Reconnaissance Flora and Vegetation Survey

Mandurah Road, Secret Harbour 2026.

Prepared for: Coterra Environment

Prepared by: **Del Botanics Environmental Consulting**
PO Box 119
Mt Helena WA 6082
delbotanics@bigpond.com

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EXECUTIVE SUMMARY

This report has been prepared by Del Botanics Environmental Consulting on behalf of Coterra Environment to present the results of a Reconnaissance Flora and Vegetation Survey, along Mandurah Road, Secret Harbour.

The recent Flora and Vegetation Assessment undertaken in the area described above identified 35 flora species, with 54% represented by weed species. The vegetation condition ranged from "Good" to "Completely Degraded."

One Priority 4 (P4) flora species, *Grevillea olivacea* was recorded during the survey. No other flora, pursuant to the *Biodiversity Conservation* (BC) *Act*, 2016 or the *Environment Protection and Biodiversity Conservation* (EPBC) *Act*, 1999 were located during the time of the survey.

Two vegetation communities were recorded at a local level during the survey. No Threatened Ecological Communities pursuant to the *Biodiversity Conservation* (BC) *Act*, 2016 or the *Environment Protection and Biodiversity Conservation* (EPBC) *Act*, 1999 were recorded during the survey.

STATEMENT OF LIMITATIONS

This environmental report has been prepared in accordance with the scope of services set out in the original quotation. In preparing the report, Del Botanics Environmental Consulting relied on data, surveys, analyses, designs, plans and other information provided by the Client and other individuals and organisations, most of which are referred to in the report. Del Botanics Environmental Consulting has not verified the accuracy or completeness of the data to the extent that the statements, opinions, facts, information, conclusions and/or recommendations in the report are based in whole or in part on the data, those conclusions are contingent upon the accuracy and completeness of the data. Del Botanics Environmental Consulting will not be liable in relation to incorrect conclusions should any data, information or condition be incorrect or have been concealed, withheld, unavailable, misrepresented or otherwise not fully disclosed.

In accordance with the scope of services, Del Botanics Environmental Consulting has relied on the data and have conducted environmental field monitoring in the preparation of the report. The nature and extent of monitoring conducted is described in the report. Within the limitations imposed by the scope of services, the monitoring and preparation of this report have been undertaken and performed in a professional manner, in accordance with generally accepted practices and using a degree of skill and care. No other warranty, express or implied, is made.

The report has been prepared for the benefit of the Client and for no other party. Del Botanics Environmental Consulting assumes no responsibility and will not be liable to any other person or organisation for or in relation to any matter dealt with or conclusions expressed in the report, or for any loss or damage suffered by any other person or organisation arising from matters dealt with or conclusions expressed in the report. Other parties should not rely upon the report or the accuracy or completeness of any conclusions and should make their own enquiries and obtain independent advice in relation to such matters.

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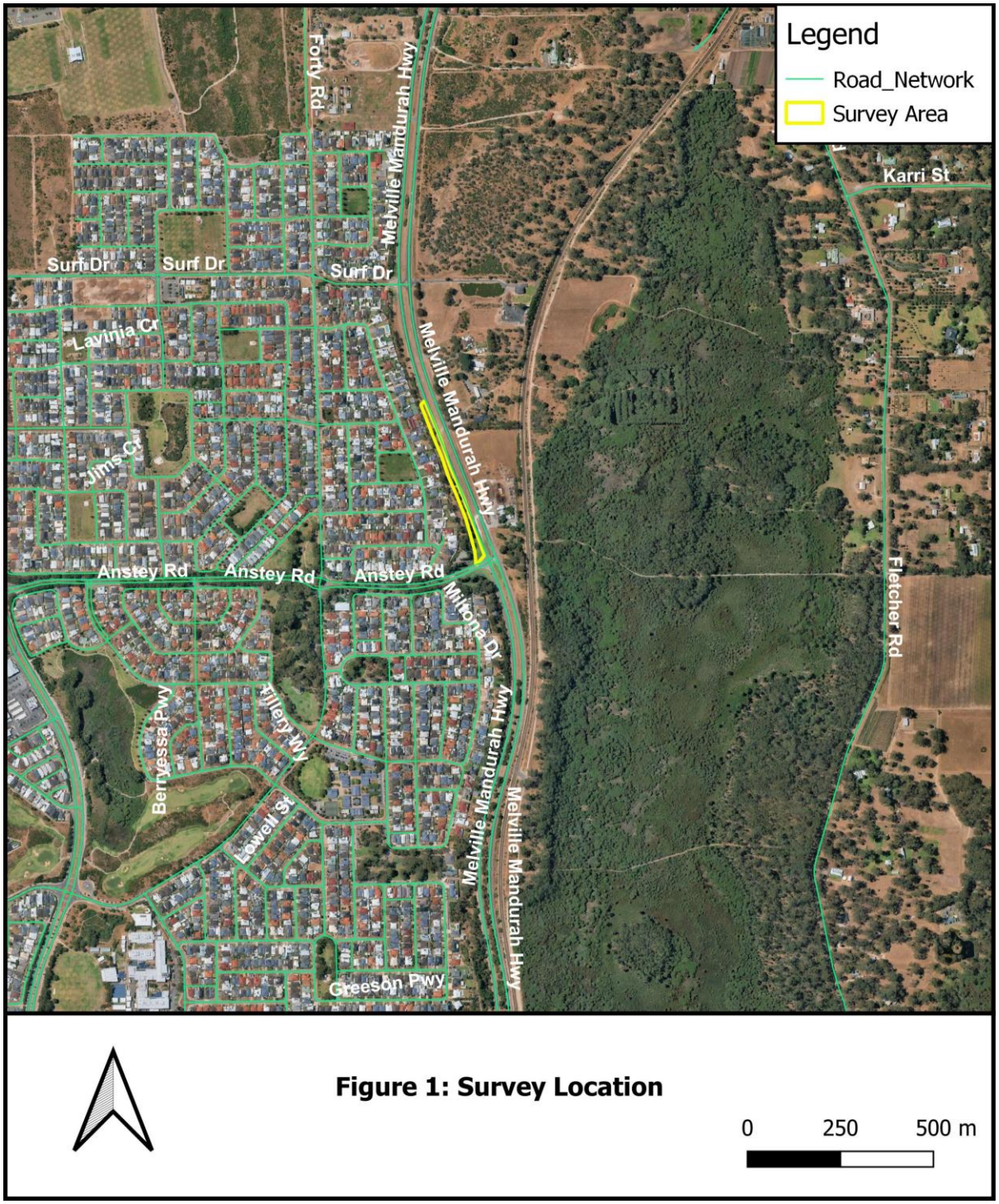
1. INTRODUCTION

1.1 BACKGROUND

This report has been prepared by Del Botanics Environmental Consulting on behalf of Coterra Environment to present the results of a Reconnaissance Flora and Vegetation Survey, along Mandurah Road, Secret Harbour. The botanical survey of the flora species and vegetation was undertaken on 14th January 2026.

The survey area is an approximate width of 10 metres along Mandurah Road to the property boundaries for a length of approximately 500m from the Anstey Road intersection. The total survey area is approximately 0.5 hectares The survey area is approximately 59.5km south of the Perth central area. The site location and survey area are shown in **Figures 1** and **2** below.


Legend
Road_Network
Survey Area
Forty Rd
Melville Mandurah Hwy
Karri St
Surf Dr
Surf Dr
Surf Dr
Lavinia Ct
Jims Ct
Melville Mandurah Hwy
Anstey Rd
Anstey Rd
Anstey Rd
Milton Dr
Fletcher Rd
Berrylessa Pwy
Tillery Wy
Lowell St
Melville Mandurah Hwy
Melville Mandurah Hwy
Greeson Pwy
Figure 1: Survey Location
0
250
500 m

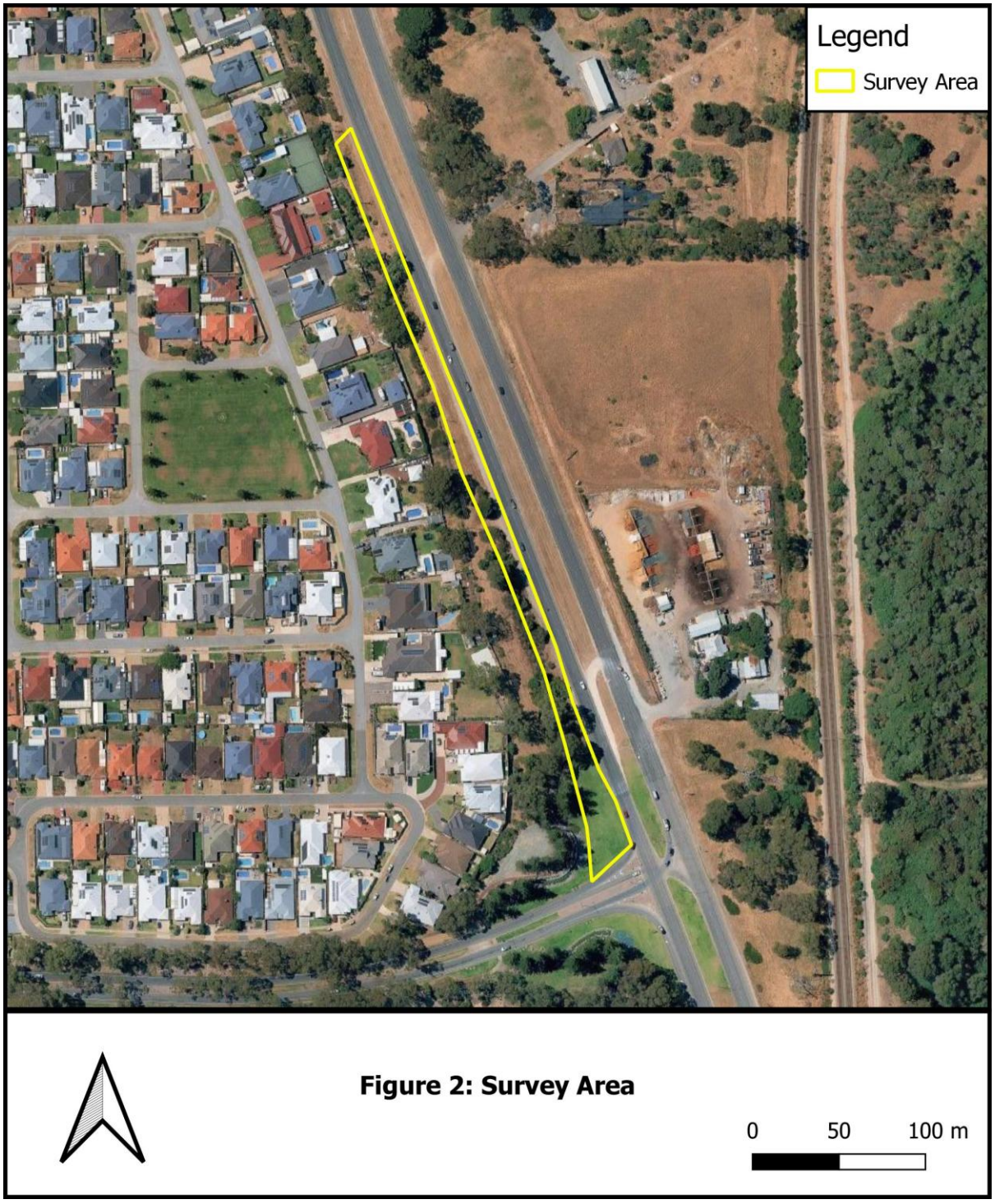


Figure 2: Survey Area

1.2 PURPOSE OF THIS REPORT

This report was prepared to present the results of the Flora and Vegetation Survey undertaken within the area described above. The flora species and vegetation were used to determine the significance of the site. In summary this report provides:

- A Department of Climate Change, Energy, the Environment and Water (DCCEEW) database search;
- A Department of Biodiversity, Conservation and Attractions (DBCA) database search;

- A reconnaissance botanical survey; and
- An assessment of vegetation communities and conditions.

2. EXISTING ENVIRONMENT

2.1 LANDFORM, TOPOGRAPHY AND SOILS

Soil-landscape system mapping of Western Australia describes broad soil and landscape characteristics from regional to local scales. The survey area is mapped as part of the Spearwood System. This system consists of sand dunes and plains of yellow deep sands, pale deep sands and yellow/brown shallow sands (DPIRD, 2023).

2.2 VEGETATION

The survey area lies in the Drummond Botanical Subdistrict within the Southwest Botanical Province as described by Beard (1990). Flora composition has been described by Beard (1990) as predominantly consisting of *Banksia* Low Woodlands on leached sands with Melaleuca swamps, where ill drained and Woodlands of *Eucalyptus* spp. on less leached soils.

2.2.1 Regional vegetation

The Biogeographic Regionalisation of Australia (IBRA) divides Australia into 89 bioregions based on major biological and geographical/geological attributes. Western Australia has 26 biogeographic regions, and 53 subregions based on dominant landscape characteristics of climate, lithology, geology, landform and vegetation.

The study area is on the Swan Coastal Plain (SWA) bioregion. The Swan Coastal Plain Bioregion comprises of the Dandaragan Plateau and the Perth Coastal Plain. The Swan Coastal Plain (SCP) is dominated by woodlands of Banksia and Tuart on sandy soils, Sheoak on outwash plains, and Paperbark in swampy areas (DCCEEW, 2024).

2.2.2 Vegetation Complex

The term vegetation complex refers to the pre-1750 distribution of vegetation complexes of the southwest forest region of Western Australia, as described by Mattiske and Havel (1998). This was part of the biodiversity assessment for the comprehensive regional assessment for the southwest forest region. Based on this mapping at a scale of 1:50,000, the Department of Primary Industries and Regional Development (DPIRD) has compiled a list of vegetation extent and types across WA. One vegetation complex occurs within the survey area, Cottesloe Complex-Central and South.

The Cottesloe Complex-Central and South consists of a mosaic of woodland of *Eucalyptus gomphocephala* (Tuart) and open forest of *Eucalyptus gomphocephala* (Tuart) - *Eucalyptus marginata* (Jarrah) - *Corymbia calophylla* (Marri). Closed heath occurs on the limestone outcrops. (DAFWA, 2012).

3. CLIMATE

The southwest of Australia experiences a Mediterranean climate, with cool wet winters and hot dry summers. The nearest weather station to the survey area is approximately 14.0km away at the Mandurah station (Site 009977). The average annual rainfall for the area recorded between 2001 and 2026 is 605.0mm, with the highest monthly rainfall experienced in June and July (Bureau of Meteorology, 2026).

The average monthly maximum temperature ranges from 17.5 °C in July to 29.9 °C in February. Average monthly minimum temperatures range from 10.9 °C in July to 19.4 °C in February, from 2001 and 2026 (Bureau of Meteorology, 2026).

Mean maximum temperature (°C) and Mean rainfall (mm) for years 2001 and 2026 is presented in **Figure 3** below (Bureau of Meteorology, 2026).

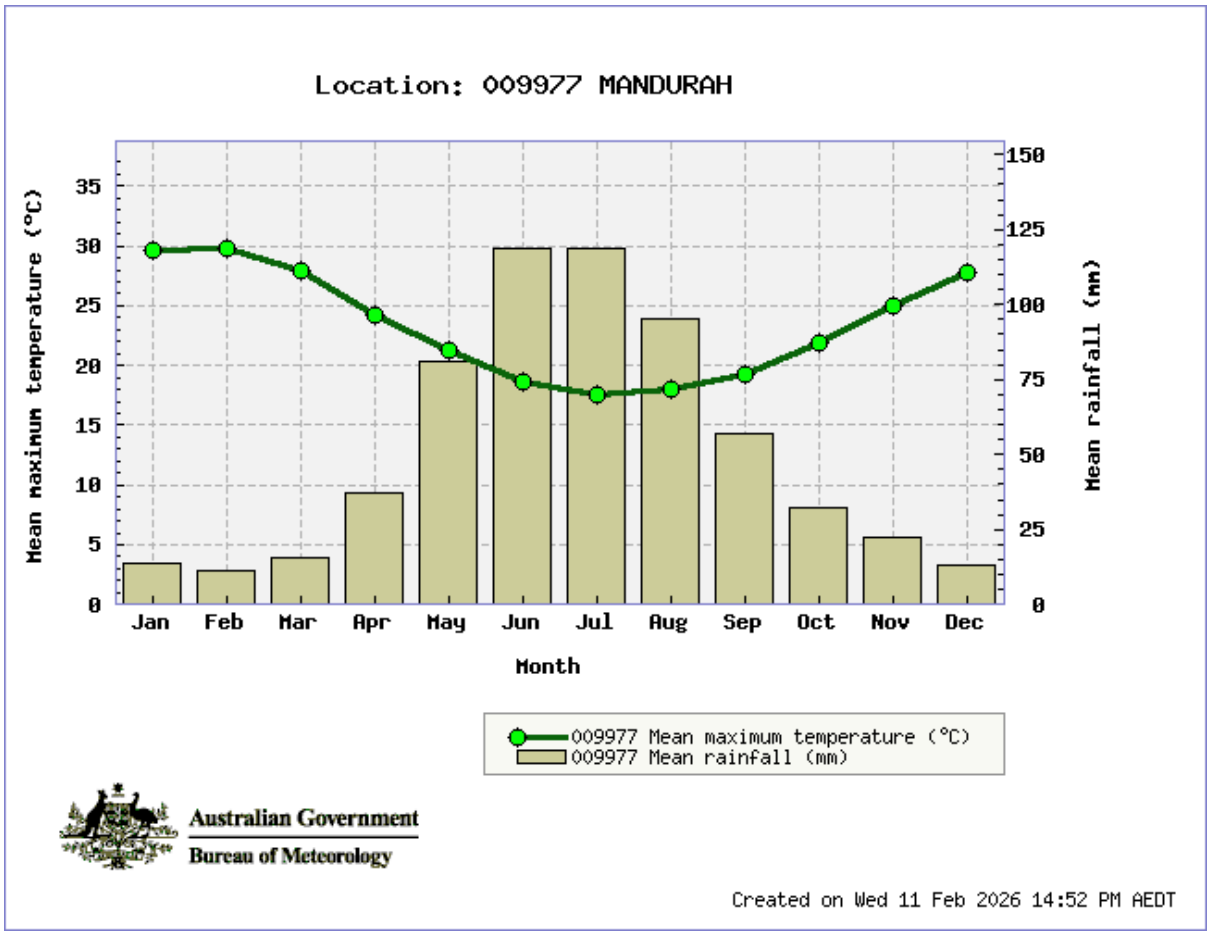


Figure 3: Mean average Rainfall and Temperature data

4. FLORA AND VEGETATION ASSESSMENT

4.1 VEGETATION METHODS

A Reconnaissance Flora and Vegetation Survey was undertaken on the 14th January 2026. The site was surveyed for flora species including, the potential to support Threatened Flora (T), Priority Flora (P), potential areas of Threatened Ecological Communities (TECs) and vegetation condition. Each variation or difference in vegetation was recorded with three 10 metre by 10 metre releves.

Data was recorded to statistically determine vegetation communities and condition. In total, three releves were assessed to record the vegetation communities. Releve data is available in **Appendix B.**

The survey methodology was undertaken in accordance with EPA Position Statement No.3: *Terrestrial Biological Surveys as an Element of Biodiversity Protection* and EPA Guidance Statement No. 51: *Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in Western Australia.*

All plant specimens collected during the field survey were dried, pressed, and then sorted in accordance with the requirements of the Western Australian State Herbarium. Identification of specimens occurred through comparison with named material and through the use of taxonomic keys. The use of standard data collection forms ensured the data was collected in a systematic and consistent manner. At each quadrat the following information was recorded:

- Vegetation condition;
- Vegetation community;
- Flora species;
- Local disturbances;
- Topography;
- Soils; and
- Age since fire.

The vegetation communities occurring on this site were described in detail. Aerial photography was used to extrapolate and map plant communities in combination with running notes made during the course of the survey.

4.2 DECLARED RARE AND PRIORITY FLORA

Species of flora acquire “Threatened” “Presumed Extinct” or “Priority” conservation status where populations are restricted geographically or threatened by local processes.

The Department of Biodiversity, Conservation and Attractions (DBCA) recognise these threats and subsequently applies regulations towards population protection and species conservation. The DBCA enforces regulations under the *Biodiversity Conservation Act,* 2016 to conserve Threatened species and protect significant populations. Priority Flora species are potentially rare or threatened and are classified in order of threat. Threatened and Priority Flora category definitions are listed in **Table 1**.

The likelihood of each flora species and vegetation community occurring onsite is determined by background research on the known soil types and vegetation communities. This information together with botanical knowledge provides an informative result on whether the flora species is likely to occur on the site.

Table 1: Definition of Threatened and Priority Flora Species (DEC 2012)

Conservation Code	Category
T	**Threatened Flora (Declared Rare Flora – Extant)**. Schedule 1 under the Wildlife Conservation Act 1950 Rare Flora Notice Taxa which have been adequately searched for and are deemed to be in the wild either rare, in danger of extinction, or otherwise in need of special protection, and have been gazetted as such. **Threatened Flora (Schedule 1) are further ranked by the Department according to their level of threat using IUCN Red List criteria:** **CR**: Critically Endangered - considered to be facing an extremely high risk of extinction in the wild. **EN**: Endangered considered to be facing a very high risk of extinction in the wild. **VU**: Vulnerable - considered to be facing a high risk of extinction in the wild
X	**Presumed Extinct Flora (Declared Rare Flora – Extinct)** Schedule 2 under the Wildlife Conservation Act 1950 Rare Flora Notice Taxa which have been adequately searched for and there is no reasonable doubt that the last individual has died and have been gazetted as such.
P1	**Priority One: Poorly known species** Species that are known from one or a few collections or sight records (generally less than five), all on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, Shire, Westrail and Main Roads WA road, gravel and soil reserves, and active mineral leases and under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes.
P2	**Priority Two: Poorly known species** Species that are known from one or a few collections or sight records, some of which are on land not under imminent threat of habitat destruction or degradation, e.g. national parks, conservation parks, nature reserves, State Forest, vacant Crown land, water reserves, etc. Species may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes.
P3	**Priority Three: Poorly known species** Species that are known from collections or sight records from several localities not under imminent threat, or from few but widespread localities with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several localities but do not meet adequacy of survey requirements and known threatening processes exist that could affect them.
P4	**Priority Four: 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) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.
P5	**Priority Five: Conservation Dependent species** Species that are not threatened but are subject to a specific conservation program, the cessation of which would result in the species becoming threatened within five years

4.2.1 Environment Protection and Biodiversity Conservation Act (1999) – Species level significance

The *Environment Protection and Biodiversity Conservation* (EPBC) *Act*, 1999, promotes the conservation of biodiversity by providing strong protection for plants at a species level. Section 178 and 179 provides the lists and categories of threatened species under the Act and is presented in **Table 2** below.

Table 2: Categories of Threatened Species (EPBC Act, Section 179, 1999)

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

4.2.2 Department of Biodiversity, Conservation and Attractions (DBCA) Flora Database Search

A Threatened and Priority Flora search was undertaken through the DBCA. The search is undertaken on records from the Threatened and Priority Flora Database (TPFL) and the WA Herbarium database (WAHerb), which provides known locations of each species. The results are provided below in **Table 3**. The search was conducted within a 10km radial area from the central coordinate.

Table 3: DBCA Threatened and Priority Flora Search Results

Taxon	Conservation Status DBCA	EPBC	Likely to occur onsite	Survey undertaken in flowering time
Acacia benthamii	2		No	No
Beyeria cinerea subsp. *cinerea*	3		No	Unknown
Calandrinia oraria	3		Unknown	Unknown
Cardamine paucijuga	2		No	No
Conostylis pauciflora subsp. *pauciflora*	4		No	No
Dillwynia dillwynioides	3		No	No
Diuris drummondii	T	EN	No	Yes
Drakaea elastica	T	CR	No	No
Eryngium pinnatifidum subsp. *Umbraphilum*	2		Unknown	Unknown
Eucalyptus foecunda subsp. *foecunda*	4		Unknown	Unknown
Jacksonia sericea	4		Yes	Yes
Lasiopetalum membranaceum	3		Yes	No
Parsonsia diaphanophleba	4		No	Yes
Pimelea calcicola	3		No	No
Schoenus capillifolius	3		No	No
Sphaerolobium calcicola	3		Yes	No
Stylidium longitubum	4		No	No
Thelymitra variegata	T	CR	No	No

4.2.3 Department of Climate Change, Energy, the Environment and Water (DCCEEW) Flora Search

In addition to the background search undertaken through the DBCA, a Department of Climate Change, Energy, the Environmental and Water (DCCEEW) Protected Matters search was undertaken. The DCCEEW Protected Matters Tool was undertaken within a 5km radius of the site. The search result noted eleven flora species of significance likely to occur in the area. These species are listed in **Table 4** below.

Table 4: DCCEEW Protected Matters Threatened and Priority Flora Search Results

Species Name	Conservation Code	Likely to occur onsite	Survey undertaken in flowering time
Andersonia gracilis	Endangered	No	No
Banksia mimica	Endangered	Yes	Yes
Caladenia huegelii	Endangered	No	No
Diuris drummondii	Vulnerable	No	Yes
Diuris micrantha	Vulnerable	No	No
Diuris purdiei	Endangered	No	No
Drakaea elastica	Endangered	No	No
Drakaea micrantha	Vulnerable	No	No
Eucalyptus x balanites	Endangered	No	Yes
Synaphea sp. Fairbridge Farm	Critically Endangered	No	No
Synaphea sp. Serpentine	Critically Endangered	No	No

4.3 THREATENED ECOLOGICAL COMMUNITIES

In Western Australia Threatened Ecological Communities (TECs) are assessed through a procedure coordinated by the DBCA and are assigned to one of the categories outlined below in **Table 5**. While they are not afforded direct statutory protection at a state level (unlike Threatened Flora under the *Biodiversity Conservation Act,* 2016) their significance is acknowledged through other State environmental approval processes (i.e. Environmental Impact Assessment pursuant to Part IV of the *Environmental Protection Act,* 1986). Scheduled TECs are afforded statutory protection at a federal level pursuant to the EPBC Act.

The Department has been identifying and listing Threatened Ecological Communities since 1994 through the non-statutory process.

The Minister for Environment previously listed ecological communities as threatened through a non-statutory process if the community was presumed to be totally destroyed or at risk of becoming totally destroyed. The *Biodiversity Conservation Act, 2*016 (BC Act) provides for the statutory listing of threatened ecological communities (TECs) by the Minister. The new legislation also describes statutory processes for preparing recovery plans for TECs, the registration of their critical habitat, and penalties for unauthorised modification of TECs.

The Department has been identifying and listing TECs since 1994 through the non-statutory process. The WA Minister for Environment has endorsed 69 ecological communities as threatened in the following categories:

- 20 critically endangered
- 17 endangered
- 28 vulnerable
- 4 presumed totally destroyed.

25 of these are listed under the Commonwealth's *Environment Protection and Biodiversity Conservation Act,* 1999. As of January 2019, an additional 393 ecological communities (community types and sub-types) with insufficient information available to be considered a TEC, or which are rare but not currently threatened, have been placed on the Priority list and referred to as Priority Ecological Communities (PECs)**.**

Table 5: Categories of DBCA's Threatened Ecological Communities

PD	**Presumably Totally Destroyed** An ecological community that has been adequately searched for but for which no representative occurrences have been located.
CE	**Critically Endangered** An ecological community that has been adequately surveyed and is found to be facing an extremely high risk of total destruction in the immediate future.
E	**Endangered** An ecological community that has been adequately surveyed and is not critically endangered but is facing a very high risk of total destruction in the near future.
V	**Vulnerable** An ecological community that has been adequately surveyed and is not critically endangered or endangered but is facing a high risk of total destruction or significant modification in the medium to long-term future.

The EPBC Act provides for the strong protection of TECs, which are listed under section 181 of the Act and are described as 'Critically Endangered', 'Endangered' or 'Vulnerable' under section 182. Schedules of protected TECs maintained pursuant to the EPBC Act are based on the same Floristic Community Types (FCTs) as adopted by DBCA, however not all TECs listed by the DBCA are scheduled under the EPBC Act.

4.3.1 Department of Biodiversity, Conservation and Attractions (DBCA) TEC Database Search

A Threatened Ecological Community (TEC) search was undertaken through the DBCA. The search is undertaken on records from the DBCA, which provides known locations of TECs. The results noted eleven known TECs to occur within a 10km radial area from the central coordinate. This information is provided in **Table 6** below.

Table 6: DBCA listed Threatened Ecological Communities

Species Name	Conservation Code	Likely to occur on site
Acacia shrublands on taller dunes	Priority 3	No
Banksia Woodlands of the Swan Coastal Plain ecological community	Priority 3 (DBCA) Endangered (EPBC)	No
Coastal shrublands on shallow sands	Priority 3	Yes
Herb rich shrublands in clay pans (floristic community type 8 as originally described in Gibson et al. 1994)	BCA Endangered (DBCA) Critically Endangered (EPBC)	No
Low lying *Banksia attenuata* woodlands or shrublands	Priority 3 (DBCA) Endangered (EPBC)	No
Melaleuca huegelii - M. systena shrublands of limestone ridges (floristic community type 26a as originally described in Gibson et al. 1994)	BCA Critically Endangered (DBCA) Critically Endangered (EPBC)	Yes
Microbial community of a coastal saline lake (Lake Walyungup)	Priority 1	No
Northern Spearwood shrublands and woodlands	Priority 3 (DBCA) Endangered (EPBC)	No
Sedgelands in Holocene dune swales of the southern Swan Coastal Plain (floristic community type 19 as originally described in in Gibson et al. 1994)	BCA Critically Endangered (DBCA) Endangered (EPBC)	No
Southern *Eucalyptus gomphocephala-Agonis flexuosa* woodlands	Priority 3 (DBCA) Critically Endangered (EPBC)	Yes
Tuart (*Eucalyptus gomphocephala*) woodlands and forests of the Swan Coastal Plain	Priority 3 (DBCA) Critically Endangered (EPBC)	Yes

4.3.2 Department of Climate Change, Energy, the Environment and Water (DCCEEW) TEC Database Search

In addition to the background search undertaken through the DBCA a search through the Department of Climate Change, Energy, the Environment and Water (DCCEEW) Protected Matters is undertaken. The (DCCEEW) Protected Matters report indicated there are five known Threatened Ecological

Communities (TECs) likely to occur within a 5km radius of the area, the TECs are listed in **Table 7** below.

Table 7: DCCEEW listed Threatened Ecological Communities

Threatened Ecological Community	Conservation Code	Likely to occur on site
Sedgelands in Holocene dune swales of the southern Swan Coastal Plain	Endangered	No
Banksia Woodlands of the Swan Coastal Plain ecological community	Endangered	No
Empodisma peatlands of southwestern Australia	Endangered	No
Tuart (*Eucalyptus gomphocephala*) Woodlands and Forests of the Swan Coastal Plain ecological community	Critically Endangered	Yes
Honeymyrtle shrubland on limestone ridges of the Swan Coastal Plain Bioregion	Critically Endangered	Yes

5. FLORA AND VEGETATION ASSESSMENT RESULTS

The releves recorded flora species in areas of the best vegetation condition within the survey area, to record as many flora species as possible. A running species list was also recorded during the survey.

A total of 35 taxa, comprising of 17 families and 30 genera were recorded on site. A list of these species has been provided in **Appendix A**. Species representation was greatest among the Myrtaceae and Poaceae families.

5.1 INTRODUCED SPECIES

Nineteen introduced flora species were recorded within the survey area, shown in **Table 8** below. This represents 54% of the total number of flora species recorded on site. One Weed of National Significance (WoNS) was recorded during the survey, **Tamarix aphylla*. (Department of Climate Change Energy, the Environment and Water (DCCEEW 2024). Definitions are provided in **Appendix C**.

Table 8: Introduced Flora Recorded in the Survey Area

Species	Common Name	Rating
**Avena fatua*	Wild Oat	Permitted - s11
**Bromus diandrus*	Great Brome	Permitted - s11
**Chloris* sp.	Chloris	Permitted - s11
**Cynodon dactylon*	Couch	Permitted - s11
**Echinacea* sp.	Echinaceae	Permitted - s11
**Ehrharta calycina*	Perennial Veldt Grass	Permitted - s11
**Eragrostis curvula*	African Lovegrass	Permitted - s11
**Erigeron bonariensis*	Fleabane	Permitted - s11
**Euphorbia terracina*	Geraldton Carnation Weed	Permitted - s11
**Hyparrhenia hirta*	Tambookie Grass	Permitted - s11
**Lagurus ovatus*	Hare's Tail Grass	Permitted - s11
**Leptospermum laevigatum*	Coast Teatree	Permitted - s11
**Oenothera stricta*	Common Evening Primrose	Permitted - s11
**Olea europaea*	Olive	Permitted - s11
**Pelargonium capitatum*	Rose Pelargonium	Permitted - s11
**Schinus molle*	Peppercorn tree	Permitted - s11
**Tamarix aphylla*	Tamarisk	Declared Pest - s22(2)
**Tribulus terrestris*	Caltrop	Permitted - s11
**Yucca* sp.	Yucca	Permitted - s11

5.2 THREATENED AND PRIORITY FLORA

One Priority 4 (P4) flora species, *Grevillea olivacea* was recorded during the survey. It is possible that this species is planted as it is adjacent to a landscaped area and is readily available from nurseries. This population is south of the currently mapped distribution.

No other flora, pursuant to the *Biodiversity Conservation* (BC) *Act,* 2016 or the *Environment Protection and Biodiversity Conservation* (EPBC) *Act*, 1999 were located during the time of the survey.

The site was predominantly in Completely Degraded vegetation condition and is adjacent to a major roadside. The survey area is unlikely to support any of the listed Threatened and Priority listed flora species. A targeted search for Threatened and Priority Flora was not undertaken as part of this survey.

5.3 THREATENED ECOLOGICAL COMMUNITIES

No Threatened Ecological Communities pursuant to the *Biodiversity Conservation* (BC) *Act*, 2016 or the *Environment Protection and Biodiversity Conservation* (EPBC) *Act*, 1999 were recorded during the time of the survey.

Although a small area of Tuart woodland was recorded within the survey area, the size and condition of this remnant, considered with the adjacent and nearby small patches of Tuart is both too small and degraded (lacking native species diversity and structure) to meet the thresholds for this community to be included in the listed TEC. It is unlikely that the listed TECs in **Tables 6** & **7** occur within the survey area due to the current vegetation condition, flora composition and patch size.

5.4 LOCAL VEGETATION COMMUNITIES

Vegetation structure recorded in each vegetation community is used to determine the coverage class as described below in **Table 9.** These vegetation structure classes are defined in the Technical Guidance – *Flora and Vegetation Surveys for Environmental Impact Assessment* (2016).

Table 9: Vegetation Structure Classes

Life Form/ Height Class	Canopy Cover (percentage)			
	100% - 70%	**70% - 30%**	**30% - 10%**	**10% - 2%**
Trees 10-30m Trees < 10m	Closed Forest Low Closed Forest	Open Forest Low Open Forest	Woodland Low Woodland	Open Woodland Low Open Woodland
Shrub Mallee	Closed Shrub Mallee	Shrub Mallee	Open Shrub Mallee	Very Open Shrub Mallee
Shrubs > 2m Shrubs 1-2m Shrubs <1m	Closed Tall Scrub Closed Heath Closed Low Heath	Tall Open Scrub Open Heath Open Low Heath	Tall Shrubland Shrubland Low Shrubland	Tall Open Shrubland Open Shrubland Low Open Shrubland
Grasses	Closed Grassland	Grassland	Open Grassland	Very Open Grassland
Herbs	Closed Herbland	Herbland	Open Herbland	Very Open Herbland
Sedges	Closed Sedgeland	Sedgeland	Open Sedgeland	Very Open Sedgeland

Two vegetation communities were represented on the site at a local level, which have been described below in **Table 10** Photographic representations of the vegetation communities are shown in the

releve data sheets in **Appendix B**. The vegetation communities, condition and releve locations are shown on **Figures 4** & **5.**

Table 10: Local Vegetation Community recorded along Mandurah Road, Secret Harbour, January 2026.

Community Description
Vegetation Community 1 – Tuart Woodland
Shrubland of *Spyridium globulosum* and *Grevillea* sp. over sedgeland of *Lepidosperma gladiatum* over open grassland of **Ehrharta calycina, *Eragrostis curvula* and **Cynodon dactylon*
Vegetation Community 2 – Mixed Shrubland over weeds
Open shrubland of *Melaleuca systena* and *Acacia rostellifera* over herbland **Erigeron bonariensis*, **Oenothera stricta* and**Pelargonium capitatum* over of grassland of **Cynodon dactylon, *Lagurus ovatus, *Ehrharta calycina, *Eragrostis curvula, *Bromus diandrus* and **Avena fatua*

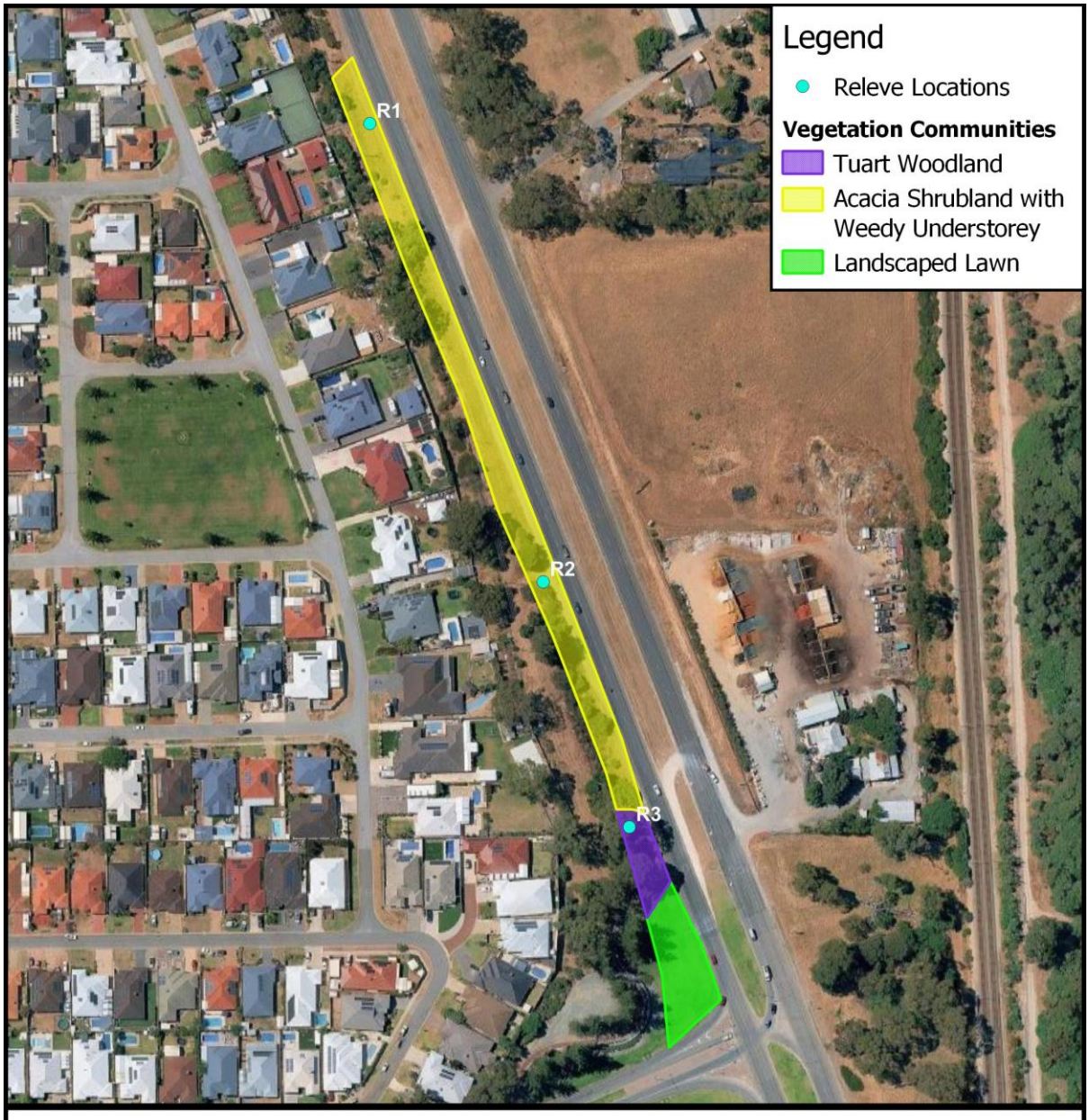


Figure 4: Vegetation Communities & Releve Locations

5.5 VEGETATION CONDITION

Many bushland remnants have been historically degraded and current land use activities continue degradation and fragmentation processes. As a result, these remnants are especially susceptible to disturbances arising from indirect impacts such as surrounding developments and human activity (Urban Bushland Council, 2018).

The survey area is between residential housing and a main road. The site has had significant impacts from these modifications, reducing the size and condition of the remnant bushland and therefore increasing the weed density and diversity and impacting the condition of the vegetation.

The vegetation condition was rated according to the Vegetation Condition Scale used in the Technical Guidance – *Flora and Vegetation Surveys for Environmental Impact Assessment* (2016). The definitions are described in **Table 11** below. Vegetation condition mapping is provided on **Figure 5.** Vegetation across the site is described as "Good" to "Completely Degraded".

Table 11: Vegetation Condition Scale

Vegetation Condition	Southwest and Interzone Botanical Provinces	Eremaean and Northern Botanical Provinces
Pristine	Pristine or nearly so, no obvious signs of disturbance or damage caused by human activities since European settlement.	
Excellent	Vegetation structure intact, disturbance affecting individual species and weeds are non-aggressive species. Damage to trees caused by fire, the presence of non-aggressive weeds and occasional vehicle tracks.	Pristine or nearly so, no obvious signs of damage caused by human activities since European settlement
Very Good	Vegetation structure altered, obvious signs of disturbance. Disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and grazing.	Some relatively slight signs of damage caused by human activities since European settlement. For example, some signs of damage to tree trunks caused by repeated fire, the presence of some relatively non-aggressive weeds, or occasional vehicle tracks
Good	Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. Disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and grazing.	More obvious signs of damage caused by human activity since European settlement, including some obvious impact on the vegetation structure such as that caused by low levels of grazing or slightly aggressive weeds
Poor		Still retains basic vegetation structure or ability to regenerate it after very obvious impacts of human activities since European settlement, such as grazing, partial clearing, frequent fires or aggressive weeds
Degraded	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. Disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds at high density, partial clearing, dieback and grazing.	Severely impacted by grazing, very frequent fires, clearing or a combination of these activities. Scope for some regeneration but not to a state approaching good condition without intensive management. Usually with a number of weed species present including very aggressive species.
Completely Degraded	The structure of the vegetation is no longer intact, and the area is completely or almost completely without native species. These areas are often described as 'parkland cleared' with the flora comprising weed or crop species with isolated native trees and shrubs.	Areas that are completely or almost completely without native species in the structure of their vegetation; i.e. areas that are cleared or 'parkland cleared' with their flora comprising weed or crop species with isolated native trees or shrubs

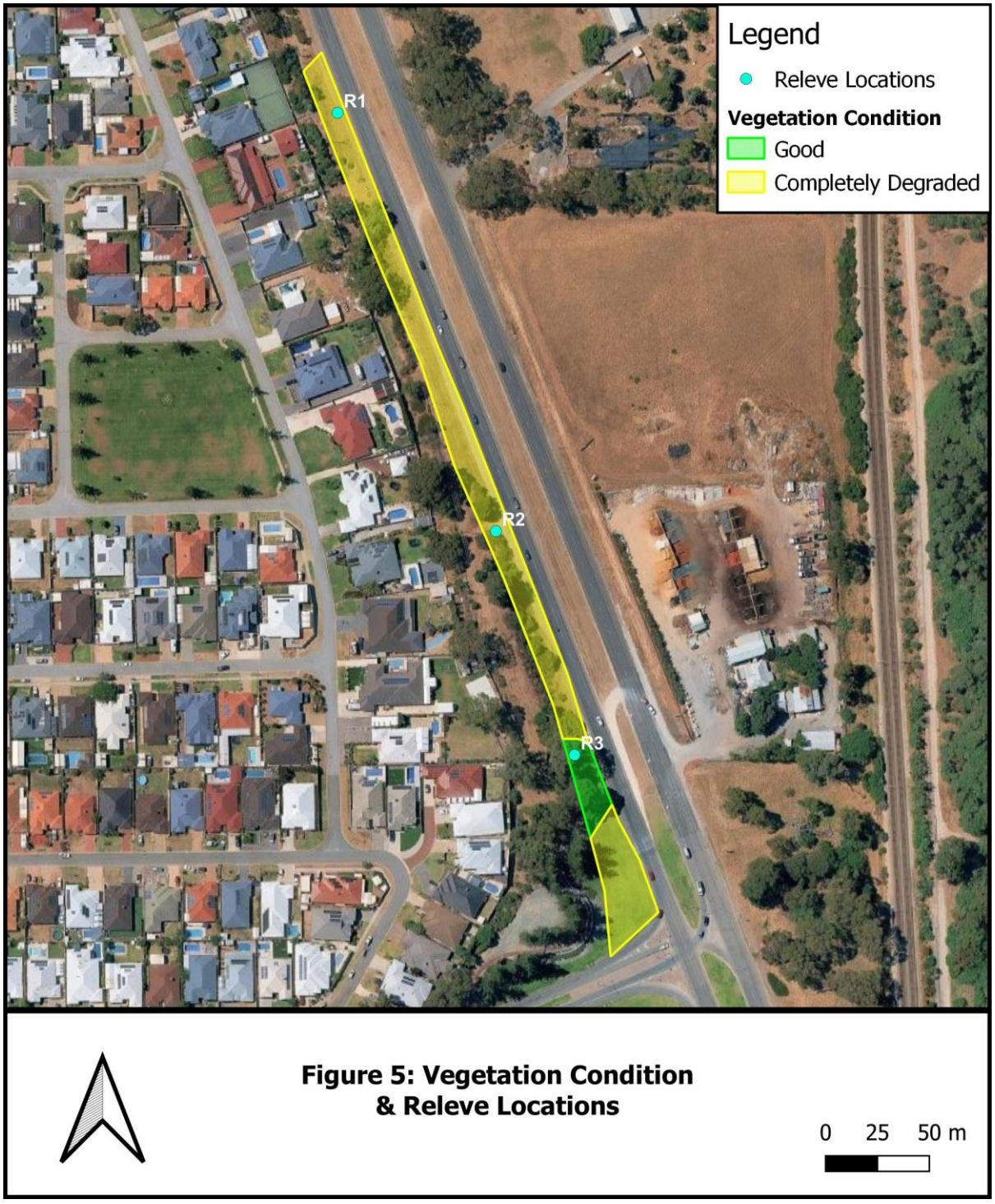


Figure 5: Vegetation Condition & Releve Locations

6. DISCUSSION AND CONCLUSION

The Reconnaissance Flora and Vegetation Survey undertaken along Mandurah, Secret Habour, identified a total of 35 taxa, comprising of 17 families and 30 genera. Weed species comprised of 54% of the total flora recorded. The vegetation condition across the site was recorded as "Good" to "Completely Degraded".

Two vegetation communities were recorded at a local level during the survey. Vegetation community 1 (Tuart Woodland) was recorded in a small area, near the intersection of Mandurah Road and Anstey Road. This area consists of vegetation in the best condition within the survey area. While the releve in this location did not include *Eucalyptus gomphocephala* (Tuart) in the species list, there were several large Tuart trees adjacent to the releve and the survey area, it is recommended where possible these trees are retained.

This area was too small to capture three releves and to be considered a suitable patch size to meet the Tuart (*Eucalyptus gomphocephala*) Woodlands and Forests of the Swan Coastal Plain ecological community criteria. Limited native understorey species were recorded to meet the criteria for this remnant to be considered part of the listed TEC.

Another patch of Tuarts was noted to occur on the eastern side of Mandurah Road. The tree canopy's were greater than 60 metres away, which excludes them as being acknowledged to meet the Tuart (*Eucalyptus gomphocephala*) Woodlands and Forests of the Swan Coastal Plain ecological community criteria.

Vegetation Community 1 (Tuart Woodland) consists of shrubland of *Spyridium globulosum* and *Grevillea* sp. over sedgeland of *Lepidosperma gladiatum* over open grassland of **Ehrharta calycina, *Eragrostis curvula* and **Cynodon dactylon.*

The vegetation recorded as Vegetation Community 2 (Mixed Shrubland over weeds) is the dominant community recorded across the survey area. The vegetation changes in structure along the survey area, with some patches containing larger shrubs and other areas with no shrubs, however the dominant species were consistent across the site. Vegetation Community 2 consists of open shrubland of *Melaleuca systena* and *Acacia rostellifera* over herbland **Erigeron bonariensis*, **Oenothera stricta* and **Pelargonium capitatum* over grassland of **Cynodon dactylon, *Lagurus ovatus, *Ehrharta calycina, *Eragrostis curvula, *Bromus diandrus* and **Avena fatua.*

A small area at the intersection of Mandurah Road and Anstey Road contains landscaped gardens with lawn. This area contains no native vegetation.

One Priority 4 (P4) flora species, *Grevillea olivacea* was recorded during the survey. No other flora, pursuant to the *Biodiversity Conservation* (BC) *Act*, 2016 or the *Environment Protection and Biodiversity Conservation* (EPBC) *Act*, 1999 were located during the time of the survey. A targeted flora search was not undertaken as part of this survey.

No Threatened Ecological Communities pursuant to the *Biodiversity Conservation* (BC) *Act*, 2016 or the *Environment Protection and Biodiversity Conservation* (EPBC) *Act*, 1999 were recorded during the survey.

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APPENDIX A
VASCULAR PLANT SPECIES RECORDED

APPENDIX A:
VASCULAR PLANT SPECIES RECORDED ALONG MANDURAH ROAD, SECRET HARBOUR 2026

*(*Denotes a weed species)*

Family	Genus/Species
Anacardiaceae	**Schinus molle*
Asparagaceae	**Yucca* sp.
Asteraceae	**Echinacea* sp.
	**Erigeron bonariensis*
Chenopodiaceae	*Rhagodia baccata*
Cyperaceae	*Lepidosperma gladiatum*
Euphorbiaceae	**Euphorbia terracina*
Fabaceae	*Acacia pulchella*
	Acacia rostellifera
	Hardenbergia comptoniana
Geraniaceae	**Pelargonium capitatum*
Goodeniaceae	*Scaevola crassifolia*
	Scaevola sp.
Myrtaceae	**Leptospermum laevigatum*
	Agonis flexuosa
	Calothamnus quadrifidus
	Eucalyptus gomphocephala
	Melaleuca huegelii
	Melaleuca systena
	Melaleuca sp.
Oleaceae	**Olea europaea*
Onagraceae	**Oenothera stricta*
Poaceae	**Avena fatua*
	**Bromus diandrus*
	**Chloris* sp.
	**Cynodon dactylon*
	**Ehrharta calycina*
	**Eragrostis curvula*
	**Hyparrhenia hirta*
	**Lagurus ovatus*
Proteaceae	*Grevillea olivacea*
	Grevillea sp.
Rhamnaceae	*Spyridium globulosum*
Tamaricaceae	**Tamarix aphylla*
Zygophyllaceae	**Tribulus terrestris*

APPENDIX B
RELEVE DATA

Del Botanics Environmental Consulting

FIELD SHEET – FLORA AND VEGETATION SURVEY

Job Code: Mandurah Rd, Secret Habour	**Date:** 14/01/2026	**Site:** R1
GPS Datum: (50) 384523.55 m E 6414306.02 m S	**Topography:** Upper slope	**Litter cover:** 5 % twigs, 20 % leaves 10% logs
Age since fire: >10 yrs	**Disturbance:** **Hi** Med Low	**Soils:** Grey Sand
Vegetation Description:		
Vegetation Condition: Completely Degraded		
Observations: Highly degraded, rubbish dumping, invasive grass weeds, dominated by weeds. Site adjacent to busy main road		

Coll No.	Taxon
	**Chloris* sp.
	**Echinacea* sp.
	**Erigeron bonariensis*
	**Cynodon dactylon*
	**Lagurus ovatus*
	**Avena fatua*
	**Oenothera stricta*
Opp	*Agonis flexuosa*

Del Botanics Environmental Consulting

FIELD SHEET – FLORA AND VEGETATION SURVEY

Job Code: Mandurah Rd, Secret Habour	**Date:** 14/01/2026	**Site:** R2
GPS Datum: (50) 384599.82 m E 6414104.58 m S	**Topography:** Upper slope	**Litter cover:** 10 % twigs, 40 % leaves 1% logs
Age since fire: >10 yrs	**Disturbance:** **Hi** Med Low	**Soils:** Grey Sand
Vegetation Description:		
Vegetation Condition: Completely Degraded		
Observations: Highly degraded, rubbish dumping, invasive grass weeds, dominated by weeds. Site adjacent to busy main road		

Coll No.	Taxon
	Agonis flexuosa
	**Echinacea* sp.
	**Eragrostis curvula*
	**Hyparrhenia hirta*
Opp	*Melaleuca huegelii*
	**Ehrharta calycina*
	**Bromus diandrus*
	Melaleuca systena

Del Botanics Environmental Consulting

FIELD SHEET – FLORA AND VEGETATION SURVEY

Job Code: Mandurah Rd, Secret Habour	**Date:** 14/01/2026	**Site:** R3
GPS Datum: (50) 384637.70 m E 6413996.80 m S	**Topography:** Upper slope	**Litter cover:** 10 % twigs, 20 % leaves 1% logs
Age since fire: >10 yrs	**Disturbance:** Hi **Med** Low	**Soils:** Grey Sand
Vegetation Description: Tuart Woodland		
Vegetation Condition: Good		
Observations: Very small remnant remaining in good condition		

Coll No.	Taxon
	**Olea europaea*
	Spyridium globulosum
	Scaevola crassifolia
Opp	*Eucalyptus gomphocephala*
	Lepidosperma gladiatum
	**Ehrharta calycina*
	**Eragrostis curvula*
	Hardenbergia comptoniana
	Rhagodia baccata
	Grevillea sp.
	**Cynodon dactylon*
P4	*Grevillea olivacea*
	**Schinus molle*
	**Euphorbia terracina*

APPENDIX C
BAM ACT DEFINITIONS

BAM Act Definitions

Legal status

Each listed organism is declared under the Biosecurity Management act with certain legal requirements:

Declared Pest, Prohibited - s12

Prohibited organisms are declared pests by virtue of section 22(1), and may only be imported and kept subject to permits. Permit conditions applicable to some species may only be appropriate or available to research organisations or similarly secure institutions.

Permitted - s11

Permitted organisms must satisfy any applicable import requirements when imported. They may be subject to an import permit if they are potential carriers of high-risk organisms.

Declared Pest - s22(2)

Declared pests must satisfy any applicable import requirements when imported, and may be subject to an import permit if they are potential carriers of high-risk organisms. They may also be subject to control and keeping requirements once within Western Australia.

Permitted, Requires Permit - r73

Regulation 73 permitted organisms may only be imported subject to an import permit. These organisms may be subject to restriction under legislation other than the *Biosecurity and Agriculture Management Act 2007*. Permit conditions applicable to some species may only be appropriate or available to research organisations or similarly secure institutions.

Unlisted - s14

If you are considering importing an unlisted organism/s you will need to submit the name/s for assessment, as unlisted organisms are automatically prohibited entry