

APPENDIX 1

FLORA & VEGETATION SURVEY

LOTS 5-8 KEROSENE LANE, BALDIVIS

FLORA AND VEGETATION SURVEY

Prepared for: Terranovis Pty Ltd

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pgv ENVIRONMENTAL

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1 INTRODUCTION

1.1 Purpose

Terranovis Pty Ltd is developing a Local Structure Plan (LSP) for Lots 5-8 Kerosene Lane, Baldivis (the site). The site is 8.11ha in size and approximately 38.5km south of the Perth Central Business District (Figure 1). The site is located in the City of Rockingham and is bound by Kerosene Lane to the north, market gardens to the east, a mostly cleared lot to the west and a lot to the south containing remnant trees (Figure 2).

The site is zoned 'Urban' under the Metropolitan Region Scheme (MRS) and 'Development' under the City of Rockingham Town Planning Scheme No. 2 (TPS2). The site is within Precinct 2 of the proposed Baldivis (North) District Structure Plan which indicates the site to contain residential development consisting of medium density housing.

PGV Environmental was commissioned by Terranovis Pty Ltd to undertake a Level 2 Spring Flora and Vegetation Survey to record the flora and vegetation present on the site.

1.2 Scope of Works

The Level 2 Spring Flora and Vegetation Survey was undertaken in accordance with Guidance Statement 51: *Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in Western Australia* (EPA, 2004) and included the following:

- Desktop search and review of DPaW's Declared Rare and Priority Flora database and Threatened Ecological Communities database;
- Examination of recent aerial photography and contour maps to provisionally identify vegetation types and condition;
- Field survey in spring using quadrats to record native and introduced species as well as a thorough site walkover of any areas of native vegetation;
- Recording of any significant plant species using a hand-held GPS;
- Description and mapping of vegetation types and vegetation condition; and
- Compilation of a flora list.

2 EXISTING ENVIRONMENT

2.1 Land Use

The site consisted of native bushland in 1953 as shown in Plate 1, however Kerosene Lane was already present as a dirt road.

Plate 1: Historical Aerial Photography of the Site from 1953 (Landgate, 2015)



Clearing of sections of the site had commenced by 1965 consisting of small areas in the north of Lots 5 and 6 and the western half of Lot 8, however the vegetation on Lot 8 was regenerating by 1974 (Landgate, 2015a). Dwellings were constructed on Lots 5 and 6 by 1977. The majority of Lot 8 was cleared by 1995 as well as large areas of Lot 7 where a dwelling was constructed (Landgate, 2015a).

Currently Lots 5 (78 Kerosene Lane in Plate 1) and 7 (56 Kerosene Lane in Plate 1) contain dwellings with remnant vegetation, while Lots 6 and 8 are vacant and consist of bushland as shown in Plate 2.

Plate 2: Aerial Photography of the Site from March 2015 (Landgate, 2015)



Land to the east of the site is utilised for market gardens with a locally owned growers market located approximately 320m from the site. Native vegetation in Bush Forever Site 356 is located immediately north of Kerosene Lane opposite Lots 7 and 8. The remaining surrounding land is undeveloped, although a new residential development is being constructed to the south of the southern adjoining lot.

2.2 Topography

The topography on the site slopes upwards in a north-westerly direction ranging from 8m Australian Height Datum (AHD) in the south-eastern corner to 23m AHD in the north-western corner (DoW, 2015) (Figure 2).

2.3 Geology and Soils

The site is mapped on the Spearwood System consisting of Aeolian sand and limestone over sedimentary rocks with sand dunes and plains of yellow deep sands, pale deep sands and yellow/brown shallow sands (DAFWA, 2015).

There are two soil types mapped on the site as describes below (DAFWA, 2015):

- Spearwood S2a Phase (211Sp_S2a) consists of lower slopes (1-5%) of a dune ridge with moderately deep to deep siliceous yellow-brown sands or pale sands with yellow-brown subsoils and minor limestone outcrops; and
- Spearwood S4a Phase (211Sp_S4a) consists of flat to gently undulating sandplain with deep, pale and sometimes bleached sands with yellow-brown subsoils.

The south-eastern section of the site consists of Spearwood S4a Phase soil while the remainder of the site consists of Spearwood S2a Phase soil.

2.4 Hydrology

The groundwater under the site has geological formations that have been grouped into three distinct aquifers:

- Superficial Aquifer (unconfined);
- Leederville Aquifer (confined); and
- Yarragadee north (confined) (DoW, 2015a).

Groundwater flows generally from the east to west under the site. The Perth Groundwater Atlas (DoW, 2015b) shows a snapshot of groundwater levels as measured in May 2003 which are an indication of low groundwater levels and are measured at approximately 3mAHD. The historical maximum groundwater level under the site is at 3 to 4mAHD. The depth to groundwater from the natural surface ranges from approximately 7 to 17m (DoW, 2015b).

There are no surface water features or wetlands on the site.

3 FLORA AND VEGETATION

3.1 Methodology

A desktop study was undertaken for the site using database searches. A flora and vegetation survey of the site was conducted by Dr Paul van der Moezel on 11 September 2015. The survey included sampling from four non-permanent 10m x 10m quadrats as well as a thorough walk through the site. Site coverage was high due to the small size of the site and the degraded nature of the open understorey on most of the site.

3.2 Desktop Studies

3.2.1 Database Searches

A search of the Department of Parks and Wildlife's (DPaW's) Threatened Flora Database, WA Herbarium database and Declared Rare and Priority Flora Species List (Parks and Wildlife, 2015) (Appendix 1) identified 6 Threatened species and 14 Priority plant species that have been recorded within 10km of the site (Table 1).

Table 1: Conservation Significant Flora known to occur near the Site

Species	Common Name	Status Under Wildlife Conservation Act 1950	Status Under EPBC Act 1999
<i>Caladenia huegelii</i>	Grand Spider Orchid	Threatened	Endangered
<i>Diuris micrantha</i>	Dwarf Bee-orchid	Threatened	Vulnerable
<i>Drakaea elastica</i>	Glossy-leaved Hammer Orchid	Threatened	Endangered
<i>Drakaea micrantha</i>	Dwarf Hammer Orchid	Threatened	Endangered
<i>Thelymitra stellata</i>	Star Sun Orchid	Threatened	Endangered
<i>Tribonanthes purpurea</i>	Granite Pink	Threatened	Vulnerable
<i>Acacia lasiocarpa</i> var. <i>bracteolata</i>		Priority 1	
<i>Boronia juncea</i> subsp. <i>juncea</i>		Priority 1	
<i>Acacia benthamii</i>		Priority 2	
<i>Cyathochaeta teretifolia</i>		Priority 3	
<i>Dillwynia dillwynioides</i>		Priority 3	
<i>Pimelea calcicola</i>		Priority 3	
<i>Schoenus capillifolius</i>		Priority 3	
<i>Sphaerolobium calcicola</i>		Priority 3	
<i>Stylidium longitubum</i>	Jumping Jacks	Priority 3	
<i>Thelymitra variegata</i>	Queen of Sheba Orchid	Priority 3	
<i>Aponogeton hexatepalus</i>	Stalked Water Ribbons	Priority 4	
<i>Dodonaea hackettiana</i>	Hackett's Hopbush	Priority 4	
<i>Jacksonia sericea</i>	Waldjumi	Priority 4	
<i>Stylidium ireneae</i>		Priority 4	

3.2.2 Likely Occurrence of Significant Flora Species

Table 2 examines the preferred habitat of each species identified in the database searches and the likelihood of the species listed in Table 1 to occur on the site.

Table 2: Likelihood of Identified Significant Flora Species occurring on the Site

Scientific Name	Preferred Habitat	Likelihood of Presence on site
<i>Caladenia huegelii</i>	Sand or clay loam. Does not survive in disturbed areas.	Possibly due to sandy soils but unlikely due to disturbed nature of most of the site.
<i>Diuris micrantha</i>	Brown loamy clay. Winter-wet swamps, in shallow water	Highly Unlikely due to absence of wet areas
<i>Drakaea elastica</i>	Low-lying situations adjoining winter-wet swamps. Does not survive in disturbed areas	Highly Unlikely due to absence of wet areas.
<i>Drakaea micrantha</i>	Usually found on cleared firebreaks or open sandy patches that have been disturbed in wetter soils.	Highly Unlikely due to absence of wetter soils.
<i>Thelymitra stellata</i>	Sand, gravel, lateritic loam	Unlikely due to absence of suitable soils types.
<i>Tribonanthes purpurea</i>	Seasonally wet soils in moss swards and herbfields among granite rocks	No due to complete absence of suitable habitat.
<i>Acacia lasiocarpa</i> var. <i>bracteolata</i> long peduncle variant	Grey or black sand over clay. Swampy areas, winter wet lowlands	Highly unlikely due to absence of suitable soil types.
<i>Boronia juncea</i> subsp. <i>juncea</i>	Sand. Low scrub	Possible due to sandy soils.
<i>Acacia benthamii</i>	Typically on limestone breakaways	Highly Unlikely due to the absence of limestone breakaways.
<i>Cyathochaeta teretifolia</i>	Grey sand, sandy clay. Swamps, creek edges	Highly Unlikely due to absence of suitable soils types.
<i>Dillwynia dillwynioides</i>	Sandy soils. Winter-wet depressions	Highly Unlikely due to the absence of winter-wet depressions.
<i>Pimelea calcicola</i>	Sand. Coastal limestone ridges.	Possible on sandy soils.
<i>Schoenus capillifolius</i>	Brown mud. Claypans.	Highly Unlikely due to absence of mud and clay.
<i>Sphaerolobium calcicola</i>	White-grey brown sand, sandy clay over limestone, black peaty sandy clay. Tall dunes, winter-wet flats, interdunal swamps, low-lying areas.	Possible on sandy soils.
<i>Stylidium longitubum</i>	Sandy clay, clay. Seasonal wetlands.	Highly Unlikely due to the absence of suitable soil types.
<i>Thelymitra variegata</i>	Sandy clay, sand, laterite.	Possible on sandy soils.
<i>Aponogeton hexatepalus</i>	Mud. Freshwater: ponds, rivers, claypans	No due to absence of water.
<i>Dodonaea hackettiana</i>	Sand. Outcropping limestone	Possible
<i>Jacksonia sericea</i>	Calcareous and sandy soils	Possible on calcareous sandy soils.

Scientific Name	Preferred Habitat	Likelihood of Presence on site
<i>Stylidium ireneae</i>	Sandy loam. Valleys near creek lines, woodland, often with <i>Agonis</i>	No – no creeks or natural <i>Agonis</i> are present on the site

* sourced from Florabase (DPaW, 2014), DoE SPRAT Database (DoE, 2014) as well as the DPaW database searches.

The database searches identified seven species that could possibly occur on the site due to their habitat preference for sandy soils, including one Threatened species (*Caladenia huegelii*) and six Priority species.

A search of the DPaW Threatened and Priority Ecological Community database (Ref 10-0715EC) identified two Threatened and three Priority Ecological Communities that have been recorded within 5km of the site (Appendix 1) as follows:

- SCP 19a 'Sedgelands in Holocene dune swales of the southern Swan Coastal Plain' (TEC)
- SCP 19b 'Woodlands over Sedgelands in Holocene dune swales of the southern Swan Coastal Plain (TEC)
- 24 'Northern Spearwood shrublands and woodlands' (Priority 3)
- 25 'Southern *Eucalyptus gomphocephala* - *Agonis flexuosa* woodlands' (Priority 3)
- Walyungup Microbial 'Microbial community of a coastal saline lake (Lake Walyungup) (Priority 1)

3.3 Survey Conditions

The conditions that the survey was undertaken in are presented in Table 3 in order to assess the adequacy of the survey. In summary, there were no constraints to the survey.

Table 3: Statement of Botanical Survey Conditions

Issue	Constraints (Yes/No); Significant, Moderate or Negligible	Comment
Competency/Experience Of The Consultant Conducting The Survey	No Constraints	Dr Paul Van Der Moezel Has Extensive Survey Experience On The Swan Coastal Plain.
Proportion Of The Flora Identified	No Constraints	The Timing Of The Survey In Early Mid-September Should Have Identified Most Of The Native Species On The Site.
Sources Of Information (Historic/Recent Or New Data)	No Constraints	The Flora Of The Swan Coastal Plain Is Relatively Well Documented.
Proportion Of The Task Achieved And Further Work That May Need To Be Undertaken	No Constraints	No Follow-Up Survey Required.

Issue	Constraints (Yes/No); Significant, Moderate or Negligible	Comment
Timing/Weather/Season/Cycle	No Constraints	The 11 September Survey Was Ideal For Identifying Rare Orchids And Maximising Flowering Of Most Species. Flowering Of <i>Caladenia Huegelii</i> Was Two Weeks' Early In 2015 Therefore The 11 September Time Was Suitable.
Intensity Of Survey (E.G. In Retrospect Was The Intensity Adequate)	No Constraints	Around 4 Hours Was Spent On The Site Which Was Appropriate Given The Small Size And High Disturbance Of The Lots.
Completeness (E.G. Was Relevant Area Fully Surveyed)	No Constraints	
Resources (E.G. Degree Of Expertise Available For Plant Identification)	No Constraints	Experienced Botanist Undertook Plant Identifications On Site.
Remoteness And/Or Access Problems	No Constraints	Easily Traversed On Foot.
Availability Of Contextual (E.G. Bioregional) Information For The Study Area.	No Constraints	Many Botanical References To Refer To On The Swan Coastal Plain In The Perth Metropolitan Region, Particularly Perth's Bush Forever.

Fungi and nonvascular flora (e.g. algae, mosses and liverworts) were not specifically surveyed for during the survey.

3.4 Results

3.4.1 Flora

A total of 65 plant species, including 35 native and 30 introduced were recorded on the site (Appendix 2). The high percentage of introduced species (46%) and very low number of native species on an 8.11ha site was indicative of the overall poor condition of the vegetation. The families with the highest representation were the Fabaceae (Wattles and Peas - 11 species including three introduced), Poaceae (Grasses – 7 species all introduced) and the Asparagaceae (Lilies – 5 species including one introduced). The Myrtaceae and Proteaceae Families were well under-represented in the species list.

The presence of only one orchid species (Pink Fairy Orchid – *Caladenia latifolia*) was also a reflection on the poor condition of the vegetation.

Four 10m x 10m quadrats were sampled on the site (Appendix 3). The species richness in the quadrats ranged from 9 – 20 (average 14.0) which is very low compared to high quality vegetation of similar type.

3.4.2 Vegetation

Vegetation Complexes

The vegetation on the site is part of the Cottesloe Complex – Central and South which is described as a 'Mosaic of woodland of *Eucalyptus gomphocephala* (Tuart) and open forest of *E. gomphocephala* – *E. marginata* (Jarrah) – *Corymbia calophylla* (Marri), closed heath on the limestone outcrops' (Hedde *et al.* 1980).

Vegetation Types

Four vegetation types were recorded on the site in addition to areas around dwellings planted with non-local native and exotic species. A description of each vegetation type is provided below and their distribution on the site is shown on Figure 3.

EgAr *Eucalyptus gomphocephala* (Tuart) Open Forest over *Acacia rostellifera* Tall Shrubland over weeds

This is the main vegetation type occurring in the central and eastern part of the site. Tuart trees dominate up to 15m high and are reasonably dense over most of the area. Jarrah trees are also present but in low densities. The mid storey contains *Acacia rostellifera* in low density and up to 4m high. The understorey is dominated by weed species, particularly Annual Veldtgrass (*Ehrharta calycina*) as well as Fumitory (*Fumaria capreolata*) and *Euphorbia peplus*. Two native climbers, *Hardenbergia comptoniana* and *Clematis linearifolia*, are common in the shrubs. The soils are brown loamy sand. Quadrat K1 is representative of this vegetation type.

EgArBs *Eucalyptus gomphocephala* (Tuart) Open Woodland over *Acacia rostellifera*/*Banksia sessilis* Tall Open Scrub over weeds

This vegetation type occurs on the western and northern ends of the site where limestone is either at the surface or just below. The Tuart trees are less dense than the EgAr vegetation type and in some places almost absent (quadrat K3). The mid-storey contains *Acacia rostellifera* and *Banksia sessilis* (Parrot Bush) in varying densities around 4m tall. *Jacksonia furcellata* is also common in patches. The native understorey is sparse with *Acacia pulchella* and *Macrozamia fraseri* common. Dominant weed species are *Ehrharta longiflora*, *Euphorbia terracina*, *Euphorbia peplus* and *Lupinus cosentinii*. Quadrats K2 and K4 are representative of this vegetation type with Tuart trees present.

Em *Eucalyptus marginata* (Jarrah) Open Woodland over weeds

A small stand of Jarrah trees up to 8m high occurs on Lot 7 with no Tuart trees present. The understorey is completely dominated by Veldtgrass (*Ehrharta calycina*). No quadrat was recorded in this type due to the absence of native understorey species.

Eg *Eucalyptus gomphocephala* (Tuart) trees over manicured lawn

Lot 7 contains native Tuart trees over manicured lawn and with no native understorey.

Floristic Community Types

Floristic Community Types (FCT) are based on the whole floristic composition of the vegetation rather than being determined by soil type and geomorphology (Vegetation Complex) or the nature of the dominant species (Vegetation Types). The FCT level of vegetation is required to identify whether any of the vegetation on the site is a Threatened or Priority Ecological Community.

The vegetation on the site is too degraded to accurately assign a FCT to. The vegetation is most likely representative of FCT 24 'Northern Spearwood shrublands and woodlands' if it were in better condition.

3.4.3 Vegetation Condition

The vegetation condition over the site was assessed using the condition scale adopted in Bush Forever (Table 4). All of the vegetation was either Completely Degraded or Degraded to Completely Degraded due to the sparse or absent native understorey and abundance of weed species (Figure 4).

Table 4: Vegetation Condition Rating Scale

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

Source: Government of Western Australia, 2000.

3.4.4 Conservation Significance of Flora and Vegetation

Flora

No conservation significant flora species were recorded on the site.

The timing of the survey was considered suitable to identify any potential Threatened or Priority species. The Threatened orchid species *Caladenia huegelii* (Grand Spider Orchid) was observed to be flowering at a reference site a few days prior to the survey on Kerosene Lane.

Vegetation

The vegetation on the site is too degraded to have any conservation significance as a vegetation complex or type. If it were in better condition the vegetation would be representative of the Priority 3 ecological community FCT 24 'Northern Spearwood shrublands and woodlands'. However, the poor quality of the vegetation means that assigning a FCT to the vegetation is not possible.

Better quality vegetation of a similar type occurs immediately to the north of the site between Kerosene Lane and Kulija Road. This area is part of the large Bush Forever site 356 'Lake Cooloongup, Lake Walyungup and Adjacent Bushland, Hillman to Port Kennedy'.

The trees and tall shrubs provide some habitat for native fauna, including Carnaby's Black Cockatoos, but are not considered significant habitat (see PGV Environmental 2015 fauna report).

The vegetation on the site is not part of an ecological corridor due to the developments to the south and east of the site. Any east-west corridor function in this part of Baldivis would occur in the Bush Forever site to the north of Kerosene Lane.

4 SUMMARY AND CONCLUSIONS

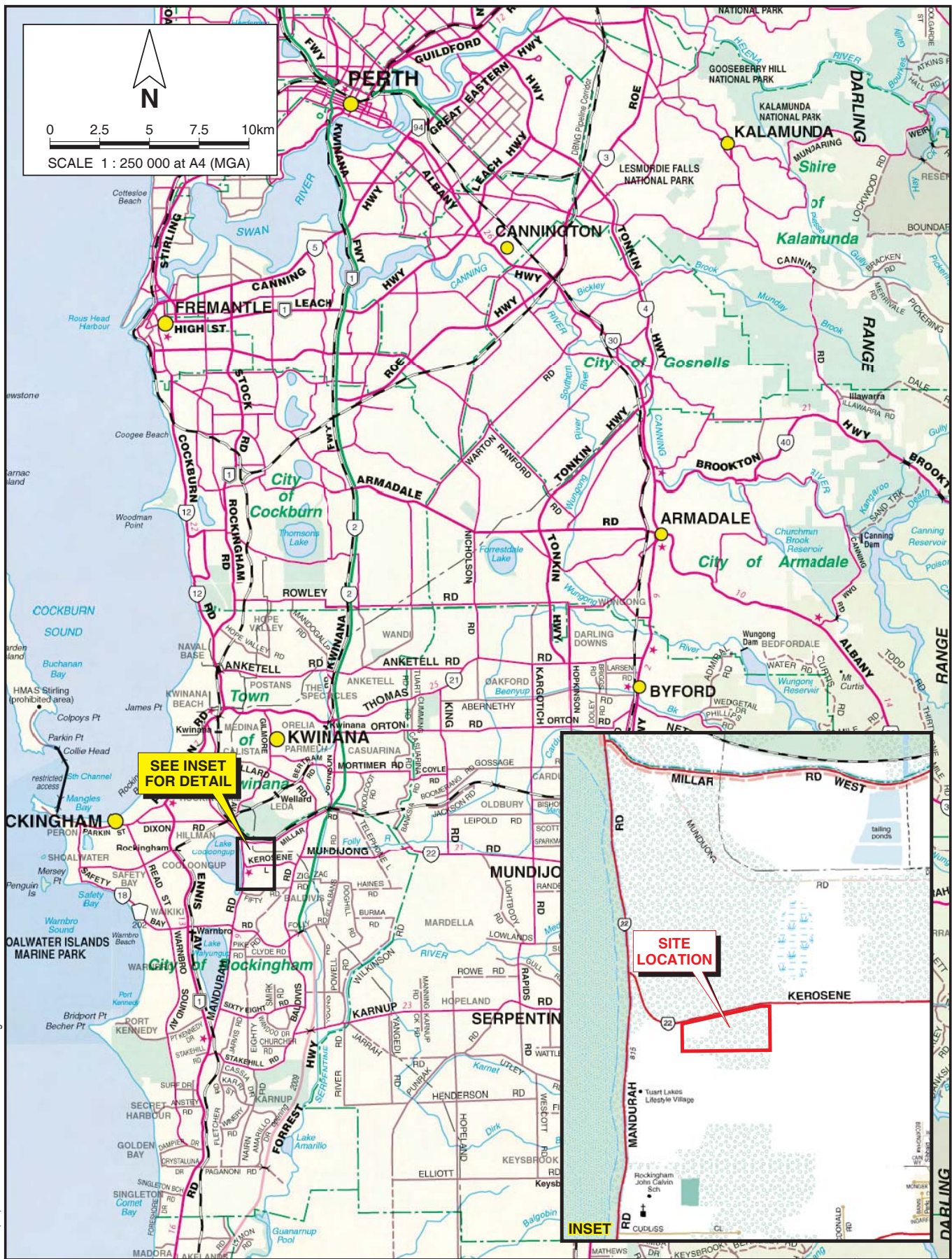
The Level 2 Flora and Vegetation Survey of Lots 5-8 Kerosene Lane resulted in the following findings:

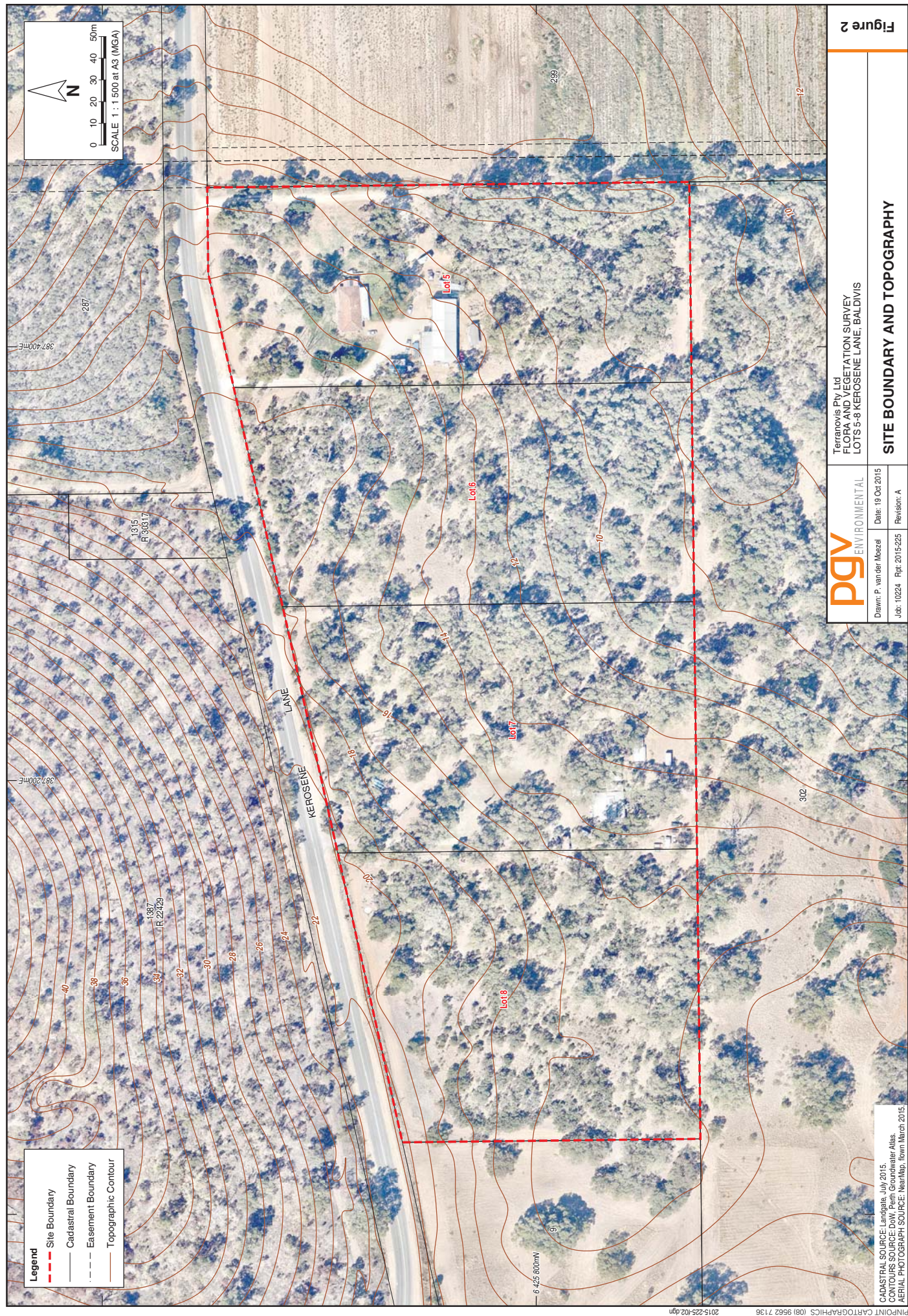
- A total of 65 plant species, including 35 native and 30 introduced were recorded on the site during the 11 September survey. The high percentage of introduced species (46%) and very low number of native species on an 8.11ha site was indicative of the overall poor condition of the vegetation.
- Database searches indicated that 7 conservation significant species could occur on the site. However, no conservation significant flora species were recorded during the survey.
- Four 10m x 10m quadrats were sampled on the site. The species richness in the quadrats ranged from 9 – 20 (average 14.0) which is very low compared to high quality vegetation of similar type.
- The vegetation on the site is part of the Cottesloe Complex – Central and South.
- Four vegetation types were recorded on the site in addition to areas around dwellings planted with non-local native and exotic species. Tuart trees were the dominant tree species with occasional Jarrah present. In areas containing shallow limestone Parrot Bush (*Banksia sessilis*) was a common species.
- All of the vegetation was either Completely Degraded or Degraded to Completely Degraded due to the sparse or absent native understorey and abundance of weed species.
- The vegetation on the site is too degraded to accurately assign a FCT to. The vegetation is most likely representative of FCT 24 'Northern Spearwood shrublands and woodlands' if it were in better condition.
- The vegetation on the site is too degraded to have any conservation significance as a vegetation complex or type.
- The vegetation on the site is not part of an ecological corridor.
- Vegetation of similar type and in better condition is contained in Bush Forever site 356 a part of which occurs immediately to the north of the site between Kerosene Lane and Kulija Road.
- Clearing of the site for urban development will not impact on any conservation values for flora and vegetation.

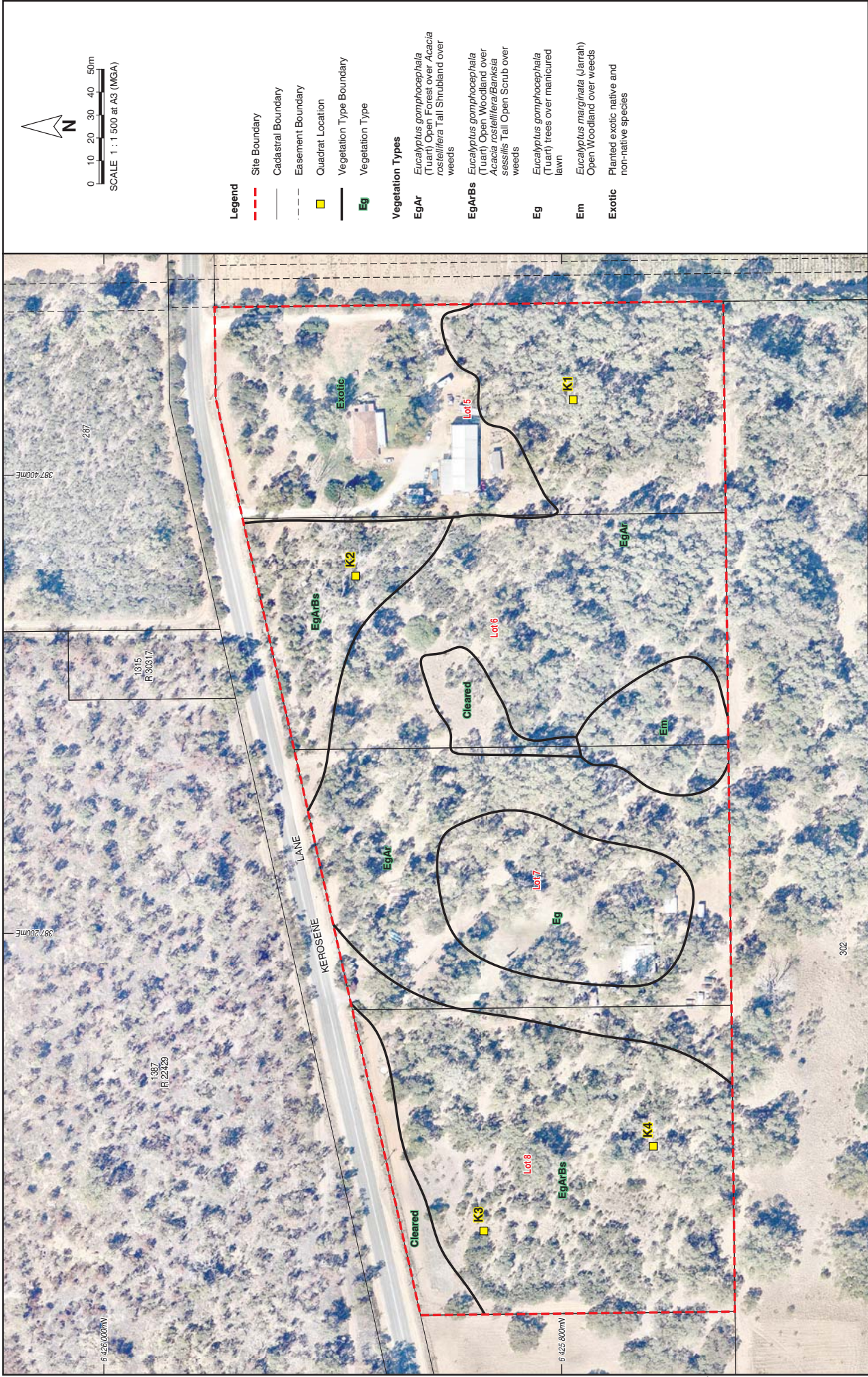
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FIGURES







PGV ENVIRONMENTAL		Terranova Pty Ltd FLOE AND VEGETATION SURVEY LOTS 5-8 KEROSENE LANE, BALDIVIS	
Drawn: P. van der Meer Job: 10224	Rpt: 2015-225	Date: 19 Oct 2015 Revision: A	VEGETATION TYPES

CADASTRAL SOURCE: Landgate, July 2015.
 AERIAL PHOTOGRAPH SOURCE: Near Map, Down March 2015.



PGV ENVIRONMENTAL	Terranova Pty Ltd FLORA AND VEGETATION SURVEY LOTS 5-8 KEROSENE LANE, BALDIVIS	
	Drawn: P. van der Meer	Date: 19 Oct 2015
	Job: 10224 Rpt. 2015-225	Revision: A
VEGETATION CONDITION		

Figure 4

Legend

- Site Boundary
- Cadastral Boundary
- Easement Boundary
- Vegetation Condition Boundary
- Vegetation Condition

Vegetation Condition
(SOURCE: Bush Forever, Govt. of W.A., 2000)

- P - Pristine**
Pristine or nearly so, no obvious signs of disturbance.
- Ex - Excellent**
Vegetation structure intact, disturbance affecting individual species and weeds are non aggressive species.
- VG - Very Good**
Vegetation structure altered, obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and grazing.
- G - Good**
Vegetation structure significantly altered by very obvious signs of multiple disturbance. Retains basic vegetation structure or ability to regenerate it. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and grazing.
- D - Degraded**
Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and grazing.
- CD - Completely Degraded**
The structure of the vegetation is no longer intact and the areas is completely or almost completely without native species. These areas are often described as 'parkland cleared' with the flora composing weed or crop species with isolated native trees or shrubs.
- CI - Cleaned**
No native vegetation remaining.

APPENDIX 1

DPaW Database Searches

Sheet	NameID	Taxon	Cons_Cod e	Plant_Desc	Site_Descr	Vegetation	Frequency	Other_Note	Locality	Geocode_ Me	Accuracy	Date
6960103	3237	Acacia benthamii	2		Low plain. Grey sand.	Open Jarrah & Tuart woodland. Allocasuarina fraseriana, Banksia attenuata, Kunzea glabrescens, Hibbertia hypericoides.	ca 20 plants.		Lot 203, Stock Road, Stake Hill	GPS	1	31/03/2005 0:00
4080696	14932	Acacia lasiocarpa var. bracteolata long peduncle variant (G.J. Keighery 5026)	1	Erect slender shrub to 1.5 m. Flowers yellow, in full flower.	Grey sand over clay.	Eucalyptus calophylla woodland.		Abundance: scattered in area.	Lowlands; Serpentine River	MAN	0	13/08/1992 0:00
4095251	141	Aponogeton hexatepalus	4	Aquatic bulbous herb 15 cm high.	Seasonal wetland on Pinjarra Plain. Red loam.	Open Melaleuca viminea scrub over Leptocarpus coangustatus dense low sedges.	common.		Bushland remnant W of junction of Mundijong and Duckpond roads (plot duck- 3)	GPS	1	7/08/1992 0:00
7332025	16633	Boronia juncea subsp. juncea	1	Shrub to 1 m high x 0.5 m wide. Pink and purple flowers.	Gentle slope with a north brown sandy loam and sub surface soil is dark brown sandy loam. Drainage is poor and wet during winter and spring only with soil being waterlogged at present.	Melaleuca preissiana, M. raphiophylla low open woodland over Astartea scoparia closed heath over Centella asiatica herbland. Excellent to pristine vegetation condition with some weed species affecting the herb layer.	a couple.		Braddock Road, Wellard	GPS	1	2/12/2005 0:00
7332149	16245	Cyathochaeta teretifolia	3	Tufted sedge with height of 1.5 m and width of 1 m.	Gentle slope with a north brown sandy loam and sub surface soil is dark brown sandy loam. Drainage is poor and wet during winter and spring only with soil being waterlogged at present.	Melaleuca preissiana, M. raphiophylla low open woodland over Astartea scoparia closed heath over Centella asiatica herbland. Excellent to pristine vegetation condition with some weed species affecting the herb layer.	locally common.	Outside quadrat.	Braddock Road, Wellard	GPS	1	2/12/2005 0:00
7858736	16245	Cyathochaeta teretifolia	3		Black peat.	Melaleuca preissiana, Eucalyptus rudis subsp. rudis, Pteridium esculentum			Lot 100, Treeby Rd, Ankerell	GPS	0	24/10/2007 0:00
4981588	12938	Diuris micrantha	T						Medina	AUTO	3	24/09/1984 0:00
1157647	4763	Dodonaea hackettiana	4	Erect shrub, ca 1.5 m high. Perennial, erect shrub, 4 m high x 3 m wide. Orange flowers. Reproductive	Level, but disturbed sand. Plain. Reserve. Lake upland. Beeliar Regional Park. Grey dry sand. Soil disturbed 20 years ago.		rare.	Population structure: 50% in bud, 100% flowering. With many alien	The Spectacles, near Medina	MAN	4	22/04/1986 0:00
7104588	4763	Dodonaea hackettiana	4			Tall trees with Eucalyptus rudis and paperbarks.	6-20 plants in 10 m x 10 m area.		About 40 m S of Osprey Drive and Just E of the drain going under Osprey Drive (which is W of Parkes Road); Yangebup	GPS	1	16/10/2003 0:00

Sheet	NameID	Taxon	Cons_Cod e	Plant_Desc	Site_Descr	Vegetation	Frequency	Other_Note	Locality	Geocode_ Me	Accuracy	Date
6097774	4763	Dodonaea hackettiana	4	Slender tall shrub 4/5 m high. In fruit.	Dune, grey sand.	Acacia rostellifera tall shrubland over Melaleuca systena.	scattered.		Woodman Point Nature Reserve, Coogee	GPS	1	28/10/2001 0:00
5437784	4027	Jacksonia sericea	4	Prostrate shrub 10 cm high, 2 m wide; sterile, only a few spiny branchlets.	Limestone ridge, brown orange sand with outcropping limestone over Tamala limestone.	Mixed Low Heath C of Grevillea preissii, Rhagodia baccata and Melaleuca acerosa.	locally abundant.		Lot 4 Mandurah Road, Singleton (Bushplan Site 395)	GPS	1	30/06/1999 0:00
5437768	4027	Jacksonia sericea	4	Prostrate shrub 10 cm high, 2 m wide; old fruit; reflexed peduncles, no spiny branchlets; could be	Limestone ridge, brown- orange sand with outcropping limestone over Tamala limestone.	Mixed Low Heath C of Grevillea preissii, Rhagodia baccata and Melaleuca acerosa.	locally abundant.		Lot 4 Mandurah Road, Singleton (Bushplan Site 395)	GPS	1	30/06/1999 0:00
6511570	4027	Jacksonia sericea	4	Prostrate shrub, buds and orange flowers.					Bushland area in pasture N of Madora Road. c. 1 km E of Fremantle Road	TOPO	2	1/12/1995 0:00
3464008	20348	Sphaerolobium calicicola	3	Erect multi- stemmed shrub 20- 30 cm tall. In full flower. Flowers	Tall dunes, grey-white sand over white sand.	Low open heath of Jacksonia/Olearia axillaris and Acacia lasiocarpa.	rare in area.		Lake Walyunup, Rockingham	MAN	0	23/10/1993 0:00
7746865	17850	Stylidium ireneae	4						Kwinana	UNK	3	2/12/2004 0:00
4555708	7756	Stylidium longitubum	3	Delicate annual herb.	Soil: Brown sand. Topography/drainage: Seasonally wet poorly drained flat. Geomorphology: Swamp deposits - holocene.	Vegetation: Melaleuca raphiophylla Low Forest B over exotic Very Open Low Grass over Lotus suaveolens, Stylidium longitubum Herbs over Lepidosperma longitudinale Tall Sedges.			Remnant bushland near Hymus Swamp in SW corner of Lowlands property (M105), 11 km WNW of Serpentine (plot hymus05).	GPS	1	6/11/1993 0:00
4622316	28354	Synaphea sp. Serpentine (G.R. Brand 103)	T	Low shrub 20 cm high x 50 cm wide, flowers yellow.	Pinjarra Plain, sumpland. Red brown loam.	Marri Woodland with Eucalyptus calophylla, Phyllanthus calycinus, Mesomelaena tetragona.			Bushland at intersection Duckpond and Mundijong Roads	MAN	0	15/08/1991 0:00

PopId	NameId	Taxon	ConsStatu	WARank	PopNumb	SubPopCo	Location	District	Vesting	Purpose1	Purpose2	CountDate	Method	MatureCo	JuvenileC	SeedlingC	LiveTotal	PlantType	AreaOccu	inFlower	Populatio
92886	14932	Acacia lasiocarpa var. bracteolata long peduncle variant(G.J.Keighery 5026)	1	4	4		Lowlands; Serpentine River.	PERTH HILLS	UNKNOWN			13/08/1992 0:00		0		0	0			Y	
84412	141	Aponogeton hexatelpus	4	7	7		ca 250m WNW of Mundijong Rd & Duckpond Rd Inc.	SWAN COASTAL	UNKNOWN			10/08/1992 0:00	ESTMT	150		150				Y	
84399	141	Aponogeton hexatelpus	4	22	22		ca 600m S of Orton Rd on Johnson Rd. W side. W side of swamp, almost adj drain on E side.	SWAN COASTAL	NON	UCL		16/09/1993 0:00	ESTMT	0		100				N	
84405	141	Aponogeton hexatelpus	4	28	28		PRI Lot 200. Duckpond reserve, cnr Duckpond Rd & Mundajong Rd, Peel Estate. West of Johnson Road, 200m west and then 120m south of intersection (roundabout) of Holden Close (extension of Orton Road). Opposite Johnson Rd and Orton Rd intersection.	SWAN COASTAL	PRI			5/11/1997 0:00		0		0	0			N	
84970	1596	Caladenia huegelii	T	CR	9		Lowlands farm. ca 1km SW of shed. Private Property. No. 52 Braddock Rd, Wellard (in possible wetland ca.360m N-NNE of Braddock-Levington Rd intersection - EXTRAPOLATED). Kwinana	SWAN COASTAL	RDL	UCL		1/10/2004 0:00		0		0	0			N	
84937	1596	Caladenia huegelii	T	CR	24		Lowlands farm. ca 1km SW of shed. Private Property. No. 52 Braddock Rd, Wellard (in possible wetland ca.360m N-NNE of Braddock-Levington Rd intersection - EXTRAPOLATED). Kwinana	SWAN COASTAL	PRI			28/07/1991 0:00	ESTMT	7	5	7				N	
93210	16245	Cyathochaeta teretifolia	3	25	25		Seasonal wetland adjoining Hymus Swamp. Ca 2 km N of Karnup Rd, at approx 1 km W of the junction with Yangetti Rd.	SWAN COASTAL	PRI			15/06/1994 0:00		0		0	0			N	
101444	12938	Diuris micrantha	T	VU	1	A	UCL, Lot 9206. Johnson Road, Bertram. Population occurs within swamp on western side of Johnson Road approximately 630m south of Holden and Johnson intersection, and approximately 70m west of eastern boundary fence	SWAN COASTAL	NON	UCL		20/09/2010 0:00	ACT_IND	6		0	0	PLANTS	3.75	Y	HEALTHY
101445	12938	Diuris micrantha	T	VU	1	B	UCL. Ca 600m S of Orton Rd on Johnson Rd. W side. On W side of drain (previously known as Lot 1201, State Housing Commission).	SWAN COASTAL	NON	UCL		24/09/2002 0:00		0		0	0			N	
87256	4763	Dodonaea hackettiana	4	15	15		Near the Spectacles, Peel Estate. W side of Johnson Rd, 1 km N of Thomas Rd.	SWAN COASTAL	PRI			5/01/1987 0:00	ESTMT	3		3				N	
87261	4763	Dodonaea hackettiana	4	20	20		PRI Lot 88. Woodman Point Nature Reserve, Googee.	SWAN COASTAL	PRI			28/10/2001 0:00		0		0				N	
87263	4763	Dodonaea hackettiana	4	22	22		NON Lot 459. About 40m S of Ospery Drv & just E of the drain going under Ospery Drv (which is W of Parkes Rd); Yangebup. Beellar Regional Park.	SWAN COASTAL	NON	UCL		16/10/2003 0:00	UNKNOWN	12		12				Y	
85073	1639	Drakaea elastica	T	CR	30		Private property, Lot 2 Lowlands Rd, Mardella (Lowlands Farm). S from Wilkinson Road/Serpentine River junction. Within 'Hymus Swamp' along the 'Dampier to Bunbury Natural Gas Pipeline Corridor'. Both sides of gas pipeline.	SWAN COASTAL	PRI			29/09/2005 0:00	ACT_IND	54		54				N	
89296	7756	Stylidium longitubum	3	14	14		PRI Lot 2. Remnant bushland near Hymus Swamp in SW cnr of lowlands property (M105), 11km WNW of Serpentine (plot hymus05).	SWAN COASTAL	PRI			6/11/1993 0:00		0		0				N	
89306	7756	Stylidium longitubum	3	23	23		PRI Lot 305. Braddock Rd, Wellard.	SWAN COASTAL	PRI			17/11/1995 0:00		0		0				N	

Taxon	Status	Rank	IUCNCriteria	EPBC	DPaWRegion	DPaWDistrict	Distribution	FloweringPeriod	RecoveryPlan
<i>Aponogeton hexatepalus</i>	4				SWAN,SWST	SWAN COASTAL,PERTH HILLS,WELLINGTON,BLACKWOOD	Perth, Pinjarra, Capel, Bunbury, Boyanup, Nannup, Bertram, Mundijong	Aug-Sep	
<i>Boronia juncea</i> subsp. <i>juncea</i>	1				SWAN,SWST	SWAN COASTAL,BLACKWOOD	Myalup, Wellard	Apr	
<i>Cyathochaeta teretifolia</i>	3				SWAN,WARR	FRANKLAND,SWAN COASTAL	Whiteman Park, Lake Gnangara, Ellenbrook, Muchea, Denbarker, Yelverton, Wellard, Mundijong	Dec	
<i>Dillwynia dillwynioides</i>	3				SWAN	SWAN COASTAL	Harvey, Pinjarrah, Yunderup, Gingin, Perth, Karnup, Mundijong, Serpentine	Aug-Oct	
<i>Diuris micrantha</i>	T	VU	D1	VU	SWAN,SWST	SWAN COASTAL,PERTH HILLS,WELLINGTON	Medina, Yarloop, Yunderup, Manjimup, Bowelling, Meelon, Bertram	Aug-Oct	
<i>Dodonaea hackettiana</i>	4				SWAN	SWAN COASTAL	Wattleup, Thompson Lake, Kings Park, Jandakot, Bibra Lake-The Spectacles, Gingin, Peron, Baldvis, Beeliar, Baldvis, Harry Waring Marsupial Reserve	Jul-Oct	
<i>Pimelea calcicola</i>	3				SWAN	SWAN COASTAL	Yanchep N.P., Burns Beach, Yalgorup N.P., Rockingham, Henderson, Beaconsfield	Sep-Nov	
<i>Schoenus capillifolius</i>	3				SWAN,SWST,WHTB	GREAT SOUTHERN,CENTRAL WHEATBELT,SWAN COASTAL,PERTH HILLS,WELLINGTON	Upper Swan, Kenwick, Waterloo, Beauford River, Beverley, Goomalling, Carousel Swamp, Pearce, Waroona, Karnup, Baldvis	Sep-Nov	
<i>Sphaerolobium calcicola</i>	3				SCST,SWAN	ALBANY,SWAN COASTAL	Yalgorup, Yanchep, Safety Bay, Myalup, Denmark	Jun/Sep-Nov	
<i>Stylidium ireneae</i>	4				SWAN,SWST	SWAN COASTAL,WELLINGTON,BLACKWOOD	Waroona, Lane Poole, Serpentine Dam, North Dandalup, Augusta, Kwinana	Oct-Nov	
<i>Stylidium longitubum</i>	3				SWAN,SWST,WHTB	GREAT SOUTHERN,SWAN COASTAL,WELLINGTON,BLACKWOOD	Upper Swan, Bullsbrook, Bunbury, Midland, Busseton, Arthur River, Jandakot, Mundijong, Karnup	Nov	
<i>Thelymitra stellata</i>	T	EN	D; C2a	EN	MWST,SWAN,WHTB	MOORA,GREAT SOUTHERN,PERTH HILLS	Perth-Three Springs, Pinjarra, Dumbleyung, Corrigin, Bungendore Park, Unnamed Shire Reserve 34155, Hartfield Rd, Mt Peron, Jurien Bay, Mt Lesueur NP, Arthur River, Coomallo NR, Julimar, Chittering, Amadale	Oct-Nov	
<i>Thelymitra variegata</i>	3				SCST,SWAN,SWST,WARR,WHTB	FRANKLAND,ALBANY,GREAT SOUTHERN,SWAN COASTAL,BLACKWOOD	Baldvis, Capel, Albany, Hyden, Mt Lindesay	Aug-Sep	
<i>Tribonanthes purpurea</i>	T	VU	C2a(i)	VU	SCST,SWAN,WHTB	ALBANY,GREAT SOUTHERN,PERTH HILLS	Pingaring, Hillman T/S, Mt Dale, Albany	Aug	

OCC_UNIQUE	COM_ID	COM_NAME	CT_DESC	S_ID_COUNT	FIRST_S_ID	LAST_S_ID	BUFFER	OCC_CONFID	BDY_ID
591	SCP19b	Woodlands over sedgeland in Holocene dune swales of the southern Swan Coastal Plain (original description; Gibson et al. (1994).	Critically Endangered	5	IP14-07	MYIP14-13	2000	No	334
596	SCP19b	Woodlands over sedgeland in Holocene dune swales of the southern Swan Coastal Plain (original description; Gibson et al. (1994).	Critically Endangered	1	IP14-08		2000	No	335
942	SCP19b	Woodlands over sedgeland in Holocene dune swales of the southern Swan Coastal Plain (original description; Gibson et al. (1994).	Critically Endangered	1	IP14-01		2000	No	339
598	SCP19b	Woodlands over sedgeland in Holocene dune swales of the southern Swan Coastal Plain (original description; Gibson et al. (1994).	Critically Endangered	1	IP14-03		2000	No	340
1908	SCP19b	Woodlands over sedgeland in Holocene dune swales of the southern Swan Coastal Plain (original description; Gibson et al. (1994).	Critically Endangered	1	IP14-04		2000	No	341
889	SCP19b	Woodlands over sedgeland in Holocene dune swales of the southern Swan Coastal Plain (original description; Gibson et al. (1994).	Critically Endangered	5	IP14-09CENTRE	IP14-PLOT3	2000	No	342
888	SCP19b	Woodlands over sedgeland in Holocene dune swales of the southern Swan Coastal Plain (original description; Gibson et al. (1994).	Critically Endangered	2	IP14-10NORTH	IP14-10SOUTH	2000	No	343
594	SCP19b	Woodlands over sedgeland in Holocene dune swales of the southern Swan Coastal Plain (original description; Gibson et al. (1994).	Critically Endangered	1	IP14-02		2000	No	344
593	SCP19b	Woodlands over sedgeland in Holocene dune swales of the southern Swan Coastal Plain (original description; Gibson et al. (1994).	Critically Endangered	3	IP14 PLOT1	IP14-06	2000	No	346
605	SCP19b	Woodlands over sedgeland in Holocene dune swales of the southern Swan Coastal Plain (original description; Gibson et al. (1994).	Critically Endangered	1	COOL15		2000	No	348
603	SCP19b	Woodlands over sedgeland in Holocene dune swales of the southern Swan Coastal Plain (original description; Gibson et al. (1994).	Critically Endangered	1	COOL14		2000	No	349
606	SCP19a	Sedgeland in Holocene dune swales of the southern Swan Coastal Plain	Critically Endangered	1	MYCOOL01		2000	No	360
640	SCP19a	Sedgeland in Holocene dune swales of the southern Swan Coastal Plain	Critically Endangered	1	Walyungup01		2000	No	361

OCC_UNIQUE	COM_ID	COM_NAME	CT_DESC	S_ID_COUNT	FIRST_S_ID	LAST_S_ID	BUFFER	OCC_CONFID	BDY_ID
919	SCP19b	Woodlands over sedgeland in Holocene dune swales of the southern Swan Coastal Plain (original description; Gibson et al. (1994).	Critically Endangered	1	Walyungup02		2000	No	362
26	SCP19b	Woodlands over sedgeland in Holocene dune swales of the southern Swan Coastal Plain (original description; Gibson et al. (1994).	Critically Endangered	1	COOL09		2000	No	363
920	SCP19b	Woodlands over sedgeland in Holocene dune swales of the southern Swan Coastal Plain (original description; Gibson et al. (1994).	Critically Endangered	1	Walyungup03		2000	No	364
922	SCP19b	Woodlands over sedgeland in Holocene dune swales of the southern Swan Coastal Plain (original description; Gibson et al. (1994).	Critically Endangered	2	Walyungup04	Walyungup05	2000	No	365
1949	SCP19a	Sedgeland in Holocene dune swales of the southern Swan Coastal Plain	Critically Endangered	1	Walyungup06		2000	No	608
1950	SCP19b	Woodlands over sedgeland in Holocene dune swales of the southern Swan Coastal Plain (original description; Gibson et al. (1994).	Critically Endangered	1	Walyungup07		2000	No	609
1951	SCP19b	Woodlands over sedgeland in Holocene dune swales of the southern Swan Coastal Plain (original description; Gibson et al. (1994).	Critically Endangered	1	Walyungup08		2000	No	610
2641	SCP24	Northern Spearwood shrublands and woodlands	Priority 3	2	KERO01	KERO02	500	No	1487
2652	SCP24	Northern Spearwood shrublands and woodlands	Priority 3	1	COOL08		500	No	1490
2653	SCP24	Northern Spearwood shrublands and woodlands	Priority 3	2	COOL02	COOL03	500	No	1491
4332	Walyungup Microbial	Microbial community of a coastal saline lake (Lake Walyungup)	Priority 1	6	Walyungup05	WalyungupSite03	2000	No	2611
4424	SCP25	Southern Eucalyptus gomphocephala-Agonis flexuosa woodlands	Priority 3	1	Ieda01		500	No	0
3119	SCP25	Southern Eucalyptus gomphocephala-Agonis flexuosa woodlands	Priority 3	1	SEW5		200	No	0

APPENDIX 2

Species List

SPECIES LIST – Lot 5-8 Kerosene Lane, Baldivis

* = Introduced species

GYMNOSPERMS

CYCADACEAE

Macrozamia fraseri

MONOCOTYLEDONS

ASPARAGACEAE

Acanthocarpus preissii

**Asparagus asparagoides*

Dichopogon capillipes

Sowerbaea laxiflora

Thysanotus patersonii

ASPHODELACEAE

**Trachyandra divaricata*

COLCHICACEAE

Burchardia congesta

CYPERACEAE

Lepidosperma leptostachyum

Lepidosperma pubisquameum

HAEMODORACEAE

Conostylis aculeata

Conostylis candicans

HEMEROCALLIDACEAE

Dianella revoluta var. *divaricata*

Tricoryne elatior

ORCHIDACEAE

Caladenia latifolia

POACEAE

**Avena fatua*

**Briza maxima*

**Bromus diandrus*

**Ehrharta calycina*

**Ehrharta longiflora*

**Eragrostis curvula*

**Lolium perenne*

RESTIONACEAE

Desmocladus flexuosus

DICOTYLEDONS

ANACARDIACEAE

**Schinus terebinthifolius*

APIACEAE

Trachymene pilosa

APOCYNACEAE

**Gomphocarpus fruticosus*

ASTERACEAE

**Hypochaeris glabra*

**Taraxacum officinale*

**Ursinia anthemoides*

BRASSICACEAE

**Brassica tournefortii*

CARYOPHYLLACEAE

**Cerastium glomeratum*

CASUARINACEAE

Allocasuarina fraseriana

Allocasuarina humilis

DILLENIACEAE

Hibbertia hypericoides

EUPHORBIACEAE

**Euphorbia peplus*

**Euphorbia terracina*

FABACEAE

**Acacia iteaphylla*
Acacia pulchella
Acacia rostellifera
**Chamaecytisus palmensis*
Daviesia divaricata
Gompholobium tomentosum
Hardenbergia comptoniana
Jacksonia furcellata
Kennedia prostrata
**Lupinus cosentinii*
Templetonia retusa

GERANIACEAE

**Geranium molle*
**Pelargonium capitatum*

MYRTACEAE

Calothamnus quadrifidus (possibly planted)
Eucalyptus gomphocephala
Eucalyptus marginata

OXALIDACEAE

**Oxalis corniculata*
**Oxalis pes-caprae*

PAPAVERACEAE

**Fumaria capreolata*

PHYLLANTHACEAE

Phyllanthus calycinus

PRIMULACEAE

**Lysimachia arvensis*

PROTEACEAE

Banksia sessilis
Hakea lissocarpha

RANUNCULACEAE

Clematis linearifolia

RHAMNACEAE

Cryptandra mutila

SCROPHULARIACEAE

**Verbascum virgatum*

SOLANACEAE

Solanum nigrum

VALERIANACEAE

**Centranthus macrosiphon*

VERBENACEAE

**Lantana camara*

APPENDIX 3

Quadrat Data

QUADRAT K1

50 387433 E 6425795 N

Vegetation: *Eucalyptus gomphocephala* (Tuart) Open Forest over *Acacia rostellifera* Tall Shrubland over weeds
Condition: Completely Degraded
Soil Type: Brown loamy sand
Landform: Flat



QUADRAT (10 x 10m)

SPECIES	HEIGHT (m)	COVER (%)
<i>Eucalyptus gomphocephala</i>	15	40
<i>Acacia rostellifera</i>	4	10
* <i>Fumaria capreolata</i>	0.5	<1
<i>Dianella revoluta</i> var. <i>divaricata</i>	0.4	<1
<i>Caladenia latifolia</i>	0.4	<1
* <i>Ehrharta calycina</i>	0.3	80
* <i>Briza maxima</i>	0.3	2
<i>Macrozamia fraseri</i>	0.3	<1
* <i>Euphorbia peplus</i>	0.2	5
<i>Clematis linearifolia</i>	Climber	10
<i>Hardenbergia comptoniana</i>	Climber	5
<i>Arthropodium capillipes</i>	dormant	<1

* introduced species

QUADRAT K2

50 387356 E 6425890 N

Vegetation: *Eucalyptus gomphocephala* (Tuart) Open Woodland over *Acacia rostellifera*/*Banksia sessilis* Tall Open Scrub over weeds
Condition: Completely Degraded
Soil Type: Orange-brown loamy sand, shallow limestone
Landform: top of small rise



QUADRAT (10 x 10m)

SPECIES	HEIGHT (m)	COVER (%)
<i>Eucalyptus gomphocephala</i>	10	5
<i>Acacia rostellifera</i>	4	30
<i>Banksia sessilis</i>	4	25
<i>Jacksonia furcellata</i>	1.4	1
<i>Acacia pulchella</i>	1	<1
* <i>Ehrharta longiflora</i>	0.7	70
<i>Cryptandra mutila</i>	0.6	<1
<i>Dianella revoluta</i> var. <i>divaricata</i>	0.6	<1
* <i>Lantana camara</i>	0.4	<1
* <i>Euphorbia terracina</i>	0.3	1
* <i>Centranthus macrosiphon</i>	0.2	20
* <i>Fumaria capreolata</i>	0.2	2
* <i>Euphorbia peplus</i>	0.2	2
* <i>Lupinus cosentinii</i>	0.1	<1
<i>Hardenbergia comptoniana</i>	climber	1

* introduced species

QUADRAT K3

50 387070 E 6425834 N

Vegetation: *Eucalyptus gomphocephala* (Tuart) Open Woodland over *Acacia rostellifera*/*Banksia sessilis* Tall Open Scrub over weeds
Condition: Completely Degraded
Soil Type: Orange/brown loamy sand, shallow limestone
Landform: sloping gently up to the north



Quadrat (10 x 10m)

SPECIES	HEIGHT (m)	COVER (%)
<i>Acacia rostellifera</i>	3	25
<i>Banksia sessilis</i>	3	25
<i>Acacia pulchella</i>	1	2
* <i>Ehrharta longiflora</i>	0.8	75
<i>Macrozamia fraseri</i>	0.6	<1
* <i>Euphorbia terracina</i>	0.5	1
* <i>Lupinus cosentinii</i>	0.5	<1
* <i>Pelargonium capitatum</i>	0.3	<1
* <i>Oxalis pes-caprae</i>	0.2	60

* introduced species

QUADRAT K4

50 387107 E 6425760 N

Vegetation: *Eucalyptus gomphocephala* (Tuart) Woodland over *Banksia sessilis*/*Jacksonia furcellata* Tall Shrubland over weeds
Condition: Degraded
Soil Type: Orange/brown loamy sand
Landform: Lower slope



Quadrat (10 x 10m)

SPECIES	HEIGHT (m)	COVER (%)
<i>Eucalyptus gomphocephala</i>	12	15
<i>Banksia sessilis</i>	4	10
<i>Jacksonia furcellata</i>	3.5	15
<i>Macrozamia fraseri</i>	1.2	1
* <i>Ehrharta longiflora</i>	1	60
<i>Gompholobium tomentosum</i>	0.5	<1
<i>Dianella revoluta</i> var. <i>divaricata</i>	0.5	<1
<i>Sowerbaea laxiflora</i>	0.4	1
* <i>Euphorbia terracina</i>	0.4	1
<i>Acacia pulchella</i>	0.4	<1
* <i>Ehrharta calycina</i>	0.3	5
* <i>Euphorbia peplus</i>	0.3	4
<i>Caladenia latifolia</i>	0.3	<1
* <i>Trachyandra divaricata</i>	0.3	<1
* <i>Briza maxima</i>	0.3	<1
* <i>Lysimachia arvensis</i>	0.2	1
<i>Trachymene pilosa</i>	0.1	<1

<i>*Hypochaeris glabra</i>	Flat	<1
<i>Hardenbergia comptoniana</i>	Climber	2
<i>Clematis linearifolia</i>	Climber	2

* introduced species