

Map 8D: Western Ringtail Possum Habitat and Fauna Observations, Albany Ring Road.

Map produced by Damien Rathbone on 20/01/2020.
 Report Reference: Rathbone, DA & Gilfillan, S (2020). Biological Survey: Albany Ring Road.
 Unpublished report by Southern Ecology for Main Roads Western Australia (SE1810).
 Map Projection: Transverse Mercator Horizontal Datum GDA 1994
 Grid: MGA Zone 50 Map Size: A3 Scale 1:6,000



Damien Rathbone | Ecologist
 E: damien@southernecology.com.au
 W: www.southernecology.com.au
 M: 0408 802 404

Western Ringtail Possum Habitat

- Core
- Core (Urban)
- Supporting
- Linkage
- Linkage likely
- Linkage possible

Western Ringtail Possum Habitat Linkages

Fauna Observations

- Western Ringtail Possum Scats
- Western Ringtail Possum Drey
- Quenda Evidence
- Potential Brush-tail Phascogale Occupied Hollow
- Survey Area



Map 1E: Survey Effort Derived from GPS Track Logs, Albany Ring Road.

Map produced by Damien Rathbone on 20/01/2020.
 Report Reference: Rathbone, DA & Gilfillan, S (2020). Biological Survey: Albany Ring Road.
 Unpublished report by Southern Ecology for Main Roads Western Australia (SE1810).
 Map Projection: Transverse Mercator Horizontal Datum GDA 1994
 Grid: MGA Zone 50 Map Size: A3 Scale 1:6,000



Damien Rathbone | Ecologist
 E: damien@southernecology.com.au
 W: www.southernecology.com.au
 M: 0408 802 404

- Survey Effort
- Survey Area



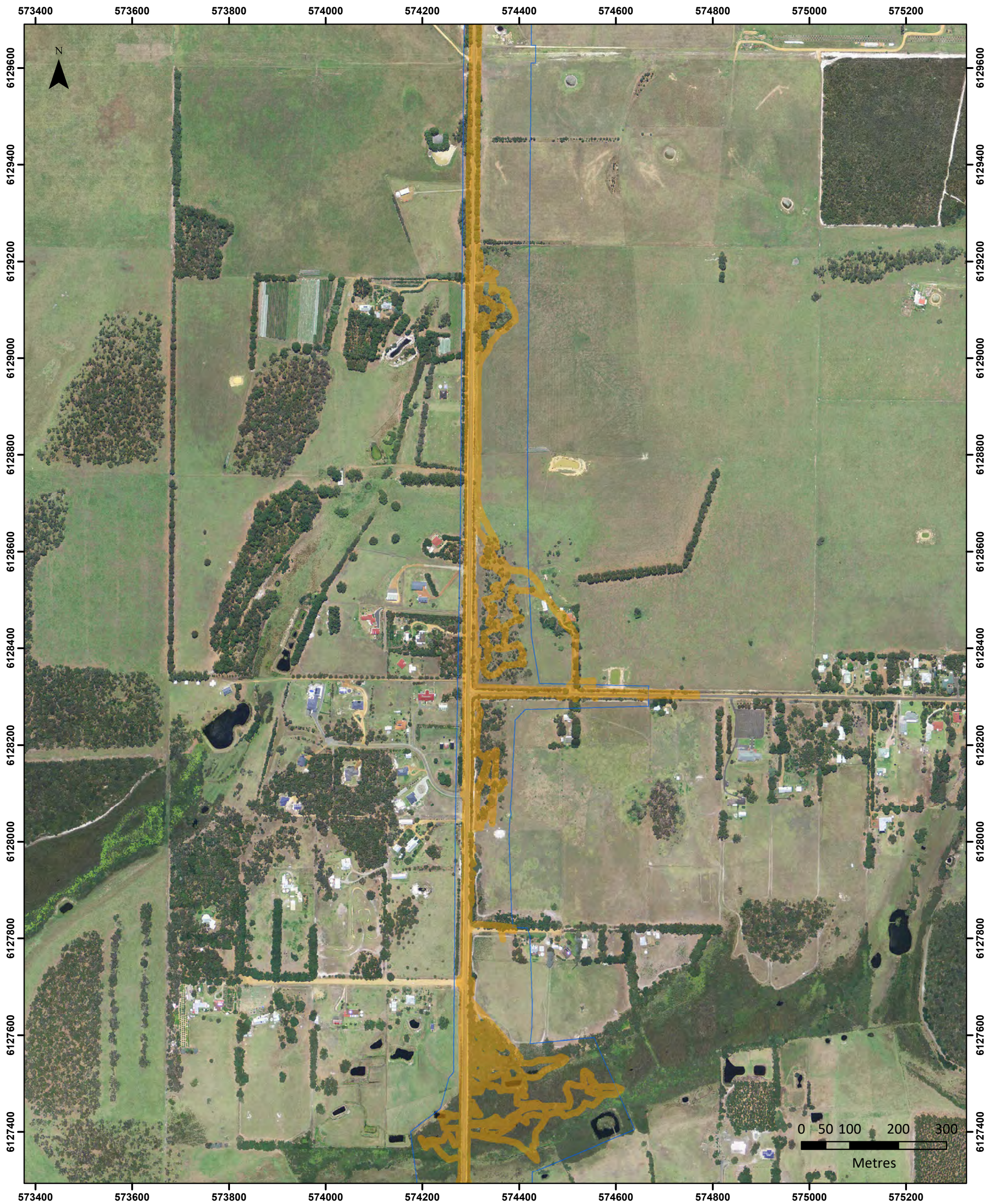
Map 2E: Survey Effort Derived from GPS Track Logs, Albany Ring Road.

Map produced by Damien Rathbone on 20/01/2020.
 Report Reference: Rathbone, DA & Gilfillan, S (2020). Biological Survey: Albany Ring Road.
 Unpublished report by Southern Ecology for Main Roads Western Australia (SE1810).
 Map Projection: Transverse Mercator Horizontal Datum GDA 1994
 Grid: MGA Zone 50 Map Size: A3 Scale 1:6,000



Damien Rathbone | Ecologist
 E: damien@southernecology.com.au
 W: www.southernecology.com.au
 M: 0408 802 404

- Survey Effort
- Survey Area



Map 3E: Survey Effort Derived from GPS Track Logs, Albany Ring Road.

Map produced by Damien Rathbone on 20/01/2020.
 Report Reference: Rathbone, DA & Gilfillan, S (2020). Biological Survey: Albany Ring Road.
 Unpublished report by Southern Ecology for Main Roads Western Australia (SE1810).
 Map Projection: Transverse Mercator Horizontal Datum GDA 1994
 Grid: MGA Zone 50 Map Size: A3 Scale 1:6,000



Damien Rathbone | Ecologist
 E: damien@southernecology.com.au
 W: www.southernecology.com.au
 M: 0408 802 404

- Survey Effort
- Survey Area



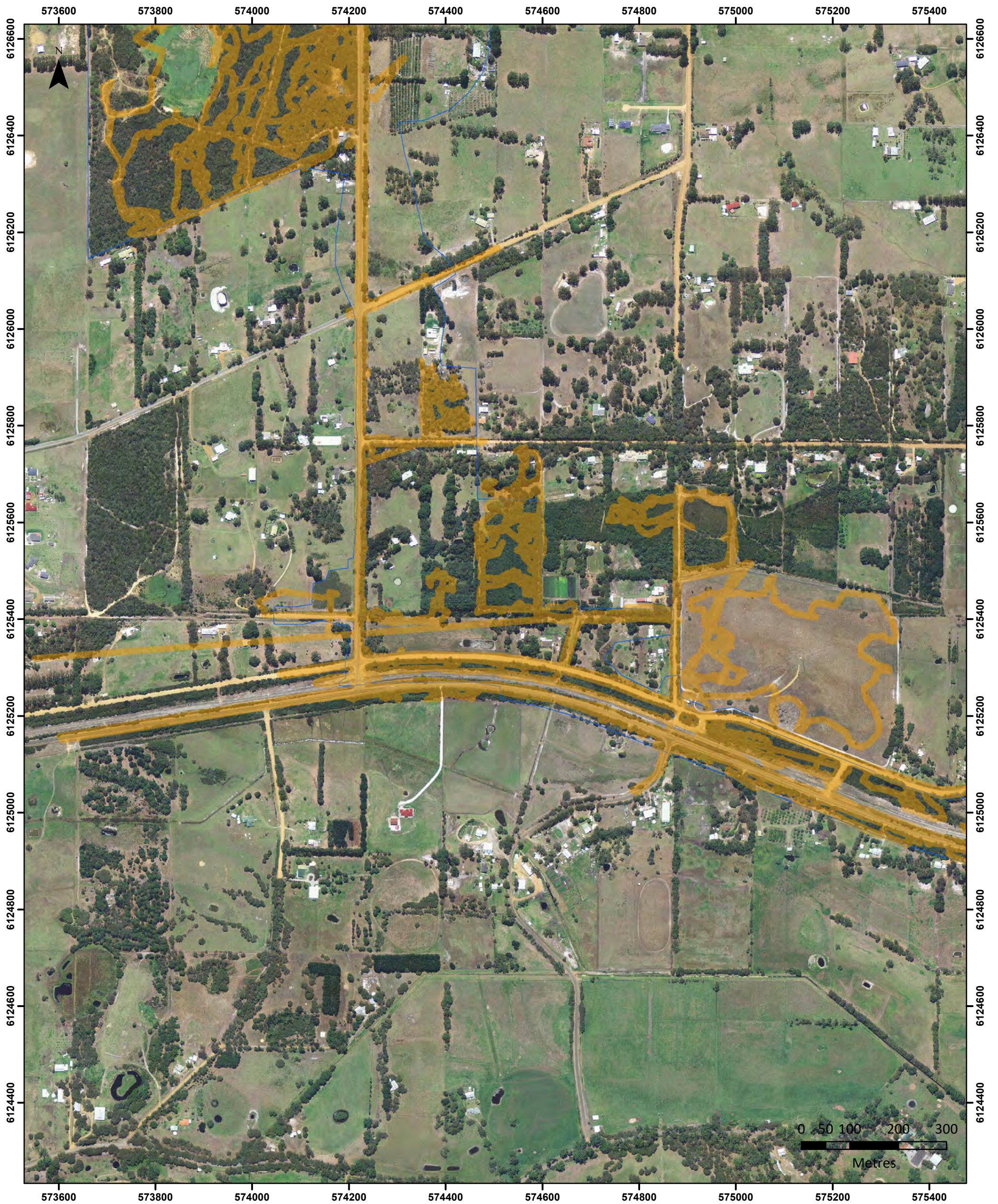
Map 4E: Survey Effort Derived from GPS Track Logs, Albany Ring Road.

Map produced by Damien Rathbone on 20/01/2020.
 Report Reference: Rathbone, DA & Gilfillan, S (2020). Biological Survey: Albany Ring Road.
 Unpublished report by Southern Ecology for Main Roads Western Australia (SE1810).
 Map Projection: Transverse Mercator Horizontal Datum GDA 1994
 Grid: MGA Zone 50 Map Size: A3 Scale 1:6,000



Damien Rathbone | Ecologist
 E: damien@southernecology.com.au
 W: www.southernecology.com.au
 M: 0408 802 404

- Survey Effort
- Survey Area



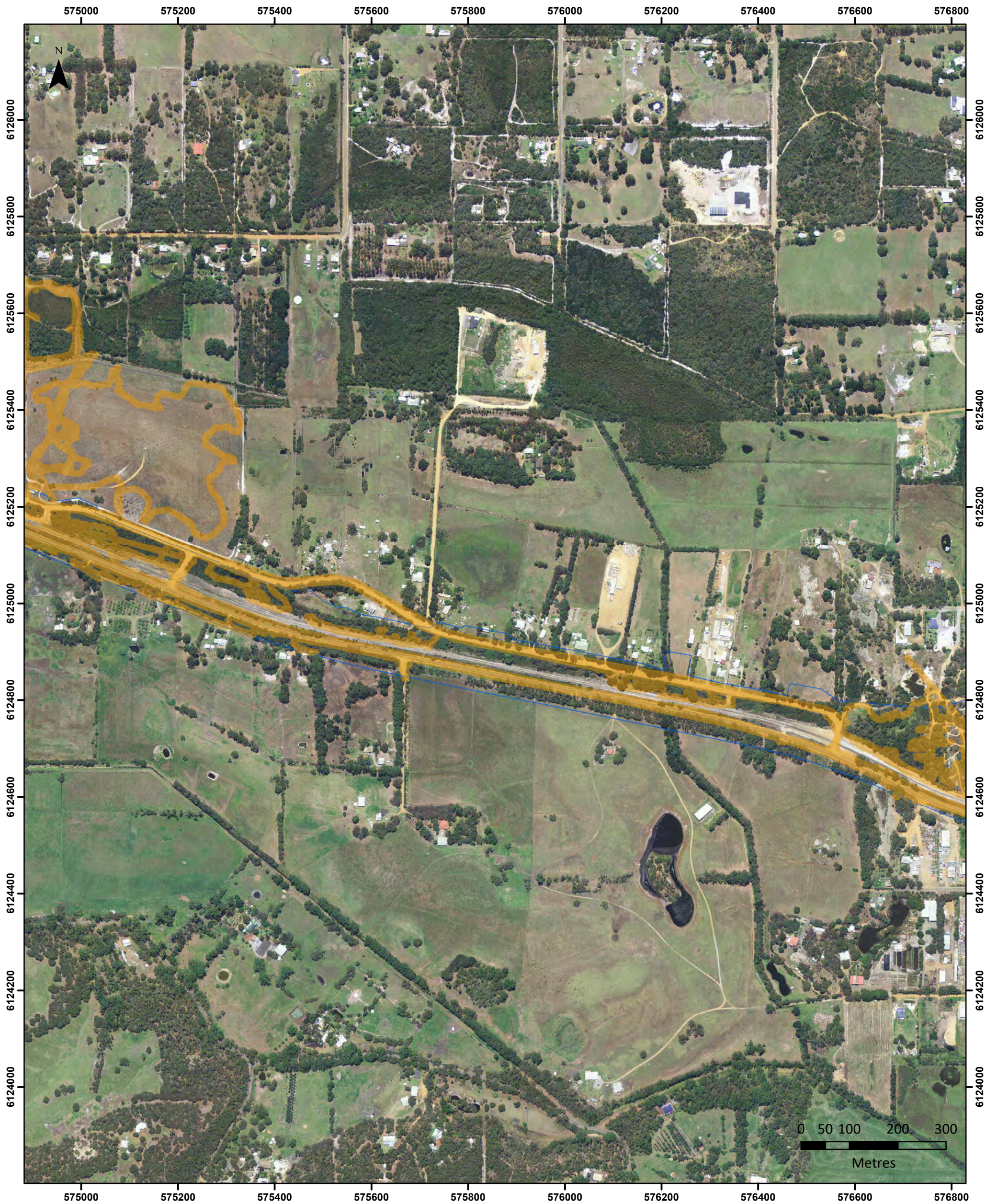
Map 5E: Survey Effort Derived from GPS Track Logs, Albany Ring Road.

Map produced by Damien Rathbone on 20/01/2020.
 Report Reference: Rathbone, DA & Gilfillan, S (2020). Biological Survey: Albany Ring Road.
 Unpublished report by Southern Ecology for Main Roads Western Australia (SE1810).
 Map Projection: Transverse Mercator Horizontal Datum GDA 1994
 Grid: MGA Zone 50 Map Size: A3 Scale 1:6,000



Damien Rathbone | Ecologist
 E: damien@southernecology.com.au
 W: www.southernecology.com.au
 M: 0408 802 404

- Survey Effort
- Survey Area



Map 6E: Survey Effort Derived from GPS Track Logs, Albany Ring Road.

Map produced by Damien Rathbone on 20/01/2020.
 Report Reference: Rathbone, DA & Gilfillan, S (2020). Biological Survey: Albany Ring Road.
 Unpublished report by Southern Ecology for Main Roads Western Australia (SE1810).
 Map Projection: Transverse Mercator Horizontal Datum GDA 1994
 Grid: MGA Zone 50 Map Size: A3 Scale 1:6,000



Damien Rathbone | Ecologist
 E: damien@southernecology.com.au
 W: www.southernecology.com.au
 M: 0408 802 404

- Survey Effort
- Survey Area



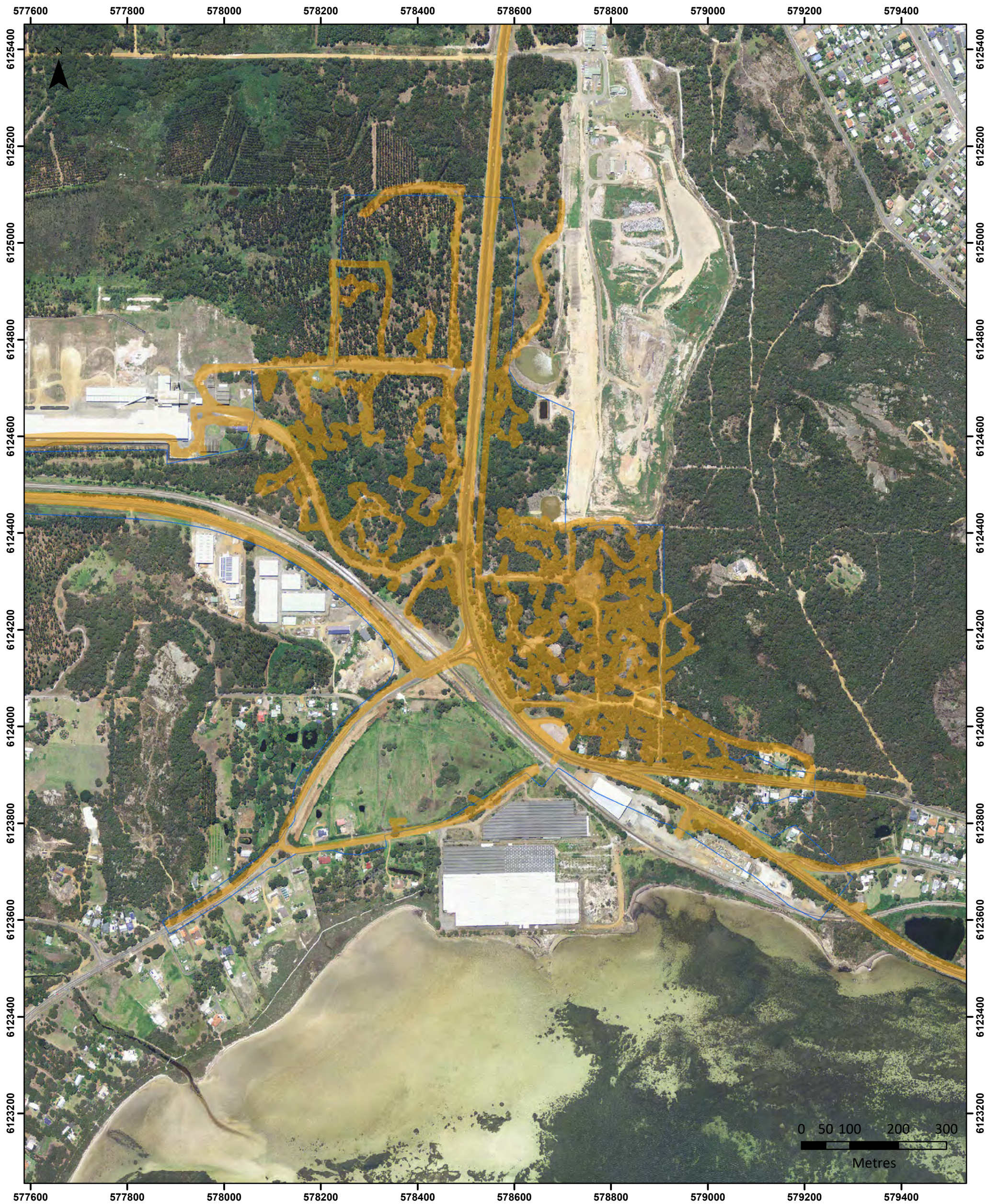
Map 7E: Survey Effort Derived from GPS Track Logs, Albany Ring Road.

Map produced by Damien Rathbone on 20/01/2020.
 Report Reference: Rathbone, DA & Gilfillan, S (2020). Biological Survey: Albany Ring Road.
 Unpublished report by Southern Ecology for Main Roads Western Australia (SE1810).
 Map Projection: Transverse Mercator Horizontal Datum GDA 1994
 Grid: MGA Zone 50 Map Size: A3 Scale 1:6,000



Damien Rathbone | Ecologist
 E: damien@southernecology.com.au
 W: www.southernecology.com.au
 M: 0408 802 404

- Survey Effort
- Survey Area



Map 8E: Survey Effort Derived from GPS Track Logs, Albany Ring Road.

Map produced by Damien Rathbone on 20/01/2020.
 Report Reference: Rathbone, DA & Gilfillan, S (2020). Biological Survey: Albany Ring Road.
 Unpublished report by Southern Ecology for Main Roads Western Australia (SE1810).
 Map Projection: Transverse Mercator Horizontal Datum GDA 1994
 Grid: MGA Zone 50 Map Size: A3 Scale 1:6,000



Damien Rathbone | Ecologist
 E: damien@southernecology.com.au
 W: www.southernecology.com.au
 M: 0408 802 404

- Survey Effort
- Survey Area

10 APPENDIX C - Plant Taxa Inventory

Table C1: Vascular plant taxa recorded opportunistically in the Survey Area. Nomenclature and status according WAH (1998-), DotEE (2017b) and DPIRD (2018). *denotes weed taxon.

Family	Taxon (Status)	Family	Taxon (Status)	
Anarthriaceae	<i>Anarthria gracilis</i>	Lepidosperma	<i>angustatum</i>	
	<i>Anarthria laevis</i>		<i>drummondii</i>	
	<i>Anarthria prolifera</i>		<i>gladiatum</i>	
	<i>Anarthria scabra</i>		<i>hopperi</i>	
	<i>Lyginia barbata</i>		<i>striatum</i>	
Apiaceae	* <i>Foeniculum vulgare</i>		<i>tenuie</i>	
	<i>Actinotus omnifertilis</i>		<i>Mesomelaena graciliceps</i>	
	<i>Centella asiatica</i>		<i>Mesomelaena tetragona</i>	
	<i>Daucus glochidiatus</i>		<i>Schoenus acuminatus</i>	
	<i>Xanthosia huegelii</i>		<i>Schoenus caespititius</i>	
	<i>Xanthosia rotundifolia</i>		<i>Schoenus cruentus</i>	
	<i>Xanthosia singuliflora</i>		<i>Schoenus multiglumis</i>	
			<i>Schoenus obtusifolius</i>	
Araceae	* <i>Zantedeschia aethiopica</i> (Declared Pest)		<i>Schoenus sp. infertile</i>	
Asparagaceae	* <i>Asparagus asparagoides</i> (WONS)		<i>Schoenus sp. striate</i>	
	* <i>Asparagus declinatus</i>		<i>Tetralia octandra</i>	
	<i>Chamaescilla corymbosa</i>		<i>Tetralia sp. Jarrah Forest</i> (R. Davis 7391)	
	<i>Lomandra micrantha</i>		<i>Tricostularia neesii</i>	
	<i>Lomandra pauciflora</i>		Dasypogonaceae	<i>Dasypogon bromeliifolius</i>
	<i>Lomandra purpurea</i>	<i>Kingia australis</i>		
	<i>Lomandra sericea</i>	Dennstaedtiaceae	<i>Histiopteris incisa</i>	
	<i>Thysanotus gracilis</i>		<i>Pteridium esculentum</i>	
	<i>Thysanotus isantherus</i> (P4)		Dilleniaceae	<i>Hibbertia cuneiformis</i>
	<i>Thysanotus multiflorus</i>			<i>Hibbertia cunninghamii</i>
	<i>Thysanotus sparteus</i>	<i>Hibbertia diamesogenos</i>		
	Asteraceae	* <i>Conyza bonariensis</i>	<i>Hibbertia furfuracea</i>	
		* <i>Sonchus oleraceus</i>	<i>Hibbertia microphylla</i>	
* <i>Taraxacum khatoonae</i>		Droseraceae	<i>Drosera erythrorhiza</i>	
<i>Lagenophora huegelii</i>			<i>Drosera glanduligera</i>	
<i>Millotia tenuifolia</i>			<i>Drosera menziesii</i>	
<i>Senecio minimus</i>			<i>Drosera pallida</i>	
Boryaceae	<i>Borya sphaerocephala</i>	<i>Drosera pulchella</i>		
Campanulaceae	<i>Lobelia anceps</i>	<i>Drosera stolonifera</i>		
	<i>Lobelia heterophylla</i>	Elaeocarpaceae	<i>Tetralia affinis</i>	
Caryophyllaceae	* <i>Petrorhagia dubia</i>		<i>Tremandra diffusa</i>	
	* <i>Sagina maritima</i>		<i>Tremandra stelligera</i>	
Casuarinaceae	<i>Allocasuarina fraseriana</i>	Ericaceae	<i>Andersonia sp. Jamesii</i> (J. Liddelow 84) (P4)	
	<i>Allocasuarina humilis</i>		<i>Andersonia sprengelioides</i>	
Centrolepidaceae	<i>Aphelia brizula</i>		<i>Astroloma pallidum</i>	
Cephalotaceae	<i>Cephalotus follicularis</i>		<i>Brachyloma baxteri</i>	
Chenopodiaceae	<i>Rhagodia preissii</i>		<i>Cosmelia rubra</i>	
Cyatheaaceae	* <i>Cyathea cooperi</i>		<i>Leucopogon assimilis</i>	
Cyperaceae	<i>Baumea acuta</i>		<i>Leucopogon australis</i>	
	<i>Baumea arthrophylla</i>		<i>Leucopogon glabellus</i>	
	<i>Baumea juncea</i>		<i>Leucopogon obovatus</i> subsp. <i>obovatus</i>	
	<i>Baumea rubiginosa</i>		<i>Leucopogon obovatus</i> subsp. <i>revolutus</i>	
	<i>Cyathochaeta avenacea</i>	<i>Leucopogon pendulus</i>		
	<i>Cyathochaeta equitans</i>	<i>Leucopogon verticillatus</i>		
	<i>Evandra aristata</i>	<i>Sphenotoma capitata</i>		
	<i>Gymnoschoenus anceps</i>	<i>Sphenotoma squarrosa</i>		
	<i>Isolepis cernua</i>	Euphorbiaceae	* <i>Ricinus communis</i>	

Family	Taxon (Status)	
Fabaceae	* <i>Acacia baileyana</i>	
	* <i>Acacia longifolia</i>	
	* <i>Acacia melanoxylon</i>	
	* <i>Acacia paradoxa</i>	
	* <i>Chamaecytisus palmensis</i>	
	* <i>Dipogon lignosus</i>	
	* <i>Ornithopus compressus</i>	
	* <i>Psoralea pinnata</i>	
	* <i>Trifolium angustifolium</i>	
	* <i>Trifolium arvense</i>	
	* <i>Ulex europaeus</i> (WONS)	
	<i>Acacia alata</i>	
	<i>Acacia browniana</i> var. <i>browniana</i>	
	<i>Acacia crassiuscula</i>	
	<i>Acacia divergens</i>	
	<i>Acacia drummondii</i>	
	<i>Acacia myrtifolia</i>	
	<i>Acacia pentadenia</i>	
	<i>Bossiaea dentata</i>	
	<i>Bossiaea linophylla</i>	
	<i>Callistachys lanceolata</i>	
	<i>Callistachys</i> sp. south-coast variant (M. Carter 180)	
	<i>Chorizema reticulatum</i>	
	<i>Gastrolobium bilobum</i>	
	<i>Gastrolobium sericeum</i>	
	<i>Gompholobium knightianum</i>	
	<i>Gompholobium polymorphum</i>	
	<i>Hardenbergia comptoniana</i>	
	<i>Hovea elliptica</i>	
	<i>Hovea trisperma</i>	
	<i>Isotropis cuneifolia</i>	
	<i>Jacksonia horrida</i>	
	<i>Paraserianthes lophantha</i>	
	<i>Pultenaea verruculosa</i>	
	<i>Sphaerolobium grandiflorum</i>	
	<i>Sphaerolobium hygrophilum</i>	
	<i>Sphaerolobium medium</i>	
	<i>Sphaerolobium vimineum</i>	
	Gentianaceae	* <i>Centaurium erythraea</i>
	Geraniaceae	* <i>Pelargonium capitatum</i>
Goodeniaceae	<i>Dampiera leptoclada</i>	
	<i>Dampiera linearis</i>	
	<i>Dampiera loranthifolia</i>	
	<i>Dampiera pedunculata</i>	
	<i>Diaspasis filifolia</i>	
	<i>Goodenia coerulea</i>	
	<i>Scaevola striata</i>	
	Haemodoraceae	<i>Anigozanthos flavidus</i>
	<i>Conostylis setigera</i>	
	<i>Haemodorum laxum</i>	
	<i>Haemodorum spicatum</i>	
Haloragaceae	<i>Gonocarpus diffusus</i>	
	<i>Trihaloragis hexandra</i> subsp. <i>hexandra</i>	

Family	Taxon (Status)	
Hemerocallidaceae	<i>Agrostocrinum hirsutum</i>	
	<i>Caesia micrantha</i>	
	<i>Dianella revoluta</i>	
	<i>Johnsonia lupulina</i>	
	<i>Stypandra glauca</i>	
	<i>Tricoryne elatior</i>	
	<i>Tricoryne humilis</i>	
Hydrocharitaceae	<i>Ottelia ovalifolia</i>	
Iridaceae	* <i>Freesia alba</i> x <i>leichtlinii</i>	
	* <i>Gladiolus undulatus</i>	
	* <i>Moraea setifolia</i>	
	* <i>Romulea rosea</i>	
	* <i>Watsonia meriana</i> var. <i>bulbillifera</i>	
	<i>Patersonia limbata</i>	
	<i>Patersonia occidentalis</i>	
	<i>Patersonia umbrosa</i> var. <i>umbrosa</i>	
	Juncaceae	* <i>Juncus articulatus</i>
		* <i>Juncus capitatus</i>
	<i>Juncus caespiticus</i>	
	<i>Juncus pallidus</i>	
	<i>Juncus planifolius</i>	
	<i>Luzula meridionalis</i>	
Lauraceae	<i>Cassytha racemosa</i>	
Lentibulariaceae	<i>Utricularia multifida</i>	
Lindsaeaceae	<i>Lindsaea linearis</i>	
Loganiaceae	<i>Orianthera serpyllifolia</i> subsp. <i>serpyllifolia</i>	
Loranthaceae	<i>Nuytsia floribunda</i>	
Lythraceae	* <i>Lythrum hyssopifolia</i>	
Malvaceae	<i>Thomasia angustifolia</i>	
	<i>Thomasia purpurea</i>	
Myrtaceae	* <i>Eucalyptus botryoides</i>	
	* <i>Eucalyptus cladocalyx</i>	
	* <i>Eucalyptus globulus</i>	
	* <i>Eucalyptus robusta</i>	
	* <i>Leptospermum laevigatum</i>	
	<i>Agonis flexuosa</i>	
	<i>Agonis theiformis</i>	
	<i>Astartea corniculata</i>	
	<i>Astartea glomerulosa</i>	
	<i>Astartea scoparia</i>	
	<i>Astartea</i> sp.	
	<i>Beaufortia decussata</i>	
	<i>Beaufortia sparsa</i>	
	<i>Callistemon glaucus</i>	
	<i>Corymbia calophylla</i>	
	<i>Corymbia ficifolia</i> (planted)	
	<i>Darwinia oederoides</i>	
	<i>Eucalyptus conferruminata</i> (planted)	
	<i>Eucalyptus cornuta</i>	
	<i>Eucalyptus gomphocephala</i> (planted)	
<i>Eucalyptus marginata</i>		
<i>Eucalyptus megacarpa</i>		
<i>Eucalyptus patens</i>		
<i>Eucalyptus salubris</i> (planted)		

Family	Taxon (Status)	Family	Taxon (Status)
	<i>Eucalyptus staeri</i>		<i>Amphipogon amphipogonoides</i>
	<i>Eucalyptus marginata x staeri</i>		<i>Amphipogon laguroides</i>
	<i>Homalospermum firmum</i>		<i>Austrostipa mollis</i>
	<i>Hypocalymma cordifolium</i>		<i>Microlaena stipoides</i>
	<i>Hypocalymma scariosum</i>		<i>Neurachne alopecuroidea</i>
	<i>Kunzea baxteri</i> (planted)		<i>Poa porphyroclados</i>
	<i>Melaleuca diosmifolia</i> (planted)		<i>Rytidosperma setaceum</i>
	<i>Melaleuca preissiana</i>		<i>Tetrarrhena laevis</i>
	<i>Melaleuca raphiophylla</i>	Polygalaceae	<i>Comesperma confertum</i>
	<i>Melaleuca thymoides</i>		<i>Comesperma virgatum</i>
	<i>Pericalymma spongiocaulum</i>	Proteaceae	<i>Adenanthos obovatus</i>
	<i>Taxandria juniperina</i>		<i>Banksia grandis</i>
	<i>Taxandria linearifolia</i>		<i>Conospermum caeruleum</i>
	<i>Taxandria marginata</i>		<i>Grevillea occidentalis</i>
	<i>Taxandria parviceps</i>		<i>Grevillea pilulifera</i>
	<i>Verticordia plumosa</i>		<i>Grevillea pulchella</i>
Olacaceae	<i>Olax benthamiana</i>		<i>Hakea amplexicaulis</i>
Orchidaceae	* <i>Disa bracteata</i>		<i>Hakea ceratophylla</i>
	<i>Caladenia flava</i>		<i>Hakea drupacea</i>
	<i>Cryptostylis ovata</i>		<i>Hakea elliptica</i>
	<i>Diuris</i> sp.		<i>Hakea ferruginea</i>
	<i>Elythranthera brunonis</i>		<i>Hakea florida</i>
	<i>Lyperanthus serratus</i>		<i>Hakea lasiantha</i>
	<i>Microtis media</i>		<i>Hakea linearis</i>
	<i>Prasophyllum brownii</i>		<i>Hakea oleifolia</i>
	<i>Prasophyllum macrostachyum</i>		<i>Hakea ruscifolia</i>
	<i>Pterostylis vittata</i>		<i>Hakea trifurcata</i>
	<i>Thelymitra canaliculata</i>		<i>Persoonia elliptica</i>
	<i>Thelymitra crinita</i>		<i>Persoonia graminea</i>
	<i>Thelymitra granitora</i>		<i>Persoonia longifolia</i>
	<i>Thelymitra macrophylla</i>		<i>Petrophile divaricata</i>
	<i>Thelymitra</i> sp.		<i>Petrophile diversifolia</i>
Orobanchaceae	* <i>Parentucellia latifolia</i>		<i>Petrophile squamata</i>
Oxalidaceae	* <i>Oxalis incarnata</i>		<i>Stirlingia tenuifolia</i>
	* <i>Oxalis purpurea</i>		<i>Synaphea gracillima</i>
	* <i>Oxalis violacea</i>		<i>Synaphea incurva</i> (P3)
Phytolaccaceae	* <i>Phytolacca octandra</i>	Ranunculaceae	<i>Clematis pubescens</i>
Pinaceae	* <i>Pinus pinaster</i>	Restionaceae	<i>Chordifex isomorphus</i>
	* <i>Pinus radiata</i>		<i>Chordifex laxus</i>
Pittosporaceae	* <i>Pittosporum undulatum</i>		<i>Desmocladus fasciculatus</i>
	<i>Billardiera fusiformis</i>		<i>Desmocladus flexuosus</i>
	<i>Billardiera heterophylla</i>		<i>Empodisma gracillimum</i>
	<i>Billardiera variifolia</i>		<i>Hypolaena fastigiata</i>
Plantaginaceae	* <i>Plantago lanceolata</i>		<i>Leptocarpus denmarkicus</i>
	<i>Veronica plebeia</i>		<i>Leptocarpus scariosus</i>
Poaceae	* <i>Aira caryophyllea</i>		<i>Leptocarpus tenax</i>
	* <i>Anthoxanthum odoratum</i>		<i>Leptocarpus tephrius</i>
	* <i>Avena barbata</i>		<i>Lepyrodia hermaphrodita</i>
	* <i>Briza maxima</i>		<i>Loxocarya cinerea</i>
	* <i>Briza minor</i>		<i>Tremulina tremula</i>
	* <i>Cenchrus clandestinus</i>	Rhamnaceae	<i>Spyridium globulosum</i>
	* <i>Cortaderia selloana</i>		<i>Trymalium odoratissimum</i>
	* <i>Holcus lanatus</i>	Rosaceae	* <i>Cotoneaster glaucophyllus</i>
	* <i>Lolium perenne</i>		* <i>Rubus species complex</i> (WONS)

Family	Taxon (Status)
Rubiaceae	* <i>Coprosma repens</i> <i>Opercularia hispidula</i>
Rutaceae	<i>Boronia crassipes</i> (P3) <i>Boronia crenulata</i> <i>Boronia juncea</i> subsp. <i>laniflora</i> <i>Boronia spathulata</i> <i>Rhadinothamnus anceps</i>
Sapindaceae	<i>Dodonaea ceratocarpa</i> <i>Dodonaea viscosa</i>
Schizaeaceae	<i>Schizaea fistulosa</i>
Solanaceae	* <i>Solanum laciniatum</i> <i>Anthocercis viscosa</i>
Stylidiaceae	<i>Levenhookia dubia</i> <i>Stylidium despectum</i> <i>Stylidium imbricatum</i> <i>Stylidium luteum</i> <i>Stylidium plantagineum</i> <i>Stylidium pygmaeum</i> <i>Stylidium spathulatum</i>
Thymelaeaceae	<i>Pimelea rosea</i> subsp. <i>rosea</i>
Typhaceae	<i>Typha orientalis</i>
Verbenaceae	* <i>Lantana camara</i> (WONS)
Xanthorrhoeaceae	<i>Xanthorrhoea platyphylla</i>
Xyridaceae	<i>Xyris lacera</i> <i>Xyris lanata</i>

11 APPENDIX D - Floristic Quadrat Data

Quadrat: 1

Date: 22/11/2017

Description: Hill crest with laterite gravel and white sand

Mapping Unit: *Hakea* spp. Shrubland/Woodland Complex

Vegetation Condition: Very Good

Location: 574224mE 6126834mN

Photo:



Floristics:

Upper (<10m, 30-70%): *Eucalyptus staeri*.

Middle 1 (2-4m, 30-70%): **Acacia longifolia*, **Leptospermum laevigatum*, **Psoralea pinnata*, *Hakea ferruginea*, *Hakea lasiantha*.

Middle 2 (<2m, 10-30%): *Acacia browniana* var. *browniana*, *Acacia myrtifolia*, *Agonis theiformis*, *Grevillea pilulifera*, *Xanthorrhoea platyphylla*, *Leucopogon obovatus* subsp. *obovatus*, *Leucopogon verticillatus*, *Petrophile squamata*, *Taxandria parviceps*.

Ground (<1m, 10-30%): *Dasyopogon bromeliifolius*, *Desmocladius fasciculatus*, *Anarthria prolifera*, *Anarthria scabra*, *Agrostocrinum hirsutum*, *Amphipogon amphipogonoides*, *Anarthria gracilis*, *Billardiera heterophylla*, *Billardiera variifolia*, *Chordifex laxus*, *Conostylis setigera*, *Cyathochaeta avenacea*, *Dampiera pedunculata*, *Drosera menziesii*, *Hibbertia microphylla*, *Hovea trisperma*, *Lepyrodia hermaphrodita*, *Levenhookia dubia*, *Lomandra micrantha* subsp. *teretifolia*, *Lomandra sericea*, *Mesomelaena tetragona*, *Schoenus acuminatus*, *Sphenotoma capitata*, *Synaphea gracillima*, *Tetraria octandra*, *Tricoryne humilis*, *Xanthosia huegellii*, **Anthoxanthum odoratum*, **Gladiolus undulatus*.

Quadrat: 2

Date: 22/11/2017

Description: Hill crest with white sand with laterite gravel

Mapping Unit: *Hakea* spp. Shrubland/Woodland Complex

Vegetation Condition: Excellent

Location: 574145mE, 6126849mN

Photo:



Floristics:

Upper (<10m, 10-30%) *Eucalyptus marginata* x *staeri*.

Middle: (1-2m, 10-30%) *Acacia myrtifolia*, *Agonis theiformis*, *Allocasuarina humilis*, *Beaufortia decussata*, *Petrophile diversifolia*, *Xanthorrhoea platyphylla*, *Leucopogon obovatus* subsp. *obovatus*, *Hakea ceratophylla*, *Hakea ferruginea*, **Leptospermum laevigatum*.

Ground: (1m, 30-70%) *Acacia browniana* var. *browniana*, *Acacia drummondii*, *Amphipogon amphipogonoides*, *Anarthria gracilis*, *Anarthria prolifera*, *Andersonia* sp. *Jamesii* (J. Liddelow 84), *Billardiera variifolia*, *Boronia spathulata*, *Cassytha racemosa*, *Chordifex laxus*, *Chorizema reticulatum*, *Conostylis setigera*, *Cyathochaeta avenacea*, *Dampiera loranthifolia*, *Dasyopogon bromeliifolius*, *Desmocladius fasciculatus*, *Goodenia coerulea*, *Grevillea pilulifera*, *Haemodorum laxum*, *Hibbertia microphylla*, *Hovea trisperma*, *Lepidosperma angustatum*, *Lepidosperma drummondii*, *Lepyrodia hermaphrodita*, *Lindsaea linearis*, *Lomandra sericea*, *Mesomelaena tetragona*, *Pericalymma spongiocaulum*, *Pultenaea verruculosa*, *Schoenus acuminatus*, *Schoenus* sp. *striate*, *Sphaerolobium grandiflorum*, *Sphenotoma capitata*, *Stirlingia tenuifolia*, *Taxandria parviceps*, *Tetraria octandra*, *Thelymitra crinita*, *Tremulina tremula*, *Xanthosia huegellii*, *Xanthosia singuliflora*.

Quadrat: 3

Date: 22/11/2017

Description: Small perched wetland (potentially artificial due to gravel extraction) peat over sand

Mapping Unit: Mapped within *Hakea* spp Shrubland/Woodland Complex

Vegetation Condition: Very Good

Location: 574095mE, 6126841mN

Photo:



Floristics:

Upper: (2-4m, >70%) *Taxandria linearifolia*, *Taxandria parviceps*, *Acacia myrtifolia*, *Allocasuarina fraseriana*, *Callistemon glaucus*, *Hakea ferruginea*, *Homalospermum firmum*, *Leucopogon obovatus* subsp. *revolvatus*.

Ground: (<1m, 10-30%) *Billardiera heterophylla*, *Dampiera leptoclada*, *Drosera pulchella*, *Gymnoschoenus anceps*, *Lepidosperma angustatum*, *Lepidosperma striatum*, *Lomandra sericea*, *Mesomelaena tetragona*, *Thysanotus sparteus*, *Xanthosia huegeli*, **Acacia longifolia*, **Gladiolus undulatus*.

Quadrat: 4

Date: 22/11/2017

Description: Hill crest with grey sand

Mapping Unit: Jarrah/Marri/Sheoak Laterite Forest

Vegetation Condition: Excellent

Location: 574185mE 6126657mN

Photo:



Floristics:

Upper: (>10m, 10-30%) *Eucalyptus marginata*

Middle: (2m, 10-30%) *Beaufortia decussata*, *Leucopogon obovatus* subsp. *obovatus*, *Leucopogon verticillatus*, *Acacia browniana* var. *browniana*, *Agonis theiformis*, *Allocasuarina fraseriana*.

Ground: (<1m, 30-70%) *Anarthria scabra*, *Cyathochaeta avenacea*, *Dampiera leptoclada*, *Dasyopogon bromeliifolius*, *Desmocladus fasciculatus*, *Drosera pallida*, *Hibbertia cunninghamii*, *Lindsaea linearis*, *Logania serpyllifolia* subsp. *serpyllifolia*, *Lomandra pauciflora*, *Lomandra sericea*, *Patersonia umbrosa* var. *umbrosa*, *Synaphea gracillima*, *Tetralia octandra*, *Thelymitra macrophylla*, *Xanthorrhoea platyphylla*, **Acacia longifolia*.

Quadrat: 5**Date:** 22/11/2017**Description:** Upper hill slope with grey sand**Mapping Unit:** Jarrah/Marri/Sheoak Laterite Forest**Vegetation Condition:** Very Good**Location:** 573739mE 6126842mN**Photo:****Floristics:****Upper:** (>10m, 30-70%) *Eucalyptus marginata*, *Corymbia calophylla*, *Allocasuarina fraseriana*.**Middle:** (2m, 10-30%) *Agonis theiformis*, *Acacia browniana* var. *browniana*, *Petrophile diversifolia*, *Beaufortia decussata*, *Leucopogon obovatus* subsp. *obovatus*, *Leucopogon verticillatus*, *Xanthorrhoea platyphylla*.**Ground:** (<1m, 30-70%) *Agrostocrinum hirsutum*, *Anarthria scabra*, *Billardiera variifolia*, *Bossiaea linophylla*, *Conostylis setigera*, *Cyathochaeta avenacea*, *Dasyopogon bromeliifolius*, *Desmodcladus fasciculatus*, *Gompholobium knightianum*, *Hakea amplexicaulis*, *Logania serpyllifolia*, *Lomandra sericea*, *Patersonia umbrosa* var. *umbrosa*, *Stylidium plantagineum*, *Tetraria octandra*, *Tetraria* sp. Jarrah Forest (R. Davis 7391).

Quadrat: 6**Date:** 22/11/2017**Description:** Middle hill-slope with grey sand**Mapping Unit:** Jarrah/Marri/Sheoak Laterite Forest**Vegetation Condition:** Very Good/Excellent**Location:** 573757mE 6126236mN**Photo:****Floristics:****Upper:** (>10m, 30-70%) *Eucalyptus marginata*, *Allocasuarina fraseriana*.**Middle:** (>2m, 10-30%) *Banksia grandis*, *Bossiaea linophylla*, *Acacia myrtifolia*, *Agonis theiformis*, *Leucopogon obovatus*, *Leucopogon verticillatus*, *Melaleuca thymoides*, *Taxandria parviceps*, *Kingia australis*.**Ground:** (<1m, 30-70%) *Anarthria scabra*, *Anarthria prolifera*, *Billardiera heterophylla*, *Conospermum caeruleum*, *Cyathochaeta equitans*, *Dasyopogon bromeliifolius*, *Johnsonia lupulina*, *Lepidosperma angustatum*, *Opercularia hispidula*, *Patersonia umbrosa* var. *umbrosa*, *Persoonia longifolia*, *Schoenus multiglumis*, *Xanthosia rotundifolia*, **Holcus lanatus*.

Quadrat: 7

Date: 22/11/2017

Description: Middle hill-slope with grey sand

Mapping Unit: Jarrah/Marri/Sheoak Laterite Forest

Vegetation Condition: Very Good/Excellent

Location: 573942mE 6126424mN

Photo:



Floristics:

Upper: (<10m, 30-70%) *Eucalyptus marginata*, *Allocasuarina fraseriana*, *Agonis flexuosa*.

Middle: (2m, 10-30%) *Bossiaea linophylla*, *Beaufortia decussata*, *Leucopogon obovatus*.

Ground: (<1m, 30-70%) *Amphipogon amphipogonoides*, *Anarthria prolifera*, *Anigozanthos flavidus*, *Billardiera variifolia*, *Caesia micrantha*, *Cyathochaeta avenacea*, *Dasyopogon bromeliifolius*, *Hibbertia cunninghamii*, *Lepidosperma angustatum*, *Lepidosperma angustatum*, *Lindsaea linearis*, *Lomandra pauciflora*, *Lomandra sericea*, *Opercularia hispidula*, *Patersonia umbrosa* var. *umbrosa*, *Scaevola striata*, *Schoenus multiglumis*, *Xanthosia rotundifolia*.

Quadrat: 8

Date: 22/11/2017

Description: Middle hill-slope with grey sand

Mapping Unit: Jarrah/Sheoak/*E. staeri* Sandy Woodland

Vegetation Condition: Very Good/Excellent

Location: 574188mE 6126436mN

Photo:



Floristics:

Upper: (<10m, 30-70%) *Eucalyptus marginata*, *Allocasuarina fraseriana*.

Middle: (2m, 10-30%) *Beaufortia decussata*, *Acacia browniana* var. *browniana*, *Agonis theiformis*, *Leucopogon obovatus*, *Xanthorrhoea platyphylla*, *Persoonia longifolia*.

Ground: (<1m, 30-70%) *Anarthria scabra*, *Cyathochaeta avenacea*, *Dasyopogon bromeliifolius*, *Drosera menziesii*, *Lepidosperma angustatum*, *Opercularia hispidula*, *Patersonia umbrosa* var. *umbrosa*, *Tetraria octandra*, *Thelymitra crinita*, *Xanthosia rotundifolia*.

Quadrat: 9

Date: 23/11/2017

Description: Middle hill-slope. Outcropping granite boulders

Mapping Unit: Marri/Jarrah Forest/Peppermint Woodland

Vegetation Condition: Very Good

Location: 578825mE 6124018mN

Photo:



Floristics:

Upper: (>10m, 30-70%) *Corymbia calophylla*, *Eucalyptus marginata*, *Agonis flexuosa*.

Middle: (2m, 10-30%) *Acacia alata*, *Agonis theiformis*, *Bossiaea linophylla*, *Hovea elliptica*, *Leucopogon obovatus*, *Xanthorrhoea platyphylla*, *Pittosporum undulatum*.

Ground: (<1m, 30-70%) *Billardiera variifolia*, *Lepidosperma tenue*, *Loxocarya cinerea*, *Opercularia hispidula*, *Tetrarrhena laevis*, *Tremandra stelligera*, *Xanthosia rotundifolia*, *Anthoxanthum odoratum*, *Asparagus asparagoides*, *Briza maxima*, *Holcus lanatus*, *Lythrum hyssopifolia*, *Sonchus oleraceus*, *Taraxacum khatoonae*.

Quadrat: 10

Date: 23/11/2017

Description: Granite outcrop

Mapping Unit: *Taxandria marginata* Granite Shrubland

Vegetation Condition: Very Good

Location: 578848mE 6124117mN

Photo:



Floristics:

Upper: (2-3m, 10-30%) *Taxandria marginata*, *Acacia crassiuscula*, *Anthocercis viscosa*.

Ground: (<1m, 10-30%) *Lepidosperma hopperi*, *Lepidosperma tenue*, *Patersonia limbata*, *Stypantra glauca*, *Diuris* sp., *Drosera stolonifera*, *Juncus pallidus*, *Aira caryophyllea*, *Anthoxanthum odoratum*, *Briza maxima*, *Briza minor*, *Ornithopus compressus*, *Psoralea pinnata*, *Watsonia meriana* var. *bulbillifera*.

Quadrat: 11

Date: 23/11/2017

Description: Granite boulders, brown loamy sand

Mapping Unit: Marri/Jarrah Coastal Hills Forest

Vegetation Condition: Very Good/Excellent

Location: 578868mE 6124198mN

Photo:



Floristics:

Upper: (>10m, 10-30%) *Corymbia calophylla*, *Eucalyptus cornuta*, *Agonis flexuosa*.

Middle: (2-4m, 10-30%) *Bossiaea linophylla*, *Clematis pubescens*, *Gastrolobium bilobum*, *Leucopogon obovatus* subsp. *obovatus*, *Hovea elliptica*.

Ground: (<1m, 30-70%) *Hibbertia cunninghamii*, *Lepidosperma tenue*, *Loxocarya cinerea*, *Microlaena stipoides*, *Opercularia hispidula*, *Poa porphyroclados*, *Styphandra glauca*, *Tetrarrhena laevis*, *Thomasia angustifolia*, *Tremandra stelligera*, *Xanthorrhoea platyphylla*, **Anthoxanthum odoratum*, **Asparagus asparagoides*, **Avena barbata*, **Briza maxima*, **Lythrum hyssopifolia*.

Quadrat: 12

Date: 23/11/2017

Description: Granite boulders, dark brown loamy sand

Mapping Unit: Marri/Jarrah Coastal Hills Forest

Vegetation Condition: Very Good

Location: 578863mE 6124350mN

Photo:



Floristics:

Upper: (>10m, 10-30%) *Corymbia calophylla*, *Eucalyptus cornuta*.

Middle: (2m, 10-30%) *Acacia myrtifolia*, *Gastrolobium bilobum*, *Hibbertia cuneiformis*, *Hibbertia furfuracea*, *Hovea elliptica*, *Rhagodia preissii*, *Leucopogon obovatus* subsp. *obovatus*.

Ground: (<1m, 10-30%) *Billardiera heterophylla*, *Clematis pubescens*, *Daucus glochidiatus*, *Lepidosperma tenue*, *Loxocarya cinerea*, *Microlaena stipoides*, *Opercularia hispidula*, *Poa porphyroclados*, *Tetraria octandra*, *Tremandra stelligera*, **Anthoxanthum odoratum*, **Asparagus asparagoides*, **Watsonia meriana* var. *bulbillifera*.

Quadrat: 13

Date: 23/11/2017

Description: Granite outcrop, brown loamy sand.

Mapping Unit: *Leucopogon assimilis* Granite Shrubland

Vegetation Condition: Very Good/Excellent

Location: 578796mE 6124359mN

Photo:



Floristics:

Upper: (2m, 30-70%) *Dodonaea ceratocarpa*, *Eucalyptus cornuta*, *Gastrolobium bilobum*, *Leucopogon obovatus* subsp. *obovatus*, *Leucopogon pendulus*, *Leucopogon Verticordia plumosa*, *assimilis*.

Ground: (<1m, 30-70%) *Andersonia sprengeloides*, *Austrostipa mollis*, *Billardiera heterophylla*, *Borya sphaerocephala*, *Hibbertia diamesogenos*, *Lepidosperma tenue*, *Luzula meridionalis*, *Microlaena stipoides*, *Neurachne alopecuroidea*, *Schoenus* sp. *infertile*, *Stypandra glauca*, **Acacia longifolia*, **Anthoxanthum odoratum*, **Briza maxima*, **Briza minor*, **Centaureum erythraea*, **Ornithopus compressus*, **Parentucellia latifolia*, **Romulea rosea*, **Trifolium arvense*.

Quadrat: 14

Date: 23/11/2017

Description: Granite outcrop margin, brown loamy sand

Mapping Unit: *Taxandria marginata*/ *Gastrolobium bilobum* Granite Shrubland

Vegetation Condition: Very Good/Excellent

Location: 578781mE 6124287mN

Photo:



Floristics:

Upper: (>10m, <10%) *Eucalyptus cornuta*.

Middle: (2m, 10-30%) *Dodonaea ceratocarpa*, *Gastrolobium bilobum*, *Hibbertia furfuracea*, *Leucopogon obovatus* subsp. *obovatus*, *Pimelea rosea* subsp. *rosea*, *Rhagodia preissii*.

Ground: (<1m, 30-70%) *Billardiera heterophylla*, *Lepidosperma tenue*, *Loxocarya cinerea*, *Stypandra glauca*, **Acacia longifolia*, **Anthoxanthum odoratum*, **Briza maxima*, **Briza minor*, **Parentucellia latifolia*, **Plantago lanceolata*, **Trifolium angustifolium*, **Trifolium arvense*, **Watsonia meriana* var. *bulbillifera*.

Quadrat: 15

Date: 23/11/2017

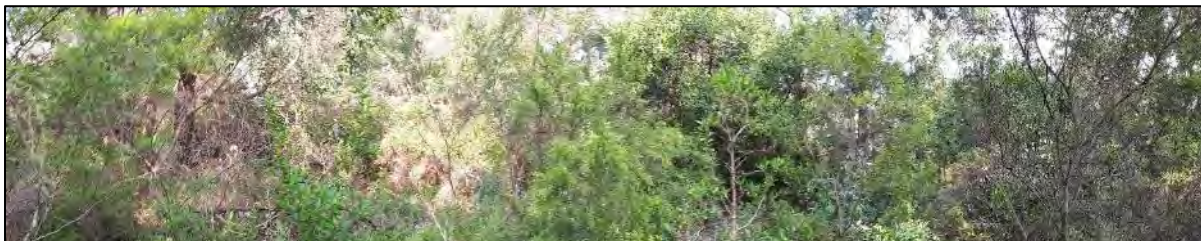
Description: Hill slope with light grey sand

Mapping Unit: Marri/Jarrah Forest/Peppermint Woodland

Vegetation Condition: Very Good

Location: 578746mE 6124229mN

Photo:



Floristics:

Upper: (>10m, 30-70%) *Corymbia calophylla*, *Eucalyptus cornuta*.

Middle: (2m, 30-70%) *Leucopogon obovatus* subsp. *obovatus*, *Agonis theiformis*, *Bossiaea linophylla*, **Acacia longifolia*, **Psoralea pinnata*.

Ground: (<1m, 10-30%) *Anigozanthos flavidus*, *Hibbertia cuneiformis*, *Hibbertia furfuracea*, *Lepidosperma gladiatum*, *Loxocarya cinerea*, *Opercularia hispidula*, *Pteridium esculentum*, *Tetraria octandra*, **Anthoxanthum odoratum*, **Asparagus asparagoides*, **Cenchrus clandestinus*, **Cenchrus clandestinus*, **Gladiolus undulatus*, **Holcus lanatus*, **Pelargonium capitatum*, **Taraxacum khatoonae*.

Quadrat: 16

Date: 23/11/2017

Description: Wetland, peat over sand

Vegetation Condition: Very Good

Mapping Unit: *Homalospermum firmum*/*Callistemon glaucus* Peat Thicket

Location: 575182mE 6125118mN

Photo:



Floristics:

Upper: (4m, >70%) *Eucalyptus marginata*, *Homalospermum firmum*, *Beaufortia sparsa*, *Adenanthos obovatus*, *Astartea scoparia*, *Bossiaea linophylla*, *Leucopogon australis*, **Acacia longifolia*.

Ground: (<1m, 10-30%) *Gastrolobium sericeum*, *Anarthria prolifera*, *Anarthria scabra*, *Anigozanthos flavidus*, *Austrostipa mollis*, *Billardiera heterophylla*, *Cyathochaeta avenacea*, *Hypolaena fastigiata*, *Johnsonia lupulina*, *Lomandra pauciflora*, *Meeboldina scariosa*, *Tricoryne elatior*, *Tricoryne elatior*, *Xyris lanata*, **Watsonia meriana* var. *bulbillifera*.

Quadrat: 17

Date: 23/11/2017

Description: Wetland, peat over sand

Mapping Unit: *Homalospermum firmum*/*Callistemon glaucus* Peat Thicket

Vegetation Condition: Very Good

Location: 574417mE 6125317mN

Photo:



Floristics:

Upper: (4m, >70%) *Homalospermum firmum*, *Beaufortia sparsa*, *Callistachys lanceolata*, *Astartea* sp., *Taxandria juniperina*, *Taxandria linearifolia*, **Eucalyptus globulus*.

Ground: (<1m, 30-70%) *Empodisma gracillimum*, *Acacia divergens*, *Hypocalymma cordifolium*, *Lepidosperma striatum*, *Lobelia heterophylla*, *Meeboldina scariosa*, *Opercularia hispidula*, *Patersonia occidentalis*, *Patersonia umbrosa* var. *umbrosa*, *Anarthria prolifera*, *Pteridium esculentum*, **Watsonia meriana* var. *bulbillifera*.

Quadrat: 18

Date: 23/11/2017

Description: Wetland, grey sand

Mapping Unit: *Evandra aristata* Sedgeland

Vegetation Condition: Very Good

Location: 574971mE 6125166mN

Photo:



Floristics:

Upper: (4m, <10%) *Nuytsia floribunda*.

Middle: () *Beaufortia sparsa*, *Evandra aristata*.

Ground: () *Amphipogon laguroides*, *Anarthria laevis*, *Anarthria prolifera*, *Anarthria scabra*, *Acacia myrtifolia*, *Adenanthos obovatus*, *Agonis flexuosa*, *Billardiera heterophylla*, *Boronia crenulata*, *Boronia spathulata*, *Dampiera linearis*, *Dasyopogon bromeliifolius*, *Gymnoschoenus anceps*, *Homalospermum firmum*, *Hypocalymma strictum*, *Hypolaena fastigiata*, *Jacksonia horrida*, *Lyginia barbata*, *Melaleuca thymoides*, *Opercularia hispidula*, *Patersonia limbata*, *Schoenus cruentus*, *Sphenotoma capitata*, *Taxandria parviceps*, *Xyris lanata*, **Leptospermum laevigatum*.

Quadrat: 19

Date: 23/11/2017

Description: Granite outcrop, brown loamy sand.

Mapping Unit: *Taxandria marginata* Granite Shrubland

Vegetation Condition: Degraded/Good

Location: 576814mE 6124669mN

Photo:



Floristics:

Upper: (<10m, 10-30%) *Corymbia calophylla*, *Agonis flexuosa*.

Middle: (2m, 10-30%) *Agonis theiformis*, *Bossiaea linophylla*, *Dodonaea ceratocarpa*, *Hibbertia furfuracea*, *Lomandra pauciflora*, *Loxocarya cinerea*, *Microlaena stipoides*, *Stypandra glauca*, *Tetralix octandra*, *Tremandra stelligera*.

Ground: (<1m, 10-30%) **Anthoxanthum odoratum*, **Asparagus asparagoides*, **Avena barbata*, **Briza maxima*, **Freesia alba x leichtlinii*, **Gladiolus undulatus*, **Lythrum hyssopifolia*, **Watsonia meriana* var. *bulbillifera*, *Astroloma pallidum*, *Austrostipa mollis*, *Billardiera variifolia*, *Cyathochaeta avenacea*, *Desmodium fasciculatum*, *Dianella revoluta*, *Lepidosperma tenue*, *Leucopogon obovatus* subsp. *obovatus*, *Xanthorrhoea platyphylla*.

Quadrat: 20

Date: 23/11/2017

Description: Swale adjacent to granite outcrop, brown loam

Mapping Unit: Marri/Jarrah Forest/Peppermint Woodland

Vegetation Condition: Very Good

Location: 576759mE 6124635mN

Photo:



Floristics:

Upper: (<10m, 30-70%) *Corymbia calophylla*, *Eucalyptus marginata*, *Agonis flexuosa*.

Middle: (2m, 30-70%) *Agonis theiformis*, *Bossiaea linophylla*, *Hibbertia cuneiformis*, *Leucopogon obovatus* subsp. *obovatus*, *Leucopogon verticillatus*.

Ground: (<1m, 30-70%) *Anarthria scabra*, *Billardiera heterophylla*, *Dasyopogon bromeliifolius*, *Hardenbergia comptoniana*, *Hypolaena fastigiata*, *Lomandra purpurea*, *Loxocarya cinerea*, *Patersonia umbrosa* var. *umbrosa*, *Pteridium esculentum*, *Schoenus multiglumis*, *Tremandra diffusa*, **Anthoxanthum odoratum*, **Asparagus asparagoides*, **Oxalis purpurea*, **Oxalis violacea*, **Pelargonium capitatum*, **Taraxacum khatoonae*, **Watsonia meriana* var. *bulbillifera*.

Quadrat: 21

Date: 24/11/2017

Description: Middle hill-slope, grey sand

Mapping Unit: Jarrah/Sheoak/E.staeri Sandy Woodland

Vegetation Condition: Excellent

Location: 574326mE 6127589mN

Photo:



Floristics:

Upper: (<10m, 30-70%) *Eucalyptus marginata*, *Corymbia calophylla*.

Middle: (2m, 30-70%) *Agonis theiformis*, *Banksia grandis*, *Beaufortia decussata*, *Persoonia elliptica*, *Xanthorrhoea platyphylla*, *Acacia browniana* var. *browniana*, *Bossiaea linophylla*, *Hakea florida*, *Kingia australis*, *Leucopogon obovatus* subsp. *obovatus*, *Leucopogon verticillatus*.

Ground: (<1m, 30-70%) *Anarthria prolifera*, *Billardiera variifolia*, *Desmocladius fasciculatus*, *Gompholobium polymorphum*, *Hibbertia cunninghamii*, *Johnsonia lupulina*, *Lepidosperma angustatum*, *Lomandra pauciflora*, *Lomandra sericea*, *Opercularia hispidula*, *Patersonia umbrosa* var. *umbrosa*, *Tetraria octandra*, *Tetraria* sp. Jarrah Forest (R. Davis 7391), *Xanthosia rotundifolia*.

Quadrat: 22

Date: 24/11/2017

Description: Wetland, peat over sand

Mapping Unit: *Homalospermum firmum*/*Callistemon glaucus* Peat Thicket

Vegetation Condition: Excellent

Location: 574397mE 6127513mN

Photo:



Floristics:

Upper: (>2m, 30-70%) *Callistemon glaucus*, *Beaufortia sparsa*, *Taxandria parviceps*.

Ground: (<1m, 30-70%) *Anarthria scabra*, *Baumea rubiginosa*, *Cephalotus follicularis*, *Drosera pulchella*, *Empodisma gracillimum*, *Gymnoschoenus anceps*, *Histiopteris incisa*, *Homalospermum firmum*, *Leptocarpus tenax*, *Schizaea fistulosa*, *Schoenus multiglumis*, *Sphaerolobium vimineum*, *Xanthosia rotundifolia*, *Xyris lanata*, **Rubus anglocandicans*, *Eucalyptus marginata*.

Quadrat: 23

Date: 24/11/2017

Description: 5 x 20 m dimensions. Wetland around artificial dam

Mapping Unit: *Homalospermum firmum*/*Callistemon glaucus* Peat Thicket

Vegetation Condition: Excellent

Location: 574400mE 6127491mN

Photo:



Floristics:

Upper: (2m, 10-30%) *Callistemon glaucus*, *Hakea florida*, *Taxandria linearifolia*.

Ground: (<1m, 10-30%) *Baumea rubiginosa*, *Cassyltha racemosa*, *Diaspasis filifolia*, *Drosera pallida*, *Drosera pulchella*, *Empodisma gracillimum*, *Gymnoschoenus anceps*, *Lepidosperma striatum*, *Leptocarpus tenax*, *Meeboldina scariosa*, *Sphaerolobium vimineum*, *Stylidium pygmaeum*, *Thelymitra canaliculata*, *Xyris lanata*, **Anthoxanthum odoratum*, **Cortaderia selloana*.

Quadrat: 24

Date: 24/11/2017

Description: Wetland. Peat over sand

Mapping Unit: *Homalospermum firmum*/*Callistemon glaucus* Peat Thicket

Vegetation Condition: Excellent

Location: 574452mE 6127424mN

Photo:



Floristics:

Upper: (2m, 10-30%) *Callistemon glaucus*, *Homalospermum firmum*, *Boronia crassipes*, *Taxandria linearifolia*.

Ground: (>1m, >70%) *Acacia divergens*, *Dampiera leptoclada*, *Diaspasis filifolia*, *Drosera menziesii*, *Empodisma gracillimum*, *Lepidosperma striatum*, *Leptocarpus tenax*, *Meeboldina tephрина ms*, *Schoenus multiglumis*, *Sphaerolobium vimineum*, **Holcus lanatus*.

Quadrat: 25

Date: 24/11/2017

Description: Lower hill-slope, grey sand

Mapping Unit: Jarrah/Sheoak/*E. staeri* Sandy Woodland

Vegetation Condition: Very Good/Excellent

Location: 574300mE 6127524mN

Photo:



Floristics:

Upper: (<10m, 30-70%) *Corymbia calophylla*, *Eucalyptus marginata*.

Middle: (2m, 30-70%) *Agonis theiformis*, *Banksia grandis*, *Beaufortia decussata*, *Bossiaea linophylla*, *Hakea ruscifolia*, *Hibbertia cuneiformis*, *Leucopogon obovatus* subsp. *obovatus*, *Leucopogon verticillatus*, *Persoonia longifolia*, *Xanthorrhoea platyphylla*.

Ground: (<1m, 30-70%) *Amphipogon amphipogonoides*, *Anarthria prolifera*, *Desmocladius fasciculatus*, *Drosera pallida*, *Haemodorum spicatum*, *Lepidosperma angustatum*, *Mesomelaena graciliceps*, *Opercularia hispidula*, *Patersonia umbrosa* var. *umbrosa*, *Scaevola striata*, *Tetraria octandra*, *Tricostularia neesii*, *Xanthosia rotundifolia*.

Quadrat: 26

Date: 27/11/2017

Description: Wetland, peat over sand

Mapping Unit: *Homalospermum firmum*/*Callistemon glaucus* Peat Thicket

Vegetation Condition: Excellent

Location: 574270mE 6127433mN

Photo:



Floristics:

Upper: (4m, 30-70%) *Callistemon glaucus*, *Hakea linearis*, *Taxandria juniperina*, *Taxandria linearifolia*, **Psoralea pinnata*.

Ground: (<1m, >70%) *Baumea acuta*, *Baumea rubiginosa*, *Diaspasis filifolia*, *Drosera menziesii*, *Empodisma gracillimum*, *Gymnoschoenus anceps*, *Leptocarpus tenax*, *Schoenus multiglumis*, *Sphaerolobium vimineum*, *Thysanotus sparteus*, *Xyris lanata*, **Holcus lanatus*, **Rubus anglocandicans*.

Quadrat: 27

Date: 27/11/2017

Description: Wetland, peat over sand

Mapping Unit: *Homalospermum firmum*/*Callistemon glaucus* Peat Thicket

Vegetation Condition: Excellent

Location: 574254mE 6127408mN

Photo:



Floristics:

Upper: (3m, 30-70%) *Callistemon glaucus*, *Homalospermum firmum*, *Boronia crassipes*.

Ground: (1m, >70%) *Acacia divergens*, *Baumea rubiginosa*, *Dampiera leptoclada*, *Empodisma gracillimum*, *Gymnoschoenus anceps*, *Leptocarpus tenax*, *Schoenus multiglumis*, *Xyris lanata*.

Quadrat: 28

Date: 27/11/2017

Description: Wetland peat over sand. ex.

Mapping Unit: *Homalospermum firmum*/*Callistemon glaucus* Peat Thicket

Vegetation Condition: Excellent

Location: 574566mE 6127504mN

Photo:



Floristics:

Upper: (3m, 30-70%) *Callistemon glaucus*, *Homalospermum firmum*, *Cosmelia rubra*, *Taxandria linearifolia*.

Ground: (1m, >70%) *Acacia divergens*, *Astartea corniculata*, *Baumea acuta*, *Baumea rubiginosa*, *Dampiera leptoclada*, *Drosera menziesii*, *Empodisma gracillimum*, *Gymnoschoenus anceps*, *Leptocarpus tenax*, *Schoenus multiglumis*, *Xyris lanata*, **Rubus anglocandicans*.

Quadrat: 29

Date: 27/11/2017

Description: Wetland, peat over sand

Mapping Unit: *Homalospermum firmum*/*Callistemon glaucus* Peat Thicket

Vegetation Condition: Excellent

Location: 574307mE 6127407mN

Photo:



Floristics:

Upper: (2m, 30-70%) *Callistemon glaucus*, *Homalospermum firmum*, *Taxandria linearifolia*, *Boronia crassipes*.

Ground: (1m, >70%) *Acacia divergens*, *Baumea rubiginosa*, *Empodisma gracillimum*, *Gymnoschoenus anceps*, *Leptocarpus tenax*, *Schoenus multiglumis*, *Sphaerolobium vimineum*.

Quadrat: 30

Date: 28/11/2017

Description: Wetland, peat over sand

Mapping Unit: *Taxandria juniperina* Closed Forest

Vegetation Condition: Very Good

Location: 574485mE 6125533mN

Photo:



Floristics:

Upper: (10m, >70%) *Taxandria juniperina*, *Homalospermum firmum*.

Ground: (<1m, <10%) *Acacia divergens*, *Baumea acuta*, *Lepidosperma striatum*, *Leptocarpus scariosus*, *Tetrarrhena laevis*, **Acacia melanoxylon*, **Anthoxanthum odoratum*.

Quadrat: 31

Date: 28/11/2017

Description: Wetland, peat over sand. Firebreak

Mapping Unit: *Taxandria juniperina* Closed Forest

Vegetation Condition: Very Good

Location: 574591mE 6125459mN

Photo:



Floristics:

Upper: (10m, 30-70%) *Taxandria juniperina*, *Rhadinothamnus anceps*,

Ground: (<1m, <10%) *Aphelia brizula*, *Baumea acuta*, *Chamaescilla corymbosa*, *Drosera pulchella*, *Isolepis cernua*, *Lobelia heterophylla*, *Microtis media*, *Prasophyllum macrostachyum*, *Thelymitra* sp., *Utricularia bifida*, **Acacia longifolia*, **Anthoxanthum odoratum*, **Briza maxima*, **Briza minor*, **Gladiolus undulatus*.

Quadrat: 32

Date: 28/11/2017

Description: Middle hill-slope, grey sand with laterite gravel

Mapping Unit: *Hakea* spp Shrubland/Woodland Complex

Vegetation Condition: Very Good/Excellent

Location: 573977mE 6126876mN

Photo:



Floristics:

Upper: (<10m, 10-30%) *Eucalyptus marginata*, *Allocasuarina fraseriana*.

Middle: (2m, 10-30%) *Hakea ferruginea*, *Taxandria parviceps*, *Agonis theiformis*, *Acacia browniana* var. *browniana*, *Acacia myrtifolia*, *Grevillea pilulifera*, *Xanthorrhoea platyphylla*.

Ground: (<1m, 30-70%) *Anarthria gracilis*, *Anarthria prolifera*, *Anarthria scabra*, *Billardiera heterophylla*, *Boronia spathulata*, *Cyathochaeta avenacea*, *Dampiera loranthifolia*, *Dasyogon bromeliifolius*, *Desmodcladus fasciculatus*, *Haemodorum laxum*, *Hibbertia microphylla*, *Hovea trisperma*, *Lepidosperma drummondii*, *Lomandra sericea*, *Mesomelaena tetragona*, *Patersonia umbrosa* var. *umbrosa*, *Sphaerolobium medium*, *Tetraria octandra*, *Tetraria* sp. Jarrah Forest (R. Davis 7391), *Thysanotus sparteus*, *Xanthosia rotundifolia*.

12 APPENDIX E - Likelihood of Occurrence Analysis

A post-survey likelihood of occurrence of all conservation significant species (flora and fauna) was assessed based on the presence of suitable habitat and survey effectiveness (see section 3.3).

Table E1. Likelihood of occurrence of conservation significant flora recorded in the vicinity of the Survey Area (<10 km). NM = Naturemap, PMST = Protected Matters Search Tool, WAHERB = Western Australia Herbarium Database, TPFL = Threatened and Priority Flora Database.

Status, Taxon [FAMILY]	Data source	Description, Habitat & Distribution	Habitat Suitability in the Survey Area	Post -Survey Likelihood of Occurrence and Survey Effectiveness
T (Previously considered extinct) <i>Acacia prismifolia</i> [Fabaceae]	NM, WAHERB	Shrub, 0.15-0.5 m high. Rocky slopes. Laterite gravel pit in road verge.	Habitat preferences poorly understood for this taxon recently rediscovered near Cranbrook. Generally, habitats in Survey Area are not considered suitable.	Unlikely. No survey limitations would have prevented detection if present in the Survey Area.
T <i>Banksia brownii</i> [Proteaceae]	NM, PMST, WAHERB, TPFL	Bushy, non-lignotuberous shrub or tree (small), 1-6 m high. Flowers cream & brown/orange-red, Mar to Jul. Sand over laterite, gravel, loam over granite. In gullies.	Potential habitat around Mt Melville, however highly impacted by Phytophthora and weeds.	Unlikely. Very conspicuous shrub and no survey limitations would have prevented detection if present in the Survey Area.
T <i>Banksia goodii</i> [Proteaceae]	NM, PMST, WAHERB, TPFL	Lignotuberous, prostrate shrub, ca 0.2 m high. Flowers orange-brown-red, May or Nov. White or grey sand over laterite.	Potential habitat in Unit 13, however highly impacted by Phytophthora and weeds.	Unlikely. No survey limitations would have prevented detection if present in the Survey Area.
T <i>Banksia verticillata</i> [Proteaceae]	NM, PMST, WAHERB, TPFL	Non-lignotuberous shrub or tree (rarely), 1.3-6 m high. Flowers yellow-orange, Jan to Apr. Sandy loam. On or beside granite outcrops.	Potential habitat around Mt Melville, however highly impacted by Phytophthora and weeds.	Unlikely. Very conspicuous shrub and no survey limitations would have prevented detection if present in the Survey Area.
T <i>Caladenia harringtoniae</i> [Orchidaceae]	NM, PMST, WAHERB, TPFL	Tuberous, perennial, herb, 0.2-0.4 m high. Flowers pink, Oct to Nov. Sandy loam. Winter-wet flats, margins of lakes, creeklines, granite outcrops. Generally, more abundant after fire.	Potential habitat around Mt Melville, however is long unburnt and highly impacted by weeds.	Possible. Survey was appropriately timed, however may emerge after fire.
T <i>Caladenia granitora</i> [Orchidaceae]	PMST	Tuberous, perennial, herb, 0.2-0.35 m high. Fl. cream & white & red, Oct to Nov. Shallow soil crevices on granite. Coastal areas.	Potential habitat around granites on Mt Melville, however no actual records in the Study Area.	Unlikely. Known from coastal granites east of the Study Area. Survey was appropriately timed to detect if present.
T <i>Chordifex abortivus</i> [Restionaceae]	NM, PMST, WAHERB	Rhizomatous, erect perennial, herb, to 0.5 m high. Flowers brown, Sep to Oct. Sand. Low rises & undulating areas.	Has the potential to occur in a wide range of habitats.	Unlikely. No survey limitations would have prevented detection if present in the Survey Area.
T <i>Conostylis misera</i> [Haemodoraceae]	NM, PMST, WAHERB	Rhizomatous, tufted perennial, grass-like or herb, 0.05-0.18 m high. Flowers yellow, Oct to Nov. White or grey sand, sandy loam. Winter-wet flats.	Generally known from wet habitat further inland than Survey Area.	Unlikely. No survey limitations would have prevented detection if present in the Survey Area.
T <i>Diuris drummondii</i> [Orchidaceae]	PMST	Tuberous, perennial, herb, 0.5-1.05 m high. Fl. yellow, Nov to Dec or Jan. Low-lying depressions, swamps. Generally, more abundant after fire.	Known from black sand over granite (Torndirrup NP). Habitat in Survey Area is degraded and impacted by weeds.	Unlikely. Limited suitable habitat in Survey Area, however may emerge after fire.
T <i>Drakaea micrantha</i> [Orchidaceae]	NM, PMST, WAHERB, TPFL	Tuberous, perennial, herb, 0.15-0.3 m high. Flowers red & yellow, Sep to Oct. White-grey sand.	Potential habitat in in moist areas in Unit 13 and in Taxandria thickets, however generally occurs further inland and west of the Survey Area.	Unlikely. Survey was appropriately timed to detect if present, however may emerge after fire.
T <i>Isopogon uncinatus</i> [Proteaceae]	NM, PMST, WAHERB, TPFL	Tufted spreading or prostrate, non-lignotuberous shrub, 0.05-0.4 m high. Flowers yellow/cream, Oct to Nov. Loam or sand on granite, peaty sand. Swampy depressions, hillslopes.	Potential habitat around Mt Melville, however highly impacted by Phytophthora and weeds.	Unlikely. No survey limitations would have prevented detection if present in the Survey Area.

Status, Taxon [FAMILY]	Data source	Description, Habitat & Distribution	Habitat Suitability in the Survey Area	Post -Survey Likelihood of Occurrence and Survey Effectiveness
T <i>Kennedia glabrata</i> [Fabaceae]	PMST	Prostrate shrub, 0.05-0.5 m high, to 5 m wide. Fl. red, Aug to Nov. Soil pockets, sandy soils. Granite outcrops.	Potential habitat around granites on Mt Melville, however no actual records in the Study Area.	Unlikely. No survey limitations would have prevented detection if present in the Survey Area.
T <i>Sphenotoma drummondii</i> [Ericaceae]	PMST	Tufted shrub, 0.15-0.5 m high. Fl. white, Sep to Dec. Stony or shallow soils over granite or quartzite. Steep rocky slopes, crevices of rocks.	Potential habitat around granites on Mt Melville, however no actual records in the Study Area.	Unlikely. No survey limitations would have prevented detection if present in the Survey Area.
T <i>Verticordia fimbriolepis</i> subsp. <i>australis</i> [Malvaceae]	NM, PMST, TPFL	Slender shrub, 0.2-0.4 m high. Flowers pink, Oct to Dec. Shallow sand, clay loam. Granite outcrops.	Potential habitat around Mt Melville, however highly impacted by Phytophthora and weeds.	Unlikely. No survey limitations would have prevented detection if present in the Survey Area.
P1 <i>Caladenia evanescens</i> [Orchidaceae]	NM, WAHERB	Tuberous, perennial, herb, 0.15-0.2 m high. Flowers green-cream-yellow, Nov. Sand. Consolidated sand dunes.	No suitable habitat (calcareous sand) present in the Survey Area.	Unlikely. No suitable habitat present.
P1 <i>Coleanthera coelophylla</i> [Ericaceae]	WAHERB	Erect shrub, 0.3-0.6 m high. Flowers pink/white, Sep to Nov. Gravelly sandy soils.	Known to occur further inland. Record in Study Area has low geo-accuracy.	Unlikely. Survey Area is considered outside the range of this taxon. Survey was appropriately timed to detect if present.
P1 <i>Drosera paleacea</i> [Droseraceae]	NM	Fibrous-rooted, rosetted perennial, herb, to 0.03 m high, to 0.015 m wide. Fl. white-cream, Sep to Dec or Jan. White sand, sandy clay.	Recently recorded from Banksia littoralis swamp in the Torndirrup area.	Possible. Other wetlands in Survey Area may be suitable. Survey was appropriately timed to detect if present, however may be more abundant after disturbance such as fire or slashing.
P1 <i>Prasophyllum paulinae</i> [Orchidaceae]	NM, WAHERB	Tuberous, perennial, herb, 0.15-0.4 m high. Fl. green-purple-red, Sep to Nov. Black, peaty soils. Swamps.	Recorded from <i>Taxandria/Homalospermum</i> swamp in Survey Area.	Known habitat present. Survey was appropriately timed to detect; however, it requires fire to germinate.
P1 <i>Thomasia multiflora</i> [Malvaceae]	NM, WAHERB	Spreading shrub, 0.3-1 m high, to 2 m wide. Flowers pink-purple, Sep to Oct. Black sand. Seasonally wet areas, granite outcrops.	Potential habitat around Mt Melville, however highly impacted by weeds.	Unlikely. <i>Thomasia purpurea</i> (common congener) was present in suitable habitat within Survey Area.
P1 <i>Thomasia purpurea</i> x <i>solanacea</i> [Malvaceae]	NM, WAHERB, TPFL	Shrub, 0.5-0.8 m high. Flowers pink-purple, Nov to Dec or Jan. Grey sand over limestone. Creek sides.	No suitable habitat (calcareous sand) present in the Survey Area.	Unlikely. No suitable habitat present.
P2 <i>Agrostocrinum scabrum</i> subsp. <i>littorale</i> [Hemerocallidaceae]	NM, WAHERB	Rhizomatous, perennial, herb, to 0.15 m high. Flowers blue, Oct to Nov. Shallow granite loams. Coastal slopes.	Potential habitat around Mt Melville, however highly impacted by weeds.	Unlikely. No survey limitations would have prevented detection if present in the Survey Area.
P2 <i>Astartea transversa</i> [Myrtaceae]	NM, WAHERB	Spreading shrub to 0.5 m. Flowers pink to white in April-May. Grey sand, wetlands/winter wet.	Suitable habitat in Unit 47.	Unlikely. Survey conducted outside flowering time (autumn), however is a distinctive shrub likely to be detected if present.
P2 <i>Conospermum quadripetalum</i> [Proteaceae]	NM, WAHERB, TPFL	Diffuse, straggly shrub, 0.3-1 m high. Fl. blue/white, Sep to Nov. Sandy clay, grey sand. Flats behind coastal hills.	No suitable habitat (calcareous sand) present in the Survey Area.	Unlikely. No suitable habitat present.
P2 <i>Conospermum spectabile</i> [Proteaceae]	NM, WAHERB	Erect, compact shrub, 0.5-0.8 m high. Flowers white & blue, Oct to Nov. Sandy soils.	Generally, occurs further inland.	Unlikely. Survey appropriately timed and is a distinctive shrub likely to be detected if present.
P2 <i>Gyrostemon thesioides</i> [Gyrostemonaceae]	NM, WAHERB, TPFL	Straggling, decumbent shrub, to 0.7 m high. Flowers red-orange-yellow/yellow-green, Nov. Sand over limestone. Consolidated coastal dunes.	No suitable habitat (calcareous sand) present in the Survey Area.	Unlikely. No suitable habitat present.
P2 <i>Isopogon buxifolius</i> var. <i>buxifolius</i> [Proteaceae]	NM, WAHERB	Upright shrub, 0.45-1 m high. Flowers pink-cream, Jul to Dec. Grey sand. Swampy areas.	Suitable habitat in Unit 47.	Unlikely. Survey appropriately timed and is a distinctive shrub likely to be detected if present.
P2 <i>Leucopogon bracteolaris</i> [Ericaceae]	NM, WAHERB	Shrub, 0.25-1 m high. Flowers white, Feb or May or Jul or Oct. Stony sand, gravelly loam.	Generally known from the Stirling Range. Record in Study Area is a geospatial error.	Unlikely. Survey Area is considered outside the range of this taxon.
P2 <i>Leucopogon cymbiformis</i> [Ericaceae]	NM, WAHERB	Dense, erect or spreading shrub, 0.1-0.6(-0.8) m high. Flowers white, Jul to Nov or Feb to Mar.	Wide range of suitable habitats	Unlikely. Survey appropriately timed and is a distinctive shrub likely to be detected if present.

Status, Taxon [FAMILY]	Data source	Description, Habitat & Distribution	Habitat Suitability in the Survey Area	Post -Survey Likelihood of Occurrence and Survey Effectiveness
		White/grey or yellow sand, lateritic gravelly soils. Sandplains, wet flats, foothills.		
P2 <i>Schoenus</i> sp. Grassy (E. Gude & J. Harvey 250) [Cyperaceae]	NM, WAHERB	Rhizomatous, perennial, grass-like or herb (sedge), to 0.7 m high. Fl. yellow. Black silt. Swamps.	Potentially suitable habitat in Unit 47, 49 or 59.	Possible. Not detected in wetlands in Survey Area, however may be difficult to detect if present in low numbers.
P2 <i>Stenanthemum sublineare</i> [Rhamnaceae]	NM,	Erect shrub, to 0.1 m high. Fl. green, Oct to Dec. Littered white sand. Coastal plain.	Potential habitat in Eucalypt woodlands (12, 13, 10).	Unlikely. No survey limitations would have prevented detection if present in the Survey Area.
P2 <i>Styliidium articulatum</i> [Styliidiaceae]	NM, WAHERB	Rosetted perennial, herb, 0.15-0.25 m high, Leaves erect to spreading, oblanceolate, 3-8 cm long, 5-14 mm wide, apex subacute to acute, glabrous. Scape glandular in upper half. Inflorescence paniculate. Flowers pink, Nov to Dec. Sandy loam, granite. Hills, coastal heath.	Potential habitat around Mt Melville, however highly impacted by weeds.	Unlikely. No survey limitations would have prevented detection if present in the Survey Area.
P2 <i>Styliidium falcatum</i> [Styliidiaceae]	NM, WAHERB, TPFL	Perennial, herb, 0.15-0.35(-0.6) m high. Flowers white, Oct to Nov. Sand, gravelly clay loam. Plains, lateritic ridges.	Potential habitat around Mt Melville, however highly impacted by weeds.	Unlikely. No survey limitations would have prevented detection if present in the Survey Area.
P2 <i>Thelymitra variegata</i> [Orchidaceae]	NM, WAHERB	Tuberous, perennial, herb, 0.1-0.35 m high. Flowers orange & red & purple & pink, Jun to Sep. Sandy clay, sand, laterite.	Potential habitat in sandy Eucalypt woodlands (Unit 13).	Unlikely. Habitat not highly suitable, survey appropriately timed to be detected if present.
P3 <i>Acacia ataxiphylla</i> subsp. <i>ataxiphylla</i> [Fabaceae]	NM, WAHERB	Prostrate, sprawling shrub, 0.15-0.5 m high, to 1 m wide. Flowers yellow, Nov to Dec or Jan. Gravelly clay loam, white/grey sand. Flats, roadsides.	Wide range of suitable habitats	Unlikely. No survey limitations would have prevented detection if present in the Survey Area.
P3 <i>Andersonia auriculata</i> [Ericaceae]	NM, WAHERB, TPFL	Erect or spreading shrub, 0.1-0.3(-0.5) m high. Flowers white & blue, Apr to Oct. Grey or peaty sand, often over laterite. Swampy areas, granite outcrops.	Potential habitat around Mt Melville, however highly impacted by weeds.	Unlikely. No survey limitations would have prevented detection if present in the Survey Area.
P3 <i>Andersonia setifolia</i> [Ericaceae]	NM, WAHERB	Decumbent to erect, cushion-forming shrub, 0.05-0.15 m high. Flowers red/white, Jun to Oct. Sandy & gravelly soils. Hillslopes & breakaways.	Potential habitat around Mt Melville, however highly impacted by weeds.	Unlikely. No survey limitations would have prevented detection if present in the Survey Area.
P3 <i>Andersonia</i> sp. Mitchell River [Ericaceae]	NM	Low, spreading, cushion-like shrub, 0.05-0.4 m high. Fl. blue/blue-white-pink, Jun to Sep. Grey sand over laterite or granite.	Potential habitat around Mt Melville, however highly impacted by weeds.	Unlikely. No survey limitations would have prevented detection if present in the Survey Area.
P3 <i>Austrostipa mundula</i> [Poaceae]	NM, WAHERB	Perennial caespitose grass to 0.5m. Grey sand.	No suitable habitat (calcareous sand) present in the Survey Area.	Unlikely. No suitable habitat present.
P3 <i>Boronia crassipes</i> [Rutaceae]	NM, WAHERB	Erect, spindly shrub, 0.5-2 m high. Flowers red-pink, Aug to Sep. Sand, peaty sand. Winter-wet swamps, creeklines.		Present (See section 4.2.4)
P3 <i>Caustis</i> sp. Boyanup [Cyperaceae]	WAHERB	Rhizomatous, clumped perennial, grass-like or herb (sedge), 0.7-1 m high. White or grey sand.	Mike Hislop (Western Australian Herbarium) has indicated the taxonomy of this entity is poorly supported.	Unlikely. No survey limitations would have prevented detection if present in the Survey Area.
P3 <i>Chorizema carinatum</i> [Fabaceae]	NM, WAHERB	Erect or spreading shrub, 0.1-0.6 m high. Flowers yellow, Oct to Dec. Sand, sandy clay.	Potential habitat in laterite woodlands (12, 31)	Unlikely. No survey limitations would have prevented detection if present in the Survey Area.
P3 <i>Corybas abditus</i> [Orchidaceae]	NM, WAHERB	Tuberous, perennial, dwarf herb, 0.01-0.02 m high. Fl. red-purple, Oct to Nov. Black peaty soils. Winter-wet swamps.	Potentially suitable habitat in wetland Units 47, 49 or 59.	Unlikely. Survey appropriately timed to be detected if present.

Status, Taxon [FAMILY]	Data source	Description, Habitat & Distribution	Habitat Suitability in the Survey Area	Post -Survey Likelihood of Occurrence and Survey Effectiveness
P3 <i>Juncus melianthus</i> [Juncaceae]	NM, TPFL	Tufted perennial, herb, 0.05-0.2 m high, to 0.4 m wide. Flowers brown, Nov to Dec or Jan. Black sand, sandy clay. Creeks, seepage areas.	Wide range of suitable habitats.	Unlikely. Survey appropriately timed, however may be difficult to detect if in low numbers.
P3 <i>Lachnagrostis billardierei</i> subsp. <i>billardierei</i> [Poaceae]	NM, WAHERB	Annual, herb. Fl. purple/green, Dec. Sand over granite. Hilltops. <i>Melaleuca cuticularis</i> .	No suitable habitat in the Survey Area.	Unlikely. No suitable habitat present.
P3 <i>Leucopogon altissimus</i> [Ericaceae]	NM, WAHERB	Erect shrub to 2 m high. Inflorescence pendulous, flowers creamy - white. Grey or brown sandy loam over granite.	Generally, occurs east of the Survey Area.	Unlikely. Survey Area outside taxon's range.
P3 <i>Melaleuca ringens</i> [Myrtaceae]	WAHERB	Bushy shrub, 0.4-2.5 m high. Fl. cream-yellow, Sep to Oct. Sand. Limestone ridges & cliff-tops.	No suitable habitat (calcareous sand) present in the Survey Area.	Unlikely. No suitable habitat present.
P3 <i>Poa billardierei</i> [Poaceae]	NM, WAHERB, TPFL	Tussock grass to 0.5 m. Fore-dunes, drift sands.	No suitable habitat (calcareous sand) present in the Survey Area.	Unlikely. No suitable habitat present.
P3 <i>Synaphea incurva</i> [Proteaceae]	NM, WAHERB, TPFL	Clumped, spreading shrub. Flowers yellow, Sep to Nov. Gravelly loam, sandy soils. Slopes.		Present (See section 4.2.4)
P3 <i>Synaphea preissii</i> [Proteaceae]	NM, WAHERB	Erect, low shrub, 0.15-0.4 m high. Flowers yellow, Jul to Nov. Sand, gravelly loam.	Suitable habitat in lateritic soils (Unit 12, 31)	Unlikely. No survey limitations would have prevented detection if present in the Survey Area.
P3 <i>Verticordia endlicheriana</i> var. <i>angustifolia</i> [Myrtaceae]	NM, WAHERB	Erect shrub, 0.3-0.5 m high. Flowers yellow, Oct to Nov. Sandy clay. Granite outcrops.	Potential habitat around Mt Melville, however highly impacted by weeds.	Unlikely. No survey limitations would have prevented detection if present in the Survey Area.
P4 <i>Adenanthos x cunninghamii</i> [Proteaceae]	NM, WAHERB, TPFL	Erect open shrub, 1-3 m high. Flowers red/pink-red, Mar or Sep to Oct. Grey sand. Coastal dunes & sandplains.	No suitable habitat (calcareous sand) present in the Survey Area.	Unlikely. No suitable habitat present.
P4 <i>Andersonia</i> sp. Jamesii (J. Liddelow 84) [Ericaceae]	NM, WAHERB, TPFL	Shrub, 0.5 m high x 0.1 m wide. Perennial, erect, open. Flowers pink / blue. Sandy clay, laterite.		Present (See section 4.2.4)
P4 <i>Banksia seneciifolia</i> [Proteaceae]	NM, WAHERB	Columnar, non-lignotuberous shrub, 0.6-1 m high. Fl. cream-yellow-brown, Jun or Aug. Sandy loam, sand. Rocky hillslopes.	Suitable habitat in lateritic soils (Unit 12, 31)	Unlikely. No survey limitations would have prevented detection if present in the Survey Area.
P4 <i>Banksia serra</i> [Proteaceae]	NM, WAHERB	Erect, slender, non-lignotuberous shrub, 1-4(-7) m high. Flowers yellow/cream-green, Jul to Sep. Gravel, sand or clay loam over laterite. Hillslopes.	Suitable habitat in lateritic soils (Unit 12, 31)	Unlikely. No survey limitations would have prevented detection if present in the Survey Area.
P4 <i>Corybas limpidus</i> [Orchidaceae]	NM, WAHERB	Tuberous, perennial, dwarf herb, 0.01 m high. Flowers red & green, Aug to Sep. Sand. Coastal dunes.	No suitable habitat (calcareous sand) present in the Survey Area.	Unlikely. No suitable habitat present.
P4 <i>Drosera fimbriata</i> [Droseraceae]	NM, WAHERB, TPFL	Erect tuberous, perennial, herb, 0.05-0.15 m high. Flowers white, Sep to Oct. Deep white sand (often in <i>Banksia</i> shrublands), granite.	No suitable habitat (white sand) present in the Survey Area.	Unlikely. No suitable habitat present.
P4 <i>Gahnia sclerioides</i> [Cyperaceae]	NM, WAHERB, TPFL	Lax, slender rhizomatous, perennial, grass-like or herb (sedge), 0.3-0.9 m high. Loam, sandy soils. Moist shaded situations.	Potential habitat around Mt Melville, however highly impacted by weeds.	Unlikely. No survey limitations would have prevented detection if present in the Survey Area.
P4 <i>Gonocarpus pusillus</i> [Haloragaceae]	NM, WAHERB	Prostrate annual, herb, 0.05-1.2 m high. Flowers green/yellow-red, Nov to Dec. Grey sandy clay. Winter-wet swamps.	Potentially suitable habitat in Unit 46, 47.	Unlikely. No survey limitations would have prevented detection if present in the Survey Area.
P4 <i>Gonocarpus simplex</i> [Haloragaceae]	NM, WAHERB, TPFL	Tufted perennial, herb, 0.2-0.6 m high. Fl. green/red-brown, Nov to Dec. Peaty sand. Swamps,	Potentially suitable habitat in Unit 46, 47.	Possible. Suitable habitat present, however none are recently burnt.

Status, Taxon [FAMILY]	Data source	Description, Habitat & Distribution	Habitat Suitability in the Survey Area	Post -Survey Likelihood of Occurrence and Survey Effectiveness
		seasonally inundated areas. Prolific after fire.		
P4 <i>Kunzea pauciflora</i> [Myrtaceae]	NM	Erect, compact shrub, (0.35-)0.5-1.2(-1.5) m high. Fl. pink, Aug to Nov.	Record in Survey Area is a geospatial error.	Unlikely. Survey Area is outside the taxon's range.
P4 <i>Laxmannia jamesii</i> [Asparagaceae]	WAHERB, TPFL	Tufted, still-rooted perennial, herb, 0.05-0.2 m high. Flowers red & white, May to Jul. Grey sand. Winter-wet locations.	Potential habitat in moist sandy soils (13, 46).	Possible. Not detected in wetlands in Survey Area, however may be difficult to detect if present in low numbers and not surveyed in peak flowering time.
P4 <i>Lepidium pseudotasmanicum</i> [Brassicaceae]	NM, WAHERB	Erect annual or biennial, herb, 0.2-0.4(-1) m high. Flowers white-green, Feb or Dec. Loam, sand.	Wide range of suitable habitats	Unlikely. No survey limitations would have prevented detection if present in the Survey Area.
P4 <i>Lysinema lasianthum</i> [Ericaceae]	NM, WAHERB, TPFL	Spindly shrub, 0.25-0.7 m high. Flowers white-cream, Jul to Nov. Swamps, seasonally wet areas.	Potential habitat in moist sandy soils (13, 46).	Unlikely. No survey limitations would have prevented detection if present in the Survey Area.
P4 <i>Microtis pulchella</i> [Orchidaceae]	NM, WAHERB	Tuberous, perennial, herb, 0.12-0.25 m high. Flowers white, Nov to Dec or Jan. Peaty sand. Winter-wet swamps. Prolific after fire.	Potential habitat in wetlands (46, 47).	Possible. The absence of recent fire may have affected detection.
P4 <i>Microtis quadrata</i> [Orchidaceae]	NM, WAHERB	Erect herb with tuber, 0.4 m high. Greenish flowers. Grey sandy clay. Wet areas. Prolific after fire.	Potential habitat in wetlands (46, 47).	Possible. The absence of recent fire may have affected detection.
P4 <i>Myosotis australis</i> [Boraginaceae]	WAHERB	Erect or procumbent annual, herb, up to 0.3 m high. Fl. white/blue, Aug to Nov. Grey sand over limestone.	No suitable habitat (calcareous sand) present in the Survey Area.	Unlikely. No suitable habitat present.
P4 <i>Spyridium spadiceum</i> [Rhamnaceae]	NM, WAHERB	Erect slender or weak semi-prostrate shrub, 0.15-3 m high. Flowers white, Aug to Dec or Jan to Feb or Apr. Sand or gravelly loam. Granitic hills.	Potential habitat around Mt Melville, however highly impacted by weeds.	Unlikely. No survey limitations would have prevented detection if present in the Survey Area.
P4 <i>Thomasia quercifolia</i> [Malvaceae]	NM, WAHERB, TPFL	Shrub to 1 m high. Pink purple flowers born in Apr, Aug, Oct, Nov or Dec. Karri loam or grey coastal sand.	No suitable habitat (calcareous sand) present in the Survey Area.	Unlikely. No suitable habitat present.
P4 <i>Thomasia solanacea</i> [Malvaceae]	NM, WAHERB	Erect shrub, 0.5-3 m high. Flowers blue-purple-pink, Sep to Dec. Alluvium, sand over limestone, rocky loam. Coastal areas.	No suitable habitat (calcareous sand) present in the Survey Area.	Unlikely. No suitable habitat present.
P4 <i>Thysanotus isantherus</i> [Asparagaceae]	NM, WAHERB	Caespitose perennial, herb (with tuberous roots), to 0.15 m high. Flowers purple, Nov to Dec. Granite.		Present (See section 4.2.4)

Table E2. Likelihood of occurrence of conservation significant fauna recorded in the vicinity of the Survey Area (<10 km).

Taxon	Habitat	Likelihood of Occurrence
Mammals		
Bilby, Dalgyte (<i>Macrotis lagotis</i>) (T-VU)	Bilbies are now mostly restricted to the drier and least fertile parts of their former range with the exception of populations in the north of the NT and WA. Remaining populations occupy three major vegetation types, namely: open tussock grassland on uplands and hills, mulga woodland/shrubland growing on ridges and rises, and hummock grassland in plains and alluvial areas (Pavey 2006)	Highly Unlikely. Not within current known range. One uncertain record from 1969.
Chuditch, Western Quoll (<i>Dasyurus geoffroi</i>) (T-VU)	Eucalypt forest (especially Jarrah, <i>Eucalyptus marginata</i>), dry woodland and mallee shrublands (Van Dyke & Strahan, 2008). In Jarrah forest, Chuditch populations occur in both moist, densely vegetated, steeply sloping forest and drier, open, gently sloping forest. The Chuditch occurs at low densities, even in quality habitats of coastal areas. In Jarrah forest they shelter during the day in horizontal, hollow logs or earth burrows (DotEE 2016).	Unlikely. Suitable habitat is present, however the lack of secure, baited reserves Chuditch range widely and occur in very low densities. May use this survey area intermittingly or as movement corridor.
Dibbler (<i>Parantechinus apicalis</i>) (T-EN)	Dibblers have been recorded over an extensive area and it is likely that they can occupy a diverse range of habitats (Friend, 2004). However, the species seem to prefer vegetation with a dense canopy greater than 1 m high which has been unburnt for at least 10 years or more (Baczocha & Start 1996). Mainland habitat is characterised by the presence of long-unburnt heathland, typified by sandy substrates and occasionally lateritic soils (Baczocha & Start 1996; Barrett 1998). This generalisation applies to records from Cheyne Beach, Torndirrup National Park and most records from Fitzgerald River National Park (Friend 2004)	Highly unlikely. No suitable habitat exists within the Survey Area
Quokka (<i>Setonix brachyurus</i>) (T-VU)	A range of vegetation types including dense forests and thickets, streamside vegetation, heaths and shrublands, <i>Taxandria linearifolia</i> dominated swamps in the Jarrah (<i>Eucalyptus marginata</i>) forest. On the south coast swamps, riparian areas, incised gullies and dense coastal heath (de Tores et al. 2007). Specifically, in the Two Peoples Bay area habitat critical to survival is known to comprise of coastal heath and thickets (<i>Eucalyptus staeri</i> , <i>Allocasuarina fraseriana</i> , <i>Hakea elliptica</i> with <i>Melaleuca striatum</i> , <i>Anarthria scabrum</i>); swamps (<i>Taxandria juniperina</i> , <i>T. linearifolia</i> , <i>Melaleuca lanceolata</i> with <i>Hakea nitida</i> , <i>Beaufortia sparsa</i> and <i>Gahnia trifida</i>); and riparian systems (<i>Eucalyptus megacarpa</i> , <i>Banksia littoralis</i> , <i>Lepidosperma</i> spp.) (DotEE 2016b)	Highly unlikely. No suitable habitat exists within the Survey Area
South-western brush-tailed phascogale, wambenger (<i>Phascogale tapoatafa wambenger</i>) (CD)	Woodland and open forests, and less commonly in wetter forests, tree species... The species has an arboreal foraging habit and a preference for mature trees for nesting hollows, although sometimes smaller trees have the potential to provide nesting hollows (Abbott and Whitford (2002). Rees et al. (2006) found that suitable hollows for this species in Victoria ranged in diameter at breast height (DBH) from 25 to 171 cm, with a mean DBH for the trees used by each individual phascogale of >80 cm. Hollow entrance sizes for Brush-tailed phascogales are small, > 5cm diameter (http://www.environment.nsw.gov.au/threatenedspeciesapp/profile.aspx?id=10613)	Possible. A confirmed record of South-western brush-tailed phascogale in Mira Mar (an Albany suburb) from March 2017 indicates they possibly occur within the Albany area. Suitable habitat exists within Marri and Jarrah Woodland and Forest within the Survey Area. Trees with potential hollows with entrance sizes suitable for this species were recorded. This species is difficult to detect by signs.
Western Ringtail Possum, ngwayir (<i>Pseudocheirus occidentalis</i>) (T-CR)	See main text	Present. See main text
Woylie, Brush-tailed Bettong (<i>Bettongia penicillata</i> subsp. <i>ogilbyi</i>) (T-CR)	Current habitat includes tall eucalypt forest and woodland, dense myrtaceous shrubland, Kwongan (proteaceous) or mallee heath (Yeatman and Groom 2012 and references therein). Thickets and other suitable habitat types such as heath, provide refuges for woylies against predators.	Highly Unlikely. Suitable habitat exists, however the lack of secure, baited reserves in the Survey Area reduces the likelihood of this species being present.
Quenda, Southern Brown Bandicoot (<i>Isoodon obesulus</i> subsp. <i>fusciventer</i>) (P4)	See main text.	Present. See main text
Western Brush Wallaby (<i>Macropus irma</i>) (P4)	Habitat includes open forest or woodland, particularly favouring open, seasonally wet flats with low grasses and open scrubby thickets. It is also found in some areas of mallee and heathland, and is uncommon in karri forest.	Unlikely. Potentially suitable habitat occurs, but no scats were observed during the survey.
Water-rat, Rakali (<i>Hydromys chrysogaster</i>) (P4)	See main text	Likely. See discussion in main text

Taxon	Habitat	Likelihood of Occurrence
Birds		
Australasian Bittern (<i>Botaurus poiciloptilus</i>) T (EN)	Densely vegetated freshwater wetlands and, rarely, in estuaries or tidal wetlands. In the southwest of Western Australia, the Bittern is found in beds of tall rush mixed with or near short fine sedge or open pools. It also occurs around swamps, lakes, pools, rivers and channels fringed with lignum <i>Muehlenbeckia</i> , cane grass <i>Eragrostis</i> or other dense vegetation (Marchant & Higgins 1990). It occasionally ventures into areas of open water or onto banks. Brackish water is tolerated in estuaries and tidal wetlands; sea coasts are avoided (Pickering 2013)	Highly Unlikely. No suitable habitat exists within the Study Area.
Baudin's Cockatoo, Long-billed black-cockatoo (<i>Calyptorhynchus baudinii</i>) T (EN)	See main text.	Present. See main text
Blue-billed Duck (<i>Oxyura australis</i>) (P4)	Prefers deep water in large permanent wetlands and swamps with dense aquatic vegetation. The species is completely aquatic, swimming low in the water along the edge of dense cover. Feeds by day far from the shore, particularly if dense cover is available in the central parts of the wetland. They feed on the bottom of swamps eating seeds, buds, stems, leaves, fruit and small aquatic insects such as the larvae of midges, caddisflies and dragonflies. Blue-billed Ducks are partly migratory, with short-distance movements between breeding swamps and overwintering lakes with some long-distance dispersal to breed during spring and early summer.	Highly Unlikely. No large permanent wetlands with open water are present.
Carnaby's Cockatoo, Short-billed black-cockatoo (<i>Calyptorhynchus latirostris</i>) T (EN)	See main text.	Present. See main text.
Eastern Curlew (<i>Numenius madagascariensis</i>) T (CR) & IA	Open mossy or transitional bogs, moss-lichen bogs and wet meadows, and on the swampy shores of small lakes; in the non-breeding season it is essentially coastal, occurring at estuaries, mangrove swamps, saltmarshes and intertidal flats, particularly those with extensive seagrass (<i>Zosteraceae</i>) meadows. BirdLife Australia http://www.birdlife.org.au/bird-profile/eastern-curlew	Highly Unlikely. No suitable habitat exists within the Survey Area.
Forest Red-tailed Black-Cockatoo (<i>Calyptorhynchus banksii subsp. naso</i>) T (VU)	See main text	Present. See main text.
Noisy Scrub-bird, Tjimilik (<i>Atrichornis clamosus</i>) T (EN)	The Noisy Scrub-bird inhabits ecological communities that support a dense understorey or lower stratum of sedges and shrubs, a dense accumulation of leaf litter and an abundant population of litter-dwelling invertebrates. In the area between Oyster Harbour and Cheyne Beach, the core areas of male Noisy Scrub-bird territories are found in dense, long-unburnt vegetation characterised as low forest (5-15 m high), scrub/thicket and (rarely) heath. These vegetation formations occur in the gullies and drainage lines of hills and granite mountains and, in lowland areas, in overgrown swamps, lake margins and beside streams (Danks <i>et al.</i> 1996).	Highly Unlikely. No suitable habitat exists within the Survey Area.
Osprey, Eastern Osprey (<i>Pandion cristatus</i>) (AI)	Require extensive areas of open fresh, brackish or saline water for foraging. Frequent a variety of wetland habitats including inshore waters, reefs, bays, coastal cliffs, beaches, estuaries, mangrove swamps, broad rivers, reservoirs and large lakes and waterholes (DotE 2019)	Highly Unlikely. No suitable habitat exists within the Survey Area.
Recherche Cape Barren Goose (<i>Cereopsis novaehollandiae</i>) T (VU)	There is little published information available on the habitat of the Cape Barren Goose (south-western). It occurs on offshore islands and rocks, and at adjacent sites on the mainland. It inhabits grasslands and low fields of succulent herbs (comprised of <i>Carpobrotus</i> sp.), and occasionally occurs in open areas in taller and denser vegetation (although islands that are covered by woodlands or thickets support few birds) (Halse <i>et al.</i> 1995; Johnstone & Storr 1998). The bird has also been recorded on and near lakes and freshwater 'soaks', on the mainland (Halse <i>et al.</i> 1995).	It is only an occasional visitor to Albany area. It was recorded in 2003 within 10 km of the Survey Area but no signs were observed during the survey. It is considered unlikely given the nature, scale and location of the Survey Area.

Taxon	Habitat	Likelihood of Occurrence
Western Bristlebird (<i>Dasyornis longirostris</i>) T (EN)	The Western Bristlebird is restricted to floristically diverse low dense coastal heathland. The distribution of the Western Bristlebird is fragmented, with populations in Fitzgerald National Park separated from those in the Hassell Beach/Waychinicup National Park/Two Peoples Bay Nature Reserve area. Within this distribution, the species occurs in heathland that is 0.5–1.5 m tall, comprising a diverse variety of shrubs such as banksias, paperbarks, hakeas, sheoaks and <i>Leptospermum</i> sp. The Western Bristlebird occurs in similar areas to the Western Whipbird (<i>Psophodes nigrogularis nigrogularis</i>), Noisy Scrub-bird (<i>Atrichornis clamosus</i>) and the western subspecies of the Ground Parrot (<i>Pezoporus wallicus flaviventris</i>).	Highly Unlikely. No suitable habitat exists within the Survey Area.
Western Ground Parrot (<i>Pezoporus flaviventris</i>) T (CR)	The vegetation types used by Ground Parrots can be broadly characterised as sedgeland, temperate shrub heaths, temperate graminoid heaths or sub-tropical graminoid heaths (Burbidge <i>et al.</i> 1997). There is only one population remaining of the western subspecies of the Ground Parrot, in coastal heath east of Albany in southwest Western Australia. There are only two remaining areas of refuge, Arid and Fitzgerald River National Parks, with about 110 individuals still thought to live in the wild.	Highly Unlikely. No suitable habitat exists within the Survey Area.
Western Whipbird (western heath) [<i>Psophodes nigrogularis subsp. nigrogularis</i>] T (EN)	The western heath subspecies of the Western Whipbird is known only to occur in one small population in south Western Australia, in the Two-Peoples Bay- Mt Manypeaks region. The population at Two Peoples Bay-Mt Manypeaks region is estimated as less than 100 pairs and occurs in dense coastal heath (Simpson and Day, 2004, Smith, 1991). The preferred habitat is thicket, a two to three-metre-high formation of varied floristic composition. Other vegetation associations are used infrequently, although all nests are usually found in dense heath adjacent to areas of thicket (Smith, 1991). Restricted to a small coastal strip east of Albany from Two Peoples Bay and Mount Gardner in the south west to about Cape Riche Road in the north east, with the South Coast Highway as an approximate inland boundary. In this area it occurs in heath-like thicket associations on coastal dunes and in low, dense mallee woodland or shrubland with understorey of dense, stunted shrubs	Unlikely. The western heath subspecies of the Western Whipbird is restricted to the dense coastal heath in the Two-Peoples Bay- Mt Manypeaks region, east of the Survey Area. Given this species very specific habitat it is unlikely to occur in the Survey Area.
Malleefowl (<i>Leipoa ocellata</i>) T (VU)	Malleefowl are large and distinctive ground-dwelling birds. They occur in shrublands and low woodlands that are dominated by mallee vegetation throughout the wheatbelt and Jarrah forests, and coastal areas east of Waychinicup.	Highly unlikely. No suitable habitat present. Out of current known range.
Fork-tailed Swift, Pacific Swift (<i>Apus pacificus</i>) (IA)	The Fork-tailed Swift is almost exclusively aerial, flying from less than 1 m to at least 300 m above ground and probably much higher. Does not breed in Australia.	Possible, but does not use on-ground habitat.
Glossy ibis (<i>Plegadis falcinellus</i>) (IA)	Non-breeding visitor to the south-west of Western Australia. Requires shallow water and mudflats, so is found in well-vegetated wetlands, floodplains (http://www.birdlife.org.au/bird-profile/glossy-ibis)	Highly unlikely. No suitable habitat present.
Masked Owl (southern subsp) (<i>Tyto novaehollandiae subsp. Novaehollandiae</i>) (P3)	Inhabits forests, woodlands, timbered waterways and open country on the fringe of these areas. The main requirements are tall Eucalypts with suitable hollows for nesting and roosting and adjacent areas for foraging that support an abundance of principally terrestrial mammals, although arboreal mammals can also be taken. Also use caves for nesting. Masked Owls are territorial, and pairs remain in or near the territory all year round (Garnett 2000).	Possible. Hollows suitable for nesting are present and abundant terrestrial mammals (Quenda) as prey also present.
Peregrine Falcon (<i>Falco peregrinus</i>) (OS)	A variety of habitats from woodlands to open grasslands and coastal cliffs. Prey consists of other birds. It requires abundant prey and secure nest sites, and prefers coastal and inland cliffs or open woodlands near water. http://www.birdlife.org.au/bird-profile/peregrine-falcon	Possible. Suitable habitat exists (all forest/woodland vegetation communities) however this species is not common.
Migratory Shorebirds		
Lesser Sand Plover (<i>Charadrius mongolus</i>) T (EN) & IA	Shorebirds are a group of wading birds that can be found feeding on swamps, tidal mudflats, beaches and open country.	Highly Unlikely. No suitable habitat exists within the Survey Area.
Great Knot (<i>Calidris tenuirostris</i>) T (CR) & IA	All those listed are migratory and do not breed in Australia, except for the Hooded Plover which breeds on sandy beaches, and also occurs on inland salt lakes in the South West of WA.	
Curlew Sandpiper (<i>Calidris ferruginea</i>) T (CR) & IA		

Taxon	Habitat	Likelihood of Occurrence
Ruddy Turnstone (<i>Arenaria interpres</i>) IA		
Sharp-tailed Sandpiper (<i>Calidris acuminata</i>)		
Sanderling (<i>Calidris alba</i>) IA		
Red-necked Stint (<i>Calidris ruficollis</i>) IA		
Greater Sand Plover (<i>Charadrius leschenaultii</i>) IA		
Bar-tailed Godwit (<i>Limosa lapponica</i>) IA		
Black-tailed Godwit (<i>Limosa limosa</i>) IA		
Whimbrel (<i>Numenius phaeopus</i>) IA		
Pacific Golden Plover (<i>Pluvialis fulva</i>)		
Grey Plover (<i>Pluvialis squatarola</i>) IA		
Grey-tailed Tattler (<i>Tringa brevipes</i>) IA		
Wood Sandpiper (<i>Tringa glareola</i>) IA		
Ruff Reeve (<i>Philomachus pugnax</i>) IA		
Hooded Plover (<i>Thinornis rubricollis</i>) IA		
Common Greenshank, greenshank (<i>Tringa nebularia</i>) IA		
Marsh Sandpiper, little greenshank (<i>Tringa stagnatilis</i>) IA		
Terek Sandpiper (<i>Xenus cinereus</i>) IA		
Reptiles		
Short-nosed Snake (<i>Elapognathus minor</i>) (P2)	See main text	Possible. See discussion in main text
Fish		
Balston's Pygmy Perch (<i>Nannatherina balstoni</i>) T (VU)	Inhabits acidic, tannin-stained freshwater pools, streams and lakes in peat flats within 30 km of the coast Margaret River and Two People's Bay. Typically found in freshwater with a pH range of 3.0–6.5 and seasonally fluctuating temperatures of 11–30 °C. It is typically found amongst inundated riparian vegetation where it is thought to feed and spawn, though adults are also found in open water. Larvae tend to be confined to shallow water < 10 cm deep amongst the flooded riparian vegetation, and as the larvae increase in size they gradually move to deeper waters (Morgan <i>et al.</i> 1995).	Highly Unlikely. No suitable habitat exists within the Survey Area.
Mud Minnow, Western Dwarf Galaxias (<i>Galaxiella munda</i>) T (EN)	Occurs in swift flowing streams within karri forests and is typically found near submerged vegetation, occasionally in the still water of ponds, swamps and roadside drains, and often inhabiting darkly tannin-stained and acidic water	Highly Unlikely. No suitable habitat exists within the Survey Area.
Pouched Lamprey (<i>Geotria australis</i>) (P3)	Adults spawn in the headwaters of freshwater rivers and streams, and when the larvae or ammocoetes hatch, they drift downstream and burrow into soft muddy sediments. They spend the next few years filter-feeding on micro-organisms from the water above. After metamorphosis, young adults migrate downstream to estuaries and coastal waters, where they feed parasitically by rasping flesh from other fishes with their toothy tongues. They eventually cease feeding and migrate back to freshwater to breed (Bray and Gomon 2011)	Highly Unlikely. No suitable habitat exists within the Survey Area.
Black-stripe Minnow, Black-striped Dwarf Galaxias (<i>Galaxiella nigrostriata</i>) T (EN)	Found only in coastal wetlands of south-west Western Australia. During summer when ephemeral pools dry out, they burrow into the moist soil below and aestivate until the rains return in autumn (Bray and Gomon 2011)	Highly Unlikely. No suitable habitat exists within the Survey Area.

Taxon	Habitat	Likelihood of Occurrence
Salamanderfish (<i>Lepidogalaxias salamandroides</i>) T (EN)	Live in small semi-permanent (ephemeral) pools and shallow streams and drains in generally acidic water around pH 4. Feeds mainly on aquatic insect larvae and small crustaceans. Are uniquely adapted to survive the desiccation of their habitat. When pools dry out, they burrow into the damp bottom sand which remains moistened by ground water (Allen et al 2002; Bray 2017)	Highly Unlikely. The species was recorded Lake Powel in 1976, but has since been found to be endemic to temperate freshwaters of south-west Western Australia, and known only from heathland peat flats between the Blackwood and Kent Rivers (Bray 2017)
Invertebrates		
Carter's Freshwater Mussel (<i>Westralunio carteri</i>) T (VU)	See main text	Possible. See discussion in main text
Banksia brownii plant-louse (<i>Trioxa barrettiae</i>) T (EN)	Current records from the Stirling Range NP and the Vancouver Peninsula (Taylor and Moir 2014). It is closely associated with its only known host plant <i>Banksia brownii</i> .	Highly Unlikely. No <i>Banksia brownii</i> populations are present.
Western Archaeid Spider (<i>Zephyrarchaea mainae</i>) T (VU)	Associated with Gondwanan refugial habitats. Requires long unburnt low coastal peppermint (<i>Agonis flexuosa</i>) woodland with a coastal heath understorey and leaf litter accumulating on top of the understorey sedges (<i>Lepidosperma</i> and Restionaceae) that remain most throughout the year (Rix and Harvey 2009). Specimens have been collected by beating and sifting sedges and low shrubs in dense coastal or near-coastal groves of Peppermint (<i>Agonis</i> sp.), with several outlying populations also known from wet Karri (<i>Eucalyptus diversicolor</i>) forest (Rix and Harvey 2012).	Highly unlikely, no suitable habitat exists within the Survey Area
Woolybush bee (<i>Hylaeus globuliferus</i>) (P3)	See main text	Possible. See discussion in main text
Helicarionid land snail (<i>Helicarion castanea</i>) (EX)	Unknown.	Highly Unlikely. Habitat unknown. Presumed Extinct

13 APPENDIX F - Significant Flora, Weed and Tree Locations

F1. Conservation Significant flora locations.

Taxon	Count	Easting	Northing	Zone	Cons_Code	SurveyDate
<i>Andersonia</i> sp. Jamesii (J. Liddelow 84)	2	574146	6126842	50	P4	22/11/2017
<i>Andersonia</i> sp. Jamesii (J. Liddelow 84)	4	574144	6126841	50	P4	22/11/2017
<i>Andersonia</i> sp. Jamesii (J. Liddelow 84)	2	574166	6126838	50	P4	28/11/2017
<i>Andersonia</i> sp. Jamesii (J. Liddelow 84)	4	574152	6126812	50	P4	28/11/2017
<i>Andersonia</i> sp. Jamesii (J. Liddelow 84)	1	574164	6126832	50	P4	28/11/2017
<i>Andersonia</i> sp. Jamesii (J. Liddelow 84)	1	574166	6126843	50	P4	28/11/2017
<i>Andersonia</i> sp. Jamesii (J. Liddelow 84)	1	574158	6126809	50	P4	28/11/2017
<i>Andersonia</i> sp. Jamesii (J. Liddelow 84)	1	574157	6126809	50	P4	28/11/2017
<i>Andersonia</i> sp. Jamesii (J. Liddelow 84)	1	574155	6126810	50	P4	28/11/2017
<i>Andersonia</i> sp. Jamesii (J. Liddelow 84)	1	574168	6126829	50	P4	28/11/2017
<i>Andersonia</i> sp. Jamesii (J. Liddelow 84)	1	574149	6126806	50	P4	28/11/2017
<i>Andersonia</i> sp. Jamesii (J. Liddelow 84)	1	574124	6126804	50	P4	28/11/2017
<i>Andersonia</i> sp. Jamesii (J. Liddelow 84)	1	574148	6126823	50	P4	28/11/2017
<i>Andersonia</i> sp. Jamesii (J. Liddelow 84)	1	575014	6130503	50	P3	20/02/2018
<i>Andersonia</i> sp. Jamesii (J. Liddelow 84)	1	575065	6130455	50	P4	8/08/2019
<i>Boronia crassipes</i>	10	574428	6127437	50	P3	26/11/2017
<i>Boronia crassipes</i>	5	574410	6127430	50	P3	26/11/2017
<i>Boronia crassipes</i>	20	574401	6127426	50	P3	26/11/2017
<i>Boronia crassipes</i>	6	574388	6127422	50	P3	26/11/2017
<i>Boronia crassipes</i>	5	574374	6127418	50	P3	26/11/2017
<i>Boronia crassipes</i>	5	574452	6127424	50	P3	26/11/2017
<i>Boronia crassipes</i>	100	574316	6127403	50	P3	26/11/2017
<i>Boronia crassipes</i>	15	574275	6127405	50	P3	26/11/2017
<i>Boronia crassipes</i>	100	574253	6127405	50	P3	26/11/2017
<i>Boronia crassipes</i>	750	574500	6127451	50	P3	26/11/2017
<i>Boronia crassipes</i>	1	574266	6127408	50	P3	27/11/2017
<i>Boronia crassipes</i>	1	574274	6127391	50	P3	27/11/2017
<i>Synaphea incurva</i>	1	574217	6126580	50	P1	22/11/2017
<i>Synaphea incurva</i>	4	574298	6127572	50	P1	22/11/2017
<i>Synaphea incurva</i>	3	574217	6126562	50	P1	22/11/2017
<i>Thysanotus isantherus</i>	1	578872	6124100	50	P4	7/11/2017
<i>Thysanotus isantherus</i>	1	578964	6124166	50	P4	7/11/2017

F2. Significant weed locations.

Taxon	Status	Easting	Northing	SurveyDate
<i>Asparagus asparagoides</i>	WONS	573748	6126781	22/11/2017
<i>Asparagus asparagoides</i>	WONS	578591	6124174	23/11/2017
<i>Lantana camara</i>	WONS	578768	6124375	23/11/2017
<i>Rubus fruticosus aggregate</i>	WONS	573750	6126779	22/11/2017
<i>Rubus fruticosus aggregate</i>	WONS	578816	6124060	23/11/2017
<i>Rubus fruticosus aggregate</i>	WONS	578770	6124240	23/11/2017
<i>Rubus fruticosus aggregate</i>	WONS	578774	6124125	23/11/2017
<i>Rubus fruticosus aggregate</i>	WONS	578767	6124106	23/11/2017
<i>Rubus fruticosus aggregate</i>	WONS	576754	6124737	23/11/2017
<i>Rubus fruticosus aggregate</i>	WONS	574435	6127389	24/11/2017
<i>Rubus fruticosus aggregate</i>	WONS	574277	6127385	27/11/2017
<i>Rubus fruticosus aggregate</i>	WONS	574269	6127376	27/11/2017
<i>Rubus fruticosus aggregate</i>	WONS	574210	6127373	27/11/2017
<i>Rubus fruticosus aggregate</i>	WONS	574599	6127487	27/11/2017
<i>Rubus fruticosus aggregate</i>	WONS	575023	6130503	30/11/2017
<i>Rubus fruticosus aggregate</i>	WONS	574989	6130535	30/11/2017
<i>Rubus fruticosus aggregate</i>	WONS	576189	6124831	30/11/2017
<i>Ulex europaeus</i>	WONS	573763	6126758	22/11/2017
<i>Ulex europaeus</i>	WONS	573818	6126574	22/11/2017
<i>Ulex europaeus</i>	WONS	578812	6124053	23/11/2017

Taxon	Status	Easting	Northing	SurveyDate
<i>Ulex europaeus</i>	WONS	578811	6124064	23/11/2017
<i>Zantedeschia aethiopica</i>	Declared Pest	578624	6124155	23/11/2017
<i>Zantedeschia aethiopica</i>	Declared Pest	574405	6127547	24/11/2017

F3. Potential Black Cockatoo breeding tree locations.

Flora_sp	Easting	Northing	DBH_mm_	Zone	Hollow	Hollow_Sz
<i>Corymbia calophylla</i>	574249	6125823	500	50	0	
<i>Corymbia calophylla</i>	574246	6125835	500	50	0	
<i>Corymbia calophylla</i>	574245	6125905	500	50	0	
<i>Corymbia calophylla</i>	573667	6126346	500	50	0	
<i>Corymbia calophylla</i>	574205	6126477	500	50	0	
<i>Corymbia calophylla</i>	578343	6124336	500	50	0	
<i>Corymbia calophylla</i>	578652	6124298	500	50	0	
<i>Corymbia calophylla</i>	578619	6124378	500	50	0	
<i>Corymbia calophylla</i>	578629	6124426	500	50	0	
<i>Corymbia calophylla</i>	578845	6123969	500	50	0	
<i>Corymbia calophylla</i>	576775	6124631	500	50	0	
<i>Corymbia calophylla</i>	574302	6127653	500	50	0	
<i>Corymbia calophylla</i>	574368	6129128	500	50	0	
<i>Corymbia calophylla</i>	578790	6124034	505	50	0	
<i>Corymbia calophylla</i>	574365	6125864	510	50	0	
<i>Corymbia calophylla</i>	574243	6125826	510	50	0	
<i>Corymbia calophylla</i>	574252	6125903	510	50	0	
<i>Corymbia calophylla</i>	573738	6126920	510	50	0	
<i>Corymbia calophylla</i>	573726	6126402	510	50	0	
<i>Corymbia calophylla</i>	578663	6124278	510	50	0	
<i>Corymbia calophylla</i>	574227	6125552	510	50	0	
<i>Corymbia calophylla</i>	574364	6125759	510	50	0	
<i>Corymbia calophylla</i>	578763	6124178	515	50	0	
<i>Corymbia calophylla</i>	578780	6124162	515	50	0	
<i>Corymbia calophylla</i>	578631	6124305	520	50	0	
<i>Corymbia calophylla</i>	576785	6124720	520	50	0	
<i>Corymbia calophylla</i>	574422	6125821	520	50	0	
<i>Corymbia calophylla</i>	574360	6125847	520	50	0	
<i>Corymbia calophylla</i>	578774	6124119	520	50	0	
<i>Corymbia calophylla</i>	574233	6125920	520	50	0	
<i>Corymbia calophylla</i>	573630	6126927	520	50	0	
<i>Corymbia calophylla</i>	573816	6126871	520	50	0	
<i>Corymbia calophylla</i>	574205	6126519	520	50	0	
<i>Corymbia calophylla</i>	578877	6124385	520	50	0	
<i>Corymbia calophylla</i>	578622	6124367	520	50	0	
<i>Corymbia calophylla</i>	576762	6124696	520	50	0	
<i>Corymbia calophylla</i>	574350	6129139	520	50	0	
<i>Corymbia calophylla</i>	574399	6125795	520	50	0	
<i>Corymbia calophylla</i>	578843	6124027	525	50	0	
<i>Corymbia calophylla</i>	573801	6126738	530	50	0	
<i>Corymbia calophylla</i>	578662	6124304	530	50	0	

Flora_sp	Eastings	Northing	DBH_mm_	Zone	Hollow	Hollow_Sz
<i>Corymbia calophylla</i>	578683	6124398	530	50	0	
<i>Corymbia calophylla</i>	578666	6124387	530	50	0	
<i>Corymbia calophylla</i>	578653	6124394	530	50	0	
<i>Corymbia calophylla</i>	576756	6124647	530	50	0	
<i>Corymbia calophylla</i>	576826	6124694	535	50	0	
<i>Corymbia calophylla</i>	574439	6125820	540	50	0	
<i>Corymbia calophylla</i>	578623	6124424	540	50	0	
<i>Corymbia calophylla</i>	578779	6123986	540	50	0	
<i>Corymbia calophylla</i>	578792	6124040	540	50	0	
<i>Corymbia calophylla</i>	578842	6124018	540	50	0	
<i>Corymbia calophylla</i>	574319	6129083	540	50	0	
<i>Corymbia calophylla</i>	574322	6129121	540	50	0	
<i>Corymbia calophylla</i>	574326	6127624	540	50	0	
<i>Corymbia calophylla</i>	578682	6124225	545	50	0	
<i>Corymbia calophylla</i>	578858	6124195	545	50	0	
<i>Corymbia calophylla</i>	574326	6125885	550	50	0	
<i>Corymbia calophylla</i>	574250	6125913	550	50	0	
<i>Corymbia calophylla</i>	574061	6126412	550	50	0	
<i>Corymbia calophylla</i>	573763	6126590	550	50	0	
<i>Corymbia calophylla</i>	578457	6124573	550	50	0	
<i>Corymbia calophylla</i>	578840	6124232	550	50	0	
<i>Corymbia calophylla</i>	578760	6124400	550	50	0	
<i>Corymbia calophylla</i>	578614	6124379	550	50	0	
<i>Corymbia calophylla</i>	578587	6124408	550	50	0	
<i>Corymbia calophylla</i>	574315	6129064	550	50	0	
<i>Corymbia calophylla</i>	576739	6124686	550	50	0	
<i>Corymbia calophylla</i>	574329	6129069	550	50	0	
<i>Corymbia calophylla</i>	574302	6125875	560	50	0	
<i>Corymbia calophylla</i>	574234	6125961	560	50	0	
<i>Corymbia calophylla</i>	573669	6126273	560	50	0	
<i>Corymbia calophylla</i>	578886	6124254	560	50	0	
<i>Corymbia calophylla</i>	576795	6124622	560	50	0	
<i>Corymbia calophylla</i>	578686	6124214	565	50	0	
<i>Corymbia calophylla</i>	578841	6124242	565	50	0	
<i>Corymbia calophylla</i>	578791	6124041	570	50	0	
<i>Corymbia calophylla</i>	574228	6125881	570	50	0	
<i>Corymbia calophylla</i>	574086	6126449	570	50	0	
<i>Corymbia calophylla</i>	573732	6126402	570	50	0	
<i>Corymbia calophylla</i>	578592	6124428	570	50	0	
<i>Corymbia calophylla</i>	578608	6124437	570	50	0	
<i>Corymbia calophylla</i>	574366	6125763	570	50	0	
<i>Corymbia calophylla</i>	574381	6125889	580	50	0	
<i>Corymbia calophylla</i>	574263	6125916	580	50	0	
<i>Corymbia calophylla</i>	573674	6126831	580	50	0	
<i>Corymbia calophylla</i>	573667	6126302	580	50	0	
<i>Corymbia calophylla</i>	578606	6124411	580	50	0	
<i>Corymbia calophylla</i>	576794	6124626	580	50	0	

Flora_sp	Easting	Northing	DBH_mm_	Zone	Hollow	Hollow_Sz
<i>Corymbia calophylla</i>	574229	6125703	580	50	0	
<i>Corymbia calophylla</i>	574391	6125758	590	50	0	
<i>Corymbia calophylla</i>	574425	6125790	590	50	0	
<i>Corymbia calophylla</i>	573673	6126266	590	50	0	
<i>Corymbia calophylla</i>	573668	6126228	590	50	0	
<i>Corymbia calophylla</i>	578649	6124361	590	50	0	
<i>Corymbia calophylla</i>	576781	6124663	590	50	0	
<i>Corymbia calophylla</i>	576762	6124635	590	50	0	
<i>Corymbia calophylla</i>	574227	6125620	590	50	0	
<i>Corymbia calophylla</i>	578857	6124231	595	50	0	
<i>Corymbia calophylla</i>	578721	6124227	595	50	0	
<i>Corymbia calophylla</i>	578850	6124044	600	50	0	
<i>Corymbia calophylla</i>	578795	6124035	600	50	0	
<i>Corymbia calophylla</i>	574233	6125845	600	50	0	
<i>Corymbia calophylla</i>	574065	6126343	600	50	0	
<i>Corymbia calophylla</i>	573824	6126895	600	50	0	
<i>Corymbia calophylla</i>	578880	6124361	600	50	0	
<i>Corymbia calophylla</i>	578661	6124341	600	50	0	
<i>Corymbia calophylla</i>	578602	6124349	600	50	0	
<i>Corymbia calophylla</i>	578633	6124364	600	50	0	
<i>Corymbia calophylla</i>	578567	6124242	600	50	0	
<i>Corymbia calophylla</i>	578833	6124035	600	50	0	
<i>Corymbia calophylla</i>	574334	6127623	600	50	0	
<i>Corymbia calophylla</i>	574325	6127622	600	50	0	
<i>Corymbia calophylla</i>	574436	6125798	600	50	0	
<i>Corymbia calophylla</i>	578781	6124124	605	50	0	
<i>Corymbia calophylla</i>	574307	6127651	610	50	0	
<i>Corymbia calophylla</i>	578695	6124335	610	50	0	
<i>Corymbia calophylla</i>	574354	6125830	610	50	0	
<i>Corymbia calophylla</i>	578838	6123999	610	50	0	
<i>Corymbia calophylla</i>	574371	6127581	610	50	0	
<i>Corymbia calophylla</i>	574427	6125823	620	50	0	
<i>Corymbia calophylla</i>	578671	6124365	620	50	0	
<i>Corymbia calophylla</i>	578772	6123990	620	50	0	
<i>Corymbia calophylla</i>	576856	6124644	630	50	0	
<i>Corymbia calophylla</i>	574366	6125900	630	50	0	
<i>Corymbia calophylla</i>	574248	6125835	630	50	0	
<i>Corymbia calophylla</i>	578870	6124022	630	50	0	
<i>Corymbia calophylla</i>	574398	6125832	630	50	0	
<i>Corymbia calophylla</i>	574367	6125839	630	50	0	
<i>Corymbia calophylla</i>	574161	6126416	630	50	0	
<i>Corymbia calophylla</i>	573808	6126864	630	50	0	
<i>Corymbia calophylla</i>	578795	6124038	630	50	0	
<i>Corymbia calophylla</i>	576781	6124646	630	50	0	
<i>Corymbia calophylla</i>	576721	6124696	630	50	0	
<i>Corymbia calophylla</i>	574255	6125828	640	50	0	
<i>Corymbia calophylla</i>	578839	6124034	640	50	0	

Flora_sp	Easting	Northing	DBH_mm_	Zone	Hollow	Hollow_Sz
<i>Corymbia calophylla</i>	573727	6126241	640	50	0	
<i>Corymbia calophylla</i>	578664	6124285	640	50	0	
<i>Corymbia calophylla</i>	576763	6124729	640	50	0	
<i>Corymbia calophylla</i>	574346	6127605	640	50	0	
<i>Corymbia calophylla</i>	578835	6124031	650	50	0	
<i>Corymbia calophylla</i>	574320	6125882	650	50	0	
<i>Corymbia calophylla</i>	576860	6124678	650	50	0	
<i>Corymbia calophylla</i>	578433	6124578	650	50	0	
<i>Corymbia calophylla</i>	574316	6129137	650	50	0	
<i>Corymbia calophylla</i>	578764	6124170	655	50	0	
<i>Corymbia calophylla</i>	578819	6124046	655	50	0	
<i>Corymbia calophylla</i>	576832	6124696	655	50	0	
<i>Corymbia calophylla</i>	574278	6125874	660	50	0	
<i>Corymbia calophylla</i>	574320	6125895	660	50	0	
<i>Corymbia calophylla</i>	574277	6125885	660	50	0	
<i>Corymbia calophylla</i>	574365	6125878	660	50	0	
<i>Corymbia calophylla</i>	574338	6127622	660	50	0	
<i>Corymbia calophylla</i>	574225	6125598	660	50	0	
<i>Corymbia calophylla</i>	578800	6124246	670	50	0	
<i>Corymbia calophylla</i>	578645	6124342	670	50	0	
<i>Corymbia calophylla</i>	578613	6124411	670	50	0	
<i>Corymbia calophylla</i>	574319	6127621	670	50	0	
<i>Corymbia calophylla</i>	578611	6124241	680	50	0	
<i>Corymbia calophylla</i>	574229	6125934	680	50	0	
<i>Corymbia calophylla</i>	576784	6124653	680	50	0	
<i>Corymbia calophylla</i>	574226	6125558	690	50	0	
<i>Corymbia calophylla</i>	574233	6125887	690	50	0	
<i>Corymbia calophylla</i>	574086	6126340	690	50	0	
<i>Corymbia calophylla</i>	574023	6126349	690	50	0	
<i>Corymbia calophylla</i>	573700	6126254	690	50	0	
<i>Corymbia calophylla</i>	574230	6125873	690	50	0	
<i>Corymbia calophylla</i>	578659	6124278	690	50	0	
<i>Corymbia calophylla</i>	578652	6124243	690	50	0	
<i>Corymbia calophylla</i>	578605	6124425	690	50	0	
<i>Corymbia calophylla</i>	574287	6125756	690	50	0	
<i>Corymbia calophylla</i>	574407	6125804	690	50	0	
<i>Corymbia calophylla</i>	578822	6124226	695	50	0	
<i>Corymbia calophylla</i>	578698	6124260	700	50	0	
<i>Corymbia calophylla</i>	574232	6125789	700	50	0	
<i>Corymbia calophylla</i>	574234	6126544	700	50	0	
<i>Corymbia calophylla</i>	574027	6126307	700	50	0	
<i>Corymbia calophylla</i>	573665	6126213	700	50	0	
<i>Corymbia calophylla</i>	578671	6124359	700	50	0	
<i>Corymbia calophylla</i>	574333	6128180	700	50	0	
<i>Corymbia calophylla</i>	574318	6129131	700	50	0	
<i>Corymbia calophylla</i>	574228	6125588	700	50	0	
<i>Corymbia calophylla</i>	574376	6125798	700	50	0	

Flora_sp	Easting	Northing	DBH_mm_	Zone	Hollow	Hollow_Sz
<i>Corymbia calophylla</i>	578761	6124143	710	50	0	
<i>Corymbia calophylla</i>	574247	6125869	710	50	0	
<i>Corymbia calophylla</i>	574348	6125884	710	50	0	
<i>Corymbia calophylla</i>	574323	6129069	710	50	0	
<i>Corymbia calophylla</i>	574419	6125799	710	50	0	
<i>Corymbia calophylla</i>	578830	6124224	715	50	0	
<i>Corymbia calophylla</i>	574224	6125420	720	50	0	
<i>Corymbia calophylla</i>	574380	6125885	720	50	0	
<i>Corymbia calophylla</i>	574280	6125905	720	50	0	
<i>Corymbia calophylla</i>	578615	6124395	720	50	0	
<i>Corymbia calophylla</i>	576770	6124724	720	50	0	
<i>Corymbia calophylla</i>	578737	6124255	725	50	0	
<i>Corymbia calophylla</i>	574300	6127650	730	50	0	
<i>Corymbia calophylla</i>	574256	6126513	740	50	0	
<i>Corymbia calophylla</i>	573732	6126390	740	50	0	
<i>Corymbia calophylla</i>	578627	6124395	740	50	0	
<i>Corymbia calophylla</i>	574250	6125855	750	50	0	
<i>Corymbia calophylla</i>	578825	6124225	750	50	0	
<i>Corymbia calophylla</i>	574226	6125926	760	50	0	
<i>Corymbia calophylla</i>	574343	6129082	760	50	0	
<i>Corymbia calophylla</i>	574376	6125933	770	50	0	
<i>Corymbia calophylla</i>	573728	6126278	770	50	0	
<i>Corymbia calophylla</i>	574377	6127575	770	50	0	
<i>Corymbia calophylla</i>	574226	6125699	770	50	0	
<i>Corymbia calophylla</i>	574065	6126334	780	50	0	
<i>Corymbia calophylla</i>	576732	6124686	780	50	0	
<i>Corymbia calophylla</i>	574254	6125820	790	50	0	
<i>Corymbia calophylla</i>	578606	6124239	790	50	0	
<i>Corymbia calophylla</i>	574227	6125430	790	50	0	
<i>Corymbia calophylla</i>	578647	6124382	800	50	0	
<i>Corymbia calophylla</i>	578863	6124020	800	50	0	
<i>Corymbia calophylla</i>	574285	6125886	800	50	0	
<i>Corymbia calophylla</i>	574346	6125888	800	50	0	
<i>Corymbia calophylla</i>	573683	6126252	810	50	0	
<i>Corymbia calophylla</i>	574360	6125916	810	50	0	
<i>Corymbia calophylla</i>	574342	6129114	820	50	0	
<i>Corymbia calophylla</i>	576849	6124651	830	50	0	
<i>Corymbia calophylla</i>	578710	6124310	845	50	0	
<i>Corymbia calophylla</i>	574230	6125901	850	50	0	
<i>Corymbia calophylla</i>	578644	6124424	850	50	0	
<i>Corymbia calophylla</i>	578807	6124146	860	50	0	
<i>Corymbia calophylla</i>	578692	6124232	860	50	0	
<i>Corymbia calophylla</i>	578687	6124234	860	50	0	
<i>Corymbia calophylla</i>	578816	6124217	865	50	0	
<i>Corymbia calophylla</i>	574360	6125807	870	50	0	
<i>Corymbia calophylla</i>	574381	6127577	870	50	0	
<i>Corymbia calophylla</i>	578848	6124048	875	50	0	

Flora_sp	Easting	Northing	DBH_mm_	Zone	Hollow	Hollow_Sz
<i>Corymbia calophylla</i>	578627	6124322	880	50	0	
<i>Corymbia calophylla</i>	574296	6125763	880	50	0	
<i>Corymbia calophylla</i>	576774	6124663	890	50	0	
<i>Corymbia calophylla</i>	578821	6124045	890	50	0	
<i>Corymbia calophylla</i>	578809	6123954	900	50	0	
<i>Corymbia calophylla</i>	574240	6125819	910	50	0	
<i>Corymbia calophylla</i>	574056	6126413	920	50	0	
<i>Corymbia calophylla</i>	578697	6124408	920	50	0	
<i>Corymbia calophylla</i>	574023	6126316	940	50	0	
<i>Corymbia calophylla</i>	578674	6124316	940	50	0	
<i>Corymbia calophylla</i>	578686	6124414	970	50	0	
<i>Corymbia calophylla</i>	574144	6126587	980	50	0	
<i>Corymbia calophylla</i>	578812	6124009	980	50	0	
<i>Corymbia calophylla</i>	578700	6124242	985	50	0	
<i>Corymbia calophylla</i>	573676	6126911	990	50	0	
<i>Corymbia calophylla</i>	574288	6128495	1000	50	0	
<i>Corymbia calophylla</i>	574359	6125796	1000	50	0	
<i>Corymbia calophylla</i>	574269	6125874	1010	50	0	
<i>Corymbia calophylla</i>	574405	6125926	1030	50	0	
<i>Corymbia calophylla</i>	576788	6124626	1040	50	0	
<i>Corymbia calophylla</i>	574232	6125841	1070	50	0	
<i>Corymbia calophylla</i>	578802	6124253	1080	50	0	
<i>Corymbia calophylla</i>	574314	6125877	1080	50	0	
<i>Corymbia calophylla</i>	576783	6124628	1140	50	0	
<i>Corymbia calophylla</i>	574387	6125755	1150	50	0	
<i>Corymbia calophylla</i>	578749	6123993	1230	50	0	
<i>Corymbia calophylla</i>	574292	6127645	1300	50	0	
<i>Corymbia calophylla</i>	578399	6124601	550	50	0	
<i>Corymbia calophylla</i>	576761	6124672	550	50	1	100
<i>Corymbia calophylla</i>	576792	6124651	620	50	1	100
<i>Corymbia calophylla</i>	574323	6129121	730	50	1	100
<i>Corymbia calophylla</i>	576838	6124675	835	50	1	100
<i>Corymbia calophylla</i>	574365	6125885	660	50	2	100,100
<i>Corymbia calophylla</i>	573677	6126294	770	50	2	100,200
<i>Corymbia calophylla</i>	578790	6124037	510	50	1	150
<i>Corymbia calophylla</i>	578876	6124351	510	50	1	150
<i>Corymbia calophylla</i>	574227	6125564	540	50	1	150
<i>Corymbia calophylla</i>	578705	6124400	710	50	1	150
<i>Corymbia calophylla</i>	576774	6124673	950	50	1	150
<i>Corymbia calophylla</i>	578661	6124416	860	50	2	150,150
<i>Corymbia calophylla</i>	574314	6127600	690	50	3	150,150,150
<i>Corymbia calophylla</i>	578882	6124340	730	50	2	150,200
<i>Corymbia calophylla</i>	574341	6127608	520	50	1	200
<i>Corymbia calophylla</i>	578866	6124391	560	50	1	200
<i>Corymbia calophylla</i>	574285	6125875	570	50	1	200
<i>Corymbia calophylla</i>	573772	6126314	590	50	1	200
<i>Corymbia calophylla</i>	574440	6125815	620	50	1	200

Flora_sp	Easting	Northing	DBH_mm_	Zone	Hollow	Hollow_Sz
<i>Corymbia calophylla</i>	573672	6126288	630	50	1	200
<i>Corymbia calophylla</i>	578665	6124417	650	50	1	200
<i>Corymbia calophylla</i>	573696	6126255	670	50	1	200
<i>Corymbia calophylla</i>	573777	6126326	690	50	1	200
<i>Corymbia calophylla</i>	574422	6125869	760	50	1	200
<i>Corymbia calophylla</i>	578604	6124399	810	50	1	200
<i>Corymbia calophylla</i>	574363	6125826	940	50	1	200
<i>Corymbia calophylla</i>	574384	6125785	1060	50	1	200
<i>Corymbia calophylla</i>	573715	6126294	850	50	2	200,300
<i>Corymbia calophylla</i>	574407	6125804	690	50	1	300
<i>Corymbia calophylla</i>	578789	6124196	920	50	1	340
<i>Dead Stag of Eucalyptus marginata or Corymbia calophylla</i>	578802	6124152	500	50	0	
<i>Dead Stag of Eucalyptus marginata or Corymbia calophylla</i>	574130	6126445	500	50	0	
<i>Dead Stag of Eucalyptus marginata or Corymbia calophylla</i>	578696	6124401	510	50	0	
<i>Dead Stag of Eucalyptus marginata or Corymbia calophylla</i>	578824	6124226	520	50	0	
<i>Dead Stag of Eucalyptus marginata or Corymbia calophylla</i>	578767	6124019	590	50	0	
<i>Dead Stag of Eucalyptus marginata or Corymbia calophylla</i>	578803	6124042	595	50	0	
<i>Dead Stag of Eucalyptus marginata or Corymbia calophylla</i>	578785	6124210	600	50	0	
<i>Dead Stag of Eucalyptus marginata or Corymbia calophylla</i>	578884	6124185	635	50	0	
<i>Dead Stag of Eucalyptus marginata or Corymbia calophylla</i>	573980	6126497	640	50	0	
<i>Dead Stag of Eucalyptus marginata or Corymbia calophylla</i>	578803	6124249	660	50	0	
<i>Dead Stag of Eucalyptus marginata or Corymbia calophylla</i>	578788	6124167	670	50	0	
<i>Dead Stag of Eucalyptus marginata or Corymbia calophylla</i>	578798	6124234	670	50	0	
<i>Dead Stag of Eucalyptus marginata or Corymbia calophylla</i>	578820	6124228	770	50	0	
<i>Dead Stag of Eucalyptus marginata or Corymbia calophylla</i>	578801	6124254	820	50	0	
<i>Dead Stag of Eucalyptus marginata or Corymbia calophylla</i>	573718	6127025	1650	50	0	
<i>Dead Stag of Eucalyptus marginata or Corymbia calophylla</i>	574343	6128064	900	50	1	100
<i>Dead Stag of Eucalyptus marginata or Corymbia calophylla</i>	574318	6128030	730	50	1	100
<i>Dead Stag of Eucalyptus marginata or Corymbia calophylla</i>	573975	6126522	730	50	5	100,100,100,200,300
<i>Dead Stag of Eucalyptus marginata or Corymbia calophylla</i>	574370	6129121	530	50	1	150
<i>Dead Stag of Eucalyptus marginata or Corymbia calophylla</i>	578793	6124279	540	50	1	150
<i>Dead Stag of Eucalyptus marginata or Corymbia calophylla</i>	578785	6124299	560	50	1	150

Flora_sp	Easting	Northing	DBH_mm_	Zone	Hollow	Hollow_Sz
<i>Dead Stag of Eucalyptus marginata or Corymbia calophylla</i>	574228	6125608	620	50	1	150
<i>Dead Stag of Eucalyptus marginata or Corymbia calophylla</i>	574434	6125878	570	50	2	150,150
<i>Dead Stag of Eucalyptus marginata or Corymbia calophylla</i>	574385	6128520	820	50	1	200
<i>Dead Stag of Eucalyptus marginata or Corymbia calophylla</i>	578847	6124195	615	50	1	300
<i>Dead Stag of Eucalyptus marginata or Corymbia calophylla</i>	578873	6124367	1370	50	3	300,200,200
<i>Dead Stag of Eucalyptus marginata or Corymbia calophylla</i>	578799	6124239	690	50	1	400
<i>Dead Stag of Eucalyptus marginata or Corymbia calophylla</i>	578824	6124229	810	50	1	400
<i>Dead Stag of Eucalyptus marginata or Corymbia calophylla</i>	578786	6124174	985	50	1	400
<i>Eucalyptus gomphocephala</i>	574317	6129742	500	50	0	
<i>Eucalyptus gomphocephala</i>	574317	6129704	500	50	0	
<i>Eucalyptus gomphocephala</i>	574318	6129710	500	50	0	
<i>Eucalyptus gomphocephala</i>	578607	6124107	510	50	0	
<i>Eucalyptus gomphocephala</i>	578556	6124138	510	50	0	
<i>Eucalyptus gomphocephala</i>	578558	6124199	520	50	0	
<i>Eucalyptus gomphocephala</i>	578596	6124189	530	50	0	
<i>Eucalyptus gomphocephala</i>	578665	6124414	550	50	0	
<i>Eucalyptus gomphocephala</i>	578574	6124238	560	50	0	
<i>Eucalyptus gomphocephala</i>	578593	6124127	560	50	0	
<i>Eucalyptus gomphocephala</i>	578562	6124172	560	50	0	
<i>Eucalyptus gomphocephala</i>	578600	6124284	590	50	0	
<i>Eucalyptus gomphocephala</i>	578515	6124330	600	50	0	
<i>Eucalyptus gomphocephala</i>	578587	6124133	610	50	0	
<i>Eucalyptus gomphocephala</i>	578620	6124101	620	50	0	
<i>Eucalyptus gomphocephala</i>	578619	6124107	620	50	0	
<i>Eucalyptus gomphocephala</i>	574262	6126608	630	50	0	
<i>Eucalyptus gomphocephala</i>	578651	6124094	630	50	0	
<i>Eucalyptus gomphocephala</i>	578509	6124378	630	50	0	
<i>Eucalyptus gomphocephala</i>	578642	6124094	640	50	0	
<i>Eucalyptus gomphocephala</i>	578675	6124095	650	50	0	
<i>Eucalyptus gomphocephala</i>	578555	6124195	650	50	0	
<i>Eucalyptus gomphocephala</i>	578649	6124091	660	50	0	
<i>Eucalyptus gomphocephala</i>	578678	6124086	670	50	0	
<i>Eucalyptus gomphocephala</i>	578561	6124133	670	50	0	
<i>Eucalyptus gomphocephala</i>	578638	6124091	690	50	0	
<i>Eucalyptus gomphocephala</i>	578557	6124233	690	50	0	
<i>Eucalyptus gomphocephala</i>	578654	6124149	730	50	0	
<i>Eucalyptus gomphocephala</i>	578576	6124231	760	50	0	
<i>Eucalyptus gomphocephala</i>	578608	6124153	770	50	0	
<i>Eucalyptus gomphocephala</i>	578649	6124114	780	50	0	
<i>Eucalyptus gomphocephala</i>	578635	6124102	800	50	0	
<i>Eucalyptus gomphocephala</i>	578569	6124220	820	50	0	

Flora_sp	Eastings	Northing	DBH_mm_	Zone	Hollow	Hollow_Sz
<i>Eucalyptus gomphocephala</i>	578566	6124226	820	50	0	
<i>Eucalyptus gomphocephala</i>	578587	6124163	830	50	0	
<i>Eucalyptus gomphocephala</i>	578514	6124308	830	50	0	
<i>Eucalyptus gomphocephala</i>	578579	6124228	860	50	0	
<i>Eucalyptus gomphocephala</i>	578512	6124348	870	50	0	
<i>Eucalyptus gomphocephala</i>	578587	6124300	880	50	0	
<i>Eucalyptus gomphocephala</i>	574322	6130081	880	50	0	
<i>Eucalyptus gomphocephala</i>	578595	6124176	890	50	0	
<i>Eucalyptus gomphocephala</i>	578605	6124041	900	50	0	
<i>Eucalyptus gomphocephala</i>	578714	6124153	910	50	0	
<i>Eucalyptus gomphocephala</i>	578604	6124108	920	50	0	
<i>Eucalyptus gomphocephala</i>	578599	6124125	920	50	0	
<i>Eucalyptus gomphocephala</i>	578533	6124219	950	50	0	
<i>Eucalyptus gomphocephala</i>	578508	6124375	990	50	0	
<i>Eucalyptus gomphocephala</i>	578633	6124071	1010	50	0	
<i>Eucalyptus gomphocephala</i>	578573	6124146	1020	50	0	
<i>Eucalyptus gomphocephala</i>	578674	6124132	1050	50	0	
<i>Eucalyptus gomphocephala</i>	578680	6124137	1070	50	0	
<i>Eucalyptus gomphocephala</i>	578596	6124075	1090	50	0	
<i>Eucalyptus gomphocephala</i>	578587	6124170	1140	50	0	
<i>Eucalyptus gomphocephala</i>	578605	6124232	1150	50	0	
<i>Eucalyptus gomphocephala</i>	578553	6124183	1220	50	0	
<i>Eucalyptus gomphocephala</i>	578644	6124156	1230	50	0	
<i>Eucalyptus gomphocephala</i>	578635	6124138	1250	50	0	
<i>Eucalyptus gomphocephala</i>	578651	6124165	1370	50	0	
<i>Eucalyptus gomphocephala</i>	578596	6124083	1559	50	0	
<i>Eucalyptus gomphocephala</i>	578478	6124299	1201	50	0	
<i>Eucalyptus gomphocephala</i>	578477	6124258	1100	50	0	
<i>Eucalyptus gomphocephala</i>	578343	6124290	950	50	0	
<i>Eucalyptus marginata</i>	574131	6126449	500	50	0	
<i>Eucalyptus marginata</i>	574113	6126443	500	50	0	
<i>Eucalyptus marginata</i>	574023	6126480	500	50	0	
<i>Eucalyptus marginata</i>	574040	6126450	500	50	0	
<i>Eucalyptus marginata</i>	573969	6126436	500	50	0	
<i>Eucalyptus marginata</i>	573996	6126531	500	50	0	
<i>Eucalyptus marginata</i>	573911	6126368	500	50	0	
<i>Eucalyptus marginata</i>	573829	6126336	500	50	0	
<i>Eucalyptus marginata</i>	573960	6126507	500	50	0	
<i>Eucalyptus marginata</i>	573819	6126433	500	50	0	
<i>Eucalyptus marginata</i>	573851	6126409	500	50	0	
<i>Eucalyptus marginata</i>	573832	6126377	500	50	0	
<i>Eucalyptus marginata</i>	574332	6128176	500	50	0	
<i>Eucalyptus marginata</i>	574317	6129017	500	50	0	
<i>Eucalyptus marginata</i>	574337	6128626	500	50	0	
<i>Eucalyptus marginata</i>	574236	6126685	510	50	0	
<i>Eucalyptus marginata</i>	574079	6126454	510	50	0	
<i>Eucalyptus marginata</i>	574047	6126461	510	50	0	

Flora_sp	Easting	Northing	DBH_mm_	Zone	Hollow	Hollow_Sz
<i>Eucalyptus marginata</i>	574038	6126430	510	50	0	
<i>Eucalyptus marginata</i>	574018	6126351	510	50	0	
<i>Eucalyptus marginata</i>	574001	6126484	510	50	0	
<i>Eucalyptus marginata</i>	573936	6126432	510	50	0	
<i>Eucalyptus marginata</i>	573914	6126422	510	50	0	
<i>Eucalyptus marginata</i>	573769	6126214	510	50	0	
<i>Eucalyptus marginata</i>	573827	6126363	510	50	0	
<i>Eucalyptus marginata</i>	574341	6128089	520	50	0	
<i>Eucalyptus marginata</i>	574008	6126397	520	50	0	
<i>Eucalyptus marginata</i>	574362	6125838	520	50	0	
<i>Eucalyptus marginata</i>	574070	6126512	520	50	0	
<i>Eucalyptus marginata</i>	573983	6126471	520	50	0	
<i>Eucalyptus marginata</i>	573732	6126914	520	50	0	
<i>Eucalyptus marginata</i>	573749	6126771	520	50	0	
<i>Eucalyptus marginata</i>	573825	6126770	520	50	0	
<i>Eucalyptus marginata</i>	573690	6126157	520	50	0	
<i>Eucalyptus marginata</i>	574321	6128115	530	50	0	
<i>Eucalyptus marginata</i>	574157	6126563	530	50	0	
<i>Eucalyptus marginata</i>	573755	6126290	530	50	0	
<i>Eucalyptus marginata</i>	573859	6126414	530	50	0	
<i>Eucalyptus marginata</i>	573822	6126407	530	50	0	
<i>Eucalyptus marginata</i>	574363	6128581	530	50	0	
<i>Eucalyptus marginata</i>	574367	6128124	540	50	0	
<i>Eucalyptus marginata</i>	574081	6126511	540	50	0	
<i>Eucalyptus marginata</i>	574090	6126618	540	50	0	
<i>Eucalyptus marginata</i>	578734	6124118	540	50	0	
<i>Eucalyptus marginata</i>	574125	6126550	540	50	0	
<i>Eucalyptus marginata</i>	573969	6126287	540	50	0	
<i>Eucalyptus marginata</i>	573734	6126758	540	50	0	
<i>Eucalyptus marginata</i>	573935	6126364	540	50	0	
<i>Eucalyptus marginata</i>	574016	6126619	540	50	0	
<i>Eucalyptus marginata</i>	573891	6126271	540	50	0	
<i>Eucalyptus marginata</i>	573802	6126271	540	50	0	
<i>Eucalyptus marginata</i>	573992	6126647	540	50	0	
<i>Eucalyptus marginata</i>	573915	6126439	540	50	0	
<i>Eucalyptus marginata</i>	573853	6126369	540	50	0	
<i>Eucalyptus marginata</i>	574135	6126437	540	50	0	
<i>Eucalyptus marginata</i>	574118	6126450	540	50	0	
<i>Eucalyptus marginata</i>	574404	6128379	540	50	0	
<i>Eucalyptus marginata</i>	574118	6126449	550	50	0	
<i>Eucalyptus marginata</i>	573974	6126365	550	50	0	
<i>Eucalyptus marginata</i>	573935	6126387	550	50	0	
<i>Eucalyptus marginata</i>	573865	6126341	550	50	0	
<i>Eucalyptus marginata</i>	573767	6126245	550	50	0	
<i>Eucalyptus marginata</i>	573743	6126243	550	50	0	
<i>Eucalyptus marginata</i>	573875	6126398	550	50	0	
<i>Eucalyptus marginata</i>	574144	6126440	550	50	0	

Flora_sp	Easting	Northing	DBH_mm_	Zone	Hollow	Hollow_Sz
<i>Eucalyptus marginata</i>	574157	6126458	550	50	0	
<i>Eucalyptus marginata</i>	574332	6128601	550	50	0	
<i>Eucalyptus marginata</i>	574351	6127582	550	50	0	
<i>Eucalyptus marginata</i>	573626	6126995	550	50	0	
<i>Eucalyptus marginata</i>	574295	6129238	550	50	0	
<i>Eucalyptus marginata</i>	574006	6126394	560	50	0	
<i>Eucalyptus marginata</i>	573987	6126464	560	50	0	
<i>Eucalyptus marginata</i>	574408	6125823	560	50	0	
<i>Eucalyptus marginata</i>	574230	6126013	560	50	0	
<i>Eucalyptus marginata</i>	574115	6126594	560	50	0	
<i>Eucalyptus marginata</i>	574041	6126474	560	50	0	
<i>Eucalyptus marginata</i>	574003	6126486	560	50	0	
<i>Eucalyptus marginata</i>	574008	6126535	560	50	0	
<i>Eucalyptus marginata</i>	573793	6126358	560	50	0	
<i>Eucalyptus marginata</i>	574307	6128519	560	50	0	
<i>Eucalyptus marginata</i>	573678	6126970	570	50	0	
<i>Eucalyptus marginata</i>	574092	6126363	570	50	0	
<i>Eucalyptus marginata</i>	573970	6126329	570	50	0	
<i>Eucalyptus marginata</i>	573970	6126400	570	50	0	
<i>Eucalyptus marginata</i>	573671	6126773	570	50	0	
<i>Eucalyptus marginata</i>	573831	6126219	570	50	0	
<i>Eucalyptus marginata</i>	573842	6126421	570	50	0	
<i>Eucalyptus marginata</i>	574298	6128020	570	50	0	
<i>Eucalyptus marginata</i>	574339	6128484	570	50	0	
<i>Eucalyptus marginata</i>	573676	6126966	570	50	0	
<i>Eucalyptus marginata</i>	574052	6126512	580	50	0	
<i>Eucalyptus marginata</i>	574045	6126515	580	50	0	
<i>Eucalyptus marginata</i>	573900	6126352	580	50	0	
<i>Eucalyptus marginata</i>	573884	6126421	580	50	0	
<i>Eucalyptus marginata</i>	574376	6128552	590	50	0	
<i>Eucalyptus marginata</i>	574340	6128072	590	50	0	
<i>Eucalyptus marginata</i>	574021	6126521	590	50	0	
<i>Eucalyptus marginata</i>	574227	6125602	590	50	0	
<i>Eucalyptus marginata</i>	574123	6126608	590	50	0	
<i>Eucalyptus marginata</i>	573810	6126433	590	50	0	
<i>Eucalyptus marginata</i>	574018	6126492	600	50	0	
<i>Eucalyptus marginata</i>	574428	6125870	600	50	0	
<i>Eucalyptus marginata</i>	573966	6126302	600	50	0	
<i>Eucalyptus marginata</i>	573819	6126761	600	50	0	
<i>Eucalyptus marginata</i>	573934	6126273	600	50	0	
<i>Eucalyptus marginata</i>	573803	6126214	600	50	0	
<i>Eucalyptus marginata</i>	574339	6127598	600	50	0	
<i>Eucalyptus marginata</i>	574333	6128501	600	50	0	
<i>Eucalyptus marginata</i>	574118	6126438	610	50	0	
<i>Eucalyptus marginata</i>	574031	6126322	610	50	0	
<i>Eucalyptus marginata</i>	573682	6126997	610	50	0	
<i>Eucalyptus marginata</i>	574053	6126384	610	50	0	

Flora_sp	Easting	Northing	DBH_mm_	Zone	Hollow	Hollow_Sz
<i>Eucalyptus marginata</i>	574069	6126421	610	50	0	
<i>Eucalyptus marginata</i>	573860	6126251	610	50	0	
<i>Eucalyptus marginata</i>	573804	6126270	610	50	0	
<i>Eucalyptus marginata</i>	578796	6124008	610	50	0	
<i>Eucalyptus marginata</i>	574074	6126436	620	50	0	
<i>Eucalyptus marginata</i>	574171	6126851	620	50	0	
<i>Eucalyptus marginata</i>	573716	6126268	630	50	0	
<i>Eucalyptus marginata</i>	573631	6126925	630	50	0	
<i>Eucalyptus marginata</i>	573918	6126271	630	50	0	
<i>Eucalyptus marginata</i>	573931	6126279	630	50	0	
<i>Eucalyptus marginata</i>	573775	6126234	630	50	0	
<i>Eucalyptus marginata</i>	573842	6126382	630	50	0	
<i>Eucalyptus marginata</i>	574200	6126562	630	50	0	
<i>Eucalyptus marginata</i>	574162	6126420	630	50	0	
<i>Eucalyptus marginata</i>	574316	6129140	630	50	0	
<i>Eucalyptus marginata</i>	573961	6126325	640	50	0	
<i>Eucalyptus marginata</i>	574233	6126509	640	50	0	
<i>Eucalyptus marginata</i>	573973	6126388	640	50	0	
<i>Eucalyptus marginata</i>	573743	6126767	640	50	0	
<i>Eucalyptus marginata</i>	573803	6126873	640	50	0	
<i>Eucalyptus marginata</i>	573914	6126376	640	50	0	
<i>Eucalyptus marginata</i>	573858	6126420	640	50	0	
<i>Eucalyptus marginata</i>	574330	6128583	640	50	0	
<i>Eucalyptus marginata</i>	574380	6128364	640	50	0	
<i>Eucalyptus marginata</i>	574411	6125862	650	50	0	
<i>Eucalyptus marginata</i>	574106	6126580	650	50	0	
<i>Eucalyptus marginata</i>	573983	6126477	650	50	0	
<i>Eucalyptus marginata</i>	573979	6126535	650	50	0	
<i>Eucalyptus marginata</i>	573701	6127000	650	50	0	
<i>Eucalyptus marginata</i>	573684	6126957	670	50	0	
<i>Eucalyptus marginata</i>	573712	6126995	670	50	0	
<i>Eucalyptus marginata</i>	574099	6126547	680	50	0	
<i>Eucalyptus marginata</i>	573960	6126360	680	50	0	
<i>Eucalyptus marginata</i>	573982	6126482	680	50	0	
<i>Eucalyptus marginata</i>	574011	6126527	680	50	0	
<i>Eucalyptus marginata</i>	573648	6126993	680	50	0	
<i>Eucalyptus marginata</i>	573847	6126780	680	50	0	
<i>Eucalyptus marginata</i>	573776	6126299	680	50	0	
<i>Eucalyptus marginata</i>	574341	6128603	680	50	0	
<i>Eucalyptus marginata</i>	574343	6125767	680	50	0	
<i>Eucalyptus marginata</i>	574075	6126514	690	50	0	
<i>Eucalyptus marginata</i>	573962	6126289	690	50	0	
<i>Eucalyptus marginata</i>	573642	6126955	690	50	0	
<i>Eucalyptus marginata</i>	576777	6124640	690	50	0	
<i>Eucalyptus marginata</i>	574327	6128050	710	50	0	
<i>Eucalyptus marginata</i>	574043	6126452	710	50	0	
<i>Eucalyptus marginata</i>	573969	6126377	710	50	0	

Flora_sp	Easting	Northing	DBH_mm_	Zone	Hollow	Hollow_Sz
<i>Eucalyptus marginata</i>	573755	6126349	710	50	0	
<i>Eucalyptus marginata</i>	573707	6126937	710	50	0	
<i>Eucalyptus marginata</i>	574069	6126545	720	50	0	
<i>Eucalyptus marginata</i>	573751	6126781	720	50	0	
<i>Eucalyptus marginata</i>	573796	6126859	720	50	0	
<i>Eucalyptus marginata</i>	573865	6126315	720	50	0	
<i>Eucalyptus marginata</i>	574407	6128369	720	50	0	
<i>Eucalyptus marginata</i>	573608	6126973	730	50	0	
<i>Eucalyptus marginata</i>	573659	6126997	730	50	0	
<i>Eucalyptus marginata</i>	574093	6126419	730	50	0	
<i>Eucalyptus marginata</i>	573952	6126341	730	50	0	
<i>Eucalyptus marginata</i>	573699	6126975	730	50	0	
<i>Eucalyptus marginata</i>	573610	6126965	740	50	0	
<i>Eucalyptus marginata</i>	573657	6127035	740	50	0	
<i>Eucalyptus marginata</i>	574337	6128618	740	50	0	
<i>Eucalyptus marginata</i>	573650	6126966	740	50	0	
<i>Eucalyptus marginata</i>	574030	6126586	750	50	0	
<i>Eucalyptus marginata</i>	574020	6126525	760	50	0	
<i>Eucalyptus marginata</i>	574100	6126369	780	50	0	
<i>Eucalyptus marginata</i>	573646	6126990	790	50	0	
<i>Eucalyptus marginata</i>	574008	6126347	800	50	0	
<i>Eucalyptus marginata</i>	573954	6126434	800	50	0	
<i>Eucalyptus marginata</i>	574318	6127593	800	50	0	
<i>Eucalyptus marginata</i>	573971	6126456	800	50	0	
<i>Eucalyptus marginata</i>	574332	6128392	800	50	0	
<i>Eucalyptus marginata</i>	573766	6126796	810	50	0	
<i>Eucalyptus marginata</i>	578764	6124079	810	50	0	
<i>Eucalyptus marginata</i>	574406	6125789	820	50	0	
<i>Eucalyptus marginata</i>	574359	6128117	850	50	0	
<i>Eucalyptus marginata</i>	573707	6126985	880	50	0	
<i>Eucalyptus marginata</i>	574297	6127664	880	50	0	
<i>Eucalyptus marginata</i>	573844	6126769	920	50	0	
<i>Eucalyptus marginata</i>	573827	6126223	920	50	0	
<i>Eucalyptus marginata</i>	573659	6126974	1010	50	0	
<i>Eucalyptus marginata</i>	574352	6128119	1070	50	0	
<i>Eucalyptus marginata</i>	574029	6126497	1070	50	0	
<i>Eucalyptus marginata</i>	573645	6126999	1080	50	0	
<i>Eucalyptus marginata</i>	574282	6126311	1140	50	0	
<i>Eucalyptus marginata</i>	574314	6129139	650	50	0	
<i>Eucalyptus marginata</i>	573904	6126312	540	50	0	
<i>Eucalyptus marginata</i>	574339	6128403	600	50	0	
<i>Eucalyptus marginata</i>	574400	6128462	790	50	0	
<i>Eucalyptus marginata</i>	574340	6128303	710	50	0	
<i>Eucalyptus marginata</i>	573614	6126987	620	50	0	
<i>Eucalyptus marginata</i>	574418	6125899	500	50	1	100
<i>Eucalyptus marginata</i>	573749	6126274	500	50	1	100
<i>Eucalyptus marginata</i>	573915	6126281	550	50	1	100

Flora_sp	Easting	Northing	DBH_mm_	Zone	Hollow	Hollow_Sz
<i>Eucalyptus marginata</i>	573866	6126429	550	50	1	100
<i>Eucalyptus marginata</i>	574342	6128483	560	50	1	100
<i>Eucalyptus marginata</i>	574232	6126686	570	50	1	100
<i>Eucalyptus marginata</i>	573954	6126483	570	50	1	100
<i>Eucalyptus marginata</i>	573900	6126425	590	50	1	100
<i>Eucalyptus marginata</i>	573744	6126341	590	50	1	100
<i>Eucalyptus marginata</i>	573673	6126332	600	50	1	100
<i>Eucalyptus marginata</i>	573728	6126252	610	50	1	100
<i>Eucalyptus marginata</i>	573977	6126491	620	50	1	100
<i>Eucalyptus marginata</i>	574382	6125900	670	50	1	100
<i>Eucalyptus marginata</i>	574345	6128471	690	50	1	100
<i>Eucalyptus marginata</i>	573929	6126292	730	50	1	100
<i>Eucalyptus marginata</i>	573772	6126285	740	50	1	100
<i>Eucalyptus marginata</i>	574281	6126287	870	50	1	100
<i>Eucalyptus marginata</i>	574116	6126441	610	50	1	100
<i>Eucalyptus marginata</i>	574318	6129210	580	50	1	100
<i>Eucalyptus marginata</i>	573764	6126210	590	50	2	100,100
<i>Eucalyptus marginata</i>	573756	6126282	540	50	2	100,100
<i>Eucalyptus marginata</i>	574349	6128450	610	50	4	100,100,200,200
<i>Eucalyptus marginata</i>	573945	6126386	900	50	4	100,100,200,200
<i>Eucalyptus marginata</i>	574341	6129177	500	50	2	100,150
<i>Eucalyptus marginata</i>	573790	6126257	690	50	2	100,150
<i>Eucalyptus marginata</i>	574366	6127579	1140	50	2	100,150
<i>Eucalyptus marginata</i>	573917	6126429	510	50	2	100,200
<i>Eucalyptus marginata</i>	573952	6126354	620	50	2	100,200
<i>Eucalyptus marginata</i>	574330	6128419	660	50	2	100,300
<i>Eucalyptus marginata</i>	573914	6126431	500	50	1	150
<i>Eucalyptus marginata</i>	573790	6126302	500	50	1	150
<i>Eucalyptus marginata</i>	574337	6127609	520	50	1	150
<i>Eucalyptus marginata</i>	574166	6126453	520	50	1	150
<i>Eucalyptus marginata</i>	573692	6126238	630	50	1	150
<i>Eucalyptus marginata</i>	574358	6128115	880	50	1	150
<i>Eucalyptus marginata</i>	574445	6125791	1010	50	1	150
<i>Eucalyptus marginata</i>	573852	6126313	500	50	2	150,100
<i>Eucalyptus marginata</i>	573833	6126403	510	50	2	150,100
<i>Eucalyptus marginata</i>	574413	6125855	700	50	2	150,150
<i>Eucalyptus marginata</i>	574396	6125868	500	50	2	150,150
<i>Eucalyptus marginata</i>	573843	6126408	520	50	2	150,150
<i>Eucalyptus marginata</i>	574330	6128419	580	50	2	150,150
<i>Eucalyptus marginata</i>	574288	6126331	930	50	2	150,150
<i>Eucalyptus marginata</i>	574333	6128180	960	50	2	150,150
<i>Eucalyptus marginata</i>	574337	6128594	1030	50	2	150,150
<i>Eucalyptus marginata</i>	573724	6126207	590	50	3	150,150,150
<i>Eucalyptus marginata</i>	574326	6128366	710	50	2	150,200
<i>Eucalyptus marginata</i>	574412	6125867	730	50	2	150,200
<i>Eucalyptus marginata</i>	573827	6126355	530	50	1	200
<i>Eucalyptus marginata</i>	574013	6126584	540	50	1	200

Flora_sp	Easting	Northing	DBH_mm_	Zone	Hollow	Hollow_Sz
<i>Eucalyptus marginata</i>	573873	6126431	560	50	1	200
<i>Eucalyptus marginata</i>	574354	6128526	580	50	1	200
<i>Eucalyptus marginata</i>	573832	6126396	650	50	1	200
<i>Eucalyptus marginata</i>	574439	6125806	660	50	1	200
<i>Eucalyptus marginata</i>	574446	6125814	710	50	1	200
<i>Eucalyptus marginata</i>	574357	6128399	720	50	1	200
<i>Eucalyptus marginata</i>	574354	6128442	820	50	1	200
<i>Eucalyptus marginata</i>	574330	6128060	920	50	1	200
<i>Eucalyptus marginata</i>	573927	6126340	500	50	2	200,200
<i>Eucalyptus marginata</i>	573692	6126288	550	50	2	200,200
<i>Eucalyptus marginata</i>	573972	6126504	630	50	2	200,200
<i>Eucalyptus marginata</i>	573908	6126333	740	50	2	200,200
<i>Eucalyptus marginata</i>	573828	6126307	750	50	2	200,200
<i>Eucalyptus marginata</i>	573812	6126368	660	50	3	200,200,100
<i>Eucalyptus marginata</i>	573785	6126221	550	50	4	200,200,150,100
<i>Eucalyptus marginata</i>	574315	6129174	760	50	1	300
<i>Eucalyptus marginata</i>	574327	6128431	570	50	1	300
<i>Eucalyptus marginata</i>	573871	6126250	900	50	1	300
<i>Eucalyptus marginata</i>	574181	6126648	540	50	1	300
<i>Eucalyptus marginata</i>	574370	6128436	700	50	1	300
<i>Eucalyptus marginata</i>	573857	6126373	610	50	2	300,200
<i>Eucalyptus marginata</i>	573719	6126219	630	50	2	300,200
<i>Eucalyptus marginata</i>	574143	6126539	520	50	2	300,300
<i>Eucalyptus marginata</i>	573921	6126453	600	50	2	300,300
<i>Eucalyptus marginata</i>	573693	6126995	520	50	1	350
<i>Eucalyptus marginata</i>	573981	6126346	570	50	1	400
<i>Eucalyptus staeri</i>	574078	6126464	540	50	0	
<i>Eucalyptus staeri</i>	574342	6127597	560	50	0	
<i>Eucalyptus staeri</i>	574325	6127631	670	50	0	
<i>Eucalyptus staeri</i>	574084	6126480	890	50	0	
<i>Eucalyptus staeri</i>	574361	6127591	1080	50	0	

F4. Fauna observations.

Fauna_Hab	Description	Easting	Northing
Baudin_feed	Baudin's Cockatoo feeding evidence, Marri nuts	574406	6125814
Baudin_feed	Baudin's Cockatoo feeding evidence, Marri nuts	574388	6125848
Baudin_feed	Baudin's Cockatoo feeding evidence, Marri nuts	574400	6125864
Baudin_feed	Baudin's Cockatoo feeding evidence, Marri nuts	574420	6125872
Baudin_feed	Baudin's Cockatoo feeding evidence, Marri nuts	578404	6124615
Baudin_feed	Baudin's Cockatoo feeding evidence, Marri nuts	576829	6124696
Baudin_feed	Baudin's Cockatoo feeding evidence, Marri nuts	578668	6124312
Baudin_feed	Baudin's Cockatoo feeding evidence, Marri nuts	578635	6124362
Baudin_feed	Baudin's Cockatoo feeding evidence, Marri nuts	578808	6124032
Baudin_feed	Baudin's Cockatoo feeding evidence, Marri nuts	576798	6124627
Baudin_feed	Baudin's Cockatoo feeding evidence, Marri nuts	576763	6124646
Baudin_feed	Baudin's Cockatoo feeding evidence, Marri nuts	578693	6124200
Baudin_feed	Baudin's Cockatoo feeding evidence, Marri nuts	578685	6124233
Baudin_feed	Baudin's Cockatoo feeding evidence, Marri nuts	578897	6123935
Baudin_feed	Baudin's Cockatoo feeding evidence, Marri nuts	578910	6123954

Fauna_Hab	Description	Easting	Northing
Baudin_feed	Baudin's Cockatoo feeding evidence, Marri nuts	578929	6124005
Baudin_feed	Baudin's Cockatoo feeding evidence, Marri nuts	579031	6123926
Baudin_feed	Baudin's Cockatoo feeding evidence, Marri nuts	579071	6123901
Baudin_feed	Baudin's Cockatoo feeding evidence, Marri nuts	579023	6123916
Baudin_feed	Baudin's Cockatoo feeding evidence, Marri nuts	579017	6123928
Bodensee	Baudin's Cockatoo see, flock of 1-15 seen flying over Baudin's Cockatoo see, flock of 1-15 feeding in Marri, approx. 50m SE of this point	575504	6130098
Baudin_seen	point	575441	6130224
Bird	Whistling kite circling	574244	6125244
BTPhas_hollow	Potential Brush-tailed Phascogale hollow in Sheoak, wear marks.	573929	6126429
Bush_rat	Bush rat burrow system	579105	6123743
BushRat_tunnel	Bush rat tunnel entrance, possible	574030	6126560
Carns_feed	Carnaby's Cockatoo feeding evidence, Marri nuts	574406	6125799
Carns_feed	Carnaby's Cockatoo feeding evidence, pine cones	574383	6125798
Carns_feed	Carnaby's Cockatoo feeding evidence, pine cones	574651	6128299
Carns_feed	Carnaby's Cockatoo feeding evidence, pine cones	574517	6128299
Carns_feed	Carnaby's Cockatoo feeding evidence, pine cones	575495	6124957
Carns_feed	Carnaby's Cockatoo feeding evidence, pine cones	578343	6124336
Carns_feed	Carnaby's feeding evidence, Marri nuts	578658	6124287
Carns_feed	Carnaby's Cockatoo feeding evidence, pine cones	574329	6130082
Carns_feed	Carnaby's Cockatoo feeding evidence, pine cones	574333	6130067
Carns_feed	Carnaby's Cockatoo feeding evidence, pine cones	574332	6130050
Carns_feed	Carnaby's Cockatoo feeding evidence, pine cones	578601	6124587
Carns_feed	Carnaby's Cockatoo feeding evidence, pine cones	573865	6127024
Carns_feed	Carnaby's Cockatoo feeding evidence	576305	6124809
Carns_feed	Carnaby's Cockatoo feeding evidence	576265	6124814
Carns_feed	Carnaby's Cockatoo feeding evidence	576259	6124815
Carns_feed	Carnaby's Cockatoo feeding evidence, pine cones	576250	6124817
Carns_feed	Carnaby's Cockatoo feeding evidence, pine cones	576117	6124826
Carns_feed	Carnaby's Cockatoo feeding evidence, pine cones	576113	6124831
Carns_feed	Carnaby's Cockatoo feeding evidence, pine cones	576156	6124831
Carns_feed	Carnaby's Cockatoo feeding evidence, pine cones	576192	6124831
Carns_feed	Carnaby's Cockatoo feeding evidence, pine cones	576152	6124831
Carns_feed	Carnaby's Cockatoo feeding evidence, pine cones	576168	6124832
Carns_feed	Carnaby's Cockatoo feeding evidence, pine cones	576155	6124832
Carns_feed	Carnaby's Cockatoo feeding evidence, pine cones	576125	6124833
Carns_feed	Carnaby's Cockatoo feeding evidence, pine cones	576166	6124834
Carns_feed	Carnaby's Cockatoo feeding evidence, pine cones	576102	6124843
Carns_feed	Carnaby's Cockatoo feeding evidence, pine cones	576101	6124843
Carns_feed	Carnaby's Cockatoo feeding evidence, pine cones	576123	6124844
Carns_feed	Carnaby's Cockatoo feeding evidence, pine cones	576069	6124861
Carns_feed	Carnaby's Cockatoo feeding evidence	574868	6125270
Carns_feed	Carnaby's Cockatoo feeding evidence	574869	6125289
Carns_feed	Carnaby's Cockatoo feeding evidence	574869	6125301
Carns_feed	Carnaby's Cockatoo feeding evidence, pine cones	574470	6125573
Carns_feed	Carnaby's Cockatoo feeding evidence, pine cones	574511	6125623
Carns_feed	Carnaby's Cockatoo feeding evidence, pine cones	574523	6125629
Carns_feed	Carnaby's Cockatoo feeding evidence, pine cones	574495	6125631
Carns_feed	Carnaby's Cockatoo feeding evidence, pine cones	574496	6125631
Carns_feed	Carnaby's Cockatoo feeding evidence, pine cones	574498	6125632
Carns_feed	Carnaby's Cockatoo feeding evidence, pine cones	574500	6125632
Carns_feed	Carnaby's Cockatoo feeding evidence, pine cones	574504	6125633
Carns_feed	Carnaby's Cockatoo feeding evidence, pine cones	574502	6125634
Carns_feed	Carnaby's Cockatoo feeding evidence, pine cones	574523	6125644
Carns_feed	Carnaby's Cockatoo feeding evidence, pine cones	574111	6126340
Carns_feed	Carnaby's Cockatoo feeding evidence, pine cones	574112	6126341
Carns_feed	Carnaby's Cockatoo feeding evidence, pine cones	574120	6126343
Carns_feed	Carnaby's Cockatoo feeding evidence, pine cones	574118	6126343
Carns_feed	Carnaby's Cockatoo feeding evidence, pine cones	574114	6126343

Fauna_Hab	Description	Easting	Northing
Carns_feed	Carnaby's Cockatoo feeding evidence, pine cones	574114	6126343
Carns_feed	Carnaby's Cockatoo feeding evidence, pine cones	574122	6126344
Carns_feed	Carnaby's Cockatoo feeding evidence, pine cones	574123	6126344
Carns_feed	Carnaby's Cockatoo feeding evidence, pine cones	574219	6126765
Carns_feed	Carnaby's Cockatoo feeding evidence, pine cones	574216	6126766
Carns_feed	Carnaby's Cockatoo feeding evidence	574812	6126815
Carns_feed	Carnaby's Cockatoo feeding evidence, pine cones	573849	6126924
Carns_feed	Carnaby's Cockatoo feeding evidence, pine cones	574340	6128303
Feral_bees	Feral bees in hollow	578647	6124382
Feral_bees	Feral bees in hollow	576838	6124675
Feral_bees	Feral bees in hollow	574363	6125826
Frog_call	Crinea glauertii heard	574426	6125244
Frog_call	Crinea glauertii heard	575420	6130164
Hollow_bees	Hollow with bees	573873	6126431
Quenda_dig	Quenda diggings	574963	6130563
Quenda_dig	Quenda diggings	578939	6123944
Quenda_dig	Quenda diggings	578964	6123956
Quenda_dig	Quenda diggings	574563	6125468
Quenda_dig	Quenda diggings	574518	6125588
Quenda_dig	Quenda diggings	576318	6124801
Quenda_dig	Quenda diggings	574243	6127421
Quenda_dig	Quenda diggings	574299	6128049
Quenda_dig	Quenda diggings	578333	6124332
Quenda_dig	Quenda diggings, many	578680	6124247
Quenda_dig	Quenda diggings	578650	6124215
Quenda_dig	Quenda diggings	578813	6124314
Quenda_dig	Quenda diggings	578754	6124026
Quenda_dig	Quenda diggings	578783	6123956
Quenda_dig	Quenda diggings	578885	6123972
Quenda_dig	Quenda diggings	576730	6124709
Quenda_dig	Quenda diggings	576673	6124696
Quenda_dig	Quenda diggings	574391	6127562
Quenda_dig	Quenda diggings	576184	6124836
Quenda_dig	Quenda diggings	578508	6123816
Quenda_dig	Quenda diggings	575025	6130496
Quenda_dig	Quenda diggings	578867	6123941
Quenda_dig	Quenda diggings	578897	6123949
Quenda_dig	Quenda diggings	578936	6123927
Quenda_dig	Quenda diggings	578990	6123952
Quenda_dig	Quenda diggings	578993	6123927
Quenda_dig	Quenda diggings	579064	6123897
Quenda_dig	Quenda diggings	579040	6123905
Quenda_dig	Quenda diggings	578957	6123926
Quenda_dig	Quenda diggings	578917	6123992
Quenda_dig	Quenda diggings	579011	6123792
Quenda_dig	Quenda diggings	574898	6125120
Quenda_dig	Quenda diggings	574989	6125081
Quenda_dig	Quenda diggings	575061	6125053
Quenda_dig	Quenda diggings	575120	6125047
Quenda_dig	Quenda diggings	575130	6125022
Quenda_dig	Quenda diggings	575357	6124945
Quenda_dig	Quenda diggings	574806	6125162
Quenda_dig	Quenda diggings	574380	6125248
Quenda_dig	Quenda diggings	575421	6130167
Quenda_dig	Quenda diggings	575496	6130099
Quenda_skull	Quenda skull	574957	6130568
RTBC_feed	Red-tailed Black Cockatoo feeding evidence, Jarrah nuts	574906	6125119
RTBlack_feed	Red-tailed Black Cockatoo feeding evidence, Marri nuts	574374	6125799
RTBlack_feed	Red-tailed Black Cockatoo feeding evidence, Marri nuts	574438	6125800

Fauna_Hab	Description	Easting	Northing
RTBlack_feed	Red-tailed Black Cockatoo feeding evidence, Marri nuts	574230	6125923
RTBlack_feed	Red-tailed Black Cockatoo feeding evidence, Jarrah nuts	574080	6126490
RTBlack_feed	Red-tailed Black Cockatoo feeding evidence, Jarrah nuts	573891	6126841
RTBlack_feed	Red-tailed Black Cockatoo feeding evidence, Jarrah nuts	573849	6126780
RTBlack_feed	Red-tailed Black Cockatoo feeding evidence, Marri nuts	578693	6124199
RTBlack_feed	Red-tailed Black Cockatoo feeding evidence, Marri nuts	576783	6124710
RTBlack_feed	Red-tailed Black Cockatoo feeding evidence, Marri nuts	576775	6124662
RTBlack_feed	Red-tailed Black Cockatoo feeding evidence, Jarrah nuts	576758	6124739
RTBlack_feed	Red-tailed Black Cockatoo feeding evidence, Jarrah nuts	574307	6127630
RTBlack_feed	Red-tailed Black Cockatoo feeding evidence, Jarrah and Marri nuts	574339	6127610
RTBlack_feed	Red-tailed Black Cockatoo feeding evidence, Jarrah nuts	574381	6127543
RTP_drey	Western Ringtail Possum drey, possible, in Taxandria about 8m high	574565	6125568
RTP_drey	Western Ringtail Possum drey in Taxandria	574527	6125609
RTP_drey	Western Ringtail Possum drey in Taxandria	574551	6125629
RTP_drey	Western Ringtail Possum drey in Taxandria	574538	6125619
RTP_drey	Western Ringtail Possum drey, half collapsed	574498	6125557
RTP_drey	Western Ringtail Possum dreys (2) in Victorian Tea Tree	578435	6124435
RTP_drey	Western Ringtail Possum drey in Victorian Tea Tree	578451	6124459
RTP_drey	Western Ringtail Possum drey in Taxandria	574237	6125297
RTP_drey	Western Ringtail Possum drey in Hakea ?florida, not occupied but intact, 2m up tree	574175	6126860
RTP_drey	Western Ringtail Possum drey in Sydney Golden Wattle, probably unoccupied	578754	6124166
RTP_drey	Western Ringtail Possum drey, collapsed	578689	6124271
RTP_drey	Western Ringtail Possum drey, 6m up in Acacia longifolia	578925	6123931
RTP_drey	Western Ringtail Possum drey, intact	574809	6125161
RTP_drey	Western Ringtail Possum drey, in Callistachys	574451	6125244
RTP_scats	Western Ringtail Possum scats, one seen in fork of Swamp Mahogany	574845	6125407
RTP_scats	Western Ringtail Possum scats, one seen	574545	6125642
RTP_scats	Western Ringtail Possum scats, one seen, in fork of Swamp Mahogany	574471	6125555
RTP_scats	Western Ringtail Possum scats, one seen	576308	6124803
RTP_scats	Western Ringtail Possum scats, one seen	576301	6124814
RTP_scats	Western Ringtail Possum scats, one seen	576251	6124815
RTP_scats	Western Ringtail Possum scats, one seen, under Victorian Tea Tree	576683	6124635
RTP_scats	Western Ringtail Possum scats, one seen, under Sheoak	574231	6125636
RTP_scats	Western Ringtail Possum scats, one seen, under Sheoak	574229	6125585
RTP_scats	Western Ringtail Possum scats, one seen	574226	6125514
RTP_scats	Western Ringtail Possum scats, one seen, under Sheoak	574335	6128302
RTP_scats	Western Ringtail Possum scats, one seen	574314	6128303
RTP_scats	Western Ringtail Possum scats, one seen	578380	6124566
RTP_scats	Western Ringtail Possum scats, one seen, on very large Eucalyptus botryoides	578274	6124486
RTP_scats	Western Ringtail Possum scats, one seen, under Peppermint	578285	6124499
RTP_scats	Western Ringtail Possum scats, one seen	578308	6124474
RTP_scats	Western Ringtail Possum scats, one seen	574485	6128301
RTP_scats	Western Ringtail Possum scats, one seen	574334	6128151
RTP_scats	Western Ringtail Possum scats, one seen	574329	6128581
RTP_scats	Western Ringtail Possum scats, one seen	574514	6125301
RTP_scats	Western Ringtail Possum scats, one seen	574334	6125299
RTP_scats	Western Ringtail Possum scats, one seen	574907	6125199
RTP_scats	Western Ringtail Possum scats,	575210	6125104
RTP_scats	Western Ringtail Possum scats, one seen	575669	6124924
RTP_scats	Western Ringtail Possum scats, one seen	576542	6124765
RTP_scats	Western Ringtail Possum scats	576777	6124633
RTP_scats	Western Ringtail Possum scats, one seen	574204	6126515
RTP_scats	Western Ringtail Possum scats, one seen	574173	6126438
RTP_scats	Western Ringtail Possum scats, one seen	574141	6126469
RTP_scats	Western Ringtail Possum scats large and small (7mm length)	574162	6126420
RTP_scats	Western Ringtail Possum scats, one seen	574132	6126519
RTP_scats	Western Ringtail Possum scats, one seen	574135	6126508
RTP_scats	Western Ringtail Possum scats, one seen	574103	6126486

<u>Fauna_Hab</u>	<u>Description</u>	<u>Easting</u>	<u>Northing</u>
RTP_scats	Western Ringtail Possum scats, one seen	574113	6126417
RTP_scats	Western Ringtail Possum scats, one seen	574070	6126390
RTP_scats	Western Ringtail Possum scats, one seen	574075	6126426
RTP_scats	Western Ringtail Possum scats, one seen	574094	6126530
RTP_scats	Western Ringtail Possum scats, one seen	574104	6126562
RTP_scats	Western Ringtail Possum scats large and small (7mm length)	574197	6126851
RTP_scats	Western Ringtail Possum scats, one seen	574144	6126856
RTP_scats	Western Ringtail Possum scats, one seen	573993	6126385
RTP_scats	Western Ringtail Possum scats, one seen	573991	6126360
RTP_scats	Western Ringtail Possum scats, one seen	573976	6126335
RTP_scats	Western Ringtail Possum scats, one seen	573974	6126420
RTP_scats	Western Ringtail Possum scats, small (7mm length)	573997	6126475
RTP_scats	Western Ringtail Possum scats, one seen	574022	6126522
RTP_scats	Western Ringtail Possum scats, small (7mm length)	573764	6126843
RTP_scats	Western Ringtail Possum scats large and small (7mm length)	573747	6126853
RTP_scats	Western Ringtail Possum scats, one seen	573743	6126871
RTP_scats	Western Ringtail Possum scats, one seen	573898	6126864
RTP_scats	Western Ringtail Possum scats, one seen	573913	6126870
RTP_scats	Western Ringtail Possum scats large and small (7mm length)	573918	6126856
RTP_scats	Western Ringtail Possum scats, many seen	573923	6126846
RTP_scats	Western Ringtail Possum scats, one seen	574299	6127696
RTP_scats	Western Ringtail Possum scats, one seen	574302	6127920
RTP_scats	Western Ringtail Possum scats, one seen	574304	6127983
RTP_scats	Western Ringtail Possum scats, one seen	573891	6126333
RTP_scats	Western Ringtail Possum scats, one seen	573909	6126291
RTP_scats	Western Ringtail Possum scats, one seen	573987	6126622
RTP_scats	Western Ringtail Possum scats, one seen	573966	6126601
RTP_scats	Western Ringtail Possum scats, one seen	573965	6126516
RTP_scats	Western Ringtail Possum scats, one seen	573797	6126408
RTP_scats	Western Ringtail Possum scats, one seen	573767	6126401
RTP_scats	Western Ringtail Possum scats, one seen	573755	6126381
RTP_scats	Western Ringtail Possum scats, one seen	573732	6126261
RTP_scats	Western Ringtail Possum scats large and small (7mm length)	573792	6126211
RTP_scats	Western Ringtail Possum scats, one seen	573862	6126243
RTP_scats	Western Ringtail Possum scats, one seen	573894	6126287
RTP_scats	Western Ringtail Possum scats, one seen	573904	6126439
RTP_scats	Western Ringtail Possum scats, one seen	573925	6126493
RTP_scats	Western Ringtail Possum scats, one seen	573957	6126577
RTP_scats	Western Ringtail Possum scats, one seen	573995	6126680
RTP_scats	Western Ringtail Possum scats, one seen	574170	6126637
RTP_scats	Western Ringtail Possum scats, small (<10mm length)	573997	6126696
RTP_scats	Western Ringtail Possum scats, one seen	573932	6126752
RTP_scats	Western Ringtail Possum scats, one seen	573916	6126708
RTP_scats	Western Ringtail Possum scats, one seen	573932	6126687
RTP_scats	Western Ringtail Possum scats, one seen	574236	6126638
RTP_scats	Western Ringtail Possum scats, one seen	578086	6124686
RTP_scats	Western Ringtail Possum scats	578754	6124134
RTP_scats	Western Ringtail Possum scats, many, in Victorian Tea Tree grove	578727	6124143
RTP_scats	Western Ringtail Possum scats	578711	6124149
RTP_scats	Western Ringtail Possum scats, one seen	578685	6124233
RTP_scats	Western Ringtail Possum scats, one seen	578809	6124143
RTP_scats	Western Ringtail Possum scats, one seen	578780	6124204
RTP_scats	Western Ringtail Possum scats, one seen	578812	6124157
RTP_scats	Western Ringtail Possum scats, small, old	578797	6124033
RTP_scats	Western Ringtail Possum scats, one seen	578775	6124041
RTP_scats	Western Ringtail Possum scats, one seen	578862	6124195
RTP_scats	Western Ringtail Possum scats, one seen	576831	6124682
RTP_scats	Western Ringtail Possum scats, one seen	576781	6124738
RTP_scats	Western Ringtail Possum scats, one seen	578657	6124283

Fauna_Hab	Description	Easting	Northing
RTP_scats	Western Ringtail Possum scats, one seen	578662	6124227
RTP_scats	Western Ringtail Possum scats, one seen, under Tuart	578655	6124122
RTP_scats	Western Ringtail Possum scats, one seen	578593	6124190
RTP_scats	Western Ringtail Possum scats, one seen	578637	6124306
RTP_scats	Western Ringtail Possum scats, one seen	578773	6124252
RTP_scats	Western Ringtail Possum scats, one seen	578598	6124392
RTP_scats	Western Ringtail Possum scats, one seen	578577	6124435
RTP_scats	Western Ringtail Possum scats, one seen	578760	6123991
RTP_scats	Western Ringtail Possum scats, one seen	578806	6123984
RTP_scats	Western Ringtail Possum scats, one seen	578809	6124013
RTP_scats	Western Ringtail Possum scats, one seen	578815	6124030
RTP_scats	Western Ringtail Possum scats, one seen	578883	6123995
RTP_scats	Western Ringtail Possum scats, one seen	576756	6124708
RTP_scats	Western Ringtail Possum scats	574384	6127573
RTP_scats	Western Ringtail Possum scats, one seen	574373	6127531
RTP_scats	Western Ringtail Possum scats, one seen	574355	6127535
RTP_scats	Western Ringtail Possum scats, one seen	574322	6127559
RTP_scats	Western Ringtail Possum scats, one seen	574311	6127574
RTP_scats	Western Ringtail Possum scats, one seen	574315	6127583
RTP_scats	Western Ringtail Possum scats, one seen	578507	6123816
RTP_scats	Western Ringtail Possum scats	578890	6124001
RTP_scats	Western Ringtail Possum scats	578871	6123966
RTP_scats	Western Ringtail Possum scats	578876	6123950
RTP_scats	Western Ringtail Possum scats	578912	6123954
RTP_scats	Western Ringtail Possum scats	578976	6123965
RTP_scats	Western Ringtail Possum scats	578982	6123954
RTP_scats	Western Ringtail Possum scats	579029	6123930
RTP_scats	Western Ringtail Possum scats	579059	6123916
RTP_scats	Western Ringtail Possum scats	579021	6123914
RTP_scats	Western Ringtail Possum scats	578982	6123795
RTP_scats	Western Ringtail Possum scats	579035	6123780
RTP_scats	Western Ringtail Possum scats	579059	6123766
RTP_scats	Western Ringtail Possum scats	579111	6123741
RTP_scats	Western Ringtail Possum scats	574905	6125124
RTP_scats	Western Ringtail Possum scats	574946	6125106
RTP_scats	Western Ringtail Possum scats	575015	6125066
RTP_scats	Western Ringtail Possum scats	575049	6125059
RTP_scats	Western Ringtail Possum scats	575367	6124943
RTP_scats	Western Ringtail Possum scats	574805	6125162
RTP_scats	Western Ringtail Possum scats	574752	6125188
RTP_scats	Western Ringtail Possum scats	574724	6125198

14 APPENDIX G - TPFL forms (see attached)

15 APPENDIX H - Naturemap and PMST search results (see attached)

NatureMap Species Report

Created By Guest user on 25/11/2019

Conservation Status Conservation Taxon (T, X, IA, S, P1-P5)

Current Names Only Yes

Core Datasets Only Yes

Method 'By Line'

Vertices 34° 57' 38" S, 117° 48' 58" E 34° 57' 56" S, 117° 48' 50" E 34° 59' 05" S, 117° 48' 50" E 34° 59'

Group By 51" S, 117° 48' 50" E 34° 59' 51" S, 117° 48' 48" E 35° 00' 42" S, 117° 48' 48" E 35° 00' 43" S, 117° 49' 04" E 35° 00' 46" S, 117° 49' 11" E 35° 00' 46" S, 117° 49' 19" E 35° 00' 56" S, 117° 49' 43" E 35° 00' 59" S, 117° 50' 07" E 35° 00' 60" S, 117° 50' 17" E 35° 01' 05" S, 117° 50' 27" E 35° 01' 09" S, 117° 50' 36" E 35° 01' 09" S, 117° 50' 49" E 35° 01' 09" S, 117° 51' 03" E 35° 01' 11" S, 117° 51' 20" E 35° 01' 16" S, 117° 51' 29" E 35° 01' 15" S, 117° 51' 38" E Kingdom

Kingdom	Species	Records
Animalia	86	4193
Fungi	3	13
Plantae	64	390
TOTAL	153	4596

Name ID	Species Name	Naturalised	Conservation Code	Endemic To Query Area
Animalia				
1.	41323 <i>Actitis hypoleucos</i> (Common Sandpiper)		IA	
2.	25554 <i>Apus pacificus</i> (Fork-tailed Swift, Pacific Swift)		IA	
3.	24208 <i>Arctocephalus forsteri</i> (New Zealand Fur Seal, long-nosed fur-seal)		S	
4.	24209 <i>Arctocephalus tropicalis</i> (Subantarctic fur-seal)		T	
5.	41326 <i>Ardenna carneipes</i> (Flesh-footed Shearwater, Fleishy-footed Shearwater)		T	
6.	41328 <i>Ardenna tenuirostris</i> (Short-tailed Shearwater)		IA	
7.	25736 <i>Arenaria interpres</i> (Ruddy Turnstone)		IA	
8.	24358 <i>Atrichornis clamosus</i> (Noisy Scrub-bird, tjimiluk)		T	
9.	25450 <i>Balaenoptera musculus</i> (Blue Whale)		T	
10.	24048 <i>Balaenoptera musculus</i> subsp. <i>brevicauda</i> (Pygmy Blue Whale)		T	
11.	24162 <i>Bettongia penicillata</i> subsp. <i>ogilbyi</i> (Woylie, Brush-tailed Bettong)		T	
12.	24345 <i>Botaurus poiciloptilus</i> (Australasian Bittern)		T	
13.	24779 <i>Calidris acuminata</i> (Sharp-tailed Sandpiper)		IA	
14.	24780 <i>Calidris alba</i> (Sanderling)		IA	
15.	25738 <i>Calidris canutus</i> (Red Knot, knot)		IA	
16.	24784 <i>Calidris ferruginea</i> (Curlew Sandpiper)		T	
17.	24788 <i>Calidris ruficollis</i> (Red-necked Stint)		IA	
18.	24790 <i>Calidris tenuirostris</i> (Great Knot)		T	
19.	24731 <i>Calyptorhynchus banksii</i> subsp. <i>naso</i> (Forest Red-tailed Black Cockatoo)		T	
20.	24733 <i>Calyptorhynchus baudinii</i> (Baudin's Cockatoo, White-tailed Long-billed Black Cockatoo)		T	
21.	24734 <i>Calyptorhynchus latirostris</i> (Carnaby's Cockatoo, White-tailed Short-billed Black Cockatoo)		T	
22.	48400 <i>Calyptorhynchus</i> sp. (white-tailed black cockatoo)		T	
23.	34034 <i>Carcharias taurus</i> (Grey Nurse Shark)		T	
24.	34031 <i>Carcharodon carcharias</i> (Great White Shark)		T	
25.	25335 <i>Caretta caretta</i> (Loggerhead Turtle)		T	
26.	25551 <i>Cereopsis novaehollandiae</i> (Cape Barren Goose)		T	
27.	25575 <i>Charadrius leschenaultii</i> (Greater Sand Plover)		T	
28.	25576 <i>Charadrius mongolus</i> (Lesser Sand Plover)		T	
29.	24440 <i>Dasyornis longirostris</i> (Western Bristlebird)		T	
30.	24092 <i>Dasyurus geoffroi</i> (Chuditch, Western Quoll)		T	
31.	25346 <i>Dermochelys coriacea</i> (Leatherback Turtle)		T	
32.	30836 <i>Diomedea exulans</i> subsp. <i>exulans</i> (Snowy Albatross)		T	
33.	25290 <i>Elapognathus minor</i> (Short-nosed Snake)		P2	
34.	24043 <i>Eubalaena australis</i> (Southern Right Whale)		T	
35.	25624 <i>Falco peregrinus</i> (Peregrine Falcon)		S	

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
36.	24475 <i>Falco peregrinus subsp. macropus</i> (Australian Peregrine Falcon)		S	
37.	34026 <i>Galaxiella munda</i> (mud minnow, western dwarf galaxias)		T	
38.	34027 <i>Galaxiella nigrostriata</i> (Black-stripe Minnow, black-striped dwarf galaxias)		T	
39.	34030 <i>Geotria australis</i> (Pouched Lamprey)		P3	
40.	34115 <i>Helicarion castanea</i> (a helicarionid land snail)		X	
41.	24215 <i>Hydromys chrysogaster</i> (Water-rat, Rakali)		P4	
42.	48587 <i>Hydroprogne caspia</i> (Caspian Tern)		IA	
43.	33977 <i>Hylaeus globuliferus</i> (woolybush bee)		P3	
44.	48588 <i>Isoodon fusciventer</i> (Quenda, southwestern brown bandicoot)		P4	
45.	24557 <i>Leipoa ocellata</i> (Malleefowl)		T	
46.	47983 <i>Lepidogalaxias salamandroides</i> (Salamanderfish)		T	
47.	30932 <i>Limosa lapponica</i> (Bar-tailed Godwit)		IA	
48.	25741 <i>Limosa limosa</i> (Black-tailed Godwit)		IA	
49.	24690 <i>Macronectes giganteus</i> (Southern Giant Petrel)		IA	
50.	24168 <i>Macrotis lagotis</i> (Bilby, Dalgyte, Ninu)		T	
51.	34033 <i>Nannatherina balstoni</i> (Balston's Pygmy Perch)		T	
52.	24210 <i>Neophoca cinerea</i> (Australian Sea-lion)		T	
53.	48022 <i>Notamacropus irma</i> (Western Brush Wallaby)		P4	
54.	24798 <i>Numenius madagascariensis</i> (Eastern Curlew)		T	
55.	25742 <i>Numenius phaeopus</i> (Whimbrel)		IA	
56.	24497 <i>Oceanites oceanicus</i> (Wilson's Storm-petrel)		IA	
57.	24328 <i>Oxyura australis</i> (Blue-billed Duck)		P4	
58.	48591 <i>Pandion cristatus</i> (Osprey, Eastern Osprey)		IA	
59.	24097 <i>Parantechinus apicalis</i> (Dibbler)		T	
60.	41348 <i>Pezoporus flaviventris</i> (Western Ground Parrot)		T	
61.	24663 <i>Phaethon rubricauda</i> (Red-tailed Tropicbird)		P4	
62.	48070 <i>Phascogale tapoatafa subsp. wambenger</i> (South-western Brush-tailed Phascogale, Wambenger)		S	
63.	24802 <i>Philomachus pugnax</i> (Ruff, reeve)		IA	
64.	24073 <i>Physeter macrocephalus</i> (Sperm Whale)		T	
65.	24843 <i>Plegadis falcinellus</i> (Glossy Ibis)		IA	
66.	24382 <i>Pluvialis fulva</i> (Pacific Golden Plover)		IA	
67.	24383 <i>Pluvialis squatarola</i> (Grey Plover)		IA	
68.	24166 <i>Pseudocheirus occidentalis</i> (Western Ringtail Possum, ngwayir)		T	
69.	24388 <i>Psophodes nigrogularis subsp. nigrogularis</i> (Western Whipbird (western heath))		T	
70.	24715 <i>Puffinus huttoni</i> (Hutton's Shearwater)		T	
71.	42358 <i>Rhincodon typus</i> (Whale Shark)		S	
72.	24145 <i>Setonix brachyurus</i> (Quokka)		T	
73.	48116 <i>Stercorarius antarcticus</i> (Brown Skua)		P4	
74.	34007 <i>Thalassarche chlororhynchos</i> (Atlantic Yellow-nosed Albatross)		T	
75.	44607 <i>Thalassarche melanophris</i> (Black-browed Albatross)		T	
76.	48597 <i>Thalasseus bergii</i> (Crested Tern)		IA	
77.	48135 <i>Thinornis rubricollis</i> (Hooded Plover, Hooded Dotterel)		P4	
78.	24803 <i>Tringa brevipes</i> (Grey-tailed Tattler)		P4	
79.	24806 <i>Tringa glareola</i> (Wood Sandpiper)		IA	
80.	24808 <i>Tringa nebularia</i> (Common Greenshank, greenshank)		IA	
81.	24809 <i>Tringa stagnatilis</i> (Marsh Sandpiper, little greenshank)		IA	
82.	44626 <i>Trioza barrettiae</i> (Banksia brownii plant-louse)		T	
83.	24855 <i>Tyto novaehollandiae subsp. novaehollandiae</i> (Masked Owl (southwest))		P3	
84.	34113 <i>Westralunio carteri</i> (Carter's Freshwater Mussel)		T	
85.	41351 <i>Xenus cinereus</i> (Terek Sandpiper)		IA	
86.	42361 <i>Zephyrarchaea mainae</i> (Main's assassin spider)		T	
Fungi				
87.	45013 <i>Amanita drummondii</i>		P3	
88.	18016 <i>Degelia flabellata</i>		P2	
89.	18015 <i>Usnea pulvinata</i>		P1	
Plantae				
90.	14725 <i>Acacia ataxiphylla subsp. ataxiphylla</i>		P3	
91.	3497 <i>Acacia prismifolia</i>		X	
92.	16876 <i>Adenanthos x cunninghamii</i>		P4	
93.	23502 <i>Agrostocrinum scabrum subsp. littorale</i>		P2	
94.	6301 <i>Andersonia auriculata</i>		P3	
95.	6319 <i>Andersonia setifolia</i>		P3	
96.	41737 <i>Andersonia sp. Jamesii</i> (J. Liddelow 84)		P4	
97.	16997 <i>Andersonia sp. Mitchell River</i> (B.G. Hammersley 925)		P3	
98.	42820 <i>Astartea transversa</i>		P2	
99.	35317 <i>Austrostipa mundula</i>		P3	
100.	1806 <i>Banksia brownii</i> (Feather-leaved Banksia)		T	
101.	1818 <i>Banksia goodii</i> (Good's Banksia)		T	

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
102.	32085 <i>Banksia seneciifolia</i>		P4	
103.	32084 <i>Banksia serra</i> (Serrate-leaved Dryandra)		P4	
104.	1854 <i>Banksia verticillata</i> (Albany Banksia)		T	
105.	4412 <i>Boronia crassipes</i>		P3	
106.	14313 <i>Caladenia evanescens</i>		P1	
107.	13621 <i>Caladenia harringtoniae</i>		T	
108.	1213 <i>Calectasia cyanea</i> (Blue Tinsel Lily)		T	
109.	17705 <i>Chordifex abortivus</i>		T	
110.	13113 <i>Chorizema carinatum</i>		P3	
111.	14003 <i>Conospermum quadripetalum</i>		P2	
112.	14004 <i>Conospermum spectabile</i>		P2	
113.	1441 <i>Conostylis misera</i> (Grass Conostylis)		T	
114.	12935 <i>Corybas abditus</i>		P3	
115.	12946 <i>Corybas limpidus</i>		P4	
116.	13635 <i>Drakaea micrantha</i>		T	
117.	3096 <i>Drosera fimbriata</i> (Manypeaks Sundew)		P4	
118.	3117 <i>Drosera paleacea</i> (Dwarf Sundew)		P1	
119.	17744 <i>Gahnia sclerioides</i>		P4	
120.	6162 <i>Gonocarpus pusillus</i>		P4	
121.	6166 <i>Gonocarpus simplex</i>		P4	
122.	2790 <i>Gyrostemon thesioides</i>		P2	
123.	12908 <i>Isopogon buxifolius</i> var. <i>buxifolius</i>		P2	
124.	2242 <i>Isopogon uncinatus</i>		T	
125.	14631 <i>Juncus meianthus</i>		P3	
126.	5838 <i>Kunzea pauciflora</i>		P4	
127.	25863 <i>Lachnagrostis billardierei</i> subsp. <i>billardierei</i>		P3	
128.	3042 <i>Lepidium pseudotasmanicum</i>		P4	
129.	6355 <i>Leucopogon alternifolius</i>		P3	
130.	33379 <i>Leucopogon altissimus</i>		P3	
131.	6363 <i>Leucopogon bracteolaris</i>		P2	
132.	6384 <i>Leucopogon cymbiformis</i>		P2	
133.	6460 <i>Lysinema lasianthum</i>		P4	
134.	1662 <i>Microtis pulchella</i> (Beautiful Mignonette Orchid)		P4	
135.	33742 <i>Microtis quadrata</i>		P4	
136.	6722 <i>Myosotis australis</i> (Southern Forget-me-not)		P4	
137.	35396 <i>Poa billardierei</i>		P3	
138.	48478 <i>Prasophyllum paulinae</i> (Pauline's Laughing Leek Orchid)		P1	
139.	16269 <i>Schoenus</i> sp. Grassy (E. Gude & J. Harvey 250)		P2	
140.	4833 <i>Spyridium spadiceum</i>		P4	
141.	19704 <i>Stenanthemum sublineare</i>		P2	
142.	7686 <i>Stylidium articulatum</i> (Stout Triggerplant)		P2	
143.	7724 <i>Stylidium falcatum</i> (Slender Beaked Triggerplant)		P2	
144.	16859 <i>Synaphea incurva</i>		P3	
145.	2327 <i>Synaphea preissii</i>		P3	
146.	1717 <i>Thelymitra variegata</i> (Queen of Sheba)		P2	
147.	5090 <i>Thomasia multiflora</i>		P1	
148.	17049 <i>Thomasia purpurea</i> x <i>solanacea</i>		P1	Y
149.	5096 <i>Thomasia quercifolia</i> (Oak Leaved Thomasia)		P4	
150.	5100 <i>Thomasia solanacea</i>		P4	
151.	1336 <i>Thysanotus isantherus</i>		P4	
152.	12420 <i>Verticordia endlicheriana</i> var. <i>angustifolia</i>		P3	
153.	12424 <i>Verticordia fimbriolepis</i> subsp. <i>australis</i>		T	

Conservation Codes

T - Rare or likely to become extinct
X - Presumed extinct
IA - Protected under international agreement
S - Other specially protected fauna
1 - Priority 1
2 - Priority 2
3 - Priority 3
4 - Priority 4
5 - Priority 5

¹ For NatureMap's purposes, species flagged as endemic are those whose records are wholly contained within the search area. Note that only those records complying with the search criterion are included in the calculation. For example, if you limit records to those from a specific datasource, only records from that datasource are used to determine if a species is restricted to the query area.



EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about [Environment Assessments](#) and the EPBC Act including significance guidelines, forms and application process details.

Report created: 24/09/19 12:09:50

[Summary](#)

[Details](#)

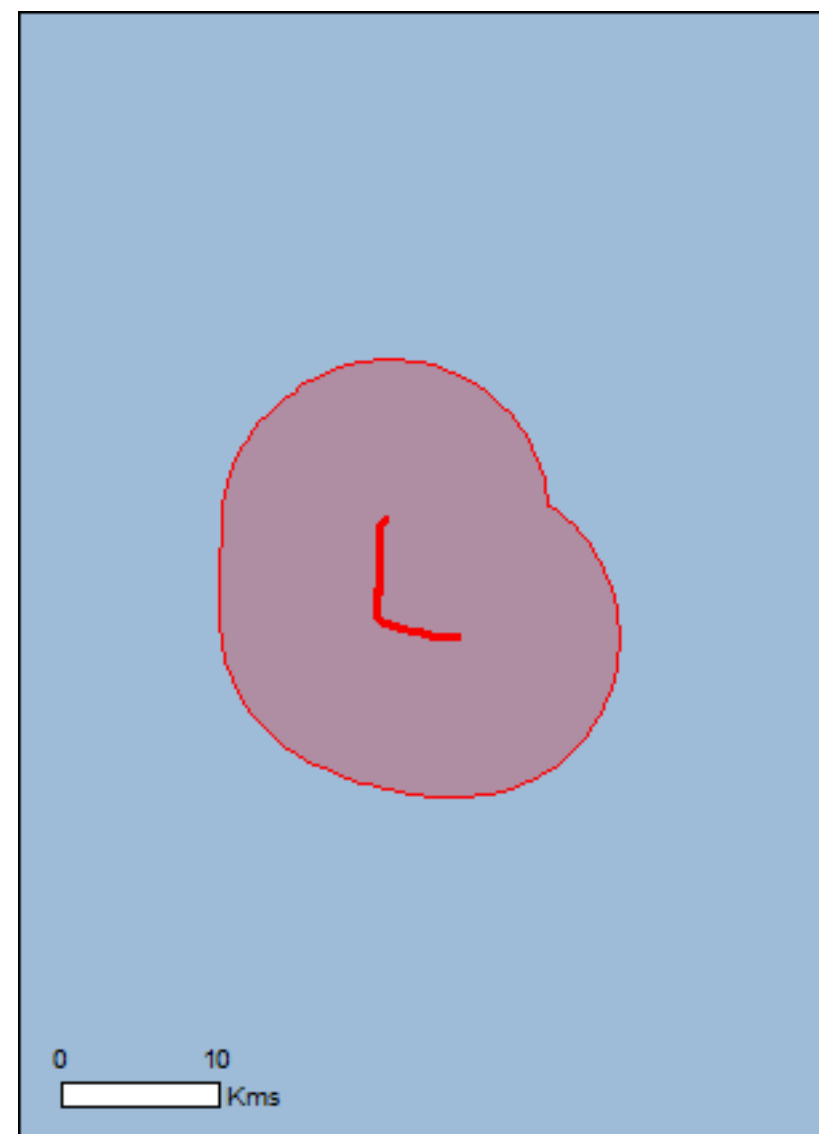
[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

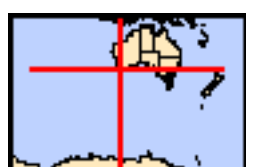
[Acknowledgements](#)



This map may contain data which are ©Commonwealth of Australia (Geoscience Australia), ©PSMA 2010

[Coordinates](#)

Buffer: 10.0Km



Summary

Matters of National Environmental Significance

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

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	2
Listed Threatened Species:	62
Listed Migratory Species:	60

Other Matters Protected by the EPBC Act

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

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

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

Commonwealth Land:	3
Commonwealth Heritage Places:	None
Listed Marine Species:	90
Whales and Other Cetaceans:	12
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None

Extra Information

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

State and Territory Reserves:	10
Regional Forest Agreements:	None
Invasive Species:	27
Nationally Important Wetlands:	1
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Listed Threatened Ecological Communities

[[Resource Information](#)]

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

Name	Status	Type of Presence
Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia	Endangered	Community may occur within area
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Community likely to occur within area

Listed Threatened Species

[[Resource Information](#)]

Name	Status	Type of Presence
Birds		
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris tenuirostris Great Knot [862]	Critically Endangered	Roosting known to occur within area
Calyptorhynchus banksii naso Forest Red-tailed Black-Cockatoo, Karrak [67034]	Vulnerable	Species or species habitat known to occur within area
Calyptorhynchus baudinii Baudin's Cockatoo, Long-billed Black-Cockatoo [769]	Endangered	Breeding known to occur within area
Calyptorhynchus latirostris Carnaby's Cockatoo, Short-billed Black-Cockatoo [59523]	Endangered	Species or species habitat known to occur within area
Cereopsis novaehollandiae grisea Cape Barren Goose (south-western), Recherche Cape Barren Goose [25978]	Vulnerable	Species or species habitat known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Roosting known to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area
Dasyornis longirostris Western Bristlebird [515]	Endangered	Species or species habitat likely to occur within area

Name	Status	Type of Presence
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea dabbenena Tristan Albatross [66471]	Endangered	Species or species habitat may occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Halobaena caerulea Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area
Limosa lapponica baueri Bar-tailed Godwit (baueri), Western Alaskan Bar-tailed Godwit [86380]	Vulnerable	Species or species habitat may occur within area
Limosa lapponica menzbieri Northern Siberian Bar-tailed Godwit, Bar-tailed Godwit (menzbieri) [86432]	Critically Endangered	Species or species habitat may occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat likely to occur within area
Phoebastria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area
Psophodes nigrogularis nigrogularis Western Heath Western Whipbird [64449]	Endangered	Species or species habitat may occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Foraging, feeding or related behaviour may occur within area
Thalassarche cauta cauta Shy Albatross, Tasmanian Shy Albatross [82345]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Name	Status	Type of Presence
Thalassarche cauta steadi White-capped Albatross [82344]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Fish		
Nannatherina balstoni Balston's Pygmy Perch [66698]	Vulnerable	Species or species habitat likely to occur within area
Insects		
Trioza barrettae Banksia brownii plant louse [87805]	Endangered	Species or species habitat known to occur within area
Mammals		
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Dasyurus geoffroii Chuditch, Western Quoll [330]	Vulnerable	Species or species habitat likely to occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Breeding known to occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
Neophoca cinerea Australian Sea-lion, Australian Sea Lion [22]	Vulnerable	Species or species habitat likely to occur within area
Parantechinus apicalis Dibbler [313]	Endangered	Species or species habitat known to occur within area
Pseudocheirus occidentalis Western Ringtail Possum, Ngwayir, Womp, Woder, Ngoor, Ngoolangit [25911]	Critically Endangered	Species or species habitat known to occur within area
Other		
Westralunio carteri Carter's Freshwater Mussel, Freshwater Mussel [86266]	Vulnerable	Species or species habitat likely to occur within area
Plants		
Banksia brownii Brown's Banksia, Feather-leaved Banksia [8277]	Endangered	Species or species habitat known to occur within area
Banksia goodii Good's Banksia [16727]	Vulnerable	Species or species habitat known to occur within area
Banksia verticillata Granite Banksia, Albany Banksia, River Banksia [8333]	Vulnerable	Species or species habitat likely to occur within area
Caladenia granitora [65292]	Endangered	Species or species habitat may occur within area

Name	Status	Type of Presence
Caladenia harringtoniae Harrington's Spider-orchid, Pink Spider-orchid [56786]	Vulnerable	Species or species habitat known to occur within area
Calectasia cyanea Blue Tinsel Lily [7669]	Critically Endangered	Species or species habitat known to occur within area
Chordifex abortivus Manypeaks Rush [64868]	Endangered	Species or species habitat likely to occur within area
Conostylis misera Grass Conostylis [21320]	Endangered	Species or species habitat likely to occur within area
Diuris drummondii Tall Donkey Orchid [4365]	Vulnerable	Species or species habitat likely to occur within area
Drakaea micrantha Dwarf Hammer-orchid [56755]	Vulnerable	Species or species habitat known to occur within area
Isopogon uncinatus Albany Cone Bush, Hook-leaf Isopogon [20871]	Endangered	Species or species habitat known to occur within area
Kennedia glabrata Northcliffe Kennedia [16452]	Vulnerable	Species or species habitat likely to occur within area
Sphenotoma drummondii Mountain Paper-heath [21160]	Endangered	Species or species habitat may occur within area
Verticordia fimbrialepis subsp. australis Southern Shy Featherflower [24630]	Vulnerable	Species or species habitat known to occur within area

Reptiles

Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area

Sharks

Carcharias taurus (west coast population) Grey Nurse Shark (west coast population) [68752]	Vulnerable	Species or species habitat likely to occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area

Listed Migratory Species

[[Resource Information](#)]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area

Name	Threatened	Type of Presence
Ardenna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area
Ardenna grisea Sooty Shearwater [82651]		Species or species habitat may occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea dabbenena Tristan Albatross [66471]	Endangered	Species or species habitat may occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Hydroprogne caspia Caspian Tern [808]		Foraging, feeding or related behaviour known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Phoebastria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Foraging, feeding or related behaviour may occur within area
Thalassarche cauta Tasmanian Shy Albatross [89224]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Migratory Marine Species		
Balaena glacialis australis Southern Right Whale [75529]	Endangered*	Breeding known to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Caperea marginata Pygmy Right Whale [39]		Species or species habitat may occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat may occur within area
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat may occur within area
Manta alfredi Reef Manta Ray, Coastal Manta Ray, Inshore Manta Ray, Prince Alfred's Ray, Resident Manta Ray [84994]		Species or species habitat known to occur within area
Manta birostris Giant Manta Ray, Chevron Manta Ray, Pacific Manta Ray, Pelagic Manta Ray, Oceanic Manta Ray [84995]		Species or species habitat known to occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Migratory Terrestrial Species		
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Arenaria interpres Ruddy Turnstone [872]		Roosting known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Roosting known to occur within area
Calidris alba Sanderling [875]		Roosting known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area

Name	Threatened	Type of Presence
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat known to occur within area
Calidris ruficollis Red-necked Stint [860]		Roosting known to occur within area
Calidris tenuirostris Great Knot [862]	Critically Endangered	Roosting known to occur within area
Charadrius bicinctus Double-banded Plover [895]		Roosting known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Roosting known to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area
Limnodromus semipalmatus Asian Dowitcher [843]		Roosting known to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Limosa limosa Black-tailed Godwit [845]		Roosting known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area
Numenius phaeopus Whimbrel [849]		Roosting known to occur within area
Pandion haliaetus Osprey [952]		Breeding known to occur within area
Pluvialis fulva Pacific Golden Plover [25545]		Roosting known to occur within area
Pluvialis squatarola Grey Plover [865]		Roosting known to occur within area
Tringa brevipes Grey-tailed Tattler [851]		Roosting known to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat known to occur within area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area
Xenus cinereus Terek Sandpiper [59300]		Roosting known to occur within area

Other Matters Protected by the EPBC Act

Commonwealth Land

[[Resource Information](#)]

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

Name

Commonwealth Land -
Defence - ALBANY TRAINING DEPOT
Defence - ALBANY TRAINING DEPOT ; AIRTC ALBANY

Listed Marine Species

[[Resource Information](#)]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea alba Great Egret, White Egret [59541]		Species or species habitat known to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Arenaria interpres Ruddy Turnstone [872]		Roosting known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Roosting known to occur within area
Calidris alba Sanderling [875]		Roosting known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat known to occur within area
Calidris ruficollis Red-necked Stint [860]		Roosting known to occur within area
Calidris tenuirostris Great Knot [862]	Critically Endangered	Roosting known to occur within area
Catharacta skua Great Skua [59472]		Species or species habitat may occur within area
Cereopsis novaehollandiae grisea Cape Barren Goose (south-western), Recherche Cape Barren Goose [25978]	Vulnerable	Species or species habitat known to occur within area
Charadrius bicinctus Double-banded Plover [895]		Roosting known to occur within area

Name	Threatened	Type of Presence
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Roosting known to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area
Charadrius ruficapillus Red-capped Plover [881]		Roosting known to occur within area
Chrysococcyx osculans Black-eared Cuckoo [705]		Species or species habitat likely to occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea dabbenena Tristan Albatross [66471]	Endangered	Species or species habitat may occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Eudyptula minor Little Penguin [1085]		Breeding known to occur within area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
Halobaena caerulea Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area
Heteroscelus brevipes Grey-tailed Tattler [59311]		Roosting known to occur within area
Himantopus himantopus Pied Stilt, Black-winged Stilt [870]		Roosting known to occur within area
Larus pacificus Pacific Gull [811]		Foraging, feeding or related behaviour known to occur within area
Limnodromus semipalmatus Asian Dowitcher [843]		Roosting known to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Limosa limosa Black-tailed Godwit [845]		Roosting known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within

Name	Threatened	Type of Presence area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area
Numenius phaeopus Whimbrel [849]		Roosting known to occur within area
Pachyptila turtur Fairy Prion [1066]		Species or species habitat likely to occur within area
Pandion haliaetus Osprey [952]		Breeding known to occur within area
Pelagodroma marina White-faced Storm-Petrel [1016]		Breeding known to occur within area
Phoebastria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area
Pluvialis fulva Pacific Golden Plover [25545]		Roosting known to occur within area
Pluvialis squatarola Grey Plover [865]		Roosting known to occur within area
Pterodroma macroptera Great-winged Petrel [1035]		Breeding known to occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area
Puffinus assimilis Little Shearwater [59363]		Foraging, feeding or related behaviour known to occur within area
Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [1043]		Foraging, feeding or related behaviour likely to occur within area
Puffinus griseus Sooty Shearwater [1024]		Species or species habitat may occur within area
Recurvirostra novaehollandiae Red-necked Avocet [871]		Roosting known to occur within area
Sterna caspia Caspian Tern [59467]		Foraging, feeding or related behaviour known to occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Foraging, feeding or related behaviour may occur within area

Name	Threatened	Type of Presence
Thalassarche cauta Tasmanian Shy Albatross [89224]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Thinornis rubricollis Hooded Plover [59510]		Species or species habitat known to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat known to occur within area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area
Xenus cinereus Terek Sandpiper [59300]		Roosting known to occur within area
Fish		
Acentronura australe Southern Pygmy Pipehorse [66185]		Species or species habitat may occur within area
Campichthys galei Gale's Pipefish [66191]		Species or species habitat may occur within area
Heraldia nocturna Upside-down Pipefish, Eastern Upside-down Pipefish, Eastern Upside-down Pipefish [66227]		Species or species habitat may occur within area
Hippocampus breviceps Short-head Seahorse, Short-snouted Seahorse [66235]		Species or species habitat may occur within area
Histiogamphelus cristatus Rhino Pipefish, Macleay's Crested Pipefish, Ring-back Pipefish [66243]		Species or species habitat may occur within area
Leptoichthys fistularius Brushtail Pipefish [66248]		Species or species habitat may occur within area
Lissocampus caudalis Australian Smooth Pipefish, Smooth Pipefish [66249]		Species or species habitat may occur within area
Lissocampus runa Javelin Pipefish [66251]		Species or species habitat may occur within area
Maroubra perserrata Sawtooth Pipefish [66252]		Species or species habitat may occur within area
Nannocampus subosseus Bonyhead Pipefish, Bony-headed Pipefish [66264]		Species or species habitat may occur within area
Notiocampus ruber Red Pipefish [66265]		Species or species

Name	Threatened	Type of Presence
Phycodurus eques Leafy Seadragon [66267]		habitat may occur within area Species or species habitat may occur within area
Phyllopteryx taeniolatus Common Seadragon, Weedy Seadragon [66268]		Species or species habitat may occur within area
Pugnaso curtirostris Pugnose Pipefish, Pug-nosed Pipefish [66269]		Species or species habitat may occur within area
Solegnathus lettiensis Gunther's Pipehorse, Indonesian Pipefish [66273]		Species or species habitat may occur within area
Stigmatopora argus Spotted Pipefish, Gulf Pipefish, Peacock Pipefish [66276]		Species or species habitat may occur within area
Stigmatopora nigra Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]		Species or species habitat may occur within area
Urocampus carinirostris Hairy Pipefish [66282]		Species or species habitat may occur within area
Vanacampus margaritifer Mother-of-pearl Pipefish [66283]		Species or species habitat may occur within area
Vanacampus phillipi Port Phillip Pipefish [66284]		Species or species habitat may occur within area
Vanacampus poecilolaemus Longsnout Pipefish, Australian Long-snout Pipefish, Long-snouted Pipefish [66285]		Species or species habitat may occur within area
Mammals		
Arctocephalus forsteri Long-nosed Fur-seal, New Zealand Fur-seal [20]		Species or species habitat likely to occur within area
Neophoca cinerea Australian Sea-lion, Australian Sea Lion [22]	Vulnerable	Species or species habitat likely to occur within area
Reptiles		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Whales and other Cetaceans		
		[Resource Information]
Name	Status	Type of Presence
Mammals		
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within

Name	Status	Type of Presence area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Caperea marginata Pygmy Right Whale [39]		Species or species habitat may occur within area
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Breeding known to occur within area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area

Extra Information

State and Territory Reserves	[Resource Information]
Name	State
Down Road	WA
Gledhow	WA
Lake Powell	WA
Marbelup	WA
Mill Brook	WA
Mistaken Island	WA
Phillips Brook	WA
Torndirrup	WA
Unnamed WA23088	WA
Unnamed WA33308	WA

Invasive Species [Resource Information]

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resources Audit, 2001.

Name	Status	Type of Presence
Birds		
Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Streptopelia senegalensis Laughing Turtle-dove, Laughing Dove [781]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
Mammals		
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Feral deer Feral deer species in Australia [85733]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Asparagus aethiopicus Asparagus Fern, Ground Asparagus, Basket Fern, Sprengi's Fern, Bushy Asparagus, Emerald Asparagus [62425]		Species or species habitat likely to occur within area
Asparagus asparagoides Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus [22473]		Species or species habitat likely to occur within area
Asparagus declinatus Bridal Veil, Bridal Veil Creeper, Pale Berry Asparagus Fern, Asparagus Fern, South African Creeper [66908]		Species or species habitat likely to occur within area
Asparagus scandens Asparagus Fern, Climbing Asparagus Fern [23255]		Species or species habitat likely to occur within area
Cenchrus ciliaris Buffel-grass, Black Buffel-grass [20213]		Species or species habitat may occur within area
Chrysanthemoides monilifera subsp. monilifera Boneseed [16905]		Species or species habitat likely to occur within area
Genista monspessulana Montpellier Broom, Cape Broom, Canary Broom, Common Broom, French Broom, Soft Broom		Species or species habitat likely to occur

Name	Status	Type of Presence
[20126] Genista sp. X Genista monspessulana Broom [67538]		within area Species or species habitat may occur within area
Lantana camara Lantana, Common Lantana, Kamara Lantana, Large-leaf Lantana, Pink Flowered Lantana, Red Flowered Lantana, Red-Flowered Sage, White Sage, Wild Sage [10892] Lycium ferocissimum African Boxthorn, Boxthorn [19235]		Species or species habitat likely to occur within area Species or species habitat likely to occur within area
Pinus radiata Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine [20780]		Species or species habitat may occur within area
Rubus fruticosus aggregate Blackberry, European Blackberry [68406]		Species or species habitat likely to occur within area
Sagittaria platyphylla Delta Arrowhead, Arrowhead, Slender Arrowhead [68483]		Species or species habitat likely to occur within area
Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]		Species or species habitat likely to occur within area
Ulex europaeus Gorse, Furze [7693]		Species or species habitat likely to occur within area

Nationally Important Wetlands		[Resource Information]
Name	State	
Oyster Harbour	WA	

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

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

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

Where very little information is available for species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc). In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More reliable distribution mapping methods are used to update these distributions as time permits.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

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

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

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

Coordinates

-34.963858 117.820552,-34.96428 117.819522,-34.967586 117.8142,-34.982847 117.814114,-34.997895 117.814029,-34.998458 117.813428,-35.006894 117.813514,-35.008923 117.81344,-35.009872 117.813698,-35.011243 117.816015,-35.012157 117.817303,-35.01286 117.819362,-35.014441 117.823997,-35.01539 117.827087,-35.016585 117.834726,-35.017007 117.837087,-35.017569 117.839404,-35.018272 117.841464,-35.018975 117.84421,-35.019256 117.8473,-35.019397 117.851592,-35.019538 117.860518

Acknowledgements

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

- [-Office of Environment and Heritage, New South Wales](#)
- [-Department of Environment and Primary Industries, Victoria](#)
- [-Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [-Department of Environment, Water and Natural Resources, South Australia](#)
- [-Department of Land and Resource Management, Northern Territory](#)
- [-Department of Environmental and Heritage Protection, Queensland](#)
- [-Department of Parks and Wildlife, Western Australia](#)
- [-Environment and Planning Directorate, ACT](#)
- [-Birdlife Australia](#)
- [-Australian Bird and Bat Banding Scheme](#)
- [-Australian National Wildlife Collection](#)
- [-Natural history museums of Australia](#)
- [-Museum Victoria](#)
- [-Australian Museum](#)
- [-South Australian Museum](#)
- [-Queensland Museum](#)
- [-Online Zoological Collections of Australian Museums](#)
- [-Queensland Herbarium](#)
- [-National Herbarium of NSW](#)
- [-Royal Botanic Gardens and National Herbarium of Victoria](#)
- [-Tasmanian Herbarium](#)
- [-State Herbarium of South Australia](#)
- [-Northern Territory Herbarium](#)
- [-Western Australian Herbarium](#)
- [-Australian National Herbarium, Canberra](#)
- [-University of New England](#)
- [-Ocean Biogeographic Information System](#)
- [-Australian Government, Department of Defence Forestry Corporation, NSW](#)
- [-Geoscience Australia](#)
- [-CSIRO](#)
- [-Australian Tropical Herbarium, Cairns](#)
- [-eBird Australia](#)
- [-Australian Government – Australian Antarctic Data Centre](#)
- [-Museum and Art Gallery of the Northern Territory](#)
- [-Australian Government National Environmental Science Program](#)
- [-Australian Institute of Marine Science](#)
- [-Reef Life Survey Australia](#)
- [-American Museum of Natural History](#)
- [-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [-Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- [-Other groups and individuals](#)

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

Please feel free to provide feedback via the [Contact Us](#) page.

Appendix B: *Prasophyllum paulinae*, Targeted Regional Flora Survey, report prepared for Main Roads Western Australia, January 2020

Prasophyllum paulinae
Targeted Regional Flora Survey



Report prepared for
Main Roads Western Australia
January 2020

Damien Rathbone | Ecologist
damien@southernecology.com.au
www.southernecology.com.au
0408 802 404



Assessment for:

Main Roads Western Australia
Great Southern Region
Chester Pass Road
PO Box 503
Albany WA 6331

Prepared by:

Southern Ecology
damien@southernecology.com.au
www.southernecology.com.au
0408 802 404
27 Newbold Rd
Torbay WA 6330

© DA Rathbone 2020. Reproduction of this report and maps in whole or in part is prohibited without the approval of the author or the client. The information provided within this report is accurate and correct to the best of the author's knowledge. No liability is accepted for loss, damage or injury arising from its use. The report should be read, distributed and referred to in its entirety.

Rev. No.	Date	Author	File Name
Draft (Rev A)	24/01/2020	DRathbone	SE1810_PasophyllumpaulinaeRegionalSurvey_20200124
Draft (Rev B)	11/02/2020	DRathbone	SE1810_PrasophyllumpaulinaeRegionalSurvey_RevB_20200211
Final (Rev 0)	17/02/2020	DRathbone	SE1810_PrasophyllumpaulinaeRegionalSurvey_Rev0_20200217

REPORT CONTENTS

1	SUMMARY	4
2	INTRODUCTION	5
2.1	<i>Background</i>	5
2.2	<i>Scope of Works</i>	5
3	METHODS	6
3.1	<i>Desktop Assessment</i>	6
3.2	<i>Targeted Flora Search</i>	6
3.3	<i>Survey Limitations</i>	7
4	DESKTOP RESULTS	9
4.1	<i>Population Information</i>	9
4.2	<i>Previous Surveys</i>	9
4.3	<i>Habitat Characteristics</i>	10
4.4	<i>Identification of Regional Survey Areas</i>	13
4.5	<i>Potential habitat in the Albany Ring Road Project area</i>	13
5	FIELD SURVEY RESULTS	15
5.1	<i>2019 Field Survey Results</i>	15
5.2	<i>Morphological Trait Assessment</i>	16
5.3	<i>Population Estimate of <i>Prasophyllum paulinae</i></i>	20
6	CONCLUSIONS	22
7	REFERENCES	23
8	Appendix A - Survey Site Maps	23

1 SUMMARY

Prasophyllum paulinae is a geographically restricted orchid taxon, listed as Priority 1 by the Department of Biodiversity, Conservation and Attractions (DBCA) and has historically been recorded within the Albany Ring Road Project area. It is known only from two populations over a range of 20 km and is a tuberous orchid, which is presumed to only exhibit annual above-ground leaves and flowers during spring for several years after its habitat is disturbed by fire. To provide contextual information on potential impacts, Southern Ecology was engaged to complete a desktop assessment to identify suitable areas of habitat for *P. paulinae* and to conduct additional targeted surveys within the regional distribution of *P. paulinae* and within the Albany Ring Road project area.

The desktop assessment identified the habitat of *P. paulinae* to most likely be associated with recently burnt vegetation that aligns with two Albany Regional Vegetation Mapping Units (*Taxandria juniperina* Closed Forest (ARVS Unit 59) and *Homalospermum firmum/Callistemon glaucus* Peat Thicket (ARVS Unit 47). These units occupy 19.25 ha of the Albany Ring Road Project area and a total of 2,861 ha are mapped within the Albany Region (Sandiford and Barrett 2010). An analysis of available fire history information and historic aerial photographs indicated approximately 391 ha of these vegetation units occur within the range of *Prasophyllum paulinae* (± 15 km) and have been burnt since 2014. These areas were targeted for regional survey in October 2019.

Representative *Prasophyllum* specimens were collected over a range of sites to assess the application of the published description of *P. paulinae* (Jones and Clement 1996). The key diagnostic morphological characters that distinguish *P. paulinae* from the allied *P. macrostachyum* were assessed on a subset of 22 freshly collected specimens.

The assessment determined that five specimens (from one new population) exhibited all of the characters that align with *P. paulinae*. However, many specimens showed a combination of characters from both species (*P. paulinae* and *P. macrostachyum*) and several of the qualitative characters could potentially be influenced by the environment. The results of the morphological assessment were concordant with the findings of others and demonstrated inconsistencies in the taxonomy and the need for a broader reassessment of the group. Andrew Brown (ex. DBCA expert in Orchidaceae) viewed the specimens collected in this study and supported our interpretation of the taxonomy (Andrew Brown pers. comm.).

The desktop, field surveys and morphological assessment identified a new previously unknown population outside the Albany Ring Road Project area, estimated to comprise 50 plants and occupy 0.45 ha. No extant individuals were found in either of the two previously known populations during the targeted survey, presumably due to the absence of recent fire. Historical photos indicate population one occupies approximately 1.04 ha of the Albany Ring Road Project area. Whilst no individuals of *P. paulinae* have been recorded from this location despite extensive survey effort (spring 2017, 2018 and 2019), there remains the possibility for the taxon to emerge after fire.

Targeted searches in areas containing suitable habitat for *P. paulinae* within the Albany Ring Road Project area did not identify any individuals of the taxon (See main report). These areas have been subject to survey effort in 2017, 2018 and 2019, however are long-unburnt and some are highly degraded.

2 INTRODUCTION

2.1 Background

Main Roads Great Southern Region are proposing to construct a heavy haulage route around the City of Albany for the transport of materials to the City's port, called the Albany Ring Road Project. The project is a staged development to support freight growth and long-term transport needs in the City of Albany in Western Australia. The project will connect Albany Highway, South Western Highway, Lower Denmark Road and Hanrahan Road allowing access to the Southern Ports Authority Albany Port (Figure 1). Stage one of the project, the construction and upgrade of Menang Drive to Chester Pass Road to Albany Highway was completed in 2017. Stages two and three are proposed.

Southern Ecology assessed a broad project envelope for potential environmental constraints for the project in 2017 (Rathbone and Gilfillan 2018), which identified that a Priority 1 listed taxon, *Prasophyllum paulinae*, was known to occur. The taxon was named in dedication to the late Pauline Herberle (Jones and Clements 1996). It is known only from two populations over a range of 20 km and is a tuberous orchid, which is presumed to only exhibit annual above-ground leaves and flowers during spring for several years after its habitat is disturbed by fire.

2.2 Scope of Works

To provide contextual information on the potential project impacts on this taxon, Southern Ecology was engaged by Main Roads to complete a desktop assessment to identify suitable areas of habitat for *P. paulinae* and to conduct additional targeted surveys within the regional distribution of *P. paulinae* and within the Albany Ring Road Project area. The outcomes of the desktop assessment and field surveys will be used to inform the environmental assessment and approvals process.

This report presents the results from the desktop assessment and targeted regional flora survey and should be read in conjunction with the detailed survey report of the project's biological survey area.

3 METHODS

3.1 Desktop Assessment

A desktop assessment of known populations of *P. paulinae* was undertaken using the following sources:

- Priority flora records from the Department of Biodiversity, Conservation and Attractions [DBCA].
- Voucher label information of specimens housed in the Western Australian Herbarium [WAH].
- The published description of *P. paulinae* (Jones and Clements 1996).

Extrapolation of potential habitat and potentially suitable areas for survey proposed for 2019 was undertaken using the following sources:

- Regional vegetation mapping (Sandiford and Barrett 2010).
- Fire history information (provided by DBCA and verbal communication from LGA's).
- Current and historic aerial photographs (Provided by Landgate and Main Roads Western Australia).

The results of the desktop assessment identified the regional survey should occur within the peak flowering period in mid-October, in the following locations:

- Re-survey of previously known populations (Gledhow and Two Peoples Bay) to confirm total number of extant individuals.
- Targeted regional survey of potential habitat within the six locations mapped in the desktop assessment (approx. 321 ha, plus 19.25 ha in the Albany Ring Road Project area).

3.2 Targeted Flora Search

A targeted search for *Prasophyllum paulinae* was undertaken within areas identified from the desktop assessment. In accordance with the EPA (2016) document, *Technical Guidance Flora and Vegetation Surveys for Environmental Impact Assessment*, areas were initially surveyed via a meandering traverse to identify habitat areas and other colonies of orchids (i.e. other *Prasophyllum* species). Where habitat was identified, a more intensive overlay of meandering transects was surveyed. Where identified, population census and site information of was recorded in accordance with the Threatened & Priority Flora (TPFL) Database Manual (Department of Environment and Conservation [DEC] 2010). Population size was determined by either direct counts, or by estimation of plant density using transects or suitably sized quadrats.

3.3 Survey Limitations

In accordance with the EPA (2016) document *Technical Guidance Flora and Vegetation Surveys for Environmental Impact Assessment*, an assessment of potential survey limitations was undertaken (Table 1).

Table 1. Assessment of potential survey limitations (EPA 2016).

Potential for Limitation	Assessment
Availability of contextual information	Regional vegetation mapping and flora records were available to allow for an appropriate level of contextual information prior to the field survey.
Personnel experience	The field assessment was conducted by Damien Rathbone (SL012382) and Keith Smith. Personnel undertaking the survey have in excess of 10 years' experience in botanical assessments within southern bioregions of WA. Damien has over 14 years of experience conducting biological surveys in southern Western Australia. Within the South Coast region, he has previously undertaken DBCA regional surveys (Albany Regional Vegetation Survey, Fitzgerald River National Park Flora Survey, Ravensthorpe Range Flora Survey), threatened species survey and recovery implementation, and has 10 scientific publications. Keith Smith is a local orchid expert and has previously surveyed and monitored <i>P. paulinae</i> (Population 2 at Two Peoples Bay) for the DBCA.
Identification issues	The taxonomy of <i>Prasophyllum</i> taxa is complex. Andrew Brown (ex. DBCA expert in Orchidaceae) has been consulted with and has provided guidance in relation to the taxonomy of the group. Specimens of possible <i>P. paulinae</i> were collected during the survey for further analysis and verification (see section 5.2 for further discussion).
Extent of survey and site access	The area of survey is relatively large, but is mostly accessible. No access issues were encountered during the field survey of the regional survey sites.
Survey intensity	Survey intensity at all regional survey sites was considered appropriate for the purpose of the survey. Survey effort included six person days using two senior botanists.
Survey timing	The survey was conducted in late October, which is considered appropriate for the <i>P. paulinae</i> . All vouchers of the taxon have been collected between 18-26 October 2019. Due to dry seasonal conditions a slight shift to early flowering may be expected. Survey timing was adjusted to account for possible early flowering.
Seasonal conditions	Below average rainfall has occurred for the year to date; therefore, it is anticipated that orchids may flower poorly and/or earlier than anticipated (Figure 1). Survey timing was adjusted to account for possible early flowering.
Disturbances	The time since previous fire is < 6 years in all areas proposed. Recent fire is considered an essential disturbance to detect <i>P. paulinae</i> .

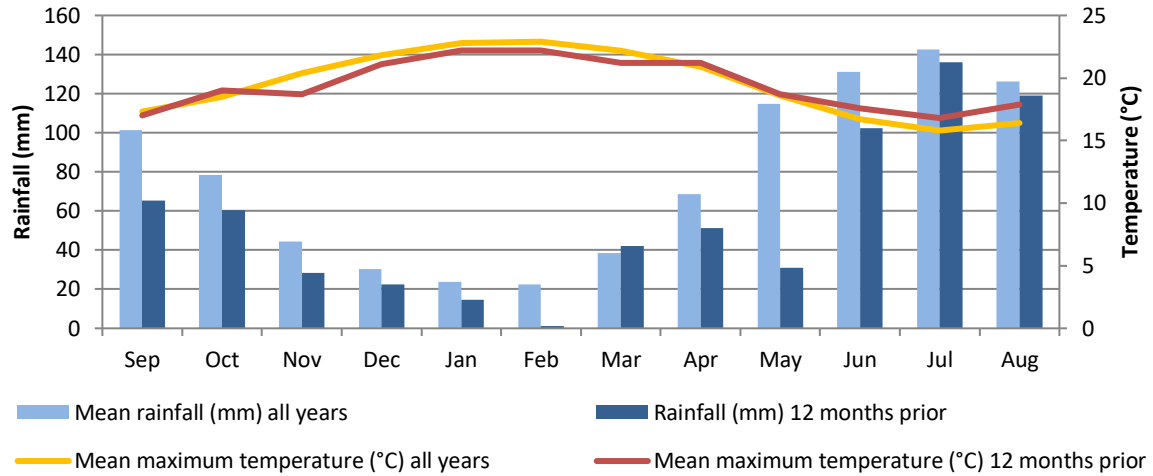


Figure 1. Climate statistics for 12 months prior (Sept 2018 - August 2019) to the assessment compared with historical averages (all years available) from the nearest weather station (Albany 9500) (BOM 2019). Total rainfall for 12-month period prior to the survey was 674 mm compared to the historic average of 922 mm.

4 DESKTOP RESULTS

4.1 Population Information

The first voucher and type specimens of *Prasophyllum paulinae* were collected in 1988 and 1993, respectively, from a regenerating swamp on private property (P222501) that occurs within the Albany Ring Road Project area (Table 2). The taxon was named in dedication to the late Pauline Herberle (Jones and Clements 1996), the family of whom owned the property up until 2018. The precise location of the early collections is uncertain due to inaccurate geo-tags, but was noted to be locally frequent within a degraded swamp with black, peaty, alkaline soil on the Heberle's property (Lot 53 Frederick Street, Gledhow; WAH Accession no. 04514238). A large area of regenerating wetland vegetation and seasonally inundated firebreaks occur at the southern end of the Herberle's property, which is considered the most likely location of the early collections of *P. paulinae*.

Prasophyllum paulinae is also known from a second population in a peat wetland at Two Peoples Bay, east of Albany (Table 2). Population monitoring after a fire in 2010, indicates it co-occurred with other *Prasophyllum* species and that numbers peaked (over 100 individuals) two years after the fire, then declined thereafter. The last plants (23 individuals) were seen in 2015 (Anna de Haan pers. com.).

Table 2. Voucher label information of specimens of *Prasophyllum paulinae* housed at the Herbarium of Western Australia from each known population.

Collection Details	Location	Site	Vegetation
Population 1 "Gledhow"			
22/10/1988 (PERTH 04514238, Sherwood, M.)	R. Heberle's property, Frederick Street, Gledhow.	Soil, sand.	In association with <i>Eucalyptus</i> sp. and <i>Agonis</i> sp.
20/10/1993 (PERTH 05724015, Jones, D.L.; Heberle, R.)	Cuthbert, near Albany, Darling district.	Gentle slope. Black, peaty, alkaline soil; degraded swamp.	Grasses and herbs.
Population 2 "Two Peoples Bay"			
26/10/2012 (Two duplicates PERTH 08674914 and 08674922, Barrett, S.; Smith, K.)	Reserve 24991, adjacent to Two Peoples Bay Nature Reserve, N of Two Peoples Bay Road.	Winter wet flat/drainage line. Peaty sand. Burnt Dec. 2011, hot fire.	<i>Homalospermum firmum</i> / <i>Callistemon glaucus</i> Peat Thicket (ARVS Unit 47). With <i>Astartea corniculata</i> , <i>Sphaerolobium rostratum</i> , <i>S. fornicatum</i> , <i>Sphenotoma gracilis</i> , <i>Empodisma gracillimum</i> , <i>Gymnoschoenus anceps</i> , <i>Diaspasis filifolia</i> , <i>Drosera sulphurea</i> , <i>Prasophyllum fimbria</i> , <i>P. macrostachyum</i> , <i>P. cucullatum</i> .

4.2 Previous Surveys

No systematic regional survey for *Prasophyllum paulinae* has previously been conducted. Opportunistic surveys have been conducted by volunteers with the Adopt an Orchid Program and by the DBCA, however its taxonomy is complex and its habitat is often challenging to access.

The taxon was reported to be relatively common when it was first collected from degraded swamps in Gledhow. However, it has not been recorded from that location since the first collections were made. Extensive survey was undertaken of the Herberle's property over several days in spring 2017 and 2018 in association with biological surveys for the Albany Ring Road Project. All suitable habitat was occupied by a common congener, *Prasophyllum macrostachyum*, and no individuals concordant with the

description of *P. paulinae* were detected. It was concluded that failure to detect *P. paulinae* in two survey seasons did not exclude its presence from the previously known habitat and its absence may be largely due to the long period since disturbance by fire. There remains the possibility for the taxon to emerge at that location in future years, particularly after a fire event.

The second known population in a peat wetland at Two Peoples Bay, east of Albany (Population 2) was discovered by Anna de Haan during opportunistic surveys undertaken through the Adopt an Orchid Program in 2010-11, which was followed up with surveys of the population by the DBCA.

4.3 Habitat Characteristics

The putative location of the known population of *P. paulinae* at Gledhow (population 1) is currently composed of a tall, long unburnt (>20 years) closed forest of *Taxandria juniperina* and *Homalospermum firmum* (Plate 1). The vegetation at this site currently aligns with the regional vegetation mapping units *Taxandria juniperina* Closed Forest (ARVS Unit 59) and *Homalospermum firmum/Callistemon glaucus* Peat Thicket (ARVS Unit 49) (Plate 1). These are closely related vegetation units that may represent post fire seral stages, with *Taxandria juniperina* Closed Forest representing the climax community. At the time of the species discovery, the site was reported to be relatively open compared to the current vegetation structure, due to recently clearing or burning. Historic aerial photography from the site in 1961 (Figure 2) illustrates the general area was largely cleared and that a wet depression was evident that extended east of the Heberle's Property.

The second known population of *P. paulinae* at Two Peoples Bay (population 2) is composed of *Homalospermum firmum/Callistemon glaucus* Peat Thicket (ARVS Unit 47) (Plate 2) with other wetland species noted, including *Astartea corniculata*, *Sphaerolobium rostratum*, *S. fornicatum*, *Sphenotoma gracilis*, *Empodisma gracillimum*, *Gymnoschoenus anceps*, *Diaspasis filifolia*, *Drosera sulphurea*, *Prasophyllum fimbria*, *P. macrostachyum*, *P. cucullatum*. The site was burnt in a high intensity fire in December 2011.

Based on the existing desktop information the suitable habitat of *P. paulinae* is most likely to be associated with recently burnt areas of *Taxandria juniperina* Closed Forest (ARVS Unit 59) and *Homalospermum firmum/Callistemon glaucus* Peat Thicket (ARVS Unit 47). However, it is acknowledged that the taxon's specific habitat may only occur within a subset of the area mapped as these units and that it could be absent from suitable habitat due to historic reasons (has failed to disperse to the habitat or has become locally extinct).

It has also been noted in the taxon description and voucher labels that a common congener, *P. macrostachyum* is present at both populations; growing in similar swampy environments but with *P. macrostachyum* occurring in wetter conditions than *P. paulinae*, often growing with the base of the plants submerged. *Prasophyllum paulinae* is similar to *P. macrostachyum* but is much more robust with stouter stems and leaves, more numerous, crowded flowers in a sub-pyramidal spike, longer ovaries, shorter, broader lateral sepals and a broadly elliptic-obovate, obtuse labellum with a much thicker-textured callus (Jones and Clement 1996).



Plate 1. Likely habitat of *P. paulinae* (P1) at population 1; *Taxandria juniperina* Closed Forest (ARVS Unit 59).



Plate 2. Example of habitat of *P. paulinae* (P1) at population 2; *Homalospermum firmum*/*Callistemon glaucus* Peat Thicket (ARVS Unit 47).



Figure 2. Aerial photograph (1960) of the Herberle's Property (lot 53 Frederick St, Gledhow), where *P. paulinae* was first collected (Population 1).

4.4 Identification of Regional Survey Areas

An analysis of available fire history information and historic aerial photographs indicated approximately 391 ha of potentially suitable vegetation (ARVS units 47 and 59) occurs within the range of *Prasophyllum paulinae* (estimated as a 15 km radius from known populations) that has been burnt since 2014 (Table 3, Figure 3). Six sites are identified where the species has not previously been recorded, but it is considered possible to occur (Figure 3).

Table 3. Extent (ha) regional mapping units and fire history considered likely to be associated with the habitat of *P. paulinae*. Some areas occur as part of a mosaic mapping unit, which has been accounted for in the analysis.

Vegetation Association	Total in ARVS (% in IUCN Reserves)	Area burnt since 2014 and within 15km of known population
<i>Homalospermum firmum</i> / <i>Callistemon glaucus</i> Peat Thicket (ARVS Unit 47)	2082 (12.6%)	321
<i>Taxandria juniperina</i> Closed Forest (ARVS Unit 59)	779 (9.9%)	70

4.5 Potential habitat in the Albany Ring Road Project area

Approximately 19.25 ha of long-unburnt vegetation within the Albany Ring Road Project aligns with habitats considered suitable for *Prasophyllum paulinae* (Table 4). Extensive targeted surveys have previously been conducted (2017 and 2018) within these areas, in which no individuals were recorded. As these areas have not been recently burnt and some are highly degraded, survey limitations are present. The previously known location of *P. paulinae* from within the project area occupies an area 1.04 ha, which has been deduced through assessment of historical aerial photos (Figure 2). A small reserve (R46057; 1.8 ha) east of the project area also has suitable wetland vegetation in Excellent condition (however is also long unburnt) and is contiguous with vegetation from the previously known population site.

Table 4. Extent (ha) condition (EPA 2016) of vegetation units suitable for *Prasophyllum paulinae* in the Albany Ring Road Project area.

Vegetation Association	Condition					Total
	Completely Degraded	Degraded	Good	Very Good	Excellent	
<i>Homalospermum firmum</i> / <i>Callistemon glaucus</i> Peat Thicket	1.93	1.68		1.96	4.96	10.53
<i>Taxandria juniperina</i> Closed Forest	4.44	1.48	0.05	2.75		8.72
	6.37	3.16	0.05	4.71	4.96	19.25