438000 439000 440000 441000 442000 443000 444000 445000 446000 447000

6350000 6349000 6348000 6347000 6346000 6345000

Boronia tenuis

Senecio leucoglossus

Legend

- Priority 4
- Infill Areas
- Worsley Mine Development Envelope
- Excellent
- Degraded
- Completely Degraded

Note
Aerial photography: Landgate (2017)

Client: SOUTH32

N

0 250 500m
Scale: 1:25,000
MGA94 (Zone 50)

CAD Ref: g1881_Veg_f17_06

Date: Feb 2019 | Rev: C | A3

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Worsley Mine Expansion
Site-vegetation Condition and Threatened and Priority Flora
Sheet 11 of 13

Figure:
6.11

448000 449000 450000 451000 452000 453000 454000 455000 456000

6350000 6349000 6348000 6347000 6346000 6345000

Senecio leucoglossus
Stylidium marradongense
Stylidium marradongense
Senecio leucoglossus
Lasiopetalum cardiophyllum
Stylidium marradongense
Hemigenia rigida
Caladenia hopperiana

Legend

- Priority T
- Priority 1
- Priority 3
- Priority 4
- Infill Areas
- Worsley Mine Development Envelope
- Excellent
- Very Good
- Good
- Degraded
- Completely Degraded

Note
Aerial photography: Landgate (2017)

Client: SOUTH32

N

0 250 500m
Scale: 1:25,000
MGA94 (Zone 50)

CAD Ref: g1881_Veg_f17_06
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Worsley Mine Expansion
Site-vegetation Condition and Threatened and Priority Flora
Sheet 12 of 13

Figure: **6.12**

457000 458000 459000 460000 461000 462000 463000 464000 465000

6350000 6349000 6348000 6347000 6346000 6345000

Caladenia hopperiana
Caladenia hopperiana
Caladenia hopperiana
Eleocharis keigheryi
Lasiopetalum cardiophyllum
Caladenia hopperiana
Caladenia hopperiana

Legend

- Priority T
- Priority 4
- Infill Areas
- Worsley Mine Development Envelope
- Excellent
- Good
- Degraded
- Completely Degraded

Note
Aerial photography: Landgate (2017)

Client: SOUTH32

N

0 250 500m
Scale: 1:25,000
MGA94 (Zone 50)

CAD Ref: g1881_Veg_f17_06
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Worsley Mine Expansion
Site-vegetation Condition and Threatened and Priority Flora
Sheet 13 of 13

Figure: **6.13**

5.7 Threatened and Priority Ecological Communities

No Threatened Ecological Communities (TECs) are known to occur within the areas the subject of the Proposal. It is recognized from database searches that the TEC –"Eucalypt Woodlands of the Western Australian Wheatbelt" has the potential to occur near the WMDE and Bauxite Transport Corridor – it has been mapped to the east and northeast of the WMDE and Bauxite Transport Corridor areas, however not within them (Appendix K). The TEC "Banksia Woodlands of the Swan Coastal Plain" has been mapped in the vicinity of the CBME (Department of Biodiversity, Conservation and Attractions 2019c, Department of the Environment and Energy 2019b), however as the CBME is located within the Darling Ranges there is no expectation that this TEC will occur within the CBME (Appendix K). One Priority Ecological Community (PEC) occurs within the WMDE, namely - The *Mount Saddleback Heath Communities* (PEC - P1) (Department of Biodiversity, Conservation and Attractions 2019d). The PEC as defined by DBCA has affinities with the site-vegetation types within the areas of heath on the Mt Saddleback area as defined and mapped by Mattiske (i.e. G, G1, G3 and G4). This PEC formerly was aligned with the larger area of heath communities on the Tunnell Road area, however now includes the Mount Saddleback Heath Communities covering some of the G1, G3 and G4 occurrences (see Figures 5.1 to 5.13 as highlighted). The heath communities within the northern and eastern Jarrah forests extend well beyond those defined and mapped in the Mt Saddleback area; however the PEC as defined by DBCA relates to the heath communities in the Mt Saddleback area (Figure 3).

The heath communities include:

- Site-vegetation Type G: Open Heath of *Grevillea bipinnatifida, Hakea undulata, Banksia squarrosa* subsp. *squarrosa, Hakea incrassata, Hakea undulata* and *Petrophile serruriae* over *Borya sphaerocephala* on shallow soils and outcrops.

- Site-vegetation Type G1: Mosaic of open heath of Proteaceae – Myrtaceae spp. with emergent patches of *Eucalyptus drummondii* on shallow soils on slopes.

- Site-vegetation Type G3: Open heath of *Banksia squarrosa* subsp. *squarrosa, Hakea incrassata, Hakea undulata, Petrophile heterophylla* and *Petrophile serruriae* on shallow soils over granite outcrops on slopes with occasional emergent *Eucalyptus drummondii.*

- Site-vegetation Type G4: Open scrub and tall shrubland of *Hakea trifurcata* and *Hakea undulata* with admixtures of mallee species including *Eucalyptus latens* and *Eucalyptus aspersa* on clay to clay-loam soils over outcrops on slopes.

- Site-vegetation Type G5: Low woodland of Eucalypt mallee species including *Eucalyptus aspersa, Eucalyptus latens, Eucalyptus longicornis* and *Eucalyptus drummondii* with occasional *Eucalyptus wandoo* over low shrubs of *Allocasuarina humilis, Hakea incrassata*, *Synaphea damopsis* and herbs on clay loams and sandy-loams on slopes.

These site-vegetation types are variants of the site-vegetation type G as defined by Havel (1975a and 1975b) and areas associated with shallow soils and granite outcrops. Several have some low mallee *Eucalyptus* species (G3, G4 and G5 as components) which provides patches of low woodlands.

The heath communities as defined and mapped are managed by South32 Worsley through the existing Protected Areas Procedure.

5.8 Significant Vegetation Communities

The following vegetation complexes and site-vegetation types are considered to be significant for their restricted representation in the conservation estate (less than 10% representation in formal and informal reserves) and also as potential wildlife corridors along creeklines.

Vegetation Complexes

- Williams – Along the major creeklines and rivers – less than 0.45% in formal and informal reserves, provides corridors and protects riparian areas (Conservation Commission 2003)
- Michibin – On Valley slopes in eastern areas of Jarrah forest – less than 7.11% in formal and informal reserves (Conservation Commission 2003).

Site-Vegetation Types

- G Types (G1, G2, G3, and G4) – lithic complexes, heath, shrublands open scrubs and woodland communities associated with shallow soils over granite and exposed granite outcrop areas. Some of these areas (G1, G3 and G4 near Mt Saddleback) overlap with the PEC (Priority 1) Mt Saddleback Heath Communities (DBCA 2019d and as supplied by DBCA – Figure 3).
- Types DG, HG and MG that are a mixture of different site-vegetation types over shallow granites in the Infill Areas, the WMDE and the wider mapped areas near Boddington.
- L Type – Open woodland of *Eucalyptus patens* with some *Eucalyptus wandoo* on lower slopes. This site-vegetation type has been cleared in sections of the eastern Jarrah forest for agriculture activities as the earlier land holders recognized the alluvial soils associated with the occurrence of the *Eucalyptus patens* communities.
- The M2 site-vegetation type which supports woodlands of *Eucalyptus accedens*, *Eucalyptus wandoo, Eucalyptus marginata* and *Corymbia calophylla* on eastern breakaways. The M2 site-vegetation type occurs in the Infill Areas, the Bauxite Transport Corridor, the WMDE and the wider mapped areas near Boddington. This site-vegetation type occurs eastwards on the upper slopes and ridges of the Eastern Jarrah forest.
- A, AY, AX, AC Types – Woodlands of *Eucalyptus rudis* and *Melaleuca* species on the swamps and creeklines that provide linkages for fauna species and also for variety of plant species on variable soils.

Other communities are significant as they support threatened and priority species. The main communities that support threatened and priority flora species include the Jarrah – Sheoak communities supporting *Lasiopetalum cardiophyllum* (P4), the lower slopes near the Hotham River and swamps (site-vegetation types A, AY, AX, AC, CW, SW and Y), the heath communities (G, G1 and G3) and open forests of *Eucalyptus marginata* subsp*. thalassica – Corymbia calophylla – Allocasuarina fraseriana* (site-vegetation types P and PS), see Figures 5.1 to 5.14.

6. DISCUSSION

This report represents a consolidation of recent assessments of the flora and vegetation values on the Infill Areas and the Bauxite Transport Corridor areas and the previous baseline information for the broader WME areas near Boddington and Collie. This assessment supplements earlier baseline flora and vegetation surveys of the Mt Saddleback area since the 1980's (Worsley Alumina Pty Ltd 1985) more recent studies on the Quindanning Timber Reserve (Mattiske Consulting Pty Ltd 1993), Marradong Timber Reserve (Mattiske Consulting Pty Ltd 1990), the Collie Refinery area (1999, 2014) and other areas of agricultural holdings, State Forest and forested areas near the Boddington operations.

6.1 Flora

Desktop searches of the EPBC Act Protected Matters database, the DBCA *NatureMap* database, and where available the Western Australian Herbarium (WAH) and Threatened and Priority Flora (TPFL) databases have identified the potential occurrence of 80 conservation significant flora species within 20 km of the WMDE and Bauxite Transport Corridor, and 32 conservation significant flora species within 20 km of the CBME. This information, together with a literature review of all available datasets from previous flora and vegetation surveys for the Project, has formed the basis of a likelihood assessment for conservation significant flora within the proposed expansion areas.

Since the early 1980's, a total of 680 plant taxa from 72 families and 260 genera have been recorded in the main baseline studies undertaken on the Worsley lease areas and 289 vascular plant species from 54 plant families and 149 genera have been recorded in the main baseline studies undertaken in the Collie areas.

A total of 149 plant taxa from 42 families and 94 genera were recorded in recently assessed areas on the Infill Areas. This low level of diversity reflects the largely degraded (64.74% completely degraded and 11.38% degraded) nature of substantial portions of the Infill Areas.

One threatened flora (*Caladenia hopperiana*) pursuant to Schedule 1 of the *Wildlife Conservation Act 1950* and the *Environment Protection and Biodiversity Conservation Act 1999* has been recorded within the WMDE. Currently this species is relatively restricted within the proposed expansion areas to a localised area in the south-eastern section of the WMDE. The *Caladenia hopperiana* was formerly recorded as *Caladenia* sp. Quindanning (K. Smith & P. Johns 231) (DBCA 2019a). Two other threatened flora species (*Caladenia dorrienii* and *Eleocharis keigheryi*) were recorded to the east of the WMDE and Infill Areas, Figures 5.1 to 5.13. South32 has a Protected Areas Procedure to manage by avoidance the threatened flora.

Of the identified potential conservation significant species, 15 (one Threatened and 14 Priority flora species) have been recorded within the proposed WMDE and Bauxite Transport Corridor. No threatened or priority flora were recorded within the recent Infill Areas.

One conservation significant species has been recorded within the proposed CBME and one occurred on the fringes of the CBME. Of the Priority species the most significant species include the *Gastrolobium* sp. Prostrate Boddington (M. Hislop 2130) (Priority 1), which is mainly concentrated on the lower slopes near the Hotham River (which overlaps within the Bauxite Transport Corridor and the WMDE) and the eastern anomaly north of the current Boddington Gold Mine camp on the lower valley slopes, and the range of Priority species restricted to the heath communities. The latter group of species in the heath communities are to some degree protected from clearing as their occurrences overlap with the PEC community – Mt Saddleback Heath Communities. This community was listed after mining commenced within Saddleback Timber Reserve and was initially only associated with Tunnell Road Heath community.

A total of 28 introduced flora species have been recorded within the Infill Areas. A total of 80 introduced flora species have been recorded in the wider lease areas near Boddington and Collie. A total of 15 introduced flora species have been recorded within the CBME area.

The majority of the weeds are short term annual species that establish on disturbed agricultural lands and although some establish in the early phase of rehabilitation, the majority are quickly outgrown by more perennial and larger native shrub and tree species.

Of the potential introduced flora species the following are Declared Plants under the *Biodiversity and Agricultural Management Act 2007* (BAM Act) (DAFWA 2018), namely:

- **Gomphocarpus fruticosus* (Declared Plant under BAM Act) – near Collie Refinery (DPAW 2019a; DotEE 2019a)
- **Silybum marianum* (Declared Plant under BAM Act) – near Collie Refinery in Phase One (Danes and Moore 1981)
- **Asparagus asparagoides* (Declared Plant under BAM Act) – near Boddington and Collie areas (DotEE 2019a)

None of the Declared Plants were recorded in the recent assessment of the Infill Areas.

6.2 Vegetation

At a regional scale Heddle *et al.* (1980) and Mattiske and Havel (1998) defined and mapped a series of vegetation complexes that enabled a refinement of the vegetation mapping of Beard (1979) and Smith (1974) for Pinjarra and Collie areas respectively. The latter work of Beard has been updated recently into Beard *et al.* (2013) for the State of Western Australia. The approach developed by Heddle *et al.* (1980) and Mattiske and Havel (1998) enabled relationships to be defined between the resulting regional patterns of vegetation and the underlying landforms, soils and climatic trends in the southwest forests. In the three areas assessed for the Proposal, the following vegetation complexes were recorded:

Infill Areas - 8 vegetation complexes, Cooke, Coolakin, Dwellingup 4, Michibin, Swamp, Williams, Yalanbee 5 and Yalanbee 6.

WMDE – 9 vegetation complexes, Cooke, Coolakin, Dwellingup 4, Michibin, Pindalup, Swamp, Williams, Yalanbee 5 and Yalanbee 6.

Bauxite Transport Corridor - 8 vegetation complexes, Cooke, Coolakin, Dwellingup 4, Michibin, Pindalup, Swamp, Williams and Yalanbee 6.

CBME – 3 vegetation complexes, Dwellingup 1, Murray 1 and Yarragil 1.

Significant vegetation complexes within the Infill Areas, WMDE, Bauxite Transport Corridor and CBME areas include the following:

- Within the Boddington lease areas, the Michibin and Williams vegetation complexes are less well represented (<10%) in formal and informal reserves (7.11% and 0.49% respectively), (Conservation Commission 2003). The latter mainly relates to their occurrence in valley systems that have been developed for agriculture on the eastern fringes of the Darling Ranges.
- All of the vegetation complexes associated with the CBME are well represented in formal and informal reserves in areas >10% (Conservation Commission 2003).

6.3 Site-Vegetation Types

At a finer scale of local mapping the following presents the site-vegetation types for the Infill Areas, WMDE, Bauxite Transport Corridor and CBME. This method of mapping was developed based on the earlier ecological studies of Havel (1975a and 1975b) who delineated a series of site-vegetation types that integrated the structural and floristic components (including key indicator species) with the underlying soil and site conditions. This approach was developed further by initially Dames and Moore (1981) and later Mattiske (1985 to 2018).

Infill Areas – 20 site-vegetation types were defined for the WMDE area. The dominant site-vegetation types (>100ha) were H, M and MG. Large sections of the Infill Areas as assessed in 2018 have been cleared for agriculture and plantations. The majority of the Infill Areas are either completely degraded (64.74%) or degraded (11.37%). The restricted site-vegetation types include swamp vegetation types (A), on the lower slopes (DG), on the undulating hills (H1), on the outcropping areas (G2) and on the moister slopes (W).

WMDE – 36 site-vegetation types were defined for the WMDE area. The dominant site-vegetation types (>300ha) were M. P, PS, S, H, H2, ST, Y, Z AY and D. Large sections of the WMDE have been cleared for agriculture and plantations. The majority of the WMDE area is either completely degraded (46.87%) or degraded (14.48%). The restricted site-vegetation types include swamp vegetation types (A1, A2), on the lower slopes (AD, AY/D, DG), on the outcropping areas (G1, G2, G4, R) and on the moister slopes (PW, SW, W).

Bauxite Transport Corridor - 26 site-vegetation types were defined for the Bauxite Transport Corridor area (noting that 80.38% of these areas overlap with the WMDE and 11.99% of the WMDE overlaps with the Transport Bauxite Corridor). The dominant site-vegetation types (>300ha) were H, M, PS and S. Large sections of the Bauxite Transport Corridor have been cleared for agriculture and plantations. A large portion of the Bauxite Transport Corridor is either completely degraded (28.42%) or degraded (3.81%). The restricted site-vegetation types include specific types on the slopes (H2, M2), on the lower slopes (AD, AY/D, DG), on the outcropping areas (G, G3, G4) and on the moister slopes (PW).

CBME – 9 site-vegetation types were defined for the CBME. The dominant site-vegetation types (>100ha) were S and ST. The majority of the CBME was relatively undisturbed with the exception of the dam and completely degraded areas (32.20%). The restricted site-vegetation types include specific types on the lower slopes (CQ) and slopes (SP). All site-vegetation types in the CBME are well represented in nearby state forest areas and conservations areas (e.g. Wellington National Park).

Significant site-vegetation types within the Infill Areas, WMDE, Bauxite Transport Corridor and CBME areas include the following:

- The Priority 1 PEC - Mt Saddleback Heath Communities as delineated by DBCA occurs in the Saddleback area near Boddington within the WMDE but not within the Bauxite Transport Corridor and overlaps with site-vegetation types G1, G3 and G4 as defined and mapped for the Mt Saddleback area by Mattiske (Worsley Alumina Pty Ltd 1985 to Mattiske 2018), Figures 5.1 to 5.13. Some of the latter site-vegetation types extend well beyond the Mt Saddleback area, e.g. within the Bauxite Transport Corridor, north of the Boddington Gold Mine and on the eastern fringes of the State Forest.

  Although these PEC communities are delineated in Figure 3 (based on DBCA data supplied) there remain some inconsistencies with the previously mapped areas of the various G communities as mapped by the Mattiske team for South32 in the various phases of detailed site-vegetation mapping since the early 1980's. The latter is illustrated by the G3 and G4 communities within the Bauxite Transport Corridor that were not included in the Mt Saddleback Heath Communities as supplied by DBCA for the area (see Figure 3).

- The G2 site-vegetation type that occurs on granite in association with Rock Sheoak (*Allocasuarina huegeliana*), heath communities and lithic complexes occurs the Infill Areas, the WMDE and the wider mapped areas near Boddington.

- The communities that are a mixture of different site-vegetation types over shallow granites (DG, HG and MG on the infill areas) occur in the Infill Areas, the WMDE and the wider mapped areas near Boddington.

- The M2 site-vegetation type which supports woodlands of *Eucalyptus accedens*, *Eucalyptus wandoo, Eucalyptus marginata* and *Corymbia calophylla* on eastern breakaways. The M2 site-vegetation type occurs in the Infill Areas, the Bauxite Transport Corridor, the WMDE and the wider mapped areas near Boddington. This site-vegetation type occurs eastwards on the upper slopes and ridges of the Eastern Jarrah forest.

- A, AY, AX, AC Types – Woodlands of *Eucalyptus rudis* and *Melaleuca* species on the swamps and creeklines that provide linkages for fauna species and a variety of plant species on variable soils in the infill areas. These site-vegetation types occur in the Infill Areas, the Bauxite Transport Corridor, the WMDE and the wider mapped areas near Boddington.

- The restricted L site-vegetation type that supports a woodland of *Eucalyptus patens* and *Eucalyptus wandoo occurs* in the Bauxite Transport Corridor, the WMDE and the wider mapped areas near Boddington.

- The Y site-vegetation types that is often associated with the occurrence of the *Gastrolobium* sp. Prostrate Boddington (M. Hislop 2130), particularly on the lower slopes near the Hotham River and north on broader clay loam valley lower slopes. This site-vegetation type is well represented in the wider areas and occurs in the Infill Areas, the Bauxite Transport Corridor, the WMDE and the wider mapped areas near Boddington

The majority of the site-vegetation types that occur on the Collie Refinery lease areas are locally well represented in State forest and conservations areas (e.g. Wellington National Park).

Overall, the vegetation communities mapped and species recorded in the Infill Areas, the WMDE and the Bauxite Transport Corridor were consistent with the historical mapping of Mattiske as reflected in the earlier work of Havel (1975a as and 1975b) in the northern Jarrah forest and also the more recent mapping by Mattiske since the Phase Two studies on the Mt Saddleback area (Worsley Alumina Pty Ltd 1985; E.M. Mattiske and Associates 1986 to 1993; Mattiske Consulting ty Ltd 2012a to 2012c). As sections of the expansion areas are either completely degraded or degraded, the potential impact on local flora values should be minimal providing some of the populations of threatened and priority flora species and the patches of the priority ecological communities are avoided.

7. CONCLUSIONS AND RECOMMENDATIONS

Under the *Environmental Protection Act 1986*, ten principles for clearing native vegetation are set out in Schedule 5, under which native vegetation should not be cleared. The review of the Ten Clearing Principles relating to the key flora and vegetation values (Principles 1, 3, 4, 5 and 6) are summarized in Table 11.

Table 11: Assessment of proposal against Clearing Principles

No.	Principle / Assessment
1	**Clearing principle** Native vegetation should not be cleared if it comprises a high level of biological diversity. **Assessment:** Proposal may be at variance to this principle in selected areas. The area under application is a mosaic of forest, heath and woodland communities. As large sections of the proposed WMDE and Bauxite Transport Corridor have already been impacted by agricultural activities and previous mining activities the potential variance to this principle is related to selected less disturbed areas and in particular the creeklines, the heath communities (PEC Priority 1) and selected forest and woodland communities that are less disturbed. The condition mapping as supplied in Figures 5.1 to 5.19 will assist in the delineation of the less disturbed communities and Figures 4.1 to 4.19 will assist in the delineation of complexes and site-vegetation types and location of threatened flora on the WMDE and Bauxite Transport Corridor. The vegetation in the CBME is either degraded, dam areas or less disturbed forested areas (Figure 4.20).
3	**Clearing principle** Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora. **Assessment** Proposal may be at variance to this principle in selected areas. Figures 4.1 to 4.19 will assist in the delineation of the location of Threatened and Priority flora on the proposed WMDE and Bauxite Transport Corridor. Foremost amongst the flora species is the Threatened *Caladenia hopperiana* (T) and the Priority 1 flora species – *Gastrolobium* sp. Prostrate Boddington (M. Hislop 2130) which are both relatively restricted. In addition, some of the Priority flora species occur in the Mt Saddleback Heath Communities (PEC P1) which are avoided during mining activities. The vegetation in the CBME is either degraded, dam areas or less disturbed forested areas (Figure 4.20) and the Priority flora species *Pultenaea skinneri* (P4) recorded historically in the Collie area was restricted to the southern valley floors and slopes and is less geographically restricted than others in the WMDE and Bauxite Transport Corridor.
4	**Clearing principle** (d) Native vegetation should not be cleared if it comprises the whole or part of, or is necessary for the maintenance of a threatened ecological community. **Assessment** Proposal is not at variance to this principle No Threatened Ecological Communities, pursuant to Schedule 1 of the *Wildlife Conservation Act 1950* and as listed by the DBCA (2019c) were recorded within the survey area. No Threatened Ecological Communities, pursuant to the *EPBC Act* and as listed by the Department of the Environment and Energy (2019b) were recorded within the survey area.

Table 11: Assessment of proposal against Clearing Principles (continued)

No.	Principle / Assessment
5	**Clearing principle** (e) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared. **Assessment** Proposal may be at variance to this principle Some of the defined and mapped vegetation complexes and site-vegetation types have been extensively cleared for agricultural activities and therefore the Proposal may be at variance (see Sections 5.7 and 6).
6	**Clearing principle** (f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland. **Assessment** Proposal may be at variance to this principle The Proposal in sections does occur near watercourses (e.g. Hotham River) and therefore the proposed clearing activities may be at variance to this principle.

In response to the proposed expansion areas in the Boddington and Collie areas, it is recommended to:

- Avoid the location of the Threatened flora species (e.g. *Caladenia hopperiana* (T));
- Avoid wherever possible the Priority flora species and in particular the priority species *Gastrolobium* sp. Prostrate Boddington (M. Hislop 2130) (P1) which is geographically restricted to the Boddington area and those Priority flora species associated with restricted communities (e.g. the heath PEC communities);
- Develop a management plan for all Threatened and Priority Flora species that have the potential to occur in the vicinity of the proposed expansion areas or that have been recorded within and near the expansion areas at Boddington (Infill Areas, WMDE and Bauxite Transport Corridor) and Collie (CBME);
- Manage direct and indirect impacts on the Priority 1 PEC - Mt Saddleback Heath Communities in the Boddington area. Management of these areas area undertaken through the South32 Protected Areas Procedure.
- Maintain existing drainage systems where feasible, ensuring tracks and other infrastructure areas do not disrupt or divert historic water flow patterns; and
- Remove and stockpile topsoil, log debris and leaf litter where possible for use in future rehabilitation programs; particularly in the areas where the vegetation is less disturbed. If possible, stockpiled topsoil should be treated for introduced species before being directly replaced on disturbed areas.

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9. PERSONNEL

The following Mattiske Consulting Pty Ltd personnel were involved in this project:

Name	Position	Project Involvement	Flora Collection Permit
Dr E.M. Mattiske	Managing Director & Principal Ecologist	Planning, management, data interpretation & reporting	SL012274
Mr R. Dharmarajan	Experienced Botanist	Planning, fieldwork, data interpretation and report preparation	SL012281
Mr A. Barrett	Experienced Botanist	Fieldwork	SL012280
Mr B. Ellery	Senior Botanist	Plant identification	N/A
Ms K. Lambert	Botanist	Fieldwork	SL012313
Ms E. Chetwin	Botanist	Fieldwork	SL012294
Mr L. Rowles	Botanist	Fieldwork	SL012277

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APPENDIX A: SUMMARY OF KEY BASELINE ASSESSMENTS OF THE SOUTH32 LEASE AREAS, 1980 TO 2018

Report	Consultant	Survey Area	Survey Date	Purpose of Survey/Study and Details
Assessment of Flora and Vegetation within Expansion Survey Areas (Mattiske Consulting Pty Ltd 2018)	Mattiske	WMDE 27793.27ha, Transport Corridor 4145.69ha and CBME 730.28ha	19th – 22nd November 2018	Define the flora and vegetation values of the private properties located within proposed expansion areas. The survey included sampling from 67 vegetation sites in the Mt Saddleback and Boddington areas with infill areas (3347.55ha). The work also entailed an update of flora and vegetation values on these expansion areas and the Collie Refinery.
Assessment of Flora and Vegetation of Private Properties within the Extension Survey Areas (Mattiske Consulting Pty Ltd 2017)	Mattiske	Bauxite Mine Expansion Area totalling 6,317.71 ha. Equivalent to the HME	15th – 18th November 2016	Define the flora and vegetation values of the private properties located within proposed expansion areas. The survey included sampling from 25 vegetation sites.
Assessment of Flora and Vegetation of Private Properties within the Extension Survey Areas (Mattiske Consulting Pty Ltd 2014)	Mattiske	PBA Extension Survey Areas totalling 3,144.56 ha. Within PBA.	30th September to 9th October 2014	Define the flora and vegetation values of the private properties located within PBA Extension Area. The survey included sampling from 207 sites to sample all vegetation types within the PBA Extension Areas.
Vegetation Monitoring Plots Sotico Property (Mattiske Consulting Pty Ltd 2013)	Mattiske	Sotico, north of Boddington Gold Mine	November 2013	Re-assessment of nine permanent plots and an additional 12 permanent plots established in representative site-vegetation types on Sotico property.
Flora and Vegetation Survey of Hotham Farm Survey Area (Mattiske Consulting Pty Ltd 2013)	Mattiske	Hotham Farm totalling 196.71 ha.	30th October to 1st November 2012	Define the flora and vegetation values of Hotham Farm. Specifically, characterise the vegetation communities, their condition and vascular flora present, provide counts and locations of any Threatened and Priority flora, review the local and regional significance of the vegetation communities identified and review the conservation status of the flora. The survey included sampling from 22 sites to sample all vegetation types within the area.
Flora and Vegetation Survey of Nullaga Property Adjacent to Marradong Section of the Boddington Bauxite Mine (Mattiske Consulting Pty Ltd 2012)	Mattiske	Nullaga Property totalling 721.12 ha Intersects the PBA	30th October to 1st November 2012	Define the flora and vegetation values of Nullaga Property. Specifically, characterise the vegetation communities, their condition and vascular flora present and review the conservation status of the flora. The survey included sampling from 55 sites to sample all vegetation types within the area.
Flora and Vegetation of the Sotico Survey Area (Mattiske Consulting Pty Ltd 2012)	Mattiske	Sotico, north of Boddington Gold Mine	January 2012 to July 2012	Site Vegetation Type classification, description and mapping, Threatened and Priority flora. Recordings at 5847 sites.

APPENDIX A: SUMMARY OF KEY BASELINE ASSESSMENTS OF THE SOUTH32 LEASE AREAS, 1980 TO 2018

Report	Consultant	Survey Area	Survey Date	Purpose of Survey/Study and Details
Vegetation Monitoring Plots Sotico Property (Mattiske Consulting Pty Ltd 2012)	Mattiske	Sotico, north of Boddington Gold Mine	November 2011	Nine permanent plots established in representative site-vegetation types on Sotico property.
Flora and Vegetation of Littleton's Cut Area (Mattiske Consulting Pty Ltd 2010)	Mattiske	Littleton's Cut Area	2010	Site Vegetation Type classification, description and mapping, Threatened and Priority flora
Flora and Vegetation Survey of Dobrowolskyi, Farmer, Hulls 1, Hulls 2, Nullaga, Pringles, Robins, Nichols, Salmeri and Spencer properties, Boddington (Mattiske Consulting Pty Ltd 2010)	Mattiske	Dobrowolskyi, Farmer, Hulls 1, Hulls 2, Nullaga, Pringles, Robins, Nichols, Salmeri and Spencer properties, Boddington	2010	Site Vegetation Type classification, description and mapping, Threatened and Priority flora
Flora and Vegetation Survey of Nichols, Black, Gibbs, Karafils, Nichols and Veitch properties, Boddington (Mattiske Consulting Pty Ltd 2010)	Mattiske	Dobrowolskyi, Farmer, Hulls 1, Hulls 2, Nullaga, Pringles, Robins, Nichols, Salmeri and Spencer properties, Boddington	2007	Site Vegetation Type classification, description and mapping, Threatened and Priority flora
Flora and Vegetation on Marradong Forest Block Boddington (Mattiske Consulting Pty Ltd 2008)	Mattiske	Marradong Timber Reserve Within the PBA	2007	Update earlier botanical studies on the Marradong Timber Reserve as undertaken Mattiske (1990). Specifically, update flora records with recent taxonomic name changes, establish vegetation monitoring sites and extend the vegetation mapping program to include nearby and adjacent private land holdings.
Flora and Vegetation on the Collie refinery lease area (Mattiske Consulting Pty Ltd 2007)	Mattiske	Collie Refinery	2007	Update earlier botanical studies on the Collie Refinery.
Review of Flora and Vegetation located in the Boddington Gold Mine and Hedges lease areas (Mattiske Consulting Pty Ltd 2005)	Mattiske	Boddington Gold Mine and Hedges Lease areas	2005	Extension and update of earlier Flora and Vegetation Studies on the Boddington Gold Mine and Hedges areas. Recording on grids and in plots and targeted flora searches.
Assessment of Tunnell Road heath communities, Boddington Bauxite Mine (Mattiske Consulting Pty Ltd 2004)	Mattiske	Tunnell Road heath, Mt Saddleback operations	2004	Assessment of heath communities, monitoring of quadrats in plots and transects.
Bennett Environmental Consulting (2004)	Bennett	Brookton and Central mining envelopes	August 2004	Define the flora and vegetation values of Brookton and Central mining envelopes.
Review of declared rare and priority flora species located in the Worsley Alumina Boddington Bauxite Mine lease areas (Mattiske Consulting Pty Ltd 2003)	Mattiske	Boddington lease areas	2003	Review of threatened and priority flora status and taxonomy.

APPENDIX A: SUMMARY OF KEY BASELINE ASSESSMENTS OF THE SOUTH32 LEASE AREAS, 1980 TO 2018

Report	Consultant	Survey Area	Survey Date	Purpose of Survey/Study and Details
Assessment of Flora and Vegetation Values on the Proposed WRL, the Potential Land Swap Area and the Southern Section of Hotham Farm, Boddington Gold Mine (Mattiske Consulting Pty Ltd 2013)	Mattiske	Newmont Boddington Gold Mine	2013	Site Vegetation Type classification, description and mapping, Threatened and Priority flora
Threatened and Priority Flora Assessment of the Hotham Pipeline and Hedges Dam, Newmont Boddington Gold Mine (Mattiske Consulting Pty Ltd 2012)	Mattiske	Newmont Boddington Gold Mine	2012	Threatened and Priority Flora Assessment
Review of Flora and Vegetation located in the Boddington Gold Mine and Hedges Lease Areas (Mattiske Consulting Pty Ltd 2005)	Mattiske	Newmont Boddington Gold Mine	2005	Flora and Vegetation Review of Boddington Gold Mine and Hedges Lease Area
Flora and Vegetation Survey Remnant Vegetation Devereux, Nichols and Veitch Properties - Boddington Bauxite Mine (Mattiske Consulting Pty Ltd 2002)	Mattiske	Devereux, Nichols and Veitch properties, Boddington	2002	Site Vegetation Type classification, description and mapping, Threatened and Priority flora
Flora and Vegetation of the Quindanning Timber Reserve (E.M. Mattiske and & Associates 1993a, 1993b, 1999)	Mattiske	Quindanning Timber Reserve	1993a, 1993b, 1999	Site Vegetation Type classification, description and mapping, Threatened and Priority flora based on gridding of areas and regular recordings and plots and targeted searching for flora.
Flora and Vegetation component (Mattiske Consulting Pty Ltd) in Worsley Alumina Boddington Gold Mine Project Flora and Fauna studies (Worsley Alumina Pty Ltd, 1999)	Mattiske	Hotham North	Surveyed in 1999 Further studies proposed prior to mining operations	Site Vegetation Type classification, description and mapping, Threatened and Priority flora
Flora and Vegetation Flora and Vegetation Survey of the Collie Refinery Lease Area Unpublished report prepared for Worsley Alumina Pty Ltd, 1999.	Mattiske	Collie Refinery	1999	Site Vegetation Type classification, description and mapping, Threatened and Priority flora

APPENDIX A: SUMMARY OF KEY BASELINE ASSESSMENTS OF THE SOUTH32 LEASE AREAS, 1980 TO 2018

Report	Consultant	Survey Area	Survey Date	Purpose of Survey/Study and Details
Vegetation Complexes of the Darling System, Western Australia. Regional Forest Agreement (RFA) Vegetation Complexes, Pinjarra, Western Australia. (Mattiske and Havel 1998)	Mattiske and Havel	Pinjarra component of RFA Vegetation Mapping	1998	Vegetation Complexes of the Darling System, based on broad relationships with underling geology, landforms and soils and climatic zones with reference to key structural and floristic components of regional vegetation patterns.
Assessment of Tunnell Road heath communities, Boddington Bauxite Mine (Mattiske Consulting Pty Ltd 1998)	Mattiske	Tunnell Road heath, Mt Saddleback operations	1998	Assessment of heath communities, monitoring of quadrats in plots and transects.
Flora and Vegetation Studies on the Mount Saddleback Survey Area (E.M. Mattiske and Associates 1993)	Mattiske	Mount Saddleback	1993	Site Vegetation Type classification, description and mapping
Flora and vegetation studies on the southern Mount Saddleback survey area (E.M. Mattiske and Associates 1993)	Mattiske	Mount Saddleback	1993	Site Vegetation Type classification, description and mapping
Flora and Vegetation, Eastern Anomaly, Boddington Gold Mine (E.M. Mattiske and Associates 1992)	Mattiske	Boddington Gold Mine	1992	Site Vegetation Type classification, description and mapping based on grid mapping and also plots. Also extensive targeted searching for Threatened and Priority Flora species (in particular *Gastrolobium* sp. Prostrate Boddington (M. Hislop 2130))
Flora and Vegetation Marradong Timber Reserve (E.M. Mattiske and Associates 1990)	Mattiske	Marradong Timber Reserve	Spring 1989	Botanical survey to characterise the vegetation and flora of the Marradong Timber Reserve. Specifically, review the local and regional significance of the vegetation communities identified, review the conservation status of the flora, record a range of botanical and physical parameters, and establish and monitor a series of permanent vegetation plots.
Mattiske Consulting Pty Ltd Flora and Vegetation Studies in Worsley Alumina Project, Flora and Fauna studies, Phase Two (Worsley Alumina Pty Ltd, 1985)	Mattiske	Mt Saddleback and surrounds	1985	Site Vegetation Type classification, description and mapping based on grid mapping and also plots. Undertaken in early 1980's. Also extensive targeted searching for Threatened and Priority Flora species. Supplemented earlier studies by by Worsley Alumina Pty Ltd and Dames and Moore (1981) for Phase One areas.
Vegetation Complexes of the Darling System, Western Australia. In: Atlas of Natural Resources of the Darling System, Western Australia, Chapter 3, Department of Conservation and Environment, Perth (Heddle *et al*. 1980)	(Mattiske (nee Heddle))	Darling System	1980	Vegetation Complexes of the Darling System, based on broad relationships with underling geology, landforms and soils and climatic zones with reference to key structural and floristic components of regional vegetation patterns.

APPENDIX B1: THREATENED AND PRIORITY FLORA DEFINITIONS

Under section 179 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), **threatened flora** are categorised as extinct, extinct in the wild, critically endangered, endangered, vulnerable and conservation dependent (Table B1.1).

Table B1.1 Federal definition of threatened flora species

Note: Adapted from section 179 of the EPBC Act.

CODE	CATEGORY	DEFINITION
Ex	**Extinct**	Species which at a particular time if, at that time, there is no reasonable doubt that the last member of the species has died.
ExW	**Extinct in the Wild**	Species which is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or it has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.
CE	**Critically Endangered**	Species which at a particular time if, at that time, it is facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria.
E	**Endangered**	Species which is not critically endangered and it is facing a very high risk of extinction in the wild in the immediate or near future, as determined in accordance with the prescribed criteria.
V	**Vulnerable**	Species which is not critically endangered or endangered and is facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria.
CD	**Conservation Dependent**	Species which at a particular time if, at that time, the species is the focus of a specific conservation program, the cessation of which would result in the species becoming vulnerable, endangered or critically endangered within a period of 5 years.

The *Biodiversity Conservation Act 2016* (*BC Act*) provides for (amongst other things) the protection of flora likely to become extinct or are otherwise in need of special protection in Western Australia under Part 10 (Division 2).

Threatened flora are listed in the *Wildlife Conservation (Rare Flora) Notice 2018* (under Part 2 of the BC Act; Department of Biodiversity, Conservation and Attractions (DBCA 2019b) and are categorised under Schedules 1-3**.** A flora species is defined as **threatened** if it is facing an extremely high risk of extinction in the wild in the immediate, near or medium-term future, pursuant to sections 20, 21 and 22 of the *BC Act* (Department of Biodiversity, Conservation and Attractions 2019b). Threatened species are categorised as critically endangered, endangered, and vulnerable (Table B1.2).

Table B1.2 State definition of threatened flora species

Note: Adapted from Department of Biodiversity, Conservation and Attractions (2019b).

CODE	CATEGORY	DEFINITION
CR	**Critically endangered**	Species considered to be facing an extremely high risk of becoming extinct in the wild (listed under Schedule 1 of the *Wildlife Conservation (Rare Flora) Notice 2018*).
EN	**Endangered**	Species considered to be facing a very high risk of becoming extinct in the wild (listed under Schedule 2 of the *Wildlife Conservation (Rare Flora) Notice 2018*).
VU	**Vulnerable**	Species considered to be facing a high risk of becoming extinct in the wild (listed under Schedule 3 of the *Wildlife Conservation (Rare Flora) Notice 2018*).

Priority flora species are defined as "possibly threatened species that do not meet the survey criteria, or are otherwise data deficient" or species that are "adequately known, are rare but not threatened, meet criteria for near threatened or have recently been removed from the threatened species list" for other than taxonomic reasons" (Department of Biodiversity, Conservation and Attractions 2019b). **Priority species are** considered significant under the Environmental Protection Authority's *Environmental Factor Guideline: Flora and Vegetation* (Environmental Protection Authority 2016a). The Department of Biodiversity, Conservation and Attractions categorises priority flora into four categories: Priority 1; Priority 2, Priority 3 and Priority 4 (Table B1.3).

Table B1.3: State definition of priority flora species

Note: Adapted from Department of Biodiversity, Conservation and Attractions (2019b).

CODE	CATEGORY	DEFINITION
P1	**Priority 1:** Poorly-known species	Known from one or a few locations (< 5) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation; or are otherwise under threat of habitat destruction or degradation. In urgent need of further survey.
P2	**Priority 2:** Poorly-known species	Known from one or a few locations (< 5). Some occurrences are on lands managed primarily for nature conservation. In urgent need of further survey.
P3	**Priority 3:** Poorly-known species	Known from several locations and the species does not appear to be under imminent threat; or from few but widespread locations with either a large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. In need of further survey.
P4	**Priority 4:** Rare, Near Threatened, and other species in need of monitoring	**a) Rare -** Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection, but could be if present circumstances change. These species are usually represented on conservation lands. **b) Near Threatened -** Species that are considered to have been adequately surveyed and that do not qualify for Conservation Dependent, but that are close to qualifying for Vulnerable. **c) Other -** Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.

APPENDIX B2: THREATENED AND PRIORITY ECOLOGICAL COMMUNITY DEFINITIONS

Under section 181 of the EPBC Act, **threatened ecological communities** are categorised as critically endangered, endangered and vulnerable (Table B2.1).

Table B2.1 Federal definition of threatened ecological communities

Note: Adapted from section 181 and section 182 of the EPBC Act.

CATEGORY	DEFINITION
Critically Endangered	If, at that time, it is facing an extremely high risk of extinction in the wild in the immediate future.
Endangered	If, at that time, it is not critically endangered and is facing a very high risk of extinction in the wild in the near future.
Vulnerable	If, at that time, it is not critically endangered or endangered, and is facing a high risk of extinction in the wild in the medium-term future.

The *Biodiversity Conservation Act 2016* (BC Act) provides for (amongst other things) some protection of ecological communities at risk of collapse in Western Australia under Part 3 (Division 2).

Threatened ecological communities (TECs) are listed in the *List of Threatened Ecological Communities endorsed by the Western Australian Minister for Environment (28 June 2018)* (under Part 2 of the *BC Act*; Department of Biodiversity, Conservation and Attractions 2019c). An ecological community is defined as **threatened** if it is facing an extremely high risk of collapse in the immediate, near or medium-term future, pursuant to sections 28, 29 and 30 of the BC Act. Threatened ecological communities are categorised as critically endangered, endangered, and vulnerable (Table B2.2). Some of these TECs are also endorsed by the Federal Minister as threatened, and some of these are listed under the *EPBC Act* and therefore afforded legislative protection at the Commonwealth level.

Table B2.2 State definition of threatened ecological communities

Note: Adapted from Department of Environment and Conservation (2013).

CODE	CATEGORY	DEFINITION
CR	**Critically Endangered**	An ecological community will be listed as CR when it has been adequately surveyed and is found to be facing an extremely high risk of total destruction in the immediate future, meeting **any one or more of** the following criteria: **1.** The estimated geographic range and distribution has been reduced by at least 90% and is either continuing to decline with total destruction imminent, or is unlikely to be substantially rehabilitated in the immediate future due to modification; **2.** The current distribution is limited i.e. highly restricted, having very few small or isolated occurrences, or covering a small area; or **3.** The ecological community is highly modified with potential of being rehabilitated in the immediate future.
EN	**Endangered**	An ecological community will be listed as EN when it has been adequately surveyed and is not CR, but is facing a very high risk of total destruction in the near future. The ecological community must meet **any one or more of** the following criteria: **1.** The estimated geographic range and distribution has been reduced by at least 70% and is either continuing to decline with total destruction imminent in the short term future, or is unlikely to be substantially rehabilitated in the short term future due to modification; **2.** The current distribution is limited i.e. highly restricted, having very few small or isolated occurrences, or covering a small area; or **3.** The ecological community is highly modified with potential of being rehabilitated in the short term future.
VU	**Vulnerable**	An ecological community will be listed as VU when it has been adequately surveyed and is not Critically Endangered or Endangered but is facing high risk of total destruction in the medium to long term future. The ecological community must meet **any one or more of** the following criteria: **1.** The ecological community exists largely as modified occurrences that are likely to be able to be substantially restored or rehabilitated; **2.** The ecological community may already be modified and would be vulnerable to threatening process, and restricted in range or distribution; or **3.** The ecological community may be widespread but has potential to move to a higher threat category due to existing or impending threatening processes.

Priority ecological communities (PECs) are defined as possible threatened ecological communities that do not meet the stringent survey criteria for the assessment of threatened ecological communities, and are listed by the Department of Biodiversity, Conservation and Attractions (2019d) in the *Priority Ecological Communities for Western Australia – Version 28 (17 January 2019)*. Priority ecological communities are considered significant under the Environmental Protection Authority's (2016a) *Environmental Factor Guideline: Flora and Vegetation*. The Department of Biodiversity, Conservation and Attractions categorises priority ecological communities into five categories: Priority 1; Priority 2, Priority 3, Priority 4 and Priority 5 (Table B2.3).

Table B2.3 State definition of priority ecological communities

Note: Adapted from Department of Environment and Conservation (2013).

CODE	CATEGORY	DEFINITION
P1	**Priority 1** (Poorly known ecological communities)	Ecological communities that are known from very few, restricted occurrences (generally ≤ 5 occurrences or a total area of ≤ 100 ha). Most of these occurrences are not actively managed for conservation (e.g. located within agricultural or pastoral lands, urban areas, or active mineral leases) and for which immediate threats exist.
P2	**Priority 2** (Poorly known ecological communities)	Communities that are known from few small occurrences (generally ≤ 10 occurrences or a total area of ≤ 200 ha). At least some occurrences are not believed to be under immediate threat of destruction or degradation.
P3	**Priority 3** (Poorly known ecological communities)	**1.** Communities that are known from several to many occurrences, a significant number or area of which are not under threat of habitat destruction or degradation; **2.** Communities known from a few widespread occurrences, which are either large or within significant remaining areas of habitat in which other occurrences may occur, much of it not under imminent threat; or **3.** Communities made up of large, and/or widespread occurrences, that may or not be represented in the reserve system, but are under threat of modification across much of their range from processes such as grazing and inappropriate fire regimes.
P4	**Priority 4** (Ecological communities that are adequately known, rare but not threatened or meet criteria for Near Threatened, or that have been recently removed from the threatened list. These communities require regular monitoring)	**1.** Rare – Communities known from few occurrences that are considered to have been adequately surveyed, sufficient knowledge is available, and are considered not to be currently threatened. **2.** Near Threatened – Communities considered to have been adequately surveyed and do not qualify for Conservation Dependent, but are close to qualifying for Vulnerable. **3.** Communities that have been removed from the list of threatened communities during the past five years.
P5	**Priority 5** (Conservation Dependent ecological communities)	Ecological communities that are not threatened but are subject to a specific conservation program, the cessation of which would result in the community becoming threatened within five years.

APPENDIX B3: CATEGORIES AND CONTROL MEASURES OF DECLARED PEST (PLANT) ORGANISMS IN WESTERN AUSTRALIA

Section 22 of Western Australia's *Biosecurity and Agriculture Management Act 2007* (BAM Act) makes provision for a plant taxon to be listed as a declared pest organism in respect to parts of, or the entire State. According to the BAM Act, a declared pest is defined as a prohibited organism (section 12), or an organism for which a declaration under section 22 (2) of the Act is in force.

Under the *Biosecurity and Agriculture Management Regulations 2013* (WA), declared pest plants are placed in one of three control categories, C1 (exclusion), C2 (eradication) or C3 (management), which determines the measures of control which apply to the declared pest (Table B3.1). The current listing of declared pest organisms and their control category is through the Western Australian Organism List (Department of Primary Industries and Regional Development 2019).

Table B3.1 Categories and control measures of declared pest (plant) organisms

Note: Adapted from *Biosecurity and Agriculture Management Regulations 2013*.

CONTROL CATEGORY	CONTROL MEASURES
C1 (Exclusion) '(a) Category 1 (C1) — Exclusion: if in the opinion of the Minister introduction of the declared pest into an area or part of an area for which it is declared should be prevented.' Pests will be assigned to this category if they are not established in Western Australia and control measures are to be taken, including border checks, in order to prevent them entering and establishing in the State.	In relation to a category 1 declared pest, the owner or occupier of land in an area for which an organism is a declared pest or a person who is conducting an activity on the land must take such of the control measures specified in subregulation (1) as are reasonable and necessary to destroy, prevent or eradicate the declared pest.
C2 (Eradication) '(b) Category 2 (C2) — Eradication: if in the opinion of the Minister eradication of the declared pest from an area or part of an area for which it is declared is feasible.' Pests will be assigned to this category if they are present in Western Australia in low enough numbers or in sufficiently limited areas that their eradication is still a possibility.	In relation to a category 2 declared pest, the owner or occupier of land in an area for which an organism is a declared pest or a person who is conducting an activity on the land must take such of the control measures specified in subregulation (1) as are reasonable and necessary to destroy, prevent or eradicate the declared pest.
C3 (Management) '(c) Category 3 (C3) — Management: if in the opinion of the Minister eradication of the declared pest from an area or part of an area for which it is declared is not feasible but that it is necessary to: **(i)** alleviate the harmful impact of the declared pest in the area; or **(ii)** reduce the number or distribution of the declared pest in the area; or **(iii)** prevent or contain the spread of the declared pest in the area.' Pests will be assigned to this category if they are established in Western Australia but it is feasible, or desirable, to manage them in order to limit their damage. Control measures can prevent a C3 pest from increasing in population size or density or moving from an area in which it is established into an area which currently is free of that pest.	In relation to a category 3 declared pest, the owner or occupier of land in an area for which an organism is a declared pest or a person who is conducting an activity on the land must take such of the control measures specified in subregulation (1) as are reasonable and necessary to: **(a)** alleviate the harmful impact of the declared pest in the area for which it is declared; or **(b)** reduce the number or distribution of the declared pest in the area for which it is declared; or **(c)** prevent or contain the spread of the declared pest in the area for which it is declared.

APPENDIX B4: OTHER DEFINITIONS

Environmentally sensitive areas

Environmentally sensitive areas are declared by the State Minister under section 51B of the *Environmental Protection Act 1986* (EP Act) and are listed in the *Environmental Protection (Environmentally Sensitive Areas) Notice 2005*, gazetted 8 April 2005. Specific environmentally sensitive areas relevant to this report include: a defined wetland and the area within 50 metres of the wetland; the area covered by vegetation within 50 metres of rare flora; the area covered by a threatened ecological community; a Bush Forever site – further areas and information are described in the *Environmental Protection (Environmentally Sensitive Areas) Notice 2005*.

Conservation significant flora

Under the *Environmental Factor Guideline: Flora and Vegetation* (Environmental Protection Authority 2016a), flora may be considered significant for a range of reasons, including, but not limited to the following:

- being identified as threatened or priority species;
- locally endemic or associated with a restricted habitat type (e.g. surface water or groundwater dependent ecosystems);
- new species or anomalous features that indicate a potential new species;
- representative of the range of a species (particularly, at the extremes of range, recently discovered range extensions, or isolated outliers of the main range);
- unusual species, including restricted subspecies, varieties or naturally occurring hybrids; or
- relictual status, being representative of taxonomic groups that no longer occur widely in the broader landscape.

Conservation significant vegetation

Under the *Environmental Factor Guideline: Flora and Vegetation* (Environmental Protection Authority 2016a), vegetation may be considered significant for a range of reasons, including, but not limited to the following:

- being identified as threatened or priority ecological communities;
- restricted distribution;
- degree of historical impact from threatening processes;
- a role as a refuge; or
- providing an important function required to maintain ecological integrity of a significant ecosystem.

APPENDIX C: SUMMARY OF VASCULAR PLANT SPECIES WITH THE POTENTIAL TO OCCUR ON WMDE AND BAUXITE TRANSPORT CORRIDOR AREAS NEAR BODDINGTON

Note: * denotes introduced species; T denotes threatened flora and P1-P4 denote priority flora species (DBCA 2018a). SCC = State conservation code; FCC = Federal conservation code; E = Endangered, V = Vulnerable (EPBC Act).

Family	Species	SCC	FCC	Nature Map	EPBC
Pteridaceae	*Cheilanthes austrotenuifolia*			x	
Dennstaedtiaceae	*Pteridium esculentum* subsp. *esculentum*			x	
Zamiaceae	*Macrozamia riedlei*			x	
Pinaceae	* *Pinus radiata*				x
Poaceae	* *Aira caryophyllea*			x	
	Austrostipa flavescens			x	
	Austrostipa variabilis			x	
	Austrostipa sp. Marchagee (B.R. Maslin 1407)			x	
	Austrostipa sp.			x	
	* *Briza minor*			x	
	* *Cortaderia selloana* subsp. *selloana*			x	
	* *Digitaria sanguinalis*			x	
	Neurachne alopecuroidea			x	
	Poa drummondiana			x	
	Poa homomalla			x	
	Poa porphyroclados			x	
	Rytidosperma caespitosum			x	
	Rytidosperma setaceum			x	
	Tetrarrhena laevis			x	
	Themeda triandra			x	
Cyperaceae	*Baumea juncea*			x	
	Carex fascicularis			x	
	Chorizandra enodis			x	
	Cyathochaeta avenacea			x	
	Eleocharis acuta			x	
	Eleocharis keigheryi	T	V	x	x
	Gahnia aristata			x	
	Isolepis producta			x	
	Lepidosperma apricola			x	
	Lepidosperma asperatum			x	
	Lepidosperma leptostachyum			x	
	Lepidosperma pruinosum			x	
	Lepidosperma pubisquameum			x	
	Lepidosperma squamatum			x	
	Lepidosperma sp.			x	
	Mesomelaena tetragona			x	
	Schoenus armeria			x	
	Schoenus bifidus			x	
	Tetraria octandra			x	
	Tetraria sp. Jarrah Forest (R. Davis 7391)			x	
Restionaceae	*Chaetanthus leptocarpoides*			x	
	Chordifex stenandrus			x	
	Desmocladus asper			x	

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Family	Species	SCC	FCC	Nature Map	EPBC
Restionaceae (cont.)	*Desmocladus fasciculatus*			x	
	Desmocladus flexuosus			x	
	Hypolaena exsulca			x	
	Leptocarpus laxus			x	
	Leptocarpus tenax			x	
	Lepyrodia glauca			x	
	Loxocarya striata			x	
Centrolepidaceae	*Centrolepis aristata*			x	
	Centrolepis glabra			x	
Hydatellaceae	*Trithuria bibracteata*			x	
Juncaceae	* *Juncus acutus* subsp. *acutus*			x	
Asparagaceae	* *Asparagus asparagoides*				x
	Chamaescilla corymbosa			x	
	Chamaescilla corymbosa var. *corymbosa*			x	
	Dichopogon capillipes			x	
	Laxmannia squarrosa			x	
	Lomandra brittanii			x	
	Lomandra caespitosa			x	
	Lomandra micrantha			x	
	Lomandra micrantha subsp. *micrantha*			x	
	Lomandra preissii			x	
	Lomandra purpurea			x	
	Lomandra sericea			x	
	Lomandra spartea			x	
	Lomandra suaveolens			x	
	Lomandra sp.			x	
	Sowerbaea laxiflora			x	
	Thysanotus manglesianus			x	
	Thysanotus patersonii			x	
	Thysanotus sparteus			x	
	Thysanotus tenellus			x	
	Thysanotus thyrsoideus			x	
	Thysanotus sp.			x	
Xanthorrhoeaceae	*Xanthorrhoea preissii*			x	
Colchicaceae	*Burchardia monantha*			x	
	Burchardia multiflora			x	
	Wurmbea dioica subsp. *alba*			x	
	Wurmbea tenella			x	
Boryaceae	*Borya scirpoidea*			x	
	Borya sphaerocephala			x	
Hemerocallidaceae	*Agrostocrinum hirsutum*			x	

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Family	Species	SCC	FCC	Nature Map	EPBC
Hemerocallidaceae (cont.)	*Caesia micrantha*			x	
	Dianella revoluta			x	
	Dianella revoluta var. *divaricata*			x	
	Tricoryne elatior			x	
	Tricoryne humilis			x	
Haemodoraceae	*Anigozanthos bicolor*			x	
	Anigozanthos manglesii subsp. *manglesii*			x	
	Conostylis aculeata subsp. *aculeata*			x	
	Conostylis caricina subsp. *caricina*			x	
	Conostylis pusilla			x	
	Conostylis setigera			x	
	Conostylis setigera subsp. *setigera*			x	
	Haemodorum laxum			x	
	Haemodorum paniculatum			x	
	Haemodorum simplex			x	
	Tribonanthes longipetala			x	
Amaryllidaceae	* *Leucojum aestivum*			x	
	* *Narcissus tazetta* subsp. *aureus*			x	
	* *Narcissus tazetta* subsp. *tazetta*			x	
Hypoxidaceae	*Pauridia gardneri*			x	
	Pauridia occidentalis var. *occidentalis*			x	
Iridaceae	* *Gladiolus tristis*			x	
	Patersonia juncea			x	
	Patersonia occidentalis			x	
	Patersonia pygmaea			x	
	Patersonia rudis			x	
Orchidaceae	*Caladenia dorrienii*	T	E	x	
	Caladenia falcata			x	
	Caladenia flava			x	
	Caladenia flava subsp. *flava*			x	
	Caladenia fluvialis			x	
	Caladenia hopperiana	T	E	x	x
	Caladenia longicauda			x	
	Caladenia longicauda subsp. *eminens*			x	
	Caladenia nana subsp. *nana*			x	
	Caladenia polychroma			x	
	Caladenia reptans subsp. *reptans*			x	
	Caladenia sp.			x	
	Cyanicula gemmata			x	
	Cyanicula sericea			x	
	Cyrtostylis huegelii			x	
	Diuris decrementa			x	
	Diuris longifolia			x	
	Diuris micrantha	T	V		x

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Family	Species	SCC	FCC	Nature Map	EPBC
Orchidaceae (cont.)	*Diuris porrifolia*			x	
	Diuris purdiei	T	E		x
	Elythranthera brunonis			x	
	Elythranthera emarginata			x	
	Eriochilus dilatatus subsp. *multiflorus*			x	
	Eriochilus scaber subsp. *scaber*			x	
	Microtis orbicularis			x	
	Prasophyllum fimbria			x	
	Prasophyllum hians			x	
	Pterostylis barbata			x	
	Pterostylis concava			x	
	Pterostylis glebosa			x	
	Pterostylis recurva			x	
	Pterostylis vittata			x	
	Pterostylis sp. crinkled leaf (G.J. Keighery 13426)			x	
	Pterostylis sp.			x	
	Pyrorchis nigricans			x	
	Thelymitra antennifera			x	
	Thelymitra crinita			x	
Casuarinaceae	*Allocasuarina fraseriana*			x	
	Allocasuarina huegeliana			x	
	Allocasuarina humilis			x	
	Allocasuarina microstachya			x	
Proteaceae	*Adenanthos cygnorum* subsp. *cygnorum*			x	
	Banksia bipinnatifida subsp. *bipinnatifida*			x	
	Banksia dallanneyi subsp. *sylvestris*			x	
	Banksia dallanneyi var. *dallanneyi*			x	
	Banksia fraseri var. *fraseri*			x	
	Banksia grandis			x	
	Banksia littoralis			x	
	Banksia nivea subsp. *nivea*			x	
	Banksia sessilis var. *sessilis*			x	
	Banksia sphaerocarpa			x	
	Banksia sphaerocarpa var. *sphaerocarpa*			x	
	Banksia squarrosa subsp. *squarrosa*			x	
	Banksia subpinnatifida var. *imberbis*	P3		x	
	Banksia subpinnatifida var. *subpinnatifida*	P2		x	
	Banksia undata var. *splendens*			x	
	Conospermum amoenum subsp. *amoenum*			x	
	Conospermum caeruleum			x	
	Conospermum filifolium subsp. *filifolium*			x	
	Grevillea bipinnatifida subsp. *bipinnatifida*			x	
	Grevillea cirsiifolia			x	
	Grevillea monticola			x	
	Grevillea quercifolia			x	
	Grevillea tenuiflora			x	
	Grevillea trifida			x	

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Family	Species	SCC	FCC	Nature Map	EPBC
Proteaceae (cont.)	*Hakea gilbertii*			x	
	Hakea incrassata			x	
	Hakea lissocarpha			x	
	Hakea petiolaris subsp. *petiolaris*			x	
	Hakea prostrata			x	
	Hakea ruscifolia			x	
	Hakea trifurcata			x	
	Hakea undulata			x	
	Hakea varia			x	
	Isopogon crithmifolius			x	
	Isopogon sp. Canning Reservoir (M.D. Tindale 121 &	P1		x	
	Isopogon teretifolius			x	
	Persoonia longifolia			x	
	Persoonia quinquenervis			x	
	Petrophile antecedens			x	
	Petrophile heterophylla			x	
	Petrophile imbricata			x	
	Petrophile seminuda			x	
	Petrophile serruriae			x	
	Petrophile squamata subsp. *squamata*			x	
	Petrophile striata			x	
	Stirlingia simplex			x	
	Synaphea cuneata			x	
	Synaphea damopsis			x	
	Synaphea decorticans			x	
	Synaphea gracillima			x	
	Synaphea obtusata			x	
	Synaphea panhesya	P1		x	
	Xylomelum occidentale			x	
Santalaceae	*Leptomeria cunninghamii*			x	
Olacaceae	*Olax benthamiana*			x	
Apodanthaceae	*Pilostyles hamiltonii*			x	
Polygonaceae	*Persicaria prostrata*			x	
Chenopodiaceae	* *Atriplex prostrata*			x	
	* *Chenopodium glaucum*			x	
Amaranthaceae	*Ptilotus declinatus*			x	
	Ptilotus drummondii var. *drummondii*			x	
	Ptilotus gaudichaudii			x	
	Ptilotus manglesii			x	
	Ptilotus sp. Beaufort River (G.J. Keighery 16554)			x	
Caryophyllaceae	* *Cerastium glomeratum*			x	

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Family	Species	SCC	FCC	Nature Map	EPBC
Ranunculaceae	*Clematis pubescens*			x	
	Ranunculus colonorum			x	
Lauraceae	*Cassytha glabella* forma *glabella*			x	
Resedaceae	* *Reseda luteola*			x	
Droseraceae	*Drosera barbigera*			x	
	Drosera bulbosa			x	
	Drosera bulbosa subsp. *bulbosa*			x	
	Drosera erythrorhiza			x	
	Drosera gigantea			x	
	Drosera hyperostigma			x	
	Drosera macrantha			x	
	Drosera menziesii			x	
	Drosera pallida			x	
	Drosera platystigma			x	
	Drosera subhirtella			x	
Pittosporaceae	*Billardiera fusiformis*			x	
	Billardiera variifolia			x	
	Marianthus bicolor			x	
	Marianthus drummondianus			x	
Byblidaceae	*Byblis gigantea*	P3		x	
Rosaceae	*Acaena echinata*			x	
	* *Rubus fruticosus*				x
Fabaceae	*Acacia alata* var. *platyptera*	P4		x	
	Acacia barbinervis subsp. *barbinervis*			x	
	Acacia browniana var. *endlicheri*			x	
	Acacia celastrifolia			x	
	Acacia dentifera			x	
	Acacia drummondii subsp. *candolleana*			x	
	Acacia drummondii subsp. *drummondii*			x	
	Acacia extensa			x	
	Acacia gemina			x	
	Acacia gilbertii			x	
	Acacia incurva			x	
	Acacia insolita subsp. *insolita*			x	
	Acacia leptospermoides subsp. *leptospermoides*			x	
	Acacia microbotrya			x	
	Acacia nervosa			x	
	Acacia preissiana			x	
	Acacia pulchella			x	
	Acacia pulchella var. *glaberrima*			x	
	Acacia pulchella var. *pulchella*			x	
	Acacia pycnocephala			x	

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Family	Species	SCC	FCC	Nature Map	EPBC
Fabaceae (cont.)	*Acacia saligna*			x	
	Acacia saligna subsp. *lindleyi*			x	
	Acacia saligna subsp. *stolonifera*			x	
	Acacia spathulifolia			x	
	Acacia stenoptera			x	
	Acacia varia var. *crassinervis*			x	
	Bossiaea angustifolia			x	
	Bossiaea disticha			x	
	Bossiaea ornata			x	
	Chorizema aciculare subsp. *laxum*			x	
	Chorizema dicksonii			x	
	Daviesia cordata			x	
	Daviesia costata			x	
	Daviesia decurrens subsp. *decurrens*			x	
	Daviesia hakeoides subsp. *subnuda*			x	
	Daviesia incrassata			x	
	Daviesia incrassata subsp. *incrassata*			x	
	Daviesia longifolia			x	
	Daviesia preissii			x	
	Daviesia rhombifolia			x	
	Dillwynia laxiflora			x	
	Gastrolobium asperum			x	
	Gastrolobium bilobum			x	
	Gastrolobium calycinum			x	
	Gastrolobium glabratum			x	
	Gastrolobium hookeri			x	
	Gastrolobium parviflorum			x	
	Gastrolobium spinosum			x	
	Gastrolobium sp. Prostrate Boddington (M. Hislop 21	P1		x	
	* *Genista monspessulana*				x
	Gompholobium burtonioides			x	
	Gompholobium confertum			x	
	Gompholobium cyaninum			x	
	Gompholobium marginatum			x	
	Gompholobium polymorphum			x	
	Gompholobium preissii			x	
	Hovea chorizemifolia			x	
	Hovea trisperma			x	
	Isotropis cuneifolia			x	
	Isotropis cuneifolia subsp. *cuneifolia*			x	
	Jacksonia alata			x	
	Jacksonia furcellata			x	
	Kennedia coccinea			x	
	Kennedia prostrata			x	
	Labichea punctata			x	
	Mirbelia dilatata			x	
	Mirbelia floribunda			x	
	Phyllota gracilis			x	
	Pultenaea ericifolia			x	

APPENDIX C: SUMMARY OF VASCULAR PLANT SPECIES WITH THE POTENTIAL TO OCCUR ON WMDE AND BAUXITE TRANSPORT CORRIDOR AREAS NEAR BODDINGTON

Note: * denotes introduced species; T denotes threatened flora and P1-P4 denote priority flora species (DBCA 2018a). SCC = State conservation code; FCC = Federal conservation code; E = Endangered, V = Vulnerable (EPBC Act).

Family	Species	SCC	FCC	Nature Map	EPBC
Fabaceae (cont.)	*Pultenaea pauciflora*	T	V	x	x
	Pultenaea reticulata			x	
	Sphaerolobium medium			x	
	Templetonia drummondii			x	
	Viminaria juncea			x	
Geraniaceae	*Geranium solanderi*			x	
	Pelargonium littorale			x	
Oxalidaceae	*Oxalis exilis*			x	
Linaceae	*Linum marginale*			x	
Rutaceae	*Boronia busselliana*			x	
	Boronia crenulata			x	
	Boronia crenulata var. *crenulata*			x	
	Boronia fastigiata			x	
	Boronia ovata			x	
	Boronia ramosa subsp. *anethifolia*			x	
	Boronia tenuis	P4		x	
Polygalaceae	*Comesperma virgatum*			x	
	Comesperma volubile			x	
Phyllanthaceae	*Phyllanthus calycinus*			x	
	Poranthera huegelii			x	
	Poranthera microphylla			x	
Celastraceae	*Stackhousia pubescens*			x	
	Stackhousia scoparia			x	
	Tripterococcus brunonis			x	
Sapindaceae	*Dodonaea ceratocarpa*			x	
Rhamnaceae	*Cryptandra arbutiflora* var. *arbutiflora*			x	
	Cryptandra nutans			x	
	Papistylus intropubens	P1		x	
	Stenanthemum coronatum			x	
	Stenanthemum nanum			x	
	Stenanthemum pumilum subsp. *majus*			x	
	Trymalium angustifolium			x	
	Trymalium ledifolium var. *rosmarinifolium*			x	
	Trymalium odoratissimum subsp. *odoratissimum*			x	
	Trymalium odoratissimum subsp. *trifidum*			x	
Elaeocarpaceae	*Platytheca galioides*			x	
	Tetratheca hirsuta			x	
	Tetratheca hirsuta subsp. *hirsuta*			x	
	Tetratheca hirsuta subsp. *viminea*			x	

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Family	Species	SCC	FCC	Nature Map	EPBC
Elaeocarpaceae (cont.)	*Tetratheca setigera*			x	
	Tetratheca virgata			x	
Malvaceae	*Lasiopetalum cardiophyllum*	P4		x	
	Lasiopetalum floribundum			x	
	Lasiopetalum glutinosum subsp. *latifolium*			x	
	Lasiopetalum pterocarpum	T	E		x
	Thomasia foliosa			x	
Dilleniaceae	*Hibbertia acerosa*			x	
	Hibbertia amplexicaulis			x	
	Hibbertia commutata			x	
	Hibbertia diamesogenos			x	
	Hibbertia glomerata subsp. *darlingensis*			x	
	Hibbertia hypericoides subsp. *hypericoides*			x	
	Hibbertia microphylla			x	
	Hibbertia quadricolor			x	
	Hibbertia serrata			x	
	Hibbertia spicata			x	
	Hibbertia stellaris			x	
	Hibbertia sp.			x	
Tamaricaceae	* *Tamarix aphylla*				x
Violaceae	*Hybanthus floribundus* subsp. *floribundus*			x	
Thymelaeaceae	*Pimelea argentea*			x	
	Pimelea ciliata subsp. *ciliata*			x	
	Pimelea imbricata var. *piligera*			x	
	Pimelea preissii			x	
Myrtaceae	*Babingtonia camphorosmae*			x	
	Beaufortia macrostemon			x	
	Calothamnus planifolius var. *planifolius*			x	
	Calothamnus quadrifidus subsp. *quadrifidus*			x	
	Calothamnus quadrifidus subsp. *teretifolius*	P4		x	
	Calothamnus sanguineus			x	
	Calytrix simplex subsp. *simplex*	P1		x	
	Calytrix simplex subsp. *suboppositifolia*			x	
	Corymbia calophylla			x	
	Darwinia citriodora			x	
	Darwinia pimelioides	P4		x	
	Darwinia thymoides			x	
	Eucalyptus aspersa			x	
	Eucalyptus decurva			x	
	Eucalyptus drummondii			x	
	Eucalyptus latens			x	
	Eucalyptus marginata			x	
	Eucalyptus patens			x	

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Family	Species	SCC	FCC	Nature Map	EPBC
Myrtaceae (cont.)	*Eucalyptus rudis*			x	
	Eucalyptus rudis subsp. *rudis*			x	
	Eucalyptus wandoo subsp. *wandoo*			x	
	Hypocalymma angustifolium			x	
	Kunzea preissiana			x	
	Kunzea recurva			x	
	Leptospermum erubescens			x	
	Melaleuca incana subsp. *incana*			x	
	Melaleuca lecanantha			x	
	Melaleuca tuberculata var. *tuberculata*			x	
	Rinzia fumana			x	
	Taxandria linearifolia			x	
	Verticordia densiflora var. *cespitosa*			x	
	Verticordia huegelii var. *decumbens*			x	
	Verticordia picta			x	
	Verticordia plumosa var. *brachyphylla*			x	
	Verticordia serrata var. *serrata*			x	
Haloragaceae	*Glischrocaryon aureum*			x	
	Gonocarpus cordiger			x	
	Meionectes tenuifolia	P3		x	
Araliaceae	*Hydrocotyle diantha*			x	
	Trachymene pilosa			x	
Apiaceae	*Daucus glochidiatus*			x	
	Pentapeltis peltigera			x	
	Platysace juncea			x	
	Xanthosia atkinsoniana			x	
	Xanthosia candida			x	
	Xanthosia huegelii			x	
	Xanthosia singuliflora			x	
Ericaceae	*Andersonia latiflora*			x	
	Astroloma acervatum			x	
	Astroloma ciliatum			x	
	Astroloma compactum			x	
	Astroloma epacridis			x	
	Astroloma glaucescens			x	
	Astroloma pallidum			x	
	Astroloma serratifolium			x	
	Astroloma sp. Narrogin (R.D. Royce 8158)			x	
	Leucopogon capitellatus			x	
	Leucopogon cordatus			x	
	Leucopogon glabellus			x	
	Leucopogon nutans			x	
	Leucopogon obtusatus			x	
	Leucopogon propinquus			x	
	Leucopogon pubescens			x	

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Family	Species	SCC	FCC	Nature Map	EPBC
Ericaceae (cont.)	*Leucopogon pulchellus*			x	
	Leucopogon sp. Boddington (D. Halford 80746)			x	
	Leucopogon verticillatus			x	
	Lysinema pentapetalum			x	
	Styphelia tenuiflora			x	
Primulaceae	* *Lysimachia arvensis*			x	
	Samolus junceus			x	
Loganiaceae	*Logania sylvicola*	P2		x	
Gentianaceae	*Schenkia australis*			x	
Menyanthaceae	*Ornduffia albiflora*			x	
Boraginaceae	*Halgania cyanea*			x	
Lamiaceae	*Hemiandra pungens*			x	
	Hemigenia argentea			x	
	Hemigenia humilis			x	
	Hemigenia pritzelii			x	
	Hemigenia viscida			x	
	Hemigenia wandooana			x	
Solanaceae	*Anthocercis gracilis*	T	V		x
Lentibulariaceae	*Utricularia multifida*			x	
Plantaginaceae	*Plantago exilis*			x	
Rubiaceae	* *Galium divaricatum*			x	
	* *Galium tricornutum*			x	
	Opercularia apiciflora			x	
	Opercularia echinocephala			x	
	Opercularia hispidula			x	
	Opercularia vaginata			x	
Caprifoliaceae	* *Centranthus ruber* subsp. *ruber*			x	
Campanulaceae	*Lobelia heterophylla*			x	
	* *Monopsis debilis* var. *depressa*			x	
Goodeniaceae	*Dampiera alata*			x	
	Dampiera lavandulacea			x	
	Dampiera linearis			x	
	Goodenia coerulea			x	
	Goodenia convexa			x	
	Goodenia katabudjar	P3		x	
	Goodenia pusilla			x	

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Family	Species	SCC	FCC	Nature Map	EPBC
Goodeniaceae (cont.)	*Lechenaultia biloba*			x	
	Scaevola calliptera			x	
	Scaevola glandulifera			x	
	Scaevola platyphylla			x	
Stylidiaceae	*Levenhookia pusilla*			x	
	Stylidium affine			x	
	Stylidium amoenum			x	
	Stylidium androsaceum			x	
	Stylidium brunonianum			x	
	Stylidium caricifolium			x	
	Stylidium carnosum			x	
	Stylidium ciliatum			x	
	Stylidium crassifolium			x	
	Stylidium junceum			x	
	Stylidium lateriticola			x	
	Stylidium lineatum			x	
	Stylidium marradongense	P3		x	
	Stylidium paulineae			x	
	Stylidium petiolare			x	
	Stylidium uniflorum subsp. *uniflorum*			x	
	Stylidium sp. Boulder Rock (A.H. Burbidge 2536)			x	
Asteraceae	*Asteridea gracilis*	P3		x	
	Asteridea pulverulenta			x	
	* *Chrysanthemoides monilifera*				x
	* *Chrysanthemoides monilifera* subsp. *monilifera*			x	x
	* *Conyza sumatrensis*			x	
	Craspedia variabilis			x	
	* *Crepis foetida* subsp. *foetida*			x	
	Gnephosis drummondii			x	
	* *Hypochaeris glabra*			x	
	* *Hypochaeris radicata*			x	
	Lagenophora huegelii			x	
	Millotia tenuifolia			x	
	Myriocephalus occidentalis			x	
	Olearia paucidentata			x	
	Podotheca angustifolia			x	
	Pseudognaphalium luteoalbum			x	
	Pterochaeta paniculata			x	
	Rhodanthe manglesii			x	
	Senecio glossanthus			x	
	Senecio leucoglossus	P4		x	
	Senecio multicaulis subsp. *multicaulis*			x	
	Senecio multicaulis subsp. *stirlingensis*			x	
	Senecio pinnatifolius var. *pinnatifolius*			x	
	Trichocline spathulata			x	
	Waitzia suaveolens var. *suaveolens*			x	

APPENDIX D: LIKELIHOOD OF VASCULAR PLANT SPECIES WITH THE POTENTIAL TO OCCUR ON WMDE AND BAUXITE TRANSPORT CORRIDOR AREAS

Note: Refer to Appendix A for State (SCC; Department of Biodiversity, Conservation and Attractions 2018a) and Federal (FCC; EPBC Act) conservation code definitions. IBRA Distribution: AVW – Avon Wheatbelt; COO – Coolgardie; ESP – Esperance Plains; GES – Geraldton Sandplains; JAF – Jarrah Forest; MAL – Mallee; SWA – Swan Coastal Plain; WAR – Warren. Likelihood of occurrence in survey area is based on a Low, Medium or High ranking.

Species	Family	SCC	FCC	Description and Habitat		Likelihood of Occurrence
Acacia brachypoda	Fabaceae	T	Endangered	Habit: Flower colour: Flowering period: Soils: IBRA Distribution: Florabase records:	Dense, rounded, slightly aromatic shrub, 1-3 m high, 1-4 m wide Yellow May to Jul Sandy clay or loam. Low-lying seasonal swampy areas AVW 9	Low
Anthocercis gracilis	Solanaceae	T	Vulnerable	Habit: Flower colour: Flowering period: Soils: IBRA Distribution: Florabase records:	Erect, spindly shrub, to 0.6(-1) meters high Yellow-green Sep to Oct Sandy or loamy soils. Granite outcrops AVW, JAF 29	Medium
Caladenia dorrienii	Orchidaceae	T	Endangered	Habit: Flower colour: Flowering period: Soils: IBRA Distribution: Florabase records:	Tuberous, perennial, herb, 0.1-0.2 m high white- -cream-yellow Sep to Nov Clayey loam, Moist sites adjacent to rivers and seasonal creeks AVW, JAF 16	Medium
Caladenia hopperiana	Orchidaceae	T	Endangered	Habit: Flower colour: Flowering period: Soils: IBRA Distribution: Florabase records:	Erect herb Cream Oct Low lying, winter wet impassable swampland JAF 4	High
Diuris micrantha	Orchidaceae	T	Vulnerable	Habit: Flower colour: Flowering period: Soils: IBRA Distribution: Florabase records:	Tuberous, perennial, herb, 0.3-0.6 meters high yellow & brown Sep to Oct Brown loamy clay. Winter-wet swamps, in shallow water JAF,SWA 6	Low
Diuris purdiei	Orchidaceae	T	Endangered	Habit: Flower colour: Flowering period: Soils: IBRA Distribution: Florabase records:	Tuberous, perennial, herb, 0.15-0.35 meters high Yellow Sep to Oct Grey-black sand, moist. Winter-wet swamps. JAF, SWA 23	Low

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Species	Family	SCC	FCC	Description and Habitat		Likelihood of Occurrence
Eleocharis keigheryi	Cyperaceae	T	Vulnerable	Habit: Flower colour: Flowering period: Soils: IBRA Distribution: Florabase records:	Rhizomatous, clumped perennial, grass-like or herb (sedge), to 0.4 meters high Green Aug to Nov Clay, sandy loam. Emergent in freshwater: creeks, clay pans AVW, GES, JAF, SWA 54	Low
Grevillea thelemanniana	Proteaceae	T	Critically Endangered	Habit: Flower colour: Flowering period: Soils: IBRA Distribution: Florabase records:	Spreading, lignotuberous shrub, 0.3-1.5 meters high Pink/red May to Nov Sand, sandy clay. Winter-wet low-lying flats JAF, SWA 37	Low
Lasiopetalum pterocarpum	Malvaceae	T	Endangered	Habit: Flower colour: Flowering period: Soils: IBRA Distribution: Florabase records:	Open, multi-stemmed shrub (with distinctly winged fruit), to 1.2 meters high Pink Aug to Dec Dark red-brown loam or clayey sand over granite. On sloping banks near creeklines JAF 11	Low
Lechenaultia laricina	Goodeniaceae	T	Endangered	Habit: Flower colour: Flowering period: Soils: IBRA Distribution: Florabase records:	Diffuse, ascending shrub, 0.15-0.7 m high Red/red-orange Sep to Dec or Jan Sand, gravelly loam AVW, JAF, MAL 20	Low
Pultenaea pauciflora	Fabaceae	T	Vulnerable	Habit: Flower colour: Flowering period: Soils: IBRA Distribution: Florabase records:	Dense, much-branched shrub, to 0.8 m high Yellow Oct to Nov Sandy & clay lateritic soils. Undulating country AVW, JAF 50	Medium

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Species	Family	SCC	FCC	Description and Habitat		Likelihood of Occurrence
Tetraria australiensis	Cyperaceae	T	Vulnerable	Habit: Flower colour: Flowering period: Soils: IBRA Distribution: Florabase records:	Rhizomatous, tufted perennial, grass-like or herb (sedge), to 1 meters high Brown Nov to Dec Sandy clay or loam. Low-lying seasonal swampy areas JAF, SWA 34	Low
Thelymitra stellata	Orchidaceae	T	Endangered	Habit: Flower colour: Flowering period: Soils: IBRA Distribution: Florabase records:	Tuberous, perennial, herb, 0.15-0.25 meters high. Yellow and brown Oct to Nov Sand, gravel, lateritic loam. GES, JAF, SWA 20	Medium
Tribonanthes purpurea	Haemodoraceae	T	Vulnerable	Habit: Flower colour: Flowering period: Soils: IBRA Distribution: Florabase records:	Dense, rounded, slightly aromatic shrub, 1-3 meters high, 1-4 m wide Yellow May to Jul Sandy clay or loam. Low-lying seasonal swampy areas AVW, ESP, JAF, MAL 21	Low
Verticordia fimbrilepis subsp. *fimbrilepis*	Myrtaceae	T	Endangered	Habit: Flower colour: Flowering period: Soils: IBRA Distribution: Florabase records:	Shrub, 0.3-0.7 meters high. Pink white Oct to Dec or Jan Gravelly sandy or clayey soils. Flats, road verges AVW, JAF 39	Medium
Andersonia sp. Saxatilis (F. & J. Hort 3324)	Ericaceae	P1		Habit: Flower colour: Flowering period: Soils: IBRA Distribution: Florabase records:	Erect, single stemmed shrub 15-60 cm high Pink white Sep, Oct Slope. Outcrop. Moist/dry brown sand/loam. Sheet/boulder JAF 6	Medium
Calytrix simplex subsp. *simplex*	Myrtaceae	P1		Habit: Flower colour: Flowering period: Soils: IBRA Distribution: Florabase records:	Shrub, ca 0.2 meters high Purple Oct to Nov Flat and slope on laterite on red-brown gravelly loam , well drained. AVW, JAF 5	High

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Species	Family	SCC	FCC	Description and Habitat		Likelihood of Occurrence
Gastrolobium sp. Prostrate Boddington (M. Hislop 2130)	Fabaceae	P1		Habit: Flower colour: Flowering period: Soils: IBRA Distribution: Florabase records:	Prostrate, mat-like shrub, to 0.05 meters high Yellow/red Oct Littered brown loam, clay, laterite. Lower slopes and rises, valley bottoms JAF 5	High
Hemigenia rigida	Lamiaceae	P1		Habit: Flower colour: Flower period: Soils: IBRA Distribution: Florabase records:	Upright or spreading shrub, 0.1-0.6(-1) meter s high. blue-purple/violet Aug to Dec or Jan Sandy soils, lateritic gravelly soils. Hillslopes, granite outcrops, flats, ironstone ridges AVW 4	High
Isopogon sp. Canning Reservoir (M.D. Tindale 121 & B.R. Maslin)	Proteaceae	P1		Habit: Flower colour: Flowering period: Soils: IBRA Distribution: Florabase records:	Erect, spreading, single-stemmed shrub, to 1.2 m high cream-pink Jun Brown, yellow or grey sand over laterite. Flats and low plains JAF 7	High
Papistylus intropubens	Rhamnaceae	P1		Habit: Flower colour: Flowering period: Soils: IBRA Distribution: Florabase records:	Erect, slender shrub, to 0.5 m high - - - JAF 1	Low
Synaphea panhesya	Proteaceae	P1		Habit: Flower colour: Flowering period: Soils: IBRA Distribution: Florabase records:	Erect shrub, 0.3-0.6 m high yellow Aug to Sep Gravelly loam & sandy gravel JAF, SWA 15	Medium
Banksia subpinnatifida var. *imberbis*	Proteaceae	P3		Habit: Flower colour: Flowering period: Soils: IBRA Distribution: Florabase records:	Erect or straggling, non-lignotuberous shrub, 0.3-1.5 m high yellow Sep to Oct Laterite AVW, JAF 16	High

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Species	Family	SCC	FCC	Description and Habitat		Likelihood of Occurrence
Banksia subpinnatifida var. *subpinnatifida*	Proteaceae	P2		Habit: Flower colour: Flowering period: Soils: IBRA Distribution: Florabase records:	Erect or straggling, non-lignotuberous shrub, 0.3-1.5 m high yellow Sep to Oct Gravelly loam AVW, JAF 21	High
Bossiaea modesta	Fabaceae	P2		Habit: Flower colour: Flowering period: Soils: IBRA Distribution: Florabase records:	Slender, trailing & twining shrub yellow & red Oct to Dec Soils derived from granite. Damp areas close to stream JAF, SWA 21	Low
Darwinia sp. Westdale (F. Hort 864)	Myrtaceae	P2		Habit: Flower colour: Flowering period: Soils: IBRA Distribution: Florabase records:	Decumbent to prostrate shrub, 0.5-1.2 m high red Dec Dry lateritic soils. High on steep slopes JAF 2	Medium
Grevillea crowleyae	Proteaceae	P2		Habit: Flower colour: Flowering period: Soils: IBRA Distribution: Florabase records:	Dense & spreading shrub, 0.5-1.5 m high - Aug to Nov Gravel JAF 9	Medium
Haloragis aculeolata	Haloragaceae	P2		Habit: Flower colour: Flowering period: Soils: IBRA Distribution: Florabase records:	Slender, erect perennial, herb, to 0.4 m high green Sep or Dec Black sand or clay over limestone. Winter-wet areas JAF, SWA 6	Low
Logania sylvicola	Loganiaceae	P2		Habit: Flower colour: Flowering period: Soils: IBRA Distribution: Florabase records:	shrub to 0.3 m high, 0.4 m wide white-cream Aug, Sep silty loam, gravelly clay, clayey sand. Low-mid slopes, flats, winter-wet areas JAF 7	Low

APPENDIX D: LIKELIHOOD OF VASCULAR PLANT SPECIES WITH THE POTENTIAL TO OCCUR ON WMDE AND BAUXITE TRANSPORT CORRIDOR AREAS

Note: Refer to Appendix A for State (SCC; Department of Biodiversity, Conservation and Attractions 2018a) and Federal (FCC; EPBC Act) conservation code definitions. IBRA Distribution: AVW – Avon Wheatbelt; COO – Coolgardie; ESP – Esperance Plains; GES – Geraldton Sandplains; JAF – Jarrah Forest; MAL – Mallee; SWA – Swan Coastal Plain; WAR – Warren. Likelihood of occurrence in survey area is based on a Low, Medium or High ranking.

Species	Family	SCC	FCC	Description and Habitat	Likelihood of Occurrence
Synaphea boyaginensis	Proteaceae	P2		Habit: Shrub, to 0.25 m high Flower colour: yellow Flowering period: Sep to Oct Soils: Gravelly clay-loam IBRA Distribution: AVW, JAF, MAL Florabase records: 22	Medium
Acacia adjutrices	Fabaceae	P3		Habit: Sub-shrub 0.3-0.7 m high Flower colour: yellow/golden Flowering period: Jul to Aug Soils: Loam, clay on laterite hills, sandplains IBRA Distribution: AVW, JAF Florabase records: 23	Medium
Acacia horridula	Fabaceae	P3		Habit: Harsh, slender, single-stemmed shrub, 0.3-0.6(-1) m high Flower colour: yellow Flowering period: May to Aug Soils: Gravelly soils over granite, sand. Rocky hillsides IBRA Distribution: JAF, SWA Florabase records: 32	High
Asteridea gracilis	Asteraceae	P3		Habit: Annual, herb, 0.15-0.35 m high Flower colour: white-pink Flowering period: Sep to Dec Soils: Sand, clay, gravelly soils IBRA Distribution: ESP, JAF, SWA Florabase records: 11	Medium
Banksia meganotia	Proteaceae	P3		Habit: Straggly or erect, prickly, lignotuberous shrub, 0.3-1 m high Flower colour: yellow Flowering period: Oct Soils: Sand, sandy loam or clay loam over laterite IBRA Distribution: AVW, MAL Florabase records: 37	Medium
Byblis gigantea	Byblidaceae	P3		Habit: Small, branched perennial, herb (or sub-shrub), to 0.45 m high Flower colour: pink-purple/white Flowering period: Sep to Dec or Jan Soils: Sandy-peat swamps. Seasonally wet areas IBRA Distribution: JAF, SWA Florabase records: 40	Low

APPENDIX D: LIKELIHOOD OF VASCULAR PLANT SPECIES WITH THE POTENTIAL TO OCCUR ON WMDE AND BAUXITE TRANSPORT CORRIDOR AREAS

Note: Refer to Appendix A for State (SCC; Department of Biodiversity, Conservation and Attractions 2018a) and Federal (FCC; EPBC Act) conservation code definitions. IBRA Distribution: AVW – Avon Wheatbelt; COO – Coolgardie; ESP – Esperance Plains; GES – Geraldton Sandplains; JAF – Jarrah Forest; MAL – Mallee; SWA – Swan Coastal Plain; WAR – Warren. Likelihood of occurrence in survey area is based on a Low, Medium or High ranking.

Species	Family	SCC	FCC	Description and Habitat	Likelihood of Occurrence
Chordifex gracilior	Restionaceae	P3		Habit: Rhizomatous, erect perennial, herb, 0.3-0.5 m high Flower colour: brown Flowering period: Sep to Dec Soils: Peaty sand. Swamps IBRA Distribution: JAF, SWA, WAR Florabase records: 31	Low
Conospermum scaposum	Proteaceae	P3		Habit: Erect shrub, 0.2-0.45(-0.75) m high Flower colour: blue Flowering period: Oct to Dec or Jan to Feb Soils: White-grey sand, sandy clay. Low swampy areas, road verges IBRA Distribution: AVW, GES, JAF, SWA Florabase records: 43	Medium
Goodenia katabudjar	Goodeniaceae	P3		Habit: Shrub (subshrub), 0.1-0.2 m high Flower colour: blue-pink/white Flowering period: Dec Soils: Sandy gravel. Upland areas of open wandoo woodland IBRA Distribution: JAF Florabase records: 11	High
Grevillea manglesii subsp. *dissectifolia*	Proteaceae	P3		Habit: Spreading, virgate shrub, 1.5-3(-5) m high, up to 3 m wide Flower colour: white & red & brown Flowering period: Jun or Sep or Nov Soils: Gravelly loam, moist. Roadsides IBRA Distribution: JAF Florabase records: 27	High
Hakea oldfieldii	Proteaceae	P3		Habit: Open, straggling shrub, up to 2.5 m high Flower colour: white-cream/yellow Flowering period: Aug to Oct Soils: Red clay or sand over laterite. Seasonally wet flats IBRA Distribution: AVW, ESP, JAF, MAL, SWA Florabase records: 57	Low
Halgania corymbosa	Boraginaceae	P3		Habit: Erect shrub, 0.35-1 m high Flower colour: blue-purple Flowering period: Aug to Nov Soils: Gravelly soils, soils over granite IBRA Distribution: JAF, SWA Florabase records: 18	High

APPENDIX D: LIKELIHOOD OF VASCULAR PLANT SPECIES WITH THE POTENTIAL TO OCCUR ON WMDE AND BAUXITE TRANSPORT CORRIDOR AREAS

Note: Refer to Appendix A for State (SCC; Department of Biodiversity, Conservation and Attractions 2018a) and Federal (FCC; EPBC Act) conservation code definitions. IBRA Distribution: AVW – Avon Wheatbelt; COO – Coolgardie; ESP – Esperance Plains; GES – Geraldton Sandplains; JAF – Jarrah Forest; MAL – Mallee; SWA – Swan Coastal Plain; WAR – Warren. Likelihood of occurrence in survey area is based on a Low, Medium or High ranking.

Species	Family	SCC	FCC	Description and Habitat	Likelihood of Occurrence
Hemigenia microphylla	Lamiaceae	P3		Habit: Slender shrub, 0.4-1.8 m high Flower colour: blue-purple Flowering period: Sep to Dec Soils: Sandy clay, peaty clay, granite. Winter-wet depressions IBRA Distribution: JAF, SWA, WAR Florabase records: 25	Medium
Hibbertia glomerata subsp. *wandoo*	Dilleniaceae	P3		Habit: Erect, much-branched shrub, to 0.6 m high Flower colour: yellow Flowering period: Feb or Apr or Aug or Oct Soils: Lateritic soils IBRA Distribution: AVW, JAF Florabase records: 17	Medium
Lasiopetalum caroliae	Malvaceae	P3		Habit: Procumbent, sprawling subshrub, 0.08–0.4 m high, 0.15–0.2 m wide Flower colour: pale to bright mauve-pink & dark red Flowering period: Sep to Nov Soils: yellow-brown, sandy loam and lateritic gravel soils, mid-slope IBRA Distribution: JAF, SWA Florabase records: 17	Medium
Leucopogon florulentus	Ericaceae	P3		Habit: Erect slender shrub, 0.3-0.8 m high Flower colour: white Flowering period: Jun to Nov Soils: White/grey or yellow sand, sandy clay, gravelly lateritic soils. Sandplains, gentle slopes IBRA Distribution: AVW, ESP, MAL Florabase records: 31	Medium
Meionectes tenuifolia	Haloragaceae	P3		Habit: Erect or prostrate annual, herb, 0.05-0.5 m high Flower colour: brown-red period: Sep or Nov to Dec Soils: Grey sand, clay. Winter wet flats IBRA Distribution: JAF, SWA Florabase records: 24	Low
Stylidium marradongense	Stylidiaceae	P3		Habit: Erect perennial, herb, 0.15-0.5 m high Flower colour: white/pink Flowering period: Sep to Nov Soils: Sand over laterite. Jarrah-Marri forest IBRA Distribution: JAF Florabase records: 12	High

APPENDIX D: LIKELIHOOD OF VASCULAR PLANT SPECIES WITH THE POTENTIAL TO OCCUR ON WMDE AND BAUXITE TRANSPORT CORRIDOR AREAS

Note: Refer to Appendix A for State (SCC; Department of Biodiversity, Conservation and Attractions 2018a) and Federal (FCC; EPBC Act) conservation code definitions. IBRA Distribution: AVW – Avon Wheatbelt; COO – Coolgardie; ESP – Esperance Plains; GES – Geraldton Sandplains; JAF – Jarrah Forest; MAL – Mallee; SWA – Swan Coastal Plain; WAR – Warren. Likelihood of occurrence in survey area is based on a Low, Medium or High ranking.

Species	Family	SCC	FCC	Description and Habitat	Likelihood of Occurrence
Tetratheca similis	Elaeocarpaceae	P3		Habit: Spreading shrub, to 0.3 m high Flower colour: pink Flowering period: Aug to Sep Soils: Sandy clay with lateritic boulders IBRA Distribution: AVW, JAF Florabase records: 20	Medium
Thysanotus anceps	Asparagaceae	P3		Habit: Rhizomatous, leafless perennial, herb, to 0.4 m high Flower colour: purple Flowering period: Oct to Dec Soils: White or grey sand, lateritic gravel, laterite IBRA Distribution: GES, JAF, SWA Florabase records: 17	Medium
Acacia alata var. *platyptera*	Fabaceae	P4		Habit: Dense shrub, 0.5-1 m high Flower colour: yellow Flowering period: Jun to Aug Soils: Clay, gravelly sandy clay. Lateritic ridges, clay flats. IBRA Distribution: AVW, JAF, SWA Florabase records: 31	Medium
Acacia cuneifolia	Fabaceae	P4		Habit: Erect or straggly shrub, 1-3 m high Flower colour: yellow Flowering period: Jul to Oct Soils: Sand, clay or loam over granite. Granite outcrops & hills, rocky watercourses IBRA Distribution: AVW, JAF Florabase records: 40	High
Acacia oncinophylla subsp. *patulifolia*	Fabaceae	P4		Habit: Shrub, 0.5-2.5(-3) m high, 'minni-ritchi' bark, phyllodes 4-9 cm long, 3-6 mm wide Flower colour: yellow Flowering period: Aug to Nov or Nov to Dec Soils: Granitic soils, occasionally on laterite IBRA Distribution: JAF, SWA Florabase records: 31	Medium
Banksia insulanemorecincta	Proteaceae	P4		Habit: Non-lignotuberous shrub, to 1 m high Flower colour: cream Flowering period: Jun to Sep Soils: Yellow sand, clay, gravel, laterite, granite. Open scrubby flat, slopes, low heath. IBRA Distribution: JAF Florabase records: 19	Medium

APPENDIX D: LIKELIHOOD OF VASCULAR PLANT SPECIES WITH THE POTENTIAL TO OCCUR ON WMDE AND BAUXITE TRANSPORT CORRIDOR AREAS

Note: Refer to Appendix A for State (SCC; Department of Biodiversity, Conservation and Attractions 2018a) and Federal (FCC; EPBC Act) conservation code definitions. IBRA Distribution: AVW – Avon Wheatbelt; COO – Coolgardie; ESP – Esperance Plains; GES – Geraldton Sandplains; JAF – Jarrah Forest; MAL – Mallee; SWA – Swan Coastal Plain; WAR – Warren. Likelihood of occurrence in survey area is based on a Low, Medium or High ranking.

Species	Family	SCC	FCC	Description and Habitat		Likelihood of Occurrence
Boronia tenuis	Rutaceae	P4		Habit: Flower colour: Flowering period: Soils: IBRA Distribution: Florabase records:	Procumbent or erect & slender shrub, 0.1-0.5 m high blue/pink-white Aug to Nov Laterite, stony soils, granite JAF, SWA 43	Medium
Caladenia integra	Orchidaceae	P4		Habit: Flower colour: Flowering period: Soils: IBRA Distribution: Florabase records:	Tuberous, perennial, herb, 0.2-0.5 m high green & red Sep to Oct Clayey loam. Granite outcrops, rocky slopes. AVW, ESP, GES, JAF, MAL 46	Medium
Caladenia speciosa	Orchidaceae	P4		Habit: Flower colour: Flowering period: Soils: IBRA Distribution: Florabase records:	Tuberous, perennial, herb, 0.35-0.6 meters high White-pink September to October White, grey or black sand. Loam flat swampy terrain JAF, SWA 59	Low
Calothamnus graniticus subsp. *leptophyllus*	Myrtaceae	P4		Habit: Flower colour: Flowering period: Soils: IBRA Distribution: Florabase records:	Erect, multi-stemmed shrub, 1-2 m high Red June to August Clay over granite, lateritic soils. Hillsides. JAF, SWA 27	Medium
Chorizema ulotropis	Fabaceae	P4		Habit: Flower colour: Flowering period: Soils: IBRA Distribution: Florabase records:	Sprawling, open, semi-prostrate shrub, to 0.45 m high orange-yellow Jul to Sep Moist to dry soils, white sand with gravel, laterite, granite. Outcrops, winter damp to dry areas, flats. ESP, JAF, MAL 24	Medium
Darwinia pimelioides	Myrtaceae	P4		Habit: Flower colour: Flowering period: Soils: IBRA Distribution: Florabase records:	Erect shrub, 0.25-0.5(-1) m high red/pink & green Sep to Oct Loam, sandy loam. Granite outcrops JAF, SWA 25	Medium

APPENDIX D: LIKELIHOOD OF VASCULAR PLANT SPECIES WITH THE POTENTIAL TO OCCUR ON WMDE AND BAUXITE TRANSPORT CORRIDOR AREAS

Note: Refer to Appendix A for State (SCC; Department of Biodiversity, Conservation and Attractions 2018a) and Federal (FCC; EPBC Act) conservation code definitions. IBRA Distribution: AVW – Avon Wheatbelt; COO – Coolgardie; ESP – Esperance Plains; GES – Geraldton Sandplains; JAF – Jarrah Forest; MAL – Mallee; SWA – Swan Coastal Plain; WAR – Warren. Likelihood of occurrence in survey area is based on a Low, Medium or High ranking.

Species	Family	SCC	FCC	Description and Habitat	Likelihood of Occurrence
Darwinia sp. Dryandra (G.J. Keighery 9295)	Myrtaceae	P4		Habit: Dense shrub, 0.1-0.45 m high Flower colour: white Flowering period: May or Jul or Nov Soils: Gravelly clay. Lateritic ridges. IBRA Distribution: AVW, JAF Florabase records: 16	Medium
Darwinia thymoides subsp. St Ronans (J.J. Alford & G.J. Keighery 64)	Myrtaceae	P4		Habit: Low shrub, 0.3-0.6 m high, 0.2-1 m wide Flower colour: Orange-red, red Flowering period: Oct to Dec or Jan Soils: sandy or gravelly clay-loam soils. Slopes and Flats. Granite outcrops. IBRA Distribution: AVW, JAF Florabase records: 21	High
Drosera occidentalis	Droseraceae	P4		Habit: Fibrous-rooted, rosetted perennial, herb, to 0.025 m high. Flower colour: White-pink Flowering period: October to December or January Soils: Swampy flats, grey clayey sand IBRA Distribution: JAF, SWA Florabase records: 19	Medium
Eucalyptus exilis	Myrtaceae	P4		Habit: (Whipstick mallee), 2-6 m high, bark smooth Flower colour: white Flowering period: Aug to Oct Soils: Grey sand, gravelly loam. Lateritic ridges. IBRA Distribution: AVW, GES, JAF Florabase records: 45	Medium
Gastrolobium ovalifolium	Fabaceae	P4		Habit: Prostrate, spreading shrub, to 0.1 m high Flower colour: orange & purple & yellow & red Flowering period: Aug to Sep Soils: Sandy clay. Gravelly hills. IBRA Distribution: AVW, JAF Florabase records: 26	Medium
Grevillea pimeleoides	Proteaceae	P4		Habit: Non-lignotuberous shrub, 0.4-2.4 m high Flower colour: yellow-orange Flowering period: May to Nov Soils: Gravelly soils over granite. Rocky hillsides. IBRA Distribution: JAF Florabase records: 36	Medium

APPENDIX D: LIKELIHOOD OF VASCULAR PLANT SPECIES WITH THE POTENTIAL TO OCCUR ON WMDE AND BAUXITE TRANSPORT CORRIDOR AREAS

Note: Refer to Appendix A for State (SCC; Department of Biodiversity, Conservation and Attractions 2018a) and Federal (FCC; EPBC Act) conservation code definitions. IBRA Distribution: AVW – Avon Wheatbelt; COO – Coolgardie; ESP – Esperance Plains; GES – Geraldton Sandplains; JAF – Jarrah Forest; MAL – Mallee; SWA – Swan Coastal Plain; WAR – Warren. Likelihood of occurrence in survey area is based on a Low, Medium or High ranking.

Species	Family	SCC	FCC	Description and Habitat	Likelihood of Occurrence
Hemigenia platyphylla	Lamiaceae	P4		Habit: Spreading shrub, 0.2-1.5 m high Flower colour: blue-purple Flowering period: Sep to Nov Soils: Sandy & loamy soils. Granite rocks, slopes. IBRA Distribution: AVW, ESP, JAF, MAL Florabase records: 19	Medium
Hibbertia montana	Dilleniaceae	P4		Habit: Erect, straggling or sprawling shrub, 0.1-0.7 m high Flower colour: yellow Flowering period: Jul to Oct Soils: Loam over granite, lateritic soils, gravel. Granite rocks, lateritic ridges & boulders, hills. IBRA Distribution: AVW, JAF, SWA Florabase records: 93	Medium
Hydrocotyle lemnoides	Araliaceae	P4		Habit: Aquatic, floating annual, herb Flower colour: purple Flowering period: Aug to Oct Soils: Swamps IBRA Distribution: AVW, GES, JAF, SWA Florabase records: 26	Low
Lasiopetalum cardiophyllum	Malvaceae	P4		Habit: Erect, multi-stemmed shrub, 0.2-0.5 m high Flower colour: pink Flowering period: Aug to Dec or Jan Soils: Lateritic gravelly soils, sandy clay. Flats, hillslopes IBRA Distribution: AVW, JAF Florabase records: 33	High
Lechenaultia pulvinaris	Goodeniaceae	P4		Habit: Hemispherical, procumbent shrub, 0.03-0.2 m high Flower colour: blue Flowering period: Oct to Dec Soils: White/grey sand. IBRA Distribution: AVW, JAF Florabase records: 35	Low
Microtis quadrata	Orchidaceae	P4		Habit: Herb to 0.4 m high Flower colour: cream/white-green Flowering period: Oct to Dec Soils: Sand, sandy clay-loam, peaty soil. Lower slope, flat, swamp IBRA Distribution: COO, ESP, JAF, SWA, WAR Florabase records: 8	Medium

APPENDIX D: LIKELIHOOD OF VASCULAR PLANT SPECIES WITH THE POTENTIAL TO OCCUR ON WMDE AND BAUXITE TRANSPORT CORRIDOR AREAS

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Species	Family	SCC	FCC	Description and Habitat	Likelihood of Occurrence
Ornduffia submersa	Menyanthaceae	P4		Habit: Aquatic herb Flower colour: white Flowering period: Aug to Oct Soils: claypan, wet sandy clay. seasonally inundated wetland IBRA Distribution: AVW, ESP, JAF, SWA, WAR Florabase records: 60	Low
Pimelea rara	Thymelaeaceae	P4		Habit: Shrub, 0.2-0.35 m high Flower colour: White Flowering period: Dec or Jan Soils: Lateritic soils IBRA Distribution: JAF Florabase records: 52	Medium
Schoenus natans	Cyperaceae	P4		Habit: Aquatic annual, grass-like or herb (sedge), 0.3 m high Flower colour: brown Flowering period: Oct Soils: Winter-wet depressions IBRA Distribution: AVW, JAF, SWA, WAR Florabase records: 61	Low
Senecio leucoglossus	Asteraceae	P4		Habit: Erect annual, herb, to 1.3 meters high Flower colour: White Flowering period: August to December Soils: Gravelly lateritic or granitic soils. Granite outcrops, slopes IBRA Distribution: JAF, SWA, WAR Florabase records: 41	High
Stylidium leptocalyx	Stylidiaceae	P4		Habit: Rosetted perennial, herb, 0.08-0.4 m high Flower colour: pink Flowering period: Oct to Nov Soils: Laterite soils. Upland, breakaways. Eucalypt woodland or shrubland IBRA Distribution: JAF Florabase records: 14	Medium
Stylidium longitubum	Stylidiaceae	P4		Habit: Erect annual (ephemeral), herb, 0.05-0.12 m high Flower colour: pink Flowering period: Oct to Dec Soils: Sandy clay, clay. Seasonal wetlands IBRA Distribution: GES, JAF, SWA Florabase records: 43	Low

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Species	Family	SCC	FCC	Description and Habitat		Likelihood of Occurrence
Stylidium striatum	Stylidiaceae	P4		Habit: Flower colour: Flowering period: Soils: IBRA Distribution: Florabase records:	Rosetted perennial, herb, 0.15-0.55 m high yellow Oct to Nov Brown clay loam over laterite. Hill slopes JAF 28	Medium
Verreauxia verreauxii	Goodeniaceae	P4		Habit: Flower colour: Flowering period: Soils: IBRA Distribution: Florabase records:	Perennial, herb, to 0.5 m high yellow Nov to Dec or Jan White/grey or yellow sand. Flats AVW, JAF 44	Low
Verticordia lindleyi subsp. *lindleyi*	Myrtaceae	P4		Habit: Flower colour: Flowering period: Soils: IBRA Distribution: Florabase records:	Erect shrub, 0.2-0.75 m high pink May or Nov to Dec or Jan Sand, sandy clay. Winter-wet depressions AVW, GES, JAF, SWA 81	Low

APPENDIX E: SUMMARY OF VASCULAR PLANT SPECIES WITH THE POTENTIAL TO OCCUR AT COLLIE REFINERY

Note: * denotes introduced species; T denotes threatened flora and P1-P4 denote priority flora species (DBCA 2018a). Scc = State conservation code; FCC = Federal conservation code; E = Endangered, V = Vulnerable.

Family	Species	SCC	FCC	Nature Map	EPBC
Pteridaceae	*Adiantum aethiopicum*			x	
	Cheilanthes austrotenuifolia			x	
Dennstaedtiaceae	*Pteridium esculentum* subsp. *esculentum*			x	
Aspleniaceae	*Asplenium aethiopicum*			x	
Marsileaceae	*Marsilea mutica*			x	
Salviniaceae	*Azolla rubra*			x	
Zamiaceae	*Macrozamia riedlei*			x	
Pinaceae	* *Pinus radiata*				x
Cupressaceae	*Callitris pyramidalis*			x	
Typhaceae	*Typha orientalis*			x	
Ruppiaceae	*Ruppia polycarpa*			x	
Juncaginaceae	*Cycnogeton lineare*			x	
Hydrocharitaceae	*Ottelia ovalifolia*			x	
Poaceae	* *Aira cupaniana*			x	
	* *Aira elegantissima*			x	
	Amphibromus nervosus			x	
	Amphipogon amphipogonoides			x	
	Amphipogon laguroides			x	
	Amphipogon laguroides subsp. *laguroides*			x	
	Austrostipa elegantissima			x	
	Austrostipa mollis			x	
	* *Briza maxima*			x	
	* *Briza minor*			x	
	* *Bromus hordeaceus*			x	
	* *Cortaderia selloana* subsp. *selloana*			x	
	Deyeuxia quadriseta			x	
	* *Holcus lanatus*			x	
	* *Hordeum leporinum*			x	
	Lachnagrostis filiformis			x	
	* *Lolium perenne*			x	
	* *Lolium rigidum*			x	
	Neurachne alopecuroidea			x	
	* *Phalaris aquatica*			x	
	* *Phalaris minor*			x	
	Poa porphyroclados			x	
	* *Polypogon monspeliensis*			x	
	* *Rostraria cristata*			x	
	Rytidosperma acerosum			x	
	Rytidosperma caespitosum			x	

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Note: * denotes introduced species; T denotes threatened flora and P1-P4 denote priority flora species (DBCA 2018a). Scc = State conservation code; FCC = Federal conservation code; E = Endangered, V = Vulnerable.

Family	Species	SCC	FCC	Nature Map	EPBC
Poaceae (continued)	* *Sporobolus africanus*			x	
	Tetrarrhena laevis			x	
	* *Vulpia muralis*			x	
	* *Vulpia myuros* forma *megalura*			x	
Cyperaceae	*Baumea vaginalis*			x	
	Bolboschoenus caldwellii			x	
	Carex tereticaulis	P3			
	Cyathochaeta avenacea			x	
	* *Cyperus congestus*			x	
	Eleocharis keigheryi	T	V		x
	Gahnia decomposita			x	
	Isolepis cyperoides			x	
	Isolepis marginata			x	
	Lepidosperma leptostachyum			x	
	Lepidosperma persecans			x	
	Lepidosperma pubisquameum			x	
	Lepidosperma scabrum			x	
	Lepidosperma squamatum			x	
	Lepidosperma tenue			x	
	Lepidosperma tetraquetrum			x	
	Lepidosperma tuberculatum			x	
	Lepidosperma sp. Margaret River (B.J. Lepschi 1841)			x	
	Lepidosperma sp.			x	
	Mesomelaena graciliceps			x	
	Mesomelaena tetragona			x	
	Schoenus bifidus			x	
	Schoenus curvifolius			x	
	Schoenus nanus			x	
	Schoenus subbulbosus			x	
	Tetraria capillaris			x	
	Tetraria octandra			x	
	Tetraria sp. Jarrah Forest (R. Davis 7391)			x	
Restionaceae	*Cytogonidium leptocarpoides*			x	
	Desmocladus fasciculatus			x	
	Desmocladus flexuosus			x	
	Hypolaena exsulca			x	
	Hypolaena robusta	P4		x	
	Leptocarpus laxus			x	
	Leptocarpus roycei			x	
	Leptocarpus thysananthus			x	
	Lepyrodia macra			x	
	Lepyrodia riparia			x	
	Loxocarya cinerea			x	
	Tremulina tremula			x	
	Tyrbastes glaucescens			x	
Anarthriaceae	*Lyginia imberbis*			x	

APPENDIX E: SUMMARY OF VASCULAR PLANT SPECIES WITH THE POTENTIAL TO OCCUR AT COLLIE REFINERY

Note: * denotes introduced species; T denotes threatened flora and P1-P4 denote priority flora species (DBCA 2018a). Scc = State conservation code; FCC = Federal conservation code; E = Endangered, V = Vulnerable.

Family	Species	SCC	FCC	Nature Map	EPBC
Centrolepidaceae	*Aphelia cyperoides*			x	
	Aphelia drummondii			x	
	Aphelia sp. Albany (B.G. Briggs 596)			x	
	Centrolepis aristata			x	
	Centrolepis glabra			x	
	Centrolepis pilosa			x	
Philydraceae	*Philydrella pygmaea*			x	
Juncaceae	* *Juncus bufonius*			x	
	* *Juncus capitatus*			x	
	Juncus gregiflorus			x	
	Juncus holoschoenus			x	
	Juncus meianthus	P3		x	
	* *Juncus microcephalus*			x	
	Juncus pallidus			x	
	* *Juncus usitatus*			x	
	Luzula meridionalis			x	
Asparagaceae	* *Asparagus asparagoides*				x
	Chamaescilla corymbosa			x	
	Chamaescilla corymbosa var. *corymbosa*			x	
	Laxmannia ramosa subsp. *ramosa*			x	
	Laxmannia squarrosa			x	
	Lomandra brittanii			x	
	Lomandra caespitosa			x	
	Lomandra drummondii			x	
	Lomandra integra			x	
	Lomandra micrantha subsp. *micrantha*			x	
	Lomandra nigricans			x	
	Lomandra odora			x	
	Lomandra pauciflora			x	
	Lomandra preissii			x	
	Lomandra purpurea			x	
	Lomandra sericea			x	
	Lomandra sonderi			x	
	Lomandra whicherensis	P3		x	
	Lomandra sp.			x	
	Sowerbaea laxiflora			x	
	Thysanotus dichotomus			x	
	Thysanotus multiflorus			x	
	Thysanotus patersonii			x	
	Thysanotus sparteus			x	
	Thysanotus tenellus			x	
	Thysanotus thyrsoideus			x	
	Thysanotus unicupensis	P3		x	
	Thysanotus sp.			x	
Dasypogonaceae	*Calectasia demarzii*			x	
	Kingia australis			x	

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Family	Species	SCC	FCC	Nature Map	EPBC
Xanthorrhoeaceae	*Xanthorrhoea acanthostachya*			x	
	Xanthorrhoea gracilis			x	
	Xanthorrhoea nana			x	
	Xanthorrhoea preissii			x	
Colchicaceae	*Burchardia congesta*			x	
	Wurmbea dioica subsp. *alba*			x	
Hemerocallidaceae	*Agrostocrinum hirsutum*			x	
	Caesia micrantha			x	
	Caesia occidentalis			x	
	Dianella revoluta			x	
	Dianella revoluta var. *divaricata*			x	
	Johnsonia lupulina			x	
	Tricoryne elatior			x	
	Tricoryne humilis			x	
	Tricoryne tenella			x	
Haemodoraceae	*Anigozanthos manglesii* subsp. *manglesii*			x	
	Conostylis aculeata			x	
	Conostylis aculeata subsp. *aculeata*			x	
	Conostylis laxiflora			x	
	Conostylis pusilla			x	
	Conostylis serrulata			x	
	Conostylis setigera subsp. *setigera*			x	
	Haemodorum laxum			x	
	Haemodorum paniculatum			x	
	Haemodorum simplex			x	
	Haemodorum sparsiflorum			x	
	Haemodorum spicatum			x	
	Phlebocarya ciliata			x	
	Tribonanthes australis			x	
	Tribonanthes violacea			x	
Amaryllidaceae	* *Crinum moorei*			x	
Iridaceae	* *Ixia polystachya*			x	
	Patersonia babianoides			x	
	Patersonia occidentalis			x	
	Patersonia occidentalis var. *occidentalis*			x	
	Patersonia pygmaea			x	
	Patersonia rudis			x	
	Patersonia umbrosa			x	
	Patersonia umbrosa var. *xanthina*			x	
Orchidaceae	*Caladenia attingens* subsp. *attingens*			x	
	Caladenia bryceana subsp. *bryceana*	T	E	x	
	Caladenia cairnsiana			x	
	Caladenia discoidea			x	
	Caladenia flava subsp. *flava*			x	
	Caladenia flava subsp. *sylvestris*			x	

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Family	Species	SCC	FCC	Nature Map	EPBC
Orchidaceae (continued)	*Caladenia leucochila*	T	E		x
	Caladenia longiclavata			x	
	Caladenia macrostylis			x	
	Caladenia marginata			x	
	Caladenia nana subsp. *nana*			x	
	Caladenia nana subsp. *unita*			x	
	Caladenia pectinata			x	
	Caladenia reptans			x	
	Caladenia reptans subsp. *reptans*			x	
	Caladenia speciosa	P4		x	
	Caladenia splendens			x	
	Caladenia straminichila			x	
	Caladenia uliginosa subsp. *patulens*	P1			
	Caladenia uliginosa subsp. *uliginosa*			x	
	Caladenia validinervia	P1		x	
	Caladenia sp.			x	
	Corybas recurvus			x	
	Cyanicula gemmata			x	
	Cyanicula sericea			x	
	Cyrtostylis huegelii			x	
	* *Disa bracteata*			x	
	Diuris carinata			x	
	Diuris longifolia			x	
	Diuris micrantha	T	V		x
	Diuris porrifolia			x	
	Drakaea glyptodon			x	
	Drakaea livida			x	
	Elythranthera brunonis			x	
	Elythranthera emarginata			x	
	Eriochilus dilatatus subsp. *multiflorus*			x	
	Eriochilus dilatatus subsp. *undulatus*			x	
	Eriochilus scaber			x	
	Eriochilus scaber subsp. *scaber*			x	
	Leporella fimbriata			x	
	Leptoceras menziesii			x	
	Lyperanthus serratus			x	
	Microtis alboviridis			x	
	Microtis media subsp. *media*			x	
	Paracaleana nigrita			x	
	Praecoxanthus aphyllus			x	
	Prasophyllum hians			x	
	Pterostylis barbata			x	
	Pterostylis recurva			x	
	Pterostylis vittata			x	
	Pterostylis sp. crinkled leaf (G.J. Keighery 13426)			x	
	Pterostylis sp.			x	
	Pyrorchis nigricans			x	
	Thelymitra antennifera			x	
	Thelymitra crinita			x	
	Thelymitra fuscolutea			x	
	Thelymitra graminea			x	

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Family	Species	SCC	FCC	Nature Map	EPBC
Orchidaceae (continued)	*Thelymitra villosa*			x	
	Thelymitra sp.			x	
Casuarinaceae	*Allocasuarina fraseriana*			x	
	Allocasuarina humilis			x	
	* *Casuarina equisetifolia*			x	
Proteaceae	*Adenanthos cygnorum* subsp. *chamaephyton*	P3		x	
	Adenanthos obovatus			x	
	Banksia bipinnatifida subsp. *bipinnatifida*			x	
	Banksia dallanneyi			x	
	Banksia dallanneyi subsp. *sylvestris*			x	
	Banksia dallanneyi var. *dallanneyi*			x	
	Banksia dallanneyi var. *mellicula*			x	
	Banksia grandis			x	
	Banksia littoralis			x	
	Banksia meisneri subsp. *meisneri*			x	
	Banksia sessilis var. *sessilis*			x	
	Banksia sphaerocarpa var. *sphaerocarpa*			x	
	Conospermum capitatum subsp. *capitatum*			x	
	Conospermum capitatum subsp. *glabratum*			x	
	Conospermum flexuosum subsp. *laevigatum*			x	
	Grevillea bipinnatifida			x	
	Grevillea bipinnatifida subsp. *bipinnatifida*			x	
	Grevillea centristigma			x	
	Grevillea diversifolia subsp. *diversifolia*			x	
	Grevillea manglesioides subsp. *manglesioides*			x	
	Grevillea pilulifera			x	
	Grevillea prominens	P3		x	
	Grevillea quercifolia			x	
	Grevillea rara	T	E	x	x
	Grevillea ripicola	P4		x	
	Hakea amplexicaulis			x	
	Hakea ceratophylla			x	
	Hakea cyclocarpa			x	
	Hakea lasianthoides			x	
	Hakea lissocarpha			x	
	Hakea ruscifolia			x	
	Hakea trifurcata			x	
	Isopogon crithmifolius			x	
	Isopogon spathulatus			x	
	Isopogon sphaerocephalus			x	
	Isopogon teretifolius			x	
	Persoonia elliptica			x	
	Persoonia longifolia			x	
	Petrophile linearis			x	
	Petrophile seminuda			x	
	Stirlingia simplex			x	
	Synaphea decumbens	P3		x	
	Synaphea floribunda			x	
	Synaphea gracillima			x	

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Proteaceae (continued)	*Synaphea hians*	P3		x	
	Synaphea obtusata			x	
	Synaphea petiolaris			x	
	Xylomelum occidentale			x	
Santalaceae	*Choretrum lateriflorum*			x	
	Leptomeria cunninghamii			x	
Olacaceae	*Olax benthamiana*			x	
Loranthaceae	*Nuytsia floribunda*			x	
Polygonaceae	*Persicaria prostrata*			x	
	* *Rumex brownii*			x	
	* *Rumex conglomeratus*			x	
	* *Rumex crispus*			x	
Amaranthaceae	*Alternanthera denticulata*			x	
	Alternanthera nodiflora			x	
	Ptilotus esquamatus			x	
	Ptilotus manglesii			x	
Phytolaccaceae	* *Phytolacca octandra*			x	
Portulacaceae	*Portulaca oleracea*			x	
Basellaceae	* *Anredera cordifolia*				x
Caryophyllaceae	* *Gypsophila vaccaria*			x	
Ranunculaceae	*Clematis pubescens*			x	
	Ranunculus colonorum			x	
Lauraceae	*Cassytha glabella*			x	
	Cassytha pomiformis			x	
	Cassytha racemosa			x	
Brassicaceae	* *Lepidium africanum*			x	
Droseraceae	*Drosera bulbosa*			x	
	Drosera bulbosa subsp. *bulbosa*			x	
	Drosera collina			x	
	Drosera glanduligera			x	
	Drosera huegelii			x	
	Drosera marchantii			x	
	Drosera menziesii			x	
	Drosera modesta			x	
	Drosera occidentalis	P4		x	
	Drosera pallida			x	
	Drosera pulchella			x	

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Family	Species	SCC	FCC	Nature Map	EPBC
Droseraceae (continued)	*Drosera rosulata*			x	
	Drosera stolonifera			x	
Crassulaceae	*Crassula decumbens*			x	
	* *Crassula natans*			x	
	* *Crassula natans* var. *minus*			x	
Pittosporaceae	*Billardiera floribunda*			x	
	Billardiera fraseri			x	
	Billardiera fusiformis			x	
	Billardiera variifolia			x	
	Cheiranthera preissiana			x	
	Marianthus drummondianus			x	
Rosaceae	*Acaena echinata*			x	
	* *Rosa rubiginosa*			x	
	* *Rubus anglocandicans*			x	
	* *Rubus laudatus*			x	
	* *Rubus loganobaccus*			x	
Fabaceae	*Acacia alata*			x	
	Acacia alata var. *alata*			x	
	Acacia applanata			x	
	Acacia celastrifolia			x	
	* *Acacia decurrens*			x	
	Acacia dentifera			x	
	Acacia divergens			x	
	Acacia drummondii subsp. *candolleana*			x	
	Acacia drummondii subsp. *elegans*			x	
	Acacia extensa			x	
	Acacia huegelii			x	
	Acacia incurva			x	
	Acacia insolita subsp. *insolita*			x	
	Acacia lateriticola			x	
	Acacia nervosa			x	
	Acacia obovata			x	
	* *Acacia podalyriifolia*			x	
	Acacia preissiana			x	
	Acacia pulchella			x	
	Acacia pulchella var. *pulchella*			x	
	* *Acacia pycnantha*			x	
	Acacia saligna			x	
	Acacia saligna subsp. *pruinescens*			x	
	Acacia saligna subsp. *saligna*			x	
	Acacia saligna subsp. *stolonifera*			x	
	Acacia semitrullata	P4		x	
	Acacia squamata			x	
	Acacia stenoptera			x	
	Acacia teretifolia			x	
	Acacia urophylla			x	
	Acacia varia var. *crassinervis*			x	

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Family	Species	SCC	FCC	Nature Map	EPBC
Fabaceae (continued)	*Aotus cordifolia*			x	
	Aotus gracillima			x	
	Aotus sp. Diffusa (W.E. Blackall & C.A. Gardner 1739)			x	
	Bossiaea angustifolia			x	
	Bossiaea aquifolium subsp. *aquifolium*			x	
	Bossiaea eriocarpa			x	
	Bossiaea linophylla			x	
	Bossiaea ornata			x	
	Bossiaea rufa			x	
	Callistachys lanceolata			x	
*	*Chamaecytisus palmensis*			x	
	Chorizema aciculare			x	
	Chorizema cordatum			x	
	Chorizema nanum			x	
	Chorizema retrorsum			x	
	Chorizema rhombeum			x	
*	*Cytisus scoparius*				x
	Daviesia cordata			x	
	Daviesia costata			x	
	Daviesia decurrens subsp. *decurrens*			x	
	Daviesia horrida			x	
	Daviesia incrassata subsp. *incrassata*			x	
	Daviesia preissii			x	
	Daviesia rhombifolia			x	
	Dillwynia dillwynioides	P3			
*	*Dipogon lignosus*			x	
	Eutaxia virgata			x	
	Gastrolobium bilobum			x	
	Gastrolobium capitatum			x	
	Gastrolobium ebracteolatum			x	
	Gastrolobium spinosum			x	
*	*Genista linifolia*				x
*	*Gleditsia triacanthos*			x	
	Gompholobium burtonioides			x	
	Gompholobium capitatum			x	
	Gompholobium knightianum			x	
	Gompholobium marginatum			x	
	Gompholobium ovatum			x	
	Gompholobium polymorphum			x	
	Gompholobium preissii			x	
	Gompholobium scabrum			x	
	Gompholobium tomentosum			x	
	Hovea chorizemifolia			x	
	Hovea trisperma			x	
	Isotropis cuneifolia			x	
	Isotropis cuneifolia subsp. *cuneifolia*			x	
	Jacksonia capitata			x	
	Jacksonia furcellata			x	
	Kennedia carinata			x	
	Kennedia coccinea			x	
	Kennedia prostrata			x	

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Fabaceae (continued)	*Labichea punctata*			x	
	* *Lathyrus latifolius*			x	
	* *Lathyrus tingitanus*			x	
	* *Lotus angustissimus*			x	
	* *Lotus subbiflorus*			x	
	* *Lupinus albus*			x	
	* *Medicago polymorpha*			x	
	Mirbelia dilatata			x	
	* *Ornithopus compressus*			x	
	* *Ornithopus sativus*			x	
	Paraserianthes lophantha			x	
	Paraserianthes lophantha subsp. *lophantha*			x	
	Phyllota gracilis			x	
	Pultenaea ochreata			x	
	Pultenaea skinneri	P4		x	
	Sphaerolobium drummondii			x	
	Sphaerolobium medium			x	
	* *Trifolium dubium*			x	
	* *Trifolium subterraneum*			x	
	Viminaria juncea			x	
Geraniaceae	* *Erodium botrys*			x	
	Geranium retrorsum			x	
	Pelargonium littorale			x	
Oxalidaceae	*Oxalis exilis*			x	
Rutaceae	*Asterolasia pallida*			x	
	Boronia crenulata			x	
	Boronia crenulata var. *crenulata*			x	
	Boronia dichotoma			x	
	Boronia fastigiata			x	
	Boronia megastigma			x	
	Boronia molloyae			x	
	Boronia nematophylla			x	
	Boronia ramosa subsp. *anethifolia*			x	
	Boronia spathulata			x	
	Boronia tenuis	P4		x	
	Diplolaena dampieri			x	
	Diplolaena drummondii			x	
	Diplolaena graniticola			x	
	Diplolaena microcephala			x	
	Philotheca nodiflora subsp. *lasiocalyx*			x	
	Philotheca spicata			x	
Polygalaceae	*Comesperma confertum*			x	
	Comesperma virgatum			x	
Euphorbiaceae	*Amperea simulans*			x	
	Calycopeplus oligandrus			x	
	* *Euphorbia dendroides*			x	

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Euphorbiaceae (continued)	*Monotaxis occidentalis*			x	
	Stachystemon vermicularis			x	
Phyllanthaceae	*Phyllanthus calycinus*			x	
	Poranthera huegelii			x	
	Poranthera microphylla			x	
Celastraceae	*Stackhousia huegelii*			x	
	Stackhousia pubescens			x	
	Tripterococcus brunonis			x	
Rhamnaceae	*Cryptandra arbutiflora* var. *arbutiflora*			x	
	Cryptandra arbutiflora var. *tubulosa*			x	
	Trymalium ledifolium			x	
	Trymalium ledifolium var. *rosmarinifolium*			x	
	Trymalium odoratissimum subsp. *trifidum*			x	
Elaeocarpaceae	*Platytheca galioides*			x	
	Tetratheca hirsuta subsp. *hirsuta*			x	
	Tetratheca hirsuta subsp. *viminea*			x	
	Tetratheca parvifolia	P3		x	
	Tremandra stelligera			x	
Malvaceae	*Lasiopetalum floribundum*			x	
	Thomasia grandiflora			x	
	Thomasia macrocarpa			x	
	Thomasia paniculata			x	
	Thomasia pauciflora			x	
	Thomasia sp. Big Brook (M. Koch 2373)			x	
Dilleniaceae	*Hibbertia amplexicaulis*			x	
	Hibbertia commutata			x	
	Hibbertia cunninghamii			x	
	Hibbertia depilipes			x	
	Hibbertia diamesogenos			x	
	Hibbertia ferruginea			x	
	Hibbertia hemignosta			x	
	Hibbertia hypericoides subsp. *hypericoides*			x	
	Hibbertia pilosa			x	
	Hibbertia pulchra var. *pulchra*			x	
	Hibbertia racemosa			x	
	Hibbertia serrata			x	
	Hibbertia silvestris			x	
	Hibbertia stellaris			x	
	Hibbertia vaginata			x	
	Hibbertia sp.			x	
Hypericaceae	*Hypericum gramineum*			x	
	* *Hypericum perforatum*			x	

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Violaceae	*Hybanthus calycinus*			x	
	Hybanthus debilissimus			x	
	Hybanthus floribundus subsp. *floribundus*			x	
Thymelaeaceae	*Pimelea angustifolia*			x	
	Pimelea ciliata subsp. *ciliata*			x	
	Pimelea imbricata var. *piligera*			x	
	Pimelea lehmanniana subsp. *nervosa*			x	
	Pimelea preissii			x	
	Pimelea suaveolens subsp. *suaveolens*			x	
	Pimelea sylvestris			x	
Lythraceae	* *Lythrum hyssopifolia*			x	
Myrtaceae	*Agonis flexuosa* var. *flexuosa*			x	
	Astartea scoparia			x	
	Babingtonia camphorosmae			x	
	Callistemon glaucus			x	
	Calothamnus graniticus subsp. *leptophyllus*	P4		x	
	Calothamnus lateralis			x	
	Calothamnus lehmannii			x	
	Calothamnus rupestris			x	
	Calytrix cravenii			x	
	Calytrix flavescens			x	
	Calytrix glutinosa			x	
	Calytrix leschenaultii			x	
	Calytrix tetragona			x	
	Calytrix variabilis			x	
	Corymbia calophylla			x	
	Darwinia citriodora			x	
	Eremaea pauciflora var. *pauciflora*			x	
	Ericomyrtus parviflora			x	
	Eucalyptus drummondii			x	
	Eucalyptus laeliae			x	
	Eucalyptus marginata subsp. *marginata*			x	
	Eucalyptus megacarpa			x	
	Eucalyptus patens			x	
	Eucalyptus rudis			x	
	Eucalyptus rudis subsp. *cratyantha*	P4			
	Eucalyptus rudis subsp. *rudis*			x	
	Homalospermum firmum			x	
	Hypocalymma angustifolium			x	
	Hypocalymma cordifolium			x	
	Hypocalymma robustum			x	
	Kunzea ericifolia			x	
	Kunzea glabrescens			x	
	Kunzea recurva			x	
	Leptospermum erubescens			x	
	Melaleuca acutifolia			x	
	Melaleuca incana			x	
	Melaleuca incana subsp. *incana*			x	

APPENDIX E: SUMMARY OF VASCULAR PLANT SPECIES WITH THE POTENTIAL TO OCCUR AT COLLIE REFINERY

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Family	Species	SCC	FCC	Nature Map	EPBC
Myrtaceae (continued)	*Melaleuca lateritia*			x	
	Melaleuca microphylla			x	
	Melaleuca parviceps			x	
	Melaleuca pauciflora			x	
	Melaleuca preissiana			x	
	Melaleuca rhaphiophylla			x	
	Melaleuca trichophylla			x	
	Melaleuca viminea			x	
	Melaleuca viminea subsp. *viminea*			x	
	Paragonis grandiflora			x	
	Pericalymma ellipticum var. *floridum*			x	
	Pericalymma spongiocaule			x	
	Rinzia fumana			x	
	Taxandria linearifolia			x	
	Tetrapora glomerata			x	
	Verticordia densiflora var. *cespitosa*			x	
Onagraceae	*Epilobium billardiereanum* subsp. *cinereum*			x	
	* *Oenothera glazioviana*			x	
	* *Oenothera stricta* subsp. *stricta*			x	
Haloragaceae	*Glischrocaryon angustifolium*			x	
	Gonocarpus benthamii			x	
	Gonocarpus benthamii subsp. *benthamii*			x	
	Myriophyllum crispatum			x	
	Myriophyllum drummondii			x	
	Myriophyllum limnophilum			x	
	Myriophyllum tillaeoides			x	
	Myriophyllum verrucosum			x	
	Trihaloragis hexandra subsp. *hexandra*			x	
	Trihaloragis hexandra subsp. *integrifolia*			x	
Araliaceae	*Hydrocotyle alata*			x	
	Hydrocotyle callicarpa			x	
	Trachymene pilosa			x	
Apiaceae	*Actinotus glomeratus*			x	
	Apium prostratum var. *prostratum*			x	
	Daucus glochidiatus			x	
	Homalosciadium homalocarpum			x	
	Pentapeltis peltigera			x	
	Pentapeltis silvatica			x	
	Platysace compressa			x	
	Platysace filiformis			x	
	Xanthosia atkinsoniana			x	
	Xanthosia candida			x	
	Xanthosia huegelii			x	
	Xanthosia tasmanica			x	

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Family	Species	SCC	FCC	Nature Map	EPBC
Ericaceae	*Andersonia aristata*			x	
	Andersonia caerulea			x	
	Andersonia involucrata			x	
	Andersonia lehmanniana			x	
	Astroloma acervatum			x	
	Astroloma ciliatum			x	
	Astroloma drummondii			x	
	Astroloma pallidum			x	
	Conostephium minus			x	
	Conostephium pendulum			x	
	Leucopogon australis			x	
	Leucopogon capitellatus			x	
	Leucopogon conostephioides			x	
	Leucopogon extremus	P2		x	
	Leucopogon glabellus			x	
	Leucopogon gracillimus			x	
	Leucopogon nutans			x	
	Leucopogon oxycedrus			x	
	Leucopogon pendulus			x	
	Leucopogon propinquus			x	
	Leucopogon pulchellus			x	
	Leucopogon reflexus			x	
	Leucopogon sprengelioides			x	
	Leucopogon strictus			x	
	Leucopogon verticillatus			x	
	Lysinema pentapetalum			x	
	Sphenotoma capitata			x	
	Sphenotoma gracilis			x	
	Styphelia tenuiflora			x	
Primulaceae	* *Lysimachia arvensis*			x	
Loganiaceae	*Orianthera serpyllifolia* subsp. *angustifolia*			x	
	Orianthera serpyllifolia subsp. *serpyllifolia*			x	
	Phyllangium paradoxum			x	
Menyanthaceae	*Liparophyllum latifolium*			x	
	Ornduffia albiflora			x	
	Ornduffia parnassifolia			x	
Apocynaceae	* *Asclepias curassavica*			x	
	* *Gomphocarpus fruticosus*			x	
Verbenaceae	* *Verbena rigida* var. *rigida*			x	
Lamiaceae	*Hemiandra pungens*			x	
	Hemigenia argentea			x	
	Hemigenia incana			x	
	Hemigenia microphylla	P3			
	Hemigenia pritzelii			x	
	Lachnostachys albicans			x	

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Family	Species	SCC	FCC	Nature Map	EPBC
Lamiaceae (continued)	* *Lavandula stoechas* subsp. *stoechas*			x	
	* *Mentha pulegium*			x	
Solanaceae	* *Lycium ferocissimum*				x
Orobanchaceae	* *Bellardia viscosa*			x	
	* *Orobanche minor*			x	
	* *Parentucellia latifolia*			x	
Lentibulariaceae	*Utricularia multifida*			x	
Plantaginaceae	* *Callitriche brutia* subsp. *brutia*			x	
	Gratiola pubescens			x	
Rubiaceae	*Opercularia apiciflora*			x	
	Opercularia echinocephala			x	
	Opercularia hispidula			x	
	* *Sherardia arvensis*			x	
Caprifoliaceae	* *Centranthus macrosiphon*			x	
	* *Centranthus ruber* subsp. *ruber*			x	
	* *Lonicera japonica*			x	
Campanulaceae	* *Grammatotheca bergiana* var. *bergiana*			x	
	Isotoma hypocrateriformis			x	
	Lobelia anceps			x	
	Lobelia heterophylla			x	
	Lobelia rhombifolia			x	
	* *Monopsis debilis* var. *depressa*			x	
	Wahlenbergia multicaulis			x	
	Wahlenbergia preissii			x	
	Wahlenbergia sp.			x	
Goodeniaceae	*Dampiera alata*			x	
	Dampiera hederacea			x	
	Dampiera linearis			x	
	Dampiera pedunculata			x	
	Dampiera trigona			x	
	Goodenia coerulea			x	
	Goodenia eatoniana			x	
	Goodenia fasciculata			x	
	Goodenia pulchella			x	
	Goodenia pulchella subsp. Coastal Plain A (M. Hislop 634)			x	
	Goodenia pusilla			x	
	Lechenaultia biloba			x	
	Lechenaultia expansa			x	
	Scaevola calliptera			x	
	Scaevola glandulifera			x	
	Scaevola striata			x	

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Family	Species	SCC	FCC	Nature Map	EPBC
Goodeniaceae (continued)	*Scaevola striata* var. *striata*			x	
	Velleia trinervis			x	
Stylidiaceae	*Levenhookia dubia*			x	
	Levenhookia pusilla			x	
	Levenhookia stipitata			x	
	Stylidium acuminatum subsp. *acuminatum*	P2		x	
	Stylidium adnatum			x	
	Stylidium amoenum			x	
	Stylidium amoenum var. *amoenum*			x	
	Stylidium androsaceum			x	
	Stylidium brunonianum			x	
	Stylidium caespitosum			x	
	Stylidium ciliatum			x	
	Stylidium crassifolium			x	
	Stylidium diversifolium			x	
	Stylidium guttatum			x	
	Stylidium inundatum			x	
	Stylidium korijekup	P2			
	Stylidium lineatum			x	
	Stylidium piliferum			x	
	Stylidium plantagineum			x	
	Stylidium pulchellum			x	
	Stylidium recurvum			x	
	Stylidium rhynchocarpum			x	
	Stylidium schoenoides			x	
	Stylidium spathulatum			x	
	Stylidium tenue subsp. *majusculum*			x	
	Stylidium tenue subsp. *tenue*			x	
	Stylidium thesioides			x	
	Stylidium uniflorum subsp. *uniflorum*			x	
	Stylidium violaceum			x	
	Stylidium sp.			x	
Asteraceae	*Angianthus drummondii*	P3			
	* *Arctotheca calendula*			x	
	Brachyscome iberidifolia			x	
	Centipeda cunninghamii			x	
	* *Chrysanthemoides monilifera*				x
	* *Conyza bonariensis*			x	
	* *Cotula coronopifolia*			x	
	Craspedia variabilis			x	
	* *Dittrichia graveolens*			x	
	Euchiton sphaericus			x	
	* *Galinsoga parviflora*			x	
	* *Glebionis segetum*			x	
	Hyalosperma cotula			x	
	Hyalosperma demissum			x	
	Hyalosperma simplex subsp. *simplex*			x	
	* *Hypochaeris glabra*			x	
	* *Lactuca saligna*			x	

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Family	Species	SCC	FCC	Nature Map	EPBC
Asteraceae (continued)	*Lagenophora huegelii*			x	
	* *Leontodon saxatilis*			x	
	Millotia tenuifolia			x	
	Millotia tenuifolia var. *tenuifolia*			x	
	Olearia axillaris			x	
	Olearia paucidentata			x	
	Pithocarpa ramosa			x	
	Podolepis gracilis			x	
	Podotheca angustifolia			x	
	Pseudognaphalium luteoalbum			x	
	Rhodanthe citrina			x	
	Senecio diaschides			x	
	Senecio leucoglossus	P4		x	
	Senecio multicaulis subsp. *multicaulis*			x	
	Siloxerus filifolius			x	
	Siloxerus humifusus			x	
	* *Soliva sessilis*			x	
	* *Sonchus asper*			x	
	* *Sonchus oleraceus*			x	
	* *Tolpis barbata*			x	
	* *Vellereophyton dealbatum*			x	
	Waitzia suaveolens			x	
	Waitzia suaveolens var. *suaveolens*			x	

APPENDIX F: LIKELIHOOD OF VASCULAR PLANT SPECIES WITH THE POTENTIAL TO OCCUR AT COLLIE REFINERY

Note: Refer to Appendix A for State (SCC; Department of Biodiversity, Conservation and Attractions 2018a) and Federal (FCC; EPBC Act) conservation code definitions. IBRA Distribution: AVW – Avon Wheatbelt; ESP – Esperance Plains; GES – Geraldton Sandplains; JAF – Jarrah Forest; MAL – Mallee; SWA – Swan Coastal Plain; WAR – Warren. Likelihood of occurrence in survey area is based on a Low, Medium or High ranking.

Species	Family	SCC	FCC	Description and Habitat	Likelihood of Occurrence
Caladenia bryceana subsp. *bryceana*	Orchidaceae	T	Endangered	Habit: Tuberous, perennial, herb, 0.05-0.1 m high Flower colour: green-yellow Flowering period: Aug to Oct Soils: Sand, loam. Adjacent to watercourses, winter-wet sites IBRA Distribution: ESP, JAF, MAL Florabase records: 16	Low
Caladenia leucochila	Orchidaceae	T	Endangered	Habit: Leaf 12-20 cm long, scape to 40 cm high Flower colour: pale yellow to greenish cream and white with faint to prominent dull red stripes Flowering period: Sep to Oct Soils: Dry sand/ laterite IBRA Distribution: JAF, SWA Florabase records: 7	Medium
Diuris micrantha	Orchidaceae	T	Vulnerable	Habit: Tuberous, perennial, herb, 0.3-0.6 meters high Flower colour: Yellow/brown Flowering period: September to October Soils: Brown loamy clay. Winter-wet swamps, in shallow water IBRA Distribution: JAF, SWA Florabase records: 6	Low
Eleocharis keigheryi	Cyperaceae	T	Vulnerable	Habit: Rhizomatous, clumped perennial, grass-like or herb (sedge), to 0.4 meters high Flower colour: Green Flowering period: August to November Soils: Clay, sandy loam. Emergent in freshwater: creeks, clay pans IBRA Distribution: AVW, GES, JAF, SWA Florabase records: 54	Low
Grevillea rara	Proteaceae	T	Endangered	Habit: Dense, prickly shrub, to 2 meters high. Flower colour: White-pink Flowering period: October Soils: Lateritic loam and creeklines. IBRA Distribution: JAF Florabase records: 11	Medium

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Species	Family	SCC	FCC	Description and Habitat	Likelihood of Occurrence
Caladenia uliginosa subsp. *patulens*	Orchidaceae	P1		Habit: Tuberous, perennial, herb, 0.2-0.35 m high Flower colour: Green-cream Flowering period: September to October Soils: Clay loam and gravel. Well drained soils amongst dense shrubs. IBRA Distribution: JAF, SWA Florabase records: 4	Medium
Caladenia validinervia	Orchidaceae	P1		Habit: Rhizomatous, flowers white-maroon. Upright single stem herb 15-30 cm high, scattered and clumping Flower colour: White-pink-purple Flowering period: September to November Soils: Undulating, brown-black laterite sand over laterite IBRA Distribution: AVW, SWA Florabase records: 8	Medium
Leucopogon extremus	Ericaceae	P2		Habit: Low spreading shrub Flower colour: - Flowering period: - Soils: Dark grey sandy loam. IBRA Distribution: JAF Florabase records: 5	Medium
Stylidium korijekup	Stylidiaceae	P2		Habit: Perennial, herb, 0.18-0.34 m high Flower colour: - Flowering period: - Soils: Well-drained grey-brown sandy loam with laterite. Upland ridges. IBRA Distribution: JAF, SWA Florabase records: 3	Medium
Stylidium acuminatum subsp. *acuminatum*	Stylidiaceae	P2		Habit: Basally rosetted. Scape to 40 cm long. Short stem below rosette. Flower colour: Pale yellow Flowering period: - Soils: Brown gravelly clay/loam IBRA Distribution: JAF Florabase records: 8	Medium

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Species	Family	SCC	FCC	Description and Habitat	Likelihood of Occurrence
Adenanthos cygnorum subsp. *chamaephyton*	Proteaceae	P3		Habit: Prostrate, mat-forming, non-lignotuberous shrub, to 0.3 m high Flower colour: White-cream-pink-green/green Flowering period: July or September to December or January Soils: Grey sand, lateritic gravel. IBRA Distribution: AVW, JAF, SWA Florabase records: 21	Medium
Angianthus drummondii	Asteraceae	P3		Habit: Erect annual, herb, to 0.1 m high Flower colour: Yellow Flowering period: October to December Soils: Grey or brown clays soils, ironstone. Seasonally wet flats. IBRA Distribution: JAF, SWA Florabase records: 18	Medium
Carex tereticaulis	Cyperaceae	P3		Habit: Monoecious, rhizomatous, tufted perennial, grass-like or herb (sedge), 0.7 m high Flower colour: Brown Flowering period: September to October Soils: Black peaty sand. IBRA Distribution: JAF, SWA, WAR Florabase records: 18	Low
Dillwynia dillwynioides	Fabaceae	P3		Habit: Decumbent or erect, slender shrub, 0.3-1.2 m high Flower colour: Red & yellow/orange Flowering period: August to December Soils: Sandy soils. Winter-wet depressions. IBRA Distribution: SWA Florabase records: 38	Low
Grevillea prominens	Proteaceae	P3		Habit: Spreading shrub, 0.5-1.7 meters high, 0.3-1 meters wide Flower colour: cream-white Flowering period: September to October Soils: Gravelly loam. Along creeklines IBRA Distribution: JAF Florabase records: 9	Low
Hemigenia microphylla	Lamiaceae	P3		Habit: Slender shrub, 0.4-1.8 m high Flower colour: blue-purple Flowering period: September to December Soils: Sandy clay, peaty clay, granite. Winter-wet depressions. IBRA Distribution: JAF, SWA, WAR Florabase records: 25	Low

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Species	Family	SCC	FCC	Description and Habitat	Likelihood of Occurrence
Juncus meianthus	Juncaceae	P3		Habit: Tufted perennial, herb, 0.05-0.2 meters high, to 0.4 meters wide Flower colour: Brown Flowering period: November to December or January Soils: Wetland, black clay-loam, saturated soils. IBRA Distribution: ESP, JAF, WAR Florabase records: 23	Low
Lomandra whicherensis	Asparagaceae	P3		Habit: Tufted rhizomatous erect herb, 20 - 40 cm high. Female inflorescence very short compared to male. Flower colour: purple Soils: Lateritic sandy clay. IBRA Distribution: JAF Florabase records: 16	Medium
Synaphea decumbens	Proteaceae	P3		Habit: slender erect or open straggly shrub to 0.5 metres high Flower colour: Yellow Flowering period: September or October Soils: Grey-brown loam/clayey sand over laterite IBRA Distribution: JAF Florabase records: 28	Medium
Synaphea hians	Proteaceae	P3		Habit: Prostrate or decumbent shrub Flower colour: Yellow Flowering period: July or September to November Soils: Sandy soils. Rises IBRA Distribution: JAF, SWA Florabase records: 52	Low
Tetratheca parvifolia	Elaeocarpaceae	P3		Habit: Small shrub, 0.2-0.3 meters high Flower colour: Pink Flowering period: October Soils: Dry, shallow, pale brown sandy-loam over granite IBRA Distribution: JAF, SWA Florabase records: 15	Low
Thysanotus unicupensis	Asparagaceae	P3		Habit: Erect herb Flower colour: Purple Soils: Grey sandy loam over laterite IBRA Distribution: JAF Florabase records: 14	Low

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Species	Family	SCC	FCC	Description and Habitat	Likelihood of Occurrence
Acacia semitrullata	Fabaceae	P4		Habit: Slender, erect, pungent shrub, (0.1-)0.2-0.7(-1.5) meters high Flower colour: Cream/white Flowering period: May to October Soils: White/grey sand, sometimes over laterite, clay. Sandplains, swampy areas. IBRA Distribution: JAF, SWA, WAR Florabase records: 86	Low
Boronia tenuis	Rutaceae	P4		Habit: Procumbent or erect & slender shrub, 0.1-0.5 meters high Flower colour: blue/pink-white Flowering period: August to November Soils: Laterite, stony soils, granite. IBRA Distribution: JAF, SWA Florabase records: 43	Medium
Caladenia speciosa	Orchidaceae	P4		Habit: Tuberous, perennial, herb, 0.35-0.6 meters high Flower colour: White-pink Flowering period: September to October Soils: White, grey or black sand. Loam flat swampy terrain IBRA Distribution: JAF, SWA Florabase records: 59	Low
Calothamnus graniticus subsp. *leptophyllus*	Myrtaceae	P4		Habit: Erect, multi-stemmed shrub, 1-2 m high Flower colour: Red Flowering period: June to August Soils: Clay over granite, lateritic soils. Hillsides IBRA Distribution: JAF, SWA Florabase records: 27	Medium
Drosera occidentalis	Droseraceae	P4		Habit: Fibrous-rooted, rosetted perennial, herb, to 0.025 m high. Flower colour: White-pink Flowering period: October to December or January Soils: Swampy flats, grey clayey sand IBRA Distribution: JAF, SWA Florabase records: 19	Low
Eucalyptus rudis subsp. *cratyantha*	Myrtaceae	P4		Habit: Tree, 5-20 m high, bark rough, box-type Flower colour: White Flowering period: July to September Soils: Loam. Flats, hillsides. IBRA Distribution: JAF, SWA, WAR Florabase records: 17	Medium

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Species	Family	SCC	FCC	Description and Habitat	Likelihood of Occurrence
Grevillea ripicola	Proteaceae	P4		Habit: Spreading, much-branched, non-lignotuberous shrub, 0.6-2(-3) meters high, to 4 meters wide Flower colour: Red/red-orange Flowering period: Jan or Mar to Apr or Nov to Dec Soils: Sandy clay, clay or gravelly loam. Swampy flats, granite outcrops, along watercourses IBRA Distribution: JAF Florabase records: 22	Low
Hypolaena robusta	Restionaceae	P4		Habit: Dioecious rhizomatous, perennial, herb, ca 0.5 m high Flowering period: September to October Soils: White sand, laterite granite IBRA Distribution: GES, JAF,SWA Florabase records: 46	Medium
Pultenaea skinneri	Fabaceae	P4		Habit: Slender shrub, 1-2 m high Flower colour: Yellow/orange & red Flowering period: Jul to Sep Soils: Sandy or clayey soils. Winter-wet depressions IBRA Distribution: JAF, SWA, WAR Florabase records: 38	High
Senecio leucoglossus	Asteraceae	P4		Habit: Erect annual, herb, to 1.3 meters high Flower colour: White Flowering period: August to December Soils: Gravelly lateritic or granitic soils. Granite outcrops, slopes IBRA Distribution: JAF, SWA, WAR Florabase records: 41	High