera asybosca	P1		344410	6611166	4	
Poranthera asybosca	P1		344374	6610991	10	
Poranthera asybosca	P1		341626	6612350	1	
Poranthera asybosca	P1		341639	6612376	4	
Poranthera asybosca	P1		341721	6612315	2	
Poranthera asybosca	P1		341722	6612368	1	
Poranthera asybosca	P1		341752	6612313	1	
Poranthera asybosca	P1		341740	6612443	1	
Poranthera asybosca	P1		341745	6612391	1	
Poranthera asybosca	P1		341927	6612434	1	
Poranthera asybosca	P1		341731	6612572	1	
Poranthera asybosca	P1		342041	6612220	5	
Poranthera asybosca	P1		342073	6612249	1	
Poranthera asybosca	P1		342196	6612231	1	
Poranthera asybosca	P1		342197	6612266	10	
Poranthera asybosca	P1		342224	6612311	1	
Poranthera asybosca	P1		341080	6612887	1	
Poranthera asybosca	P1		341081	6613024	10	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Poranthera asybosca	P1		341080	6613042	2	
Poranthera asybosca	P1		341122	6612993	3	
Poranthera asybosca	P1		341124	6612904	1	
Poranthera asybosca	P1		341172	6613014	4	
Poranthera asybosca	P1		341172	6613040	2	
Poranthera asybosca	P1		341270	6612713	4	
Poranthera asybosca	P1		341278	6612689	2	
Poranthera asybosca	P1		341313	6612640	1	
Poranthera asybosca	P1		341347	6612690	2	
Poranthera asybosca	P1		341291	6612938	10	
Poranthera asybosca	P1		341315	6612838	5	
Poranthera asybosca	P1		341314	6612881	10	
Poranthera asybosca	P1		341308	6612963	2	
Poranthera asybosca	P1		341315	6612985	2	
Poranthera asybosca	P1		341344	6612892	10	
Poranthera asybosca	P1		341375	6613027	3	
Poranthera asybosca	P1		341404	6612975	2	
Poranthera asybosca	P1		343864	6610366	1	Immediately outside Targeted Survey Area
Poranthera asybosca	P1		343822	6611104	1	
Poranthera asybosca	P1		343825	6610829	4	
Poranthera asybosca	P1		343739	6610745	4	
Poranthera asybosca	P1		343672	6610978	2	
Poranthera asybosca	P1		343670	6610882	3	
Poranthera asybosca	P1		343672	6610793	18	
Poranthera asybosca	P1		343671	6610769	3	
Poranthera asybosca	P1		343684	6610655	2	
Poranthera asybosca	P1		343511	6611268	3	
Poranthera asybosca	P1		343509	6611530	2	
Poranthera asybosca	P1		342939	6611634	15	
Poranthera asybosca	P1		344033	6610463	3	
Poranthera asybosca	P1		343910	6610554	1	
Poranthera asybosca	P1		343914	6610501	1	
Poranthera asybosca	P1		343875	6610587	3	
Poranthera asybosca	P1		343914	6610501	1	
Poranthera asybosca	P1		343875	6610587	1	
Poranthera asybosca	P1		343875	6610618	3	
Poranthera asybosca	P1		343875	6610618	2	
Poranthera asybosca	P1		343867	6611195	5	
Poranthera asybosca	P1		344580	6610989	3	
Poranthera asybosca	P1		344578	6610994	2	
Poranthera asybosca	P1		344546	6611032	2	
Poranthera asybosca	P1		344545	6611020	1	
Poranthera asybosca	P1		344546	6611014	1	
Poranthera asybosca	P1		344540	6611009	5	
Poranthera asybosca	P1		344539	6611003	10	
Poranthera asybosca	P1		344501	6610964	2	
Poranthera asybosca	P1		344502	6610976	5	

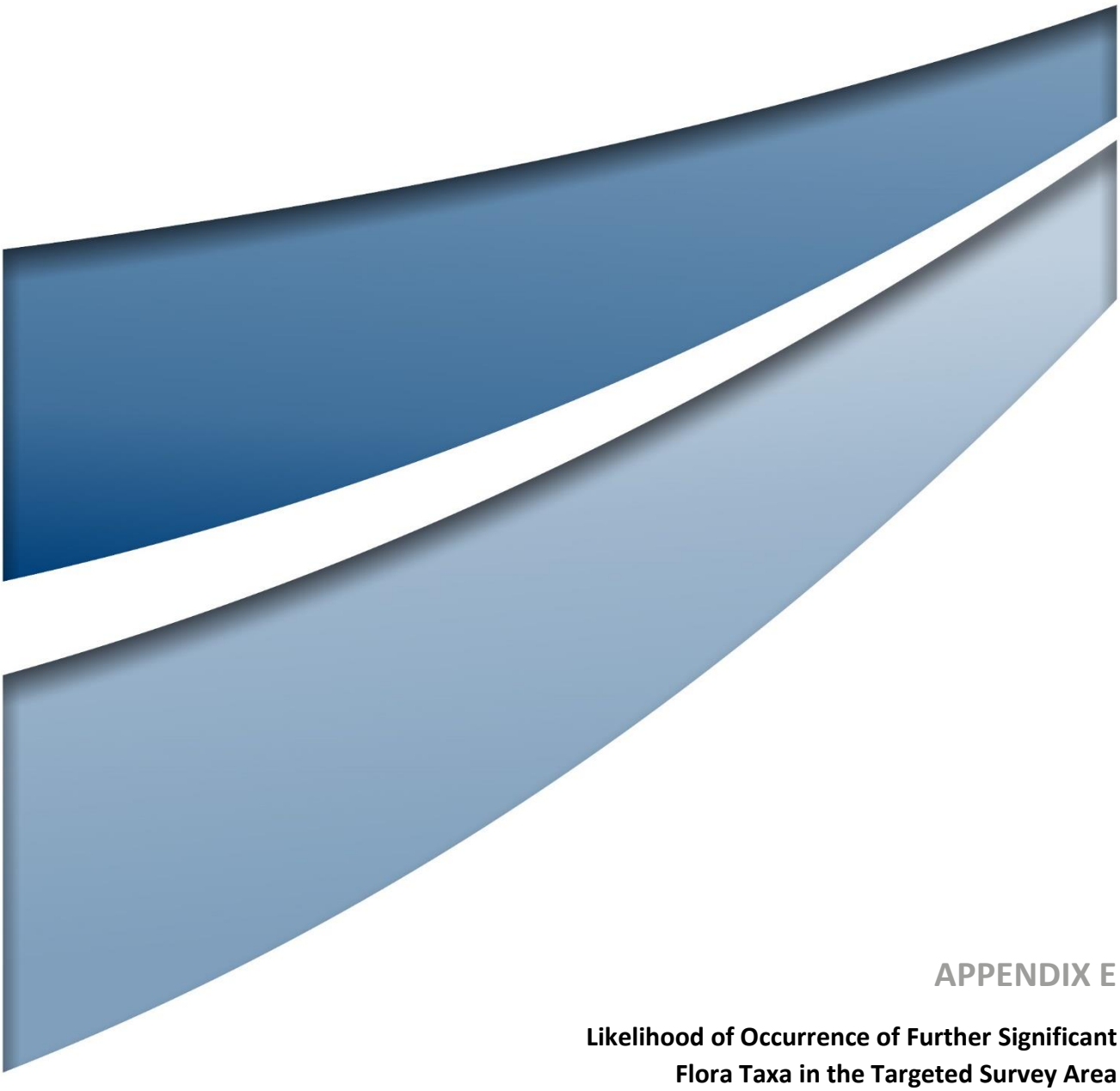
Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Poranthera asybosca	P1		344504	6611121	3	
Poranthera asybosca	P1		344459	6611153	3	
Poranthera asybosca	P1		344466	6611145	2	
Poranthera asybosca	P1		341011	6612926	1	
Poranthera asybosca	P1		341172	6612923	3	
Poranthera asybosca	P1		341283	6612849	1	
Poranthera asybosca	P1		341325	6612858	1	
Poranthera asybosca	P1		341319	6612883	2	
Poranthera asybosca	P1		341701	6612303	2	
Poranthera asybosca	P1		341703	6612333	1	
Poranthera asybosca	P1		341732	6612237	1	
Poranthera asybosca	P1		341768	6612210	1	
Poranthera asybosca	P1		341764	6612222	1	
Poranthera asybosca	P1		341761	6612333	1	
Poranthera asybosca	P1		341765	6612381	1	
Poranthera asybosca	P1		341759	6612389	1	
Poranthera asybosca	P1		341830	6612366	2	
Poranthera asybosca	P1		341781	6612548	1	
Poranthera asybosca	P1		342070	6612405	1	
Poranthera asybosca	P1		342030	6612249	2	
Poranthera asybosca	P1		342055	6612228	1	
Poranthera asybosca	P1		342049	6612238	2	
Poranthera asybosca	P1		342081	6612194	1	
Poranthera asybosca	P1		342144	6612212	1	
Poranthera asybosca	P1		342175	6612235	3	
Poranthera asybosca	P1		342170	6612250	2	
Poranthera asybosca	P1		342176	6612260	4	
Poranthera asybosca	P1		342170	6612273	1	
Poranthera asybosca	P1		342170	6612308	2	
Poranthera asybosca	P1		342201	6612320	1	
Poranthera asybosca	P1		342201	6612158	4	
Poranthera asybosca	P1		342230	6612279	1	
Poranthera asybosca	P1		342232	6612289	1	
Poranthera asybosca	P1		342231	6612300	1	
Poranthera asybosca	P1		342233	6612305	1	
Poranthera asybosca	P1		342411	6612240	1	
Poranthera asybosca	P1		342397	6612075	1	
Poranthera asybosca	P1		342369	6611845	2	
Poranthera asybosca	P1		343975	6611419	3	
Poranthera asybosca	P1		342282	6612307	1	Immediately outside Targeted Survey Area
Poranthera asybosca	P1		342208	6612253	2	
Poranthera asybosca	P1		343841	6611398	10	
Poranthera asybosca	P1		343902	6611398	10	
Poranthera asybosca	P1		343982	6611408	3	
Poranthera asybosca	P1		344191	6611419	5	
Poranthera asybosca	P1		344238	6611425	3	
Poranthera asybosca	P1		344269	6611430	3	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Poranthera asybosca	P1		344587	6611649	10	
Poranthera asybosca	P1		343775	6611619	5	
Poranthera moorokatta	P2		344711	6610538	20	
Poranthera moorokatta	P2		344676	6610538	10	
Poranthera moorokatta	P2		344528	6610841	1	
Poranthera moorokatta	P2		344270	6611209	3	
Poranthera moorokatta	P2		344361	6610671	10	
Poranthera moorokatta	P2		344612	6610892	2	
Poranthera moorokatta	P2		344529	6610840	4	
Schoenus griffinianus	P4		342334	6612174	1	
Schoenus griffinianus	P4		341842	6612441	2	
Schoenus griffinianus	P4		341923	6612307	5	
Schoenus griffinianus	P4		341960	6612309	2	
Schoenus griffinianus	P4		341823	6612443	5	
Schoenus griffinianus	P4		342231	6611867	1	
Schoenus pennisetis	P3		345012	6609916	10	
Schoenus pennisetis	P3		344990	6609889	3	
Schoenus pennisetis	P3		340920	6612837	25	Immediately outside Targeted Survey Area
Schoenus pennisetis	P3		342631	6612331	2	
Schoenus pennisetis	P3		342671	6612301	1	
Schoenus pennisetis	P3		342609	6612347	5	
Schoenus pennisetis	P3		342653	6612317	20	
Stylidium hymenocraspedum	P3		341081	6612890	1	
Stylidium hymenocraspedum	P3		341341	6612756	15	
Stylidium hymenocraspedum	P3		343621	6611677	3	
Thysanotus glaucus	P4		341350	6612766	10	
Verticordia lindleyi subsp. *lindleyi*	P4		345015	6610036	1	
Verticordia lindleyi subsp. *lindleyi*	P4		340847	6612743	15	
Verticordia lindleyi subsp. *lindleyi*	P4		340933	6612788	4	
Verticordia lindleyi subsp. *lindleyi*	P4		341013	6612810	4	
Verticordia lindleyi subsp. *lindleyi*	P4		340872	6613019	5	
Verticordia lindleyi subsp. *lindleyi*	P4		341304	6613076	2	
Verticordia lindleyi subsp. *lindleyi*	P4		341175	6613127	1	
Verticordia lindleyi subsp. *lindleyi*	P4		341791	6612414	1	
Verticordia lindleyi subsp. *lindleyi*	P4		341943	6612381	3	
Verticordia lindleyi subsp. *lindleyi*	P4		341491	6612695	3	
Verticordia lindleyi subsp. *lindleyi*	P4		341493	6612703	15	
Verticordia lindleyi subsp. *lindleyi*	P4		341496	6612715	10	
Verticordia lindleyi subsp. *lindleyi*	P4		341510	6612727	2	Immediately outside Targeted Survey Area
Verticordia lindleyi subsp. *lindleyi*	P4		341511	6612712	4	
Verticordia lindleyi subsp. *lindleyi*	P4		341801	6612403	10	
Verticordia lindleyi subsp. *lindleyi*	P4		341743	6612470	15	
Verticordia lindleyi subsp. *lindleyi*	P4		341756	6612410	1	
Verticordia lindleyi subsp. *lindleyi*	P4		341753	6612446	3	
Verticordia lindleyi subsp. *lindleyi*	P4		341962	6612412	4	
Verticordia lindleyi subsp. *lindleyi*	P4		341961	6612404	10	
Verticordia lindleyi subsp. *lindleyi*	P4		341912	6612442	2	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Verticordia lindleyi* subsp. *lindleyi	P4		342314	6612238	1	
Verticordia lindleyi* subsp. *lindleyi	P4		342342	6612234	1	
Verticordia lindleyi* subsp. *lindleyi	P4		342175	6612079	2	
Verticordia lindleyi* subsp. *lindleyi	P4		342238	6612031	1	
Verticordia lindleyi* subsp. *lindleyi	P4		342240	6612165	1	
Verticordia lindleyi* subsp. *lindleyi	P4		340971	6612804	10	Immediately outside Targeted Survey Area
Verticordia lindleyi* subsp. *lindleyi	P4		341172	6612826	10	
Verticordia lindleyi* subsp. *lindleyi	P4		341151	6612796	2	
Verticordia lindleyi* subsp. *lindleyi	P4		341152	6612810	4	
Verticordia lindleyi* subsp. *lindleyi	P4		341415	6612592	4	
Verticordia lindleyi* subsp. *lindleyi	P4		341416	6612603	3	
Verticordia lindleyi* subsp. *lindleyi	P4		341416	6612613	0	
Verticordia lindleyi* subsp. *lindleyi	P4		341251	6612976	4	
Verticordia lindleyi* subsp. *lindleyi	P4		341250	6612986	4	
Verticordia lindleyi* subsp. *lindleyi	P4		341250	6613001	5	
Verticordia lindleyi* subsp. *lindleyi	P4		341315	6613039	10	
Verticordia lindleyi* subsp. *lindleyi	P4		341337	6613073	10	
Verticordia lindleyi* subsp. *lindleyi	P4		341373	6612891	1	
Verticordia lindleyi* subsp. *lindleyi	P4		341396	6612804	2	Immediately outside Targeted Survey Area
Verticordia lindleyi* subsp. *lindleyi	P4		341398	6612749	3	
Verticordia lindleyi* subsp. *lindleyi	P4		343666	6610621	15	
Verticordia lindleyi* subsp. *lindleyi	P4		343660	6610890	3	Immediately outside Targeted Survey Area
Verticordia lindleyi* subsp. *lindleyi	P4		343435	6611124	2	
Verticordia lindleyi* subsp. *lindleyi	P4		343513	6611062	3	
Verticordia lindleyi* subsp. *lindleyi	P4		343511	6611119	8	
Verticordia lindleyi* subsp. *lindleyi	P4		343511	6611157	15	
Verticordia lindleyi* subsp. *lindleyi	P4		343433	6611338	1	
Verticordia lindleyi* subsp. *lindleyi	P4		343355	6611714	1	
Verticordia lindleyi* subsp. *lindleyi	P4		342947	6611413	3	Immediately outside Targeted Survey Area
Verticordia lindleyi* subsp. *lindleyi	P4		343708	6610538	1	Immediately outside Targeted Survey Area
Verticordia lindleyi* subsp. *lindleyi	P4		343632	6611112	2	
Verticordia lindleyi* subsp. *lindleyi	P4		343472	6611170	6	
Verticordia lindleyi* subsp. *lindleyi	P4		343471	6611145	3	
Verticordia lindleyi* subsp. *lindleyi	P4		343468	6611105	8	
Verticordia lindleyi* subsp. *lindleyi	P4		343475	6611087	4	
Verticordia lindleyi* subsp. *lindleyi	P4		343549	6611093	5	
Verticordia lindleyi* subsp. *lindleyi	P4		343552	6611160	3	
Verticordia lindleyi* subsp. *lindleyi	P4		343549	6611169	6	
Verticordia lindleyi* subsp. *lindleyi	P4		343550	6611180	17	
Verticordia lindleyi* subsp. *lindleyi	P4		343491	6611319	1	
Verticordia lindleyi* subsp. *lindleyi	P4		343395	6611273	1	
Verticordia lindleyi* subsp. *lindleyi	P4		343153	6611284	2	Immediately outside Targeted Survey Area
Verticordia lindleyi* subsp. *lindleyi	P4		343149	6611346	1	
Verticordia lindleyi* subsp. *lindleyi	P4		343487	6611169	5	
Verticordia lindleyi* subsp. *lindleyi	P4		343491	6611159	2	
Verticordia lindleyi* subsp. *lindleyi	P4		343498	6611151	5	
Verticordia lindleyi* subsp. *lindleyi	P4		343482	6611144	3	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Verticordia lindleyi* subsp. *lindleyi	P4		343489	6611126	8	
Verticordia lindleyi* subsp. *lindleyi	P4		343575	6611158	3	
Verticordia lindleyi* subsp. *lindleyi	P4		343574	6611204	15	
Verticordia lindleyi* subsp. *lindleyi	P4		343574	6611204	2	
Verticordia lindleyi* subsp. *lindleyi	P4		343416	6611438	3	
Verticordia lindleyi* subsp. *lindleyi	P4		342948	6611713	1	
Verticordia lindleyi* subsp. *lindleyi	P4		342855	6611666	4	
Verticordia lindleyi* subsp. *lindleyi	P4		345070	6609901	1	
Verticordia lindleyi* subsp. *lindleyi	P4		344089	6610392	1	
Verticordia lindleyi* subsp. *lindleyi	P4		343691	6610581	5	
Verticordia lindleyi* subsp. *lindleyi	P4		343689	6610568	5	
Verticordia lindleyi* subsp. *lindleyi	P4		343450	6611134	4	
Verticordia lindleyi* subsp. *lindleyi	P4		343452	6611110	3	
Verticordia lindleyi* subsp. *lindleyi	P4		343540	6611045	3	
Verticordia lindleyi* subsp. *lindleyi	P4		343531	6611083	2	
Verticordia lindleyi* subsp. *lindleyi	P4		343531	6611114	6	
Verticordia lindleyi* subsp. *lindleyi	P4		343533	6611138	3	
Verticordia lindleyi* subsp. *lindleyi	P4		343532	6611153	7	
Verticordia lindleyi* subsp. *lindleyi	P4		343529	6611186	6	
Verticordia lindleyi* subsp. *lindleyi	P4		343455	6611570	1	
Verticordia lindleyi* subsp. *lindleyi	P4		343213	6611877	2	
Verticordia lindleyi* subsp. *lindleyi	P4		343209	6611459	3	
Verticordia lindleyi* subsp. *lindleyi	P4		343211	6611327	3	
Verticordia lindleyi* subsp. *lindleyi	P4		343128	6611758	1	
Verticordia lindleyi* subsp. *lindleyi	P4		341241	6612979	1	
Verticordia lindleyi* subsp. *lindleyi	P4		341322	6613063	2	
Verticordia lindleyi* subsp. *lindleyi	P4		341328	6613069	2	
Verticordia lindleyi* subsp. *lindleyi	P4		341504	6612702	1	
Verticordia lindleyi* subsp. *lindleyi	P4		341551	6612597	4	
Verticordia lindleyi* subsp. *lindleyi	P4		341763	6612440	6	
Verticordia lindleyi* subsp. *lindleyi	P4		341765	6612445	4	
Verticordia lindleyi* subsp. *lindleyi	P4		341759	6612452	6	
Verticordia lindleyi* subsp. *lindleyi	P4		341765	6612460	4	
Verticordia lindleyi* subsp. *lindleyi	P4		341772	6612428	5	
Verticordia lindleyi* subsp. *lindleyi	P4		341894	6612338	2	
Verticordia lindleyi* subsp. *lindleyi	P4		342323	6612238	2	
Verticordia lindleyi* subsp. *lindleyi	P4		342496	6611864	2	
Verticordia lindleyi* subsp. *lindleyi	P4		342497	6611797	2	
Verticordia lindleyi* subsp. *lindleyi	P4		342443	6612380	1	
Verticordia lindleyi* subsp. *lindleyi	P4		342450	6612399	2	Immediately outside Targeted Survey Area
Verticordia lindleyi* subsp. *lindleyi	P4		342471	6612337	1	
Verticordia lindleyi* subsp. *lindleyi	P4		342472	6612366	2	
Verticordia lindleyi* subsp. *lindleyi	P4		342570	6612346	1	
Verticordia lindleyi* subsp. *lindleyi	P4		342651	6612294	6	
Verticordia lindleyi* subsp. *lindleyi	P4		342651	6612309	2	
Verticordia lindleyi* subsp. *lindleyi	P4		342654	6612326	5	
Verticordia lindleyi* subsp. *lindleyi	P4		342752	6611539	6	

Taxon	Status (WA)	Status (EPBC)	Easting	Northing	Count	Location
Verticordia lindleyi* subsp. *lindleyi	P4		342777	6611726	1	
Verticordia lindleyi* subsp. *lindleyi	P4		343312	6611974	3	



APPENDIX E

Likelihood of Occurrence of Further Significant Flora Taxa in the Targeted Survey Area

Note: taxa shaded in blue have existing records within the Targeted Survey Area, and taxa shaded in grey were returned from the interrogation of the DCCEEW SPRAT Database but have not been previously recorded in the area according to DBCA databases (2021b, 2023d).

Symbols and sources are defined at the end of this appendix.

Taxon	Status (WA)	Status (EPBC)	Flowering Period[$]	Habitat		Identifiable During Survey	Nearest Location^	Likelihood of Occurrence
				WA Herbarium[$]	VTs*			
Acacia benthamii	P2		August to October	Flats and plains, sand dunes, seasonal wetlands with grey or brown sand, often over limestone. Limestone breakaways	-	Y	10.1 km to southwest	**Unlikely** Habitat not considered to be present. Nearest known location represents westerly extent of range
Allocasuarina grevilleoides	P3		September to November	Slopes, outcrops and plains with rocky or gravelly brown sand or clay loam over laterite or granite	CLW: 7.	Y	5 km to south	**Unlikely** Habitat not considered to be present
Andersonia gracilis	T	EN	August to November	Winter-wet areas, near swamps with white-grey sand, sandy clay and gravelly loam	2022: D-A, W-B, W-C. CLW: 1, 2, 5, 6, 7, 9b, 17, 18.	Y	3.3 km to east	**Unlikely** Existing record in Targeted Survey Area originates from a Mattiske (2017) survey. This record is considered erroneous, as the location occurs in Banksia woodland (VT D-A), which is not appropriate habitat for this taxon. It is possible this record is the result of a data entry error, as other records from the survey that occur in the vicinity of the Targeted Survey Area appear to be located in appropriate habitat. This taxon was searched for during the 2023 survey but was not recorded in the Targeted Survey Area

Taxon	Status (WA)	Status (EPBC)	Flowering Period[$]	Habitat		Identifiable During Survey	Nearest Location[^]	Likelihood of Occurrence
				WA Herbarium[$]	VTs*			
Angianthus micropodioides	P3		September to January	Winter-wet areas, shallow depressions, clay pans, subsaline flats and dunes adjacent to salt lakes with grey or brown clay loam or sand	CLW: 2, 5, 13.	Y	5.9 km to north	**Unlikely** Habitat not considered to be present
***Anigozanthos humilis* subsp. Badgingarra (S.D. Hopper 7114)**	P2		September to December	Slopes, plains, flats and winter-wet areas with white or grey sand. Banksia woodland, low wet heath	-	Y	10.7 km to east	**Unlikely** Western extent of known distribution is east of Targeted Survey Area (represented by nearest known location), closer to lateritic influence from Darling Scarp
Anigozanthos viridis* subsp. *terraspectans	T	VU	October to November	Winter-wet flats, wetlands and basins with brown or yellow sand or clay loam. Recently burnt areas	2022: D-A, W-A, W-C. CLW: 1, 2, 5, 7, 9a, 9b, 17.	Y	3.2 km to northeast	**Unlikely** Existing record in Targeted Survey Area from unknown origin (returned from Shared Flora Database (Iluka, 2021)). This record is of *Anigozanthos viridis* subsp. ?*terraspectans*, and plots on a cleared track within Banksia woodland (VT D-A), which is not appropriate habitat for this taxon. It is possible that the record represents a data entry error, or a misidentification. This taxon was searched for during the 2023 survey but was not recorded in the Targeted Survey Area. Appropriate habitat (true clay pans) not considered to be present.

Taxon	Status (WA)	Status (EPBC)	Flowering Period[$]	Habitat		Identifiable During Survey	Nearest Location^	Likelihood of Occurrence
				WA Herbarium[$]	VTs*			
Arnocrinum gracillimum	P3		October to January	Lower slopes and plains with white or grey sand over laterite, sometimes gravelly	CLW: 17, 18.	Y	4.0 km to northeast	**Unlikely** Western extent of known distribution is east of Targeted Survey Area (represented by nearest known location), closer to lateritic influence from Darling Scarp
Babingtonia* aff. *cherticola	PU		November to December	Sandplains, slopes and flats with brown or grey sand, sometimes gravelly and over laterite. Low wet heath	CLW: 1.	Y	60 km to northeast	**Unlikely** Habitat possibly present, but western extent of known distribution is east of Survey Area (represented by nearest known location), closer to lateritic influence from Darling Scarp
Babingtonia delicata	P1		November	Winter-wet closed depressions, wetlands and lakes with white, yellow or grey clayey sand	-	Y	7.9 km to southeast	**Unlikely** Habitat possibly present, but Targeted Survey Area occurs slightly northwest of northern extent of known distribution, and taxon was searched for during the 2023 survey but was not recorded in the Targeted Survey Area
Banksia catoglypta	T	VU	June	Slopes and breakaways with grey or white gravelly sand over laterite	-	Y	52 km to north	**Unlikely** Taxon restricted to a small area between Eneabba and Badgingarra. Nearest known location represents most southerly extent of range

Taxon	Status (WA)	Status (EPBC)	Flowering Period[$]	Habitat		Identifiable During Survey	Nearest Location^	Likelihood of Occurrence
				WA Herbarium[$]	VTs*			
Banksia dallanneyi* subsp. *pollosta	P3		August to September	Flats and slopes with grey or yellow sand with laterite or limestone	2022: W-C. CLW: 1, 5, 17, 18.	Y	30 km to southeast	**Unlikely** Existing records occur in close proximity to Targeted Survey Area, and habitat extends into Targeted Survey Area. However, multiple collections of *Banksia dallanneyi* were made during the 2023 survey in habitat appropriate for *Banksia dallanneyi* subsp. *pollosta* (P3), but they were later identified as *Banksia dallanneyi* subsp. *dallanneyi* var. *dallanneyi* (which is not of conservation significance). It is possible that the historical records of *Banksia dallanneyi* subsp. *pollosta* (P3) represent misidentifications of *Banksia dallanneyi* subsp. *dallanneyi* var. *dallanneyi*
Beaufortia bicolor	P3		November to December	Upland areas with sandy soils over laterite	CLW: 7, 17, 18.	Y	1.9 km to west	**Unlikely** Habitat not considered to be present
Beaufortia eriocephala	P3		June, September to December	Ridges, low rises and flats with brown, grey or white sand or sandy clay and lateritic gravel over laterite or sometimes granite	CLW: 7.	Y	6.5 km to southwest	**Unlikely** Habitat not considered to be present
Beyeria cinerea* subsp. *cinerea	P3		May to October	Slopes and hilltops with brown or grey calcareous sand over limestone	CLW: 8.	Y	12 km to southeast	**Unlikely** Habitat not considered to be present. Nearest known location represents easterly extent of range

Taxon	Status (WA)	Status (EPBC)	Flowering Period[$]	Habitat		Identifiable During Survey	Nearest Location^	Likelihood of Occurrence
				WA Herbarium[$]	VTs*			
Beyeria gardneri	P3		August to September	Sandplains and hillsides with yellow sand, often over laterite	-	Y	4.7 km to east	**Unlikely** Habitat not considered to be present; typically occurs on upland areas on the Dandaragan Scarp. Nearest known location represents westerly extent of range
Byblis gigantea	P3		October to January	Low plains, flats and swamps with brown or white sand or sandy clay, sometimes peaty	-	Y	150 km to south	**Not considered to be present** Taxon distribution extends from Guildford (approx. 150 km south of Targeted Survey Area) to Boddington. Nearest known location likely to be a misidentification, as the closely related *Byblis lamellata* is common in the Cooljarloo area
Caladenia denticulata* subsp. *albicans	P1		August to September	Near-coastal calcareous sandy soils under tall Acacia species	CLW: 17, 18.	N	5.2 km to southwest	**Unlikely** Habitat not considered to be present. Nearest known location represents easterly extent of range
Calectasia palustris	P2		September to November	Winter-wet flats and swamps with white sand	CLW: 1, 2, 5, 7.	Y	5.2 km to north	**Unlikely** Habitat possibly present, but Targeted Survey Area occurs slightly south of known distribution, and taxon was searched for during the 2023 survey but was not recorded in the Targeted Survey Area

Taxon	Status (WA)	Status (EPBC)	Flowering Period[$]	Habitat		Identifiable During Survey	Nearest Location[^]	Likelihood of Occurrence
				WA Herbarium[$]	VTs*			
Calytrix* aff. *eneabbensis	PU		-	-	-	Y	77 km to south	**Unlikely** Taxonomic status of this entity unclear. No individuals that resemble the entity referred to as *Calytrix* aff. *eneabbensis* were recorded by the 2022 or 2023 surveys, nor other previous surveys undertaken in the Osprey area for Tronox
Chamelaucium lullfitzii	T	EN	September to December	Hilltops, slopes and undulating plains with gravelly sand	-	Y	102 km to southeast	**Unlikely** Taxon restricted to a very small area between Gingin, Bindoon and Muchea. Nearest known location represents most northerly extent of range
Conostephium magnum	P4		July to September	Sand dunes and slopes with white-grey sand	2022: D-A. CLW: 1, 5, 6, 7, 8, 9b, 17, 18.	Y	2.5 km to east	**Unlikely** Habitat possibly present, but taxon was searched for during the 2023 survey but was not recorded in the Targeted Survey Area
Desmocladus biformis	P3		September to October	Hills, slopes and undulating plains with white or brown sand or sandy clay over laterite	CLW: 17.	Y	7.8 km to east	**Unlikely** Habitat not considered to be present; typically occurs on upland areas on the Dandaragan Scarp
Desmocladus elongatus	P4		August to December	Slopes, plains and uplands with white or grey sand over laterite	-	Y	10.1 km to east	**Unlikely** Habitat not considered to be present; typically occurs on upland areas on the Dandaragan Scarp. Nearest known location represents southwesterly extent of range

Taxon	Status (WA)	Status (EPBC)	Flowering Period[$]	Habitat		Identifiable During Survey	Nearest Location[^]	Likelihood of Occurrence
				WA Herbarium[$]	VTs*			
Drakaea elastica	T	EN	October to November	Low plains and flats with grey or white sand	-	Y	28 km to southeast	**Unlikely** Outside known range; taxon distribution extends from south of Perth (approx. 180 km south of Targeted Survey Area) to Busselton, with the exception of a disjunct record near Guraga Lake
Drosera leioblastus	P1		September to October	White siliceous sand with laterite	-	Y	6.1 km to east	**Unlikely** Habitat not considered to be present; typically occurs on upland areas on the Dandaragan Scarp. Nearest known location represents westerly extent of range
Drosera leucostigma	P1		November	Sandy margins of winter-wet areas	-	Y	8.4 km to northeast	**Unlikely** Taxon restricted to a very small area on the base of the Dandaragan Scarp, near Badgingarra and Watheroo. Nearest known location represents most southwesterly extent of range
Drosera prophylla	P3		June to July	Hilltops, lateritic breakaways, ridges and slopes with gravelly sand over laterite	-	Y	7.7 km to east	**Unlikely** Habitat not considered to be present; typically occurs on upland areas on the Dandaragan Scarp. Nearest known location represents southwesterly extent of range

Taxon	Status (WA)	Status (EPBC)	Flowering Period[$]	Habitat		Identifiable During Survey	Nearest Location^	Likelihood of Occurrence
				WA Herbarium[$]	VTs*			
Eremophila glabra* subsp. *chlorella	T	EN	July to November	Winter-wet depressions, lake edges and flats with grey-white sandy clay or sand	CLW: 2.	Y	4.5 km to south	**Unlikely** Habitat possibly present, but taxon was searched for during the 2023 survey but was not recorded in the Targeted Survey Area
***Eryngium pinnatifidum* subsp. Palustre (G.J. Keighery 13459)**	P3		September to November	Winter-wet flats and depressions and clay pans, sometimes inundated, with grey or brown clay or sandy clay	2022: W-A. CLW: 2, 16.	Y	12.9 km to northwest	**Unlikely** Habitat possibly present, but taxon was searched for during the 2023 survey but was not recorded in the Targeted Survey Area
Eucalyptus abdita	P2		February	Slopes and breakaways with laterite, sandy clay with gravel over laterite	-	Y	8.6 km to east	**Unlikely** Habitat not considered to be present
Eucalyptus* × *balanites	T	EN	February, June to July	Slopes and plains with white, brown or grey sand or sandy loam, sometimes gravelly and over laterite	-	Y	24 km to south	**Unlikely** Taxon restricted to a very small area west of Badgingarra (with the exception of a disjunct record near Armadale). Nearest known location represents most southerly extent of range
Eucalyptus dolorosa	T	EN	February	Lateritic slopes and breakaways with gravelly/rocky brown loam	-	Y	22 km to southeast	**Unlikely** Habitat not considered to be present. Taxon restricted to a single location on Mount Misery
Eucalyptus leprophloia	T	EN	July, November	Laterite breakaways with grey or white sand or sandy clay	-	Y	42 km to northeast	**Unlikely** Habitat not considered to be present. Nearest known location represents most southerly extent of range

Taxon	Status (WA)	Status (EPBC)	Flowering Period[$]	Habitat		Identifiable During Survey	Nearest Location^	Likelihood of Occurrence
				WA Herbarium[$]	VTs*			
Eucalyptus macrocarpa* subsp. *elachantha	P4		August to December	Hillslopes, ridges, sandplains with white or grey sand over laterite	-	Y	4.1 km to east	**Unlikely** Habitat not considered to be present, typically occurs on upland areas on the Dandaragan Scarp. Nearest known location represents westerly extent of range
Eucalyptus pendens	P4		August to October	Breakaways and slopes with white, yellow or brown gravelly sand or sandy loam over laterite	-	Y	7.0 km to northeast	**Unlikely** Habitat not considered to be present. Nearest known location represents most southerly extent of range
Frankenia glomerata	P4		November	Salt lake edges, watercourses and flats with white sand or grey-brown sandy loam	2022: W-D. CLW: 1, 2, 13.	Y	88 km to northeast	**Unlikely** As per **Section 5.1.2**, DBCA databases indicate that there are no records of this taxon in the Cooljarloo area (WA Herbarium, 1998-). It is possible that the record in the Desktop Study Area represents a misidentification
Grevillea batrachioides	T	EN	October to November	Slopes, plains and sandstone outcrops with brown gravelly sandy loam over sandstone	-	Y	54 km to north	**Unlikely** Habitat not considered to be present. Taxon restricted to a very small area in Lesueur National Park
Grevillea calliantha	T	EN	April, August to October	Plains and lower slopes with sandy loam over laterite or occasionally ironstone	-	Y	12 km to southeast	**Unlikely** Taxon restricted to a small area between Cataby and Dandaragan. Nearest known location represents most northwesterly extent of range

Taxon	Status (WA)	Status (EPBC)	Flowering Period[$]	Habitat		Identifiable During Survey	Nearest Location^	Likelihood of Occurrence
				WA Herbarium[$]	VTs*			
Grevillea saccata	P4		April or June to November	Hilltops and slopes with yellow or brown sand, usually with gravel and over laterite	-	Y	4.7 km to east	**Unlikely** Habitat not considered to be present, typically occurs on upland areas on the Dandaragan Scarp. Nearest known location represents westerly extent of range
Guichenotia alba	P3		July to August	Flats and lower slopes with white or grey sand or clay with gravel over laterite	CLW: 1, 5, 7, 18.	Y	7.1 km to southeast	**Unlikely** Habitat unlikely to be present, typically occurs on areas with greater laterite influence, generally closer to Dandaragan Scarp
Hakea longiflora	P3		June to July	High in landscape; hills, breakaways and plains with white, grey or yellow gravelly sand or sandy loam over laterite or occasionally sandstone	CLW: 1, 18.	Y	20 km to southeast	**Unlikely** Habitat not considered to be present, typically occurs on upland areas on the Dandaragan Scarp. Nearest known location represents westerly extent of range
Hakea megalosperma	T	VU	April to June	High in landscape; hills, breakaways, slopes and flats with white, grey or brown sand or sandy loam over laterite	-	Y	12 km to east	**Unlikely** Habitat not considered to be present
Haloragis foliosa	P3		December	Dunes, interdunal swales and open depressions with white, brown or grey sand or clay loam over limestone	-	Y	26 km to northwest	**Unlikely** Habitat not considered to be present; typically restricted to coastal and near-coastal areas. Nearest known location represents most southerly extent of range

Taxon	Status (WA)	Status (EPBC)	Flowering Period[$]	Habitat		Identifiable During Survey	Nearest Location[^]	Likelihood of Occurrence
				WA Herbarium[$]	VTs*			
Hemiandra gardneri	T	EN	August to November	Plains with yellow or grey sand or clayey sand	-	Y	58 km to east	**Unlikely** Known distribution generally much further east of Targeted Survey Area on the Dandaragan Scarp. Nearest known location represents most westerly extent of range (with the exception of a disjunct record west of Lesueur National Park)
Hibbertia leptotheca	P3		August to September	Slopes, dunes and limestone ridges and outcrops with white, grey or brown calcareous sand over limestone	-	Y	13 km to southwest	**Unlikely** Habitat not considered to be present; typically restricted to coastal and near-coastal areas. Nearest known location represents northern extent of range
Hopkinsia anoectocolea	P3		September to December	Winter-wet depressions, floodplains, salt lakes with white or grey sand, often saline	-	Y	4.4 km to southeast (in rehab)	**Unlikely** Taxon not known to be endemic to Cooljarloo area. Has been recorded in Cooljarloo rehabilitation, but of unknown origin; possibly introduced through seeding, or from topsoil. Taxon has not been recorded in remnant vegetation in Cooljarloo area despite numerous surveys
Hypocalymma ×proliferum	P1		August	Lateritic slopes and plains with yellow, grey or brown sand. Margins of watercourses	-	Y	18 km to southeast	**Unlikely** Habitat not considered to be present; typically occurs on upland areas on the Dandaragan Scarp. Nearest known location represents westerly extent of range

Taxon	Status (WA)	Status (EPBC)	Flowering Period[$]	Habitat		Identifiable During Survey	Nearest Location[^]	Likelihood of Occurrence
				WA Herbarium[$]	VTs*			
Hypocalymma serrulatum	P2		April to July, November, January	Drainage lines, edges of and slopes above winter-wet depressions with grey sand	CLW: 7.	Y	4.8 km to north	**Unlikely** Habitat not considered to be present; typically occurs on areas with greater laterite influence, generally closer to Dandaragan Scarp. Targeted Survey Area occurs west of known distribution
Hypocalymma tetrapterum	P3		July to September	Slopes above and edges of drainage lines with brown or grey sandy loam and lateritic gravel. Often in open eucalypt woodlands	-	Y	2.8 km to east	**Unlikely** Habitat not considered to be present; typically occurs on areas with greater laterite influence, generally closer to Dandaragan Scarp. Targeted Survey Area occurs west of known distribution
Hypolaena robusta	P4		September to November	Lateritic hills, plains and flats with white or grey sand and lateritic gravel over laterite, Banksia or *Eucalyptus todtiana* woodland	-	Y	7.3 km to east	**Unlikely** Habitat not considered to be present, Targeted Survey Area occurs slightly west of known distribution
Isopogon autumnalis	P3		April to June	Slopes, sandplains and flats with white, yellow or grey sand. Banksia woodland, upland areas	-	Y	6.2 km to east	**Unlikely** Habitat not considered to be present; typically occurs on upland areas on the Dandaragan Scarp

Taxon	Status (WA)	Status (EPBC)	Flowering Period[$]	Habitat		Identifiable During Survey	Nearest Location[^]	Likelihood of Occurrence
				WA Herbarium[$]	VTs*			
Isotropis cuneifolia* subsp. *glabra	P3		August to October	Low rises and winter-wet depressions and flats with grey or brown sand or clay	CLW: 1, 5, 9b.	Y	8.3 km to south	**Unlikely** Habitat possibly present, but Targeted Survey Area occurs slightly north of known distribution, and taxon was searched for during the 2023 survey but was not recorded in the Targeted Survey Area
Jacksonia anthoclada	P3		November	Slopes with brown, yellow or white sand over laterite, upland areas	-	Y	8.3 km to northeast	**Unlikely** Habitat not considered to be present; typically occurs on upland areas on the Dandaragan Scarp. Nearest known location represents most southerly extent of range
Jacksonia carduacea	P3		July, November to December	Plains and flats with white, grey or yellow sand, sometimes over laterite	2022: W-C. CLW: 1, 2, 5, 17, 18.	Y	2.6 km to northeast	**Unlikely** Habitat possibly present, but taxon was searched for during the 2023 survey and was not recorded in the Targeted Survey Area
Lepidobolus densus	P4		August	Sandplains, lake edges and slopes with brown or yellow sand	CLW: 18.	Y	74 km to southeast	**Unlikely** Habitat not considered to be present; typically occurs on upland areas on the Dandaragan Scarp. Not known from the Cooljarloo area
Lepidobolus quadratus	P3		August to September	Dry kwongan, hillslopes and rises with grey-white sand and lateritic gravel, upland areas	-	Y	11 km to east	**Unlikely** Habitat not considered to be present; typically occurs on upland areas on the Dandaragan Scarp

Taxon	Status (WA)	Status (EPBC)	Flowering Period[$]	Habitat		Identifiable During Survey	Nearest Location[^]	Likelihood of Occurrence
				WA Herbarium[$]	VTs*			
Lepyrodia curvescens	P2		September to November	Plains, winter wet flats, depressions and edges of wetlands with grey sandy loam	2022: D-A, W-C. CLW: 17.	Y	2.7 km to south	**Unlikely** Habitat possibly present, but taxon was searched for during the 2023 survey but was not recorded in the Targeted Survey Area
***Leucopogon* sp. Yanchep (M. Hislop 1986)**	P3		April to June	Crests of low rises and plains, often coastal, with yellow, brown or grey sand over limestone. Banksia woodland	CLW: 1.	Y	35 km to south	**Unlikely** Habitat not considered to be present. Not known from the Cooljarloo area
Loxocarya gigas	P2		October to February	Lateritic breakaways, ridges, slopes and flats with white or grey sand over laterite	-	Y	51 km to north	**Unlikely** Habitat not considered to be present. Majority of taxon records are from Warradarge east to Pinjarrega (west of Coorow), with the exception of a disjunct record in Boonanarring Nature Reserve
Lyginia excelsa	P1		September to October	Slopes, undulating plains and open depressions with white or grey sandy loam	CLW: 1.	Y	8.9 km to northeast	**Unlikely** Habitat not considered to be present; typically occurs on upland areas on the Dandaragan Scarp. All records in Targeted Survey Area in Shared Flora Database are historical misidentifications of *Lyginia imberbis*

Taxon	Status (WA)	Status (EPBC)	Flowering Period[$]	Habitat		Identifiable During Survey	Nearest Location[^]	Likelihood of Occurrence
				WA Herbarium[$]	VTs*			
Meionectes tenuifolia	P3		October to December	Inundated alluvial, granitic and winter-wet flats and wetlands with grey or brown sandy loam	-	Y	6.0 km to southwest	**Unlikely** Coordinates of nearest known location (from DBCA database interrogation) are erroneous, and have been updated on Florabase to 46 km east of the Targeted Survey Area near Moora. All other records of this taxon occur east and south of Gingin
Myriophyllum muelleri	P1		November	Inundated winter-wet depressions, freshwater lagoons	-	Y	9.6 km to northwest	**Unlikely** Habitat not considered to be present. According to specimens lodged at the WA Herbarium, only known from two locations; near Nambung National Park, and near Esperance. Coordinates of nearest known location are erroneous and do not match locality description (Nambung River), with actual record likely to be further north and/or west
Paracaleana dixonii	T	EN	October to January	Undulating plains, flats and slopes with gravelly grey sand	CLW: 17, 18.	Y	5.9 km to southeast	**Unlikely** Habitat possibly present, but taxon was searched for during the 2023 survey but was not recorded in the Targeted Survey Area

Taxon	Status (WA)	Status (EPBC)	Flowering Period[$]	Habitat		Identifiable During Survey	Nearest Location^	Likelihood of Occurrence
				WA Herbarium[$]	VTs*			
Persoonia filiformis	P3		November to December	Sandplains with yellow or white sand over laterite	-	Y	4.2 km to east	**Unlikely** Western extent of known distribution is east of Targeted Survey Area (represented by nearest known location), closer to lateritic influence from Darling Scarp
Persoonia rudis	P3		September to January	Sandplains and flats with white, grey or yellow sand, often over laterite	2022: W-C. CLW: 17.	Y	5.9 km to east	**Unlikely** Habitat possibly present, but taxon was searched for during the 2023 survey but was not recorded in the Targeted Survey Area
Phlebocarya pilosissima* subsp. *pilosissima	P3		August to October	Upland areas with white or grey sand with lateritic gravel	-	Y	5.2 km to north	**Unlikely** Habitat not considered to be present; typically occurs on upland, lateritic areas on the Dandaragan Scarp
Platysace ramosissima	P3		October to November	Undulating plains and flats with yellow, brown or grey sand	CLW: 1, 2, 5, 6, 7, 17, 18.	Y	36 km to southeast	**Unlikely** Taxon not known from Cooljarloo area. Historical records of *Platysace ramosissima* (P3) from the Cooljarloo area are likely misidentifications of *Platysace xerophila*, which is not of conservation significance

Taxon	Status (WA)	Status (EPBC)	Flowering Period[$]	Habitat		Identifiable During Survey	Nearest Location[^]	Likelihood of Occurrence
				WA Herbarium[$]	VTs*			
Ptychosema pusillum	T	VU	September to October	Low plains, slopes and dunes with white or grey sand. Banksia woodland	-	Y	18 km to southeast	**Unlikely** Targeted Survey Area occurs outside accepted distribution. The location description for the record from near Badgingarra (no date attached) is potentially dubious, as this record is not mentioned in the Approved Conservation Advice for the species (DEWHA, 2008)
Schoenus badius	P2		September to October	Slopes, drainage lines and winter-wet flats with grey or brown sand	-	Y	4.9 km to northwest	**Unlikely** Taxon not known from Cooljarloo area. DBCA location is erroneous; WAHerb specimen may be missing. Taxon restricted to near Dongara to Geraldton. Other specimens from Cooljarloo area previously identified as this taxon have been re-identified as *Schoenus pennisetis* (P3)
Schoenus natans	P4		September to December	Inundated winter-wet wetlands, clay pans and drainage lines with brown or grey clay, sometimes with lateritic gravel	CLW: 9a.	Y	8.8 km to southeast	**Unlikely** Habitat not considered to be present
Stenanthemum sublineare	P2		October to December	Slopes and flats with grey or brown sandy loam	CLW: 17.	Y	6.1 km to southwest	**Unlikely** Habitat possibly present, but taxon was searched for during the 2023 survey but was not recorded in the Targeted Survey Area

Taxon	Status (WA)	Status (EPBC)	Flowering Period[$]	Habitat		Identifiable During Survey	Nearest Location[^]	Likelihood of Occurrence
				WA Herbarium[$]	VTs*			
Stylidium aceratum	P3		October to November	Winter-wet flats, swamps and wetlands with grey or brown sandy loam	CLW: 2.	Y	1.5 km to east	**Unlikely** Habitat possibly present, but taxon was searched for during the 2023 survey but was not recorded in the Targeted Survey Area
Stylidium aeonioides	P4		September to November	Breakaways, slopes and flats with grey gravelly sand or clayey sand over laterite	-	Y	6.0 km to north	**Unlikely** Habitat not considered to be present
***Stylidium carnosum* subsp. ?Narrow leaves (J.A. Wege 490)**	P1		September to October	Lateritic hillslopes and plains with white-grey sand	CLW: 18.	Y	20 km to north	**Unlikely** Habitat not considered to be present
Stylidium longitubum	P4		July, October to December	Winter-wet damplands, flats and wetlands with brown or grey clay loam	2022: W-D. CLW: 1, 9a, 13.	Y	1.1 km to west	**Unlikely** Habitat possibly present, but taxon was searched for during the 2023 survey but was not recorded in the Targeted Survey Area
Stylidium maritimum	P3		September to November	Dune slopes and flats, coastal heath and shrubland, open Banksia woodland with sand over limestone	-	Y	25 km to west	**Unlikely** Habitat not considered to be present; restricted to coastal and near-coastal areas
Stylidium tinkeri	P1		April, October to November	Winter-wet depressions, flats, wetlands and valleys with brown or grey clay loam	-	Y	6.5 km to northeast	**Unlikely** All but one known record occur across a small range between Arrowsmith and Three Springs, 110 km north of Targeted Survey Area. Nearest known location is disjunct from the remainder of records

Taxon	Status (WA)	Status (EPBC)	Flowering Period[$]	Habitat		Identifiable During Survey	Nearest Location^	Likelihood of Occurrence
				WA Herbarium[$]	VTs*			
Stylidium torticarpum	P3		September to November	Adjacent to drainage lines, depressions, and beneath breakaways, heath or mallee shrubland on sandy clay or clay loam over laterite	-	Y	7.8 km to north	**Unlikely** Taxon not known from Cooljarloo area. Nearest known location is erroneous; coordinates do not match locality description (Mount Lesueur area)
Styphelia obtecta	T	EN	October to November	Plains with white, grey or yellow sand	-	Y	64 km to north	**Unlikely** Taxon not known from Cooljarloo area. Taxon distribution extends from north of Eneabba to South Eneabba Nature Reserve (with the exception of a disjunct record at Alexander Morrison National Park)
Tetratheca angulata	P3		September to December	Slopes and hilltops with white, grey or brown gravelly sand or loam over laterite, bases of ridges and breakaways	-	Y	9.6 km to east	**Unlikely** Habitat not considered to be present. Nearest known location represents most westerly extent of range
Thelymitra apiculata	P4		June to August	Slopes with grey or brown sand with lateritic gravel	CLW: 1.	N	4.9 km to southeast	**Unlikely** Habitat not considered to be present; typically occurs on areas with greater laterite influence, generally closer to Dandaragan Scarp
Thelymitra pulcherrima	P2		July to September	Flats and slopes of lateritic hills with white-grey sand or grey-brown sandy clay	CLW: 1, 17.	N	6.7 km to south	**Unlikely** Habitat unlikely to be present; typically occurs on areas with greater laterite influence, generally closer to Dandaragan Scarp

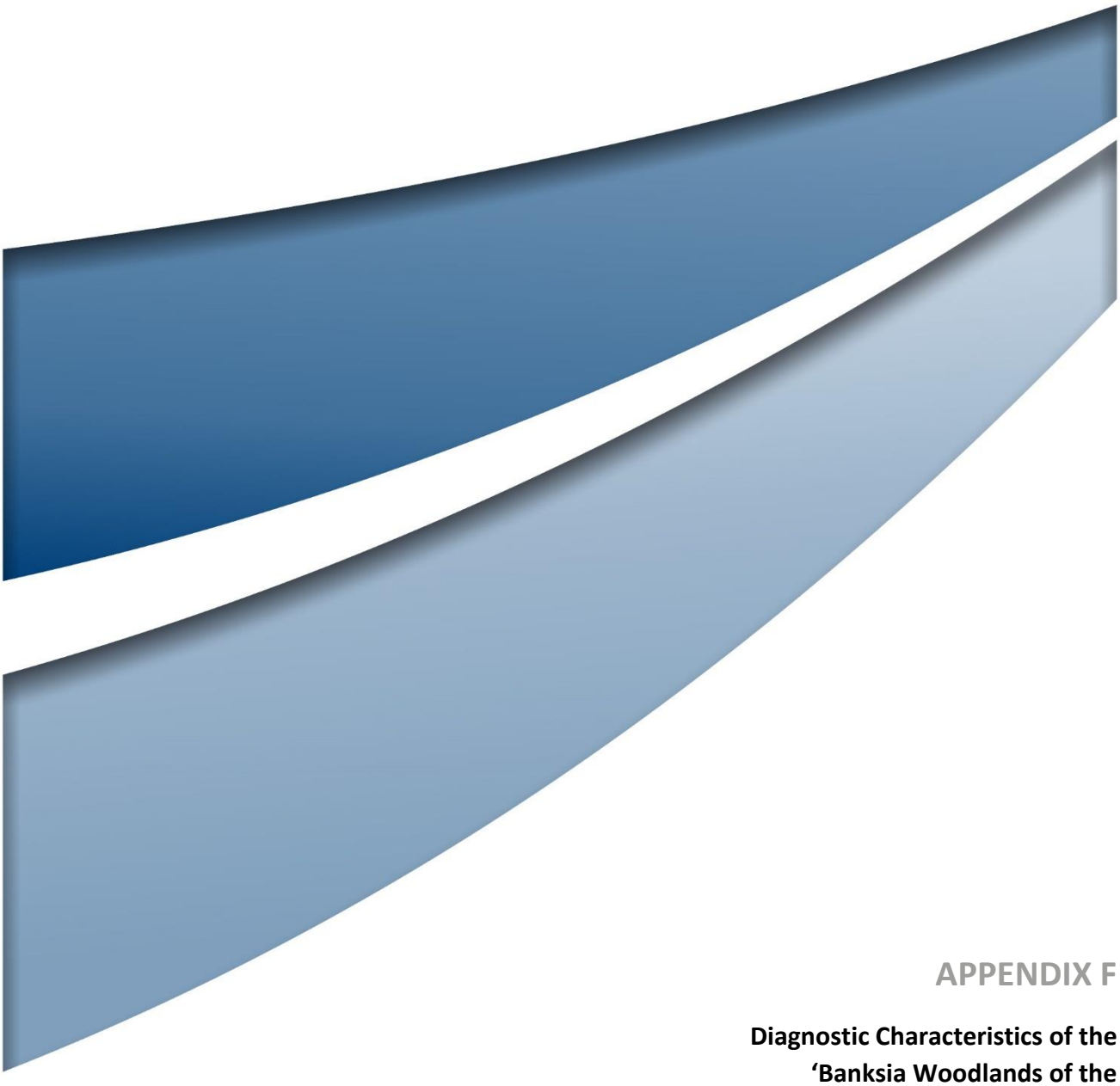
Taxon	Status (WA)	Status (EPBC)	Flowering Period[$]	Habitat		Identifiable During Survey	Nearest Location^	Likelihood of Occurrence
				WA Herbarium[$]	VTs*			
Thelymitra stellata	T	EN	October to November	Ridges and tops of lateritic hills with grey or brown sand or loam and lateritic gravel	-	Y	8.5 km to south	**Unlikely** Habitat not considered to be present. Taxon not known from Cooljarloo area; taxon has disjunct distribution, with majority of records occurring from Coomallo Nature Reserve north to Arrowsmith, and a small number of records occurring from Boonanarring south to Armadale
Verticordia amphigia	P3		October to November	Winter-wet depressions with sandy loam, clay and rocky loam, ferricrete	-	Y	3.0 km to east	**Unlikely** Habitat not considered to be present
Verticordia huegelii* var. *tridens	P3		September to November	Slopes and gullies with brown or cream clay loam, over laterite or sometimes granite or spongolite	-	Y	6.9 km to south	**Unlikely** Taxon not known from Cooljarloo area. Previous record in area confirmed by Mattiske (2017) as a misidentification; correct identification is *Verticordia huegelii* var. *decumbens*

EN = Endangered; VU = Vulnerable; PU =Potentially undescribed.

[$] Source: Specimen information from specimens lodged at the WA Herbarium (accessed via Florabase) (WA Herbarium, 1998-).

** Detailed Survey Area and Cooljarloo West VTs within which known records occur (where spatial data is available).*

^ Nearest known location to Targeted Survey Area, determined using spatial data from interrogation of DBCA WA Herbarium Specimen and TPFL Databases (DBCA, 2023d) (for taxa that were returned by this interrogation), or otherwise determined manually using location information available on Florabase (WA Herbarium, 1998-).



APPENDIX F

Diagnostic Characteristics of the 'Banksia Woodlands of the Swan Coastal Plain' EPBC-listed TEC

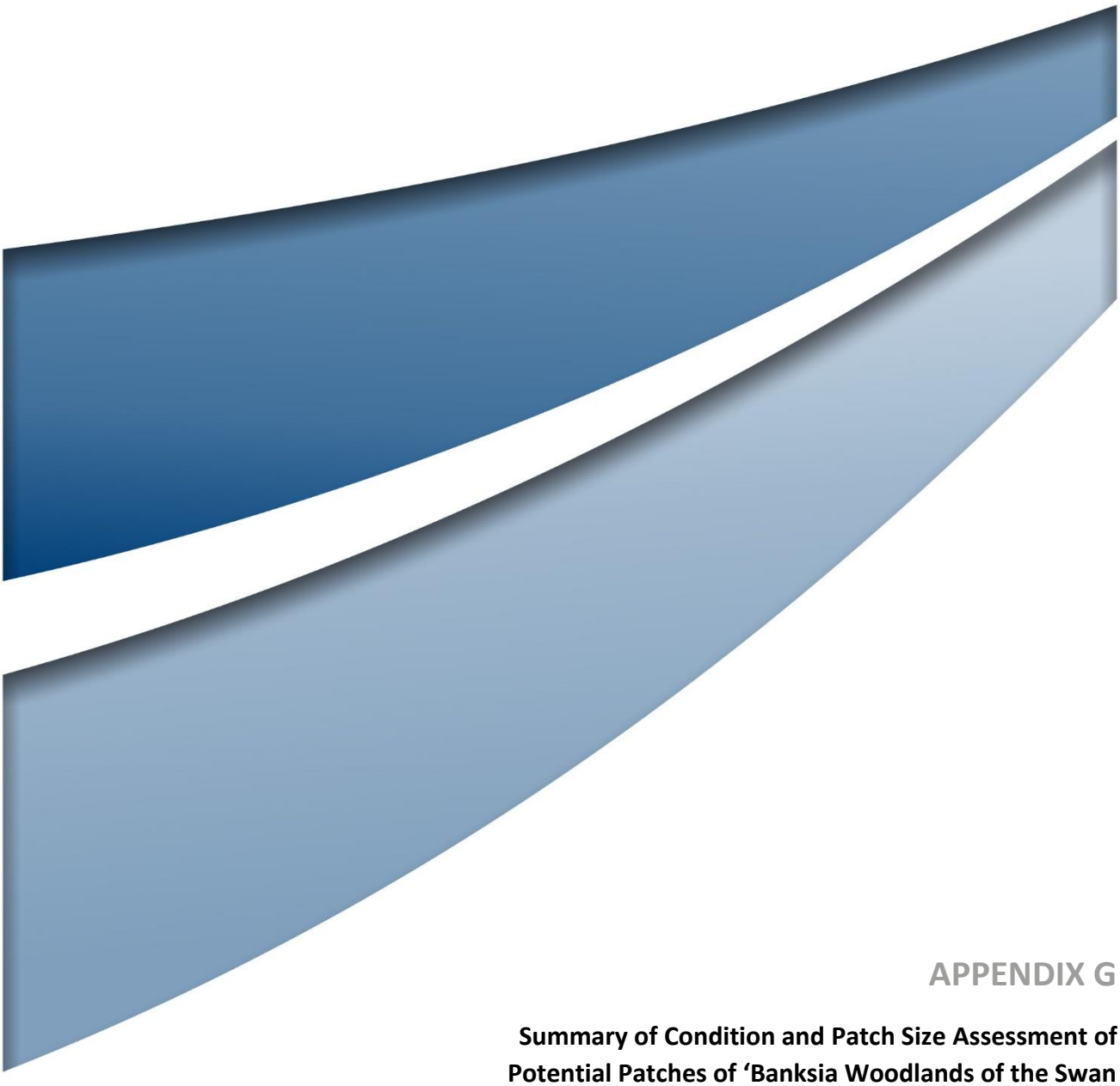
Criterion		Description
Location and Physical Environment (must satisfy criterion 1)		
1		Patch is located within the Swan Coastal Plain IBRA Bioregion
Soils and Landform (must satisfy criterion 2(a) OR 2(b))		
2	**(a)**	Patch occurs on well-drained, low nutrient soils on sandplain landforms OR
	(b)	Patch occurs on sandy colluvium and aeolian sands of the Dandaragan Plateau
Structure and Vegetation (must satisfy criteria 3(a) AND 3(b), sometimes also satisfying criteria 3(c) and 3(d))		
3	**(a)**	Is a low woodland to forest AND
	(b)	Patch includes at least one of the following Banksia species as dominant or co-dominant in the upper layer: • *Banksia attenuata* • *Banksia menziesii* • *Banksia prionotes* • *Banksia ilicifolia*
	(c)	Patch includes emergent trees of medium or tall (> 10 m) height above the Banksia canopy, often including: • *Corymbia calophylla* • *Eucalyptus marginata* • *Eucalyptus gomphocephala* • *Nuytsia floribunda* • *Allocasuarina fraseriana* • *Callitris arenaria* • *Callitris pyramidalis* • *Xylomelum occidentale*
	(d)	Patch has an often highly species-rich understorey that consists of: • a layer of sclerophyllous shrubs of various heights • a herbaceous ground layer of cord rushes, sedges and perennial and ephemeral forbs, that sometimes includes grasses
Vegetation Condition (must satisfy criterion 4(a) OR 4(b))		
4	**(a)**	Vegetation condition of patch is Pristine to Good using the following indicative measures: • Low native species diversity to native species diversity fully retained • 0 % to 50 % weed cover OR
	(b)	Vegetation condition of patch is Degraded to Very Degraded but retains important natural values
Patch Size (must satisfy criterion 5(a) OR 5(b))		
5	**(a)**	Patch size meets the minimum size according to its condition, as below: • Pristine – no minimum patch size applies • Excellent – 0.5 ha or 5,000 m^2 (e.g. 50 m x 100 m) • Very Good – 1 ha or 10,000 m^2 (e.g. 100 m x 100 m) • Good – 2 ha or 20,000 m^2 (e.g. 200 m x 100 m) OR
	(b)	Patch is smaller than the above requirements but contributes to the overall function of the ecological community (e.g. contributes ß-diversity and connectivity)

Contra-indicators	Description
1	Patch is clearly dominated by *Banksia littoralis* (indicates a different, dampland community)
2	Patch is clearly dominated by *Bankia burdettii* (indicates a tall shrubland and not the Banksia Woodlands ecological community)
3	Patch represents FCT 20c (corresponds with a separate EPBC ecological community listing, 'Shrublands and Woodlands of the eastern Swan Coastal Plain', which occurs mainly on the transitional soils of the Ridge Hill Shelf, on the Swan Coastal Plain adjacent to the Darling Scarp, but also extends marginally onto the alluvial clays deposited on the eastern fringe of the Swan Coastal Plain)

Key

Colour	Definition
	Must be satisfied
	May or may not be satisfied
	Must not be satisfied

Source: Approved Conservation Advice (incorporating listing advice) for the Banksia Woodlands of the Swan Coastal Plain ecological community (DoEE, 2016).



APPENDIX G

Summary of Condition and Patch Size Assessment of Potential Patches of 'Banksia Woodlands of the Swan Coastal Plain' TEC within the Targeted Survey Area

Potential Patch Number	Vegetation Condition	Area Mapped (ha)	Criteria Outcome		Other Considerations	Overall Outcome
			Vegetation Condition*	Patch Size^		
7	Excellent	17.11	Met	Met	Not required to be assessed; patch meets vegetation condition and patch size requirements	**Part of the TEC**
10	Excellent	0.06	Met	Not Met	Does not contribute significantly to the overall function of the ecological community – small island of vegetation that does not contribute to connectivity, potential patch 11 is not within 30 m	Not part of the TEC
11	Excellent	0.005	Met	Not Met	Does not contribute significantly to the overall function of the ecological community – small island of vegetation that does not contribute to connectivity, potential patches 10 and 12 are not within 30 m	Not part of the TEC
12	Excellent	20.33	Met	Met	Not required to be assessed; patch meets vegetation condition and patch size requirements	**Part of the TEC**
13	Excellent	0.17	Met	Not Met	Does not contribute significantly to the overall function of the ecological community – small island of vegetation that does not contribute to connectivity, potential patch 14 is not within 30 m	Not part of the TEC
16	Excellent	0.11	Met	Not Met	Does not contribute significantly to the overall function of the ecological community – small island of vegetation that does not contribute to connectivity	Not part of the TEC
19	Excellent	0.01	Met	Not Met	Does not contribute significantly to the overall function of the ecological community – small island of vegetation that does not contribute to connectivity, potential patches 12 and 20 are not within 30 m	Not part of the TEC
23	Excellent	0.24	Met	Not Met	Does not contribute significantly to the overall function of the ecological community – small island of vegetation that does not contribute to connectivity, potential patch 12 is not within 30 m	Not part of the TEC
24	Excellent	0.92	Met	Met	Not required to be assessed; patch meets vegetation condition and patch size requirements	**Part of the TEC**
25	Excellent	1.41	Met	Met	Not required to be assessed; patch meets vegetation condition and patch size requirements	**Part of the TEC**
26	Excellent	15.35	Met	Met	Not required to be assessed; patch meets vegetation condition and patch size requirements	**Part of the TEC**

Potential Patch Number	Vegetation Condition	Area Mapped (ha)	Criteria Outcome		Other Considerations	Overall Outcome
			Vegetation Condition*	Patch Size^		
28	Excellent	0.02	Met	Not Met	Contributes to the overall function of the ecological community – contiguous vegetation occurs outside the Targeted Survey Area within the Detailed Survey Area. Patch 28 was mapped by the 2022 Detailed Survey over an area of 60 ha, and thus meets the patch size requirements	**Part of the TEC**
Total		**55.74**				

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