

Appendix D

# **Revised Biodiversity Development Assessment Report**

## **Part 4 (Revised BDAR, App. D to J)**

Appendix D

# **BDAR Requirement Compliance**

**Appendix Table D.1 Assessment of Compliance with BDAR Minimum Information Requirements**

<b>BDAR Section</b>	<b>BAM Ref.</b>	<b>BAM Requirement</b>	<b>Reference(s) in the Revised BDAR</b>
<b>Introduction</b>	Chapters 2 and 3	<b>Information</b>	
		Introduction to the biodiversity assessment including:	–
		<input checked="" type="checkbox"/> brief description of the proposal	<b>Section 2.0</b>
		<input checked="" type="checkbox"/> identification of subject land boundary, including:	<b>Section 1.2.1 and Section 1.2.2 and Figure 1.1 and Figure 1.2</b>
		<input checked="" type="checkbox"/> operational footprint	
		<input checked="" type="checkbox"/> construction footprint indicating clearing associated with temporary/ancillary construction facilities and infrastructure	
		<input checked="" type="checkbox"/> general description of the subject land	<b>Section 1.2.1</b>
		<input checked="" type="checkbox"/> sources of information used in the assessment, including reports and spatial data	<b>Section 1.4, Section 4.1.1, and Section 5.2.1.</b> Also referenced in text and listed in the References Section
		<input checked="" type="checkbox"/> identification and justification for entering the BOS	<b>Section 1.3.1 and Table 1.1</b>
		<b>Maps and tables</b>	
<input checked="" type="checkbox"/> Map of the subject land boundary showing the final proposal footprint, including the construction footprint for any clearing associated with temporary/ancillary construction facilities and infrastructure	<b>Figure 1.2</b>		
<b>Landscape</b>	Section 3.1 and Section 3.2, Appendix E	<b>Information</b>	
		Identification of site context components and landscape features, including:	–
		<input checked="" type="checkbox"/> general description of subject land topographic and hydrological setting, geology and soils	<b>Section 1.2.1, Table 3.2</b>
<input checked="" type="checkbox"/> per cent native vegetation cover in the assessment area (as described in BAM Section 3.2)	<b>Section 3.3 and Table 3.3</b>		

BDAR Section	BAM Ref.	BAM Requirement	Reference(s) in the Revised BDAR
	<input checked="" type="checkbox"/>	IBRA bioregions and subregions (as described in BAM Subsection 3.1.3(2.))	<b>Section 3.2, Table 3.2 and Appendix A, Figure 3.1</b>
	<input checked="" type="checkbox"/>	rivers and streams classified according to stream order (as described in BAM Subsection 3.1.3(3.) and Appendix E)	<b>Table 3.2 and Appendix A, Figure 3.3</b>
	<input checked="" type="checkbox"/>	wetlands within, adjacent to and downstream of the site (as described in BAM Subsection 3.1.3(3.))	<b>Section 3.2, Table 3.2, Appendix A, Figure 3.3</b>
	<input checked="" type="checkbox"/>	connectivity of different areas of habitat (as described in BAM Subsection 3.1.3(5–6.))	<b>Section 3.2, Table 3.2, Appendix A, Figure 3.4</b>
	<input checked="" type="checkbox"/>	karst, caves, crevices, cliffs, rocks and other geological features of significance and for vegetation clearing proposals, soil hazard features (as described in BAM Subsections 3.1.3(7.) and 3.1.3(12.))	<b>Section 3.2, Table 3.2, Appendix A</b>
	<input checked="" type="checkbox"/>	areas of outstanding biodiversity value occurring on the subject land and assessment area (as described in BAM Subsection 3.1.3(8–9.))	<b>Section 3.2, Table 3.2</b>
	<input checked="" type="checkbox"/>	any additional landscape features identified in any SEARs for the proposal	<b>Section 3., Table 3.2</b>
	<input checked="" type="checkbox"/>	NSW (Mitchell) landscape on which the subject land occurs	<b>Section 3.2, Table 3.2, Appendix A, Figure 3.2</b>
	<input checked="" type="checkbox"/>	details of field reconnaissance undertaken to confirm the extent and condition of landscape features and native vegetation cover (as described in Operational Manual Stage 1 Section 2.4)	<b>Section 4.1.2 and 4.1.3, Section 4.23, Table 4.1</b>
<b>Maps and tables</b>			
	<input checked="" type="checkbox"/>	Site Map	<b>Figure 3.1</b>
	<input checked="" type="checkbox"/>	Property boundary	
	<input checked="" type="checkbox"/>	Boundary of subject land	
	<input checked="" type="checkbox"/>	Cadastre of subject land (including labelling of Lot and DP or section plan if relevant)	
	<input checked="" type="checkbox"/>	Landscape features identified in BAM Subsection 3.1.3.	

BDAR Section	BAM Ref.	BAM Requirement	Reference(s) in the Revised BDAR
		<input checked="" type="checkbox"/> Location Map <input checked="" type="checkbox"/> Digital aerial photography at 1:1,000 scale or finer <input checked="" type="checkbox"/> Boundary of subject land <input checked="" type="checkbox"/> Assessment area (i.e. the subject land and either 1500 m buffer area or 500 m buffer for linear development) <input checked="" type="checkbox"/> Landscape features identified in BAM Subsection 3.1.3 <input checked="" type="checkbox"/> Additional detail (e.g. local government area boundaries) relevant at this scale	<b>Figure 1.1 and Figure 3.2</b>
		Landscape features identified in BAM Subsection 3.1.3 and to be shown on the Site Map and/or Location Map include:	–
		<input checked="" type="checkbox"/> IBRA bioregions and subregions <input checked="" type="checkbox"/> rivers, streams and estuaries <input checked="" type="checkbox"/> wetlands and important wetlands <input checked="" type="checkbox"/> connectivity of different areas of habitat <input checked="" type="checkbox"/> karst, caves, crevices, cliffs, rocks and other geological features of significance and if required, soil hazard features <input checked="" type="checkbox"/> areas of outstanding biodiversity value occurring on the subject land and assessment area <input checked="" type="checkbox"/> any additional landscape features identified in any SEARs for the proposal <input checked="" type="checkbox"/> NSW (Mitchell) landscape on which the subject land occurs	<b>Figure 3.1, Figure 3.2, Figure 3.3, Figure 3.4 and Figure 3.5</b>
		<b>Data</b>	
		<input checked="" type="checkbox"/> All report maps as separate jpeg files	To be issued to BCS as separate data package
		Individual digital shape files of:	–
		<input checked="" type="checkbox"/> subject land boundary	To be issued to BCS as separate data package

BDAR Section	BAM Ref.	BAM Requirement	Reference(s) in the Revised BDAR
		<input checked="" type="checkbox"/> assessment area (i.e. subject land and 1500 m buffer area) boundary	To be issued to BCS as separate data package
		<input checked="" type="checkbox"/> cadastral boundary of subject land	To be issued to BCS as separate data package
		<input checked="" type="checkbox"/> areas of native vegetation cover	To be issued to BCS as separate data package
		<input checked="" type="checkbox"/> landscape features	To be issued to BCS as separate data package
<b>Native vegetation</b>	Chapter 4, Appendix A and Appendix H	<b>Information</b>	
		<input checked="" type="checkbox"/> Identify native vegetation extent within the subject land, including cleared areas and evidence to support differences between mapped vegetation extent and aerial imagery (as described in BAM Section 4.1(1–3.) and Subsection 4.1.1)	<b>Section 4.2 and Figure 3.1 and Figure 3.6</b>
		<input checked="" type="checkbox"/> Provide justification for all parts of the subject land that do not contain native vegetation (as described in BAM Subsection 4.1.2)	<b>Section 4.1.3, Section 4.2, Section 4.7 and Section 4.8</b>
		<input checked="" type="checkbox"/> Review of existing information on native vegetation including references to previous vegetation maps of the subject land and assessment area (described in BAM Section 4.1(3.) and Subsection 4.1.1)	<b>Section 4.1.1</b>
		<input checked="" type="checkbox"/> Describe the systematic field-based floristic vegetation survey undertaken in accordance with BAM Section 4.2	<b>Section 4.1.2, Table 4.1, Table 4.2, Table 4.3, Figure 4.1, Figure 4.2</b>
		<input checked="" type="checkbox"/> Where relevant, describe the use of more appropriate local data, provide reasons that support the use of more appropriate local data and include the written confirmation from the decision-maker that they support the use of more appropriate local data (as described in BAM Subsection 1.4.2 and Appendix A)	Not applicable
		For each PCT within the subject land, describe:	–

BDAR Section	BAM Ref.	BAM Requirement	Reference(s) in the Revised BDAR
		<input checked="" type="checkbox"/> PCT name and ID	<b>Section 4.3 and Table 4.3</b>
		<input checked="" type="checkbox"/> vegetation class	<b>Section 4.3, Table 4.4 – Table 4.14</b>
		<input checked="" type="checkbox"/> extent (ha) within subject land	<b>Section 4.3 and Table 4.4 – Table 4.14</b>
		<input checked="" type="checkbox"/> evidence used to identify a PCT including any analyses undertaken, references/sources, existing vegetation maps (BAM Section 4.2(1–3.))	<b>Section 4.3.1 to Section 4.3.4</b>
		<input checked="" type="checkbox"/> plant species relied upon for identification of the PCT and relative abundance of each species	<b>Section 4.3.1 to Section 4.3.4</b>
		<input checked="" type="checkbox"/> if relevant, TEC status including evidence used to determine vegetation is the TEC (BAM Subsection 4.2.2(1–2.))	<b>Section 4.5 and Table 4.16 to Table 4.19</b>
		<input checked="" type="checkbox"/> estimate of per cent cleared value of PCT (BAM Subsection 4.2.1(5.))	<b>Table 4.4 to Table 4.14</b>
		Describe the vegetation integrity assessment of the subject land, including:	–
		<input checked="" type="checkbox"/> identification and mapping of vegetation zones (as described in BAM Subsection 4.3.1)	Method provided in <b>Section 4.1</b> ; Results provided in <b>Section 4.3</b> and <b>Table 4.7</b>
		<input checked="" type="checkbox"/> description of vegetation zones within the subject land (as described in Operational Manual Stage 1 Table 2 and Subsection 3.3.2)	<b>Table 4.1, Section 4.3.1 to Section 4.3.4</b> and <b>Figure 4.2</b>
		<input checked="" type="checkbox"/> area (ha) of each vegetation zone	<b>Section 4.3.1 to Section 4.3.4</b> and <b>Table 4.15</b>
		<input checked="" type="checkbox"/> assessment of patch size (as described in BAM Subsection 4.3.2)	<b>Section 4.1.4</b>
		<input checked="" type="checkbox"/> survey effort (i.e. number of vegetation integrity survey plots) as described in BAM Subsection 4.3.4(1–2.)	<b>Section 4.1.2.3, Table 4.2</b> and <b>Table 4.15</b>

BDAR Section	BAM Ref.	BAM Requirement	Reference(s) in the Revised BDAR
		<input checked="" type="checkbox"/> use of relevant benchmark data from BioNet Vegetation Classification (as described in BAM Subsection 4.3.3(5.))	<b>Section 4.3.1 to Section 4.3.4</b>
		Where use of more appropriate local benchmark data is proposed (as described in BAM Subsection 1.4.2, BAM Subsection 4.3.3(5.) and BAM Appendix A):	–
		<input type="checkbox"/> identify the PCT or vegetation class for which local benchmark data will be applied	Not applicable
		<input type="checkbox"/> identify published sources of local benchmark data (if benchmarks obtained from published sources)	
		<input type="checkbox"/> describe methods of local benchmark data collection (if reference plots used to determine local benchmark data)	
		<input type="checkbox"/> provide justification for use of local data rather than BioNet Vegetation Classification benchmark values	Not applicable
		<input type="checkbox"/> provide written confirmation from the decision-maker that they support the use of local benchmark data	Not applicable
		<b>Maps and tables</b>	
		<input checked="" type="checkbox"/> Map of native vegetation extent within the subject land at scale not greater than 1:1,000 including identification of all areas of native vegetation including areas that are ground cover only, cleared areas (as described in BAM Section 4.1(1–3.)) and all parts of the subject land that do not contain native vegetation (BAM Subsection 4.1.2)	<b>Figure 3.6 and Figure 4.1</b>
		<input checked="" type="checkbox"/> Map of PCTs within the subject land (as described in BAM Section 4.2(1.))	<b>Figure 4.2 and Appendix A</b>
		<input checked="" type="checkbox"/> Map of vegetation zones within the subject land (as described in BAM Subsection 4.3.1)	<b>Figure 4.2 and Appendix A</b>
		<input checked="" type="checkbox"/> Map the location of floristic vegetation survey plots and vegetation integrity survey plots relative to PCT boundaries	<b>Figure 4.2 and Appendix A</b>
		<input checked="" type="checkbox"/> Map of TEC distribution on the subject land and table of TEC listing, status and area (ha)	<b>Table 4.16 to Table 4.19 and Figure 4.3</b>

BDAR Section	BAM Ref.	BAM Requirement	Reference(s) in the Revised BDAR
		<input checked="" type="checkbox"/> Map of patch size locations for each native vegetation zone and table of patch size areas (as described in BAM Subsection 4.3.2)	<b>Section 4.1.4, Appendix A</b>
		Table of current vegetation integrity scores for each vegetation zone within the site and including:	-
		<input checked="" type="checkbox"/> composition condition score <input checked="" type="checkbox"/> structure condition score <input checked="" type="checkbox"/> function condition score <input checked="" type="checkbox"/> presence of hollow bearing trees	<b>Section 4.4 and Table 4.15</b>
		<b>Data</b>	
		<input checked="" type="checkbox"/> All report maps as separate jpeg files	To be issued to BCS as separate data package
		<input checked="" type="checkbox"/> Plot field data (MS Excel format)	To be issued to BCS as separate data package
		<input checked="" type="checkbox"/> Plot field datasheets	To be issued to BCS as separate data package
		Digital shape files of:	-
		<input checked="" type="checkbox"/> PCT boundaries within subject land	To be issued to BCS as separate data package
		<input checked="" type="checkbox"/> TEC boundaries within subject land	To be issued to BCS as separate data package
		<input checked="" type="checkbox"/> vegetation zone boundaries within subject land	To be issued to BCS as separate data package
		<input checked="" type="checkbox"/> floristic vegetation survey and vegetation integrity plot locations	To be issued to BCS as separate data package

BDAR Section	BAM Ref.	BAM Requirement	Reference(s) in the Revised BDAR
<b>Threatened species</b>	Chapter 5	<b>Information</b>	
		Identify ecosystem credit species likely to occur on the subject land, including:	–
		☒ list of ecosystem credit species derived from the BAM-C (as described in BAM Subsection 5.1.1 and Section 5.2(1.))	<b>Section 5.1.1 and Table 5.1</b>
		☒ justification and supporting evidence for exclusion of any ecosystem credit species based on geographic limitations, habitat constraints or vagrancy (as described in BAM Subsections 5.2.1 and 5.2.2)	<b>Section 5.1.1 and Table 5.1</b>
		☒ justification for addition of any ecosystem credit species to the list	<b>Section 5.1.1 and Table 5.1</b>
		Identify species credit species likely to occur on the subject land, including:	–
		☒ list of species credit species derived from the BAM-C (as described in BAM Subsection 5.1.1)	<b>Section 5.1.2 and Table 5.2</b>
		☒ justification and supporting evidence for exclusions based on geographic limitations, habitat constraints or vagrancy (as described in BAM Subsections 5.2.1 and 5.2.2)	<b>Section 5.1.2 and Table 5.2</b>
		☒ justification and supporting evidence for exclusions based on degraded habitat constraints and/or microhabitats on which the species depends (as described in BAM Subsection 5.2.2)	<b>Section 5.1.2 and Table 5.2</b>
		☒ justification for addition of any species credit species to the list	<b>Section 5.1.2 and Table 5.2</b>
		From the list of candidate species credit species, identify:	–
		☒ species assumed present within the subject land (if relevant) (as described in BAM Subsection 5.2.4(2.a.))	<b>Section 5.1.2 and Table 5.2 and Table 5.3</b>
		☒ species present within the subject land on the basis of being identified on an important habitat map for a species (as described in BAM Subsection 5.2.4(2.d.))	
		☒ species for which targeted surveys are to be completed to determine species presence (BAM Subsection 5.2.4(2.b.))	

BDAR Section	BAM Ref.	BAM Requirement	Reference(s) in the Revised BDAR
		<input checked="" type="checkbox"/> species for which an expert report is to be used to determine species presence (BAM Subsection 5.2.4(2.c.))	
		Present the outcomes of species credit species assessments from:	–
		<input checked="" type="checkbox"/> threatened species survey (as described in BAM Section 5.2.4)	<b>Section 5.2.4 and 5.2.5, Table 5.5 and Table 5.6</b>
		<input type="checkbox"/> expert reports (if relevant) including justification for presence of the species and information used to make this determination (as described in BAM Subsection 5.2.4, Section 5.3, Box 3)	<b>Section 5.3, Appendix H</b>
		Where survey has been undertaken include detailed information on:	–
		<input checked="" type="checkbox"/> survey method and effort (as described in BAM Section 5.3)	<b>Section 5.2</b>
		<input checked="" type="checkbox"/> justification of survey method and effort (e.g. citation of peer-reviewed literature) if approach differs from the department’s taxa-specific survey guides or where no relevant guideline has been published	<b>Section 5.2.4 and Section 5.2.5</b>
		<input checked="" type="checkbox"/> timing of survey in relation to requirements in the TBDC or the department’s taxa-specific survey guides. Where survey was undertaken outside these guides include justification for the timing of surveys	<b>Section 5.2.2, Section 5.2.3, Section 5.2.4 and Section 5.2.5</b>
		<input checked="" type="checkbox"/> survey personnel and relevant experience	<b>Page ii</b>
		<input checked="" type="checkbox"/> describe any limitations to surveys and how these were addressed/overcome	<b>Section 5.5</b>
		Where an expert report has been used in place of survey (as described in BAM Section 5.3, Box 3), include:	–
		<input type="checkbox"/> justification of the use of an expert report	<b>Section 5.3, Appendix H</b>
		<input type="checkbox"/> identify the expert, provide evidence of their expert credentials and departmental approval of expert status	
		<input type="checkbox"/> all requirements of Box 3 have been addressed in the expert report	
		Where use of local data is proposed (BAM Subsection 1.4.2):	–

BDAR Section	BAM Ref.	BAM Requirement	Reference(s) in the Revised BDAR
		<input type="checkbox"/> identify relevant species <input type="checkbox"/> identify data to be amended <input type="checkbox"/> identify source of information for local data, e.g. published literature, additional survey data, etc. <input type="checkbox"/> justify use of local data in preference to VIS Classification or TBDC data	<b>Section 5.4</b> – Not applicable
		<input type="checkbox"/> provide written confirmation from the decision-maker that they support the use of local data	Not applicable
		Species polygon completed for species credit species present within the subject land (assumed present or determined on the basis of survey, expert report or important habitat map) ensuring that:	–
		<input type="checkbox"/> the unit of measure for each species is documented	Not applicable
		for species assessed by area:	–
		<input type="checkbox"/> within the polygon includes the extent of suitable habitat for the target species the subject land (as described in BAM Subsection 5.2.5)	Not applicable
		<input type="checkbox"/> a description of, and evidence-based justification for, the habitat constraints, features or microhabitats used to map the species polygon including reference to information in the TBDC for that species and any buffers applied	No applicable
		for species assessed by counts of individuals:	–
		<input type="checkbox"/> the number of individual plants present on the subject land (as described in BAM Subsection 5.2.5(3.))	Not applicable
		<input type="checkbox"/> the method used to derive this number (i.e. threatened species survey or expert report) and evidence-based justification for the approach taken	Not applicable
		<input type="checkbox"/> the polygon includes all individuals located on the subject land with a buffer of 30 m around the individuals or groups of individuals on the subject land	Not applicable
		<input type="checkbox"/> Identify the biodiversity risk weighting for each species credit species identified as present within the subject land (as described in BAM Section 5.4)	Not applicable

BDAR Section	BAM Ref.	BAM Requirement	Reference(s) in the Revised BDAR
		<b>Maps and tables</b>	
		<input checked="" type="checkbox"/> Table showing ecosystem credit species in accordance with BAM Subsection 5.1.1, and identifying:	<b>Section 5.1, Table 5.1</b>
		<input checked="" type="checkbox"/> the ecosystem credit species removed from the list	<b>Section 5.1, Table 5.1</b>
		<input checked="" type="checkbox"/> the sensitivity to gain class of each species	<b>Section 5.1, Table 5.1</b>
		<input checked="" type="checkbox"/> Table detailing species credit species in accordance with BAM Section 5.2 and identifying:	<b>Section 5.2, Table 5.2 and Table 5.3</b>
		<input checked="" type="checkbox"/> the species credit species removed from the list of species because the species is considered vagrant, out of geographic range or the habitat or microhabitat features are not present	<b>Section 5.2, Table 5.2 and Table 5.3</b>
		<input checked="" type="checkbox"/> the candidate species credit species not recorded on the subject land as determined by targeted survey, expert report or important habitat map	<b>Section 5.6</b>
		<input type="checkbox"/> Table detailing species credit species recorded or assumed as present within the subject land, habitat constraints or microhabitats associated with the species, counts of individuals (flora)/extent of suitable habitat (flora and fauna) (as described in BAM Subsection 5.2.6) and biodiversity risk weighting (BAM Section 5.4)	Not applicable
		<input checked="" type="checkbox"/> Map indicating the GPS coordinates of all individuals of each species recorded within the subject land and the species polygon for each species (as described in BAM Subsection 5.2.5)	<b>Section 5.6, Figure 5.6</b>
		<b>Data</b>	
		<input checked="" type="checkbox"/> Digital shape files of suitable habitat identified for survey for each candidate species credit species	To be issued to BCS as separate data package
		<input checked="" type="checkbox"/> Survey locations including GPS coordinates of any plots, transects, grids	To be issued to BCS as separate data package
		<input checked="" type="checkbox"/> Digital shape files of each species polygon including GPS coordinates of located individuals	To be issued to BCS as separate data package

BDAR Section	BAM Ref.	BAM Requirement	Reference(s) in the Revised BDAR
		<input checked="" type="checkbox"/> Species polygon map in jpeg format	To be issued to BCS as separate data package
		<input checked="" type="checkbox"/> Expert reports and any supporting data used to support conclusions of the expert report	To be issued to BCS as separate data package
		<input checked="" type="checkbox"/> Field datasheets detailing survey information including prevailing conditions, date, time, equipment used, etc.	Field data captured digitally To be issued to BCS as separate data package
<b>Prescribed impacts</b>	Chapter 6	<b>Information</b>	
		Identify potential prescribed biodiversity impacts on threatened entities, including:	–
		<input checked="" type="checkbox"/> karst, caves, crevices, cliffs, rocks and other geological features of significance (as described in BAM Subsection 6.1.1)	<b>Section 6.0 and Table 6.1</b>
		<input checked="" type="checkbox"/> occurrences of human-made structures and non-native vegetation (as described in BAM Subsection 6.1.2)	
		<input checked="" type="checkbox"/> corridors or other areas of connectivity linking habitat for threatened entities (as described in BAM Subsection 6.1.3)	
		<input checked="" type="checkbox"/> waterbodies or any hydrological processes that sustain threatened entities (as described in BAM Subsection 6.1.4)	
		<input type="checkbox"/> protected animals that may use the proposed wind farm development site as a flyway or migration route (as described in BAM Subsection 6.1.5)	<b>Section 6.0, Section 8.3 and Table 6.1</b>
		<input checked="" type="checkbox"/> where the proposed development may result in vehicle strike on threatened fauna or on animals that are part of a threatened ecological community (as described in BAM Subsection 6.1.6)	<b>Section 6.0 and Table 6.1</b>
		<input checked="" type="checkbox"/> Identify a list of threatened entities that may be dependent upon or may use habitat features associated with any of the prescribed impacts	<b>Section 6.0 and Table 6.1</b>
		<input checked="" type="checkbox"/> Describe the importance of habitat features to the species including, where relevant, impacts on life cycle or movement patterns (e.g. Subsection 6.1.3)	<b>Section 8.3 and Table 8.6 to Table 8.8, Appendix B</b>
	Where the proposed development is for a wind farm:	–	

BDAR Section	BAM Ref.	BAM Requirement	Reference(s) in the Revised BDAR
		<input checked="" type="checkbox"/> identify a candidate list of protected animals that may use the development site as a flyway or migration route, including: resident threatened aerial species, resident raptor species and nomadic and migratory species that are likely to fly over the proposal area (as described in BAM Subsection 6.1.5)	<b>Appendix B</b>
		<input checked="" type="checkbox"/> provide details of targeted survey for candidate species of wind farm developments undertaken in accordance with BAM Subsection 6.1.5(2–3.)	<b>Appendix B</b>
		<input checked="" type="checkbox"/> predict the habitual flight paths for nomadic and migratory species likely to fly over the subject land and map the likely habitat for resident threatened aerial and raptor species (BAM Subsection 6.1.5(4.))	<b>Appendix B</b>
		Where the proposal may result in vehicle strike:	–
		<input checked="" type="checkbox"/> identify a list of threatened fauna or protected fauna species that are part of a TEC and at risk of vehicle strike due to the proposal	<b>Section 6.0, Table 6.1 and Appendix B</b>
		<b>Maps and tables</b>	
		<input checked="" type="checkbox"/> Map showing location of any prescribed impact features (i.e. karst, caves, crevices, cliffs, rocks, human-made structures, etc.)	<b>No applicable</b>
		<input checked="" type="checkbox"/> Map showing location of potential vehicle strike locations	<b>Not applicable</b>
		<input checked="" type="checkbox"/> Maps of habitual flight paths for nomadic and migratory species likely to fly over the site and maps of likely habitat for threatened aerial species resident on the site (for wind farm developments only)	<b>Appendix B</b>
		<b>Data</b>	
		<input checked="" type="checkbox"/> Digital shape files of prescribed impact feature locations	To be issued to BCS as separate data package
		<input checked="" type="checkbox"/> Prescribed impact features map in jpeg format	To be issued to BCS as separate data package
	Chapter 7	<b>Information</b>	

BDAR Section	BAM Ref.	BAM Requirement	Reference(s) in the Revised BDAR	
<b>Avoid and minimise impacts</b>		Demonstration of efforts to avoid and minimise impacts on biodiversity values (including prescribed impacts) associated with the proposal location in accordance with Chapter 7, including an analysis of alternative:	–	
	☒	modes or technologies that would avoid or minimise impacts on biodiversity values and justification for selecting the proposed mode or technology	<b>Section 7.1 and 7.2 and Table 7.1 to 7.4</b>	
	☒	routes that would avoid or minimise impacts on biodiversity values and justification for selecting the proposed route	<b>Section 7.1 and 7.2 and Table 7.1 to 7.4</b>	
	☒	alternative locations that would avoid or minimise impacts on biodiversity values and justification for selecting the proposed location	<b>Section 7.1</b>	
	☒	alternative sites within a property on which the proposal is located that would avoid or minimise impacts on biodiversity values and justification for selecting the proposed site	<b>Section 7.1 and Figure 7.1 and Figure 7.2</b>	
	☒	Describe efforts to avoid and minimise impacts (including prescribed impacts) to biodiversity values through proposal design (as described in BAM Sections 7.1 and 7.2)	<b>Section 7.2 and Table 7.5</b>	
	☒	Identification of any other site constraints that the proponent has considered in determining the location and design of the proposal (as described in BAM Subsection 7.2.1(3.))	<b>Section 7.1 and Table 7.1 to Table 7.4</b>	
	☒	Detail measures or options considered but not implemented because they are not feasible and/or practical (e.g. due to site constraints)	<b>Section 7.3</b>	
	<b>Maps and tables</b>			
	☒	Table of measures to be implemented to avoid and minimise the impacts of the proposal, including action, outcome, timing and responsibility	<b>Section 7.1, Table 7.1 to Table 7.4 and Section 7.2 and Table 7.5</b>	
	☒	Map of alternative footprints considered to avoid or minimise impacts on biodiversity values; and of the final proposal footprint, including construction and operation	<b>Figure 7.1 and Figure 7.2</b>	

BDAR Section	BAM Ref.	BAM Requirement	Reference(s) in the Revised BDAR
		<input checked="" type="checkbox"/> Maps demonstrating indirect impact zones where applicable <b>Data</b> Digital shape files of: <input checked="" type="checkbox"/> alternative and final proposal footprint <input checked="" type="checkbox"/> direct and indirect impact zones <input checked="" type="checkbox"/> Maps in jpeg format	<b>Appendix B</b>  To be issued to BCS as separate data package  To be issued to BCS as separate data package  To be issued to BCS as separate data package  To be issued to BCS as separate data package
<b>Assessment of impacts</b>	Chapter 8, Sections 8.1 and 8.2	<b>Information</b> <input checked="" type="checkbox"/> Determine the impacts on native vegetation and threatened species habitat, including a description of direct impacts of clearing of native vegetation, threatened ecological communities and threatened species habitat (as described in BAM Section 8.1) Assessment of indirect impacts on vegetation and threatened species and their habitat including (as described in BAM Section 8.2): <input checked="" type="checkbox"/> description of the nature, extent, frequency, duration and timing of indirect impacts of the proposal <input checked="" type="checkbox"/> documenting the consequences to vegetation and threatened species and their habitat including evidence-based justifications <input checked="" type="checkbox"/> reporting any limitations or assumptions, etc. made during the assessment <input checked="" type="checkbox"/> identification of the threatened entities and their habitat likely to be affected Assessment of prescribed biodiversity impacts (as described in BAM Section 8.3) including:	<b>Section 8.1, Table 8.1 and Table 8.2</b>  –  <b>Section 8.2 and Table 8.5</b>  <b>Section 8.2, Table 8.5</b>  <b>Section 4.1.5 and Section 5.5</b>  <b>Section 8.2 and Table 8.5</b>  –

BDAR Section	BAM Ref.	BAM Requirement	Reference(s) in the Revised BDAR
		assessment of the nature, extent frequency, duration and timing of impacts on the habitat of threatened species or ecological communities associated with:	–
	<input checked="" type="checkbox"/>	karst, caves, crevices, cliffs, rocks and other features of geological significance	Not applicable
	<input checked="" type="checkbox"/>	human-made structures	<b>Section 8.3.1</b>
	<input checked="" type="checkbox"/>	non-native vegetation	<b>Section 8.3.1</b>
	<input checked="" type="checkbox"/>	connectivity of different areas of habitat of threatened species that facilitates the movement of those species across their range	<b>Section 8.3.2</b>
	<input checked="" type="checkbox"/>	movement of threatened species that maintains their life cycle	<b>Section 8.3.2</b>
	<input checked="" type="checkbox"/>	water quality, waterbodies and hydrological processes that sustain threatened species and threatened ecological communities	<b>Section 8.3.3</b>
	<input type="checkbox"/>	assessment of the impacts of wind turbine strikes on protected animals	<b>Section 8.3.4 and Appendix B</b>
	<input checked="" type="checkbox"/>	assessment of the impacts of vehicle strikes on threatened species of animals or on animals that are part of a TEC	<b>Section 8.3</b>
	<input checked="" type="checkbox"/>	evaluate the consequences of prescribed impacts	<b>Section 8.3 and Appendix B</b>
	<input checked="" type="checkbox"/>	describe impacts that are uncertain	<b>Section 8.3 and Appendix B</b>
	<input checked="" type="checkbox"/>	document limitations to data, assumptions and predictions	<b>Section 4.1.5 and Section 5.5</b>
		<b>Maps and tables</b>	
	<input checked="" type="checkbox"/>	Table showing change in vegetation integrity score for each vegetation zone as a result of identified impacts	<b>Section 8.1 and Table 8.1 and Table 8.2</b>
		<b>Data</b>	
		N/A	<b>Appendix I</b>

BDAR Section	BAM Ref.	BAM Requirement	Reference(s) in the Revised BDAR
<b>Mitigation and management of impacts</b>	Chapter 8, Sections 8.4 and 8.5	<b>Information</b>	
		Identification of measures to mitigate or manage impacts in accordance with the recommendations in BAM Sections 8.4 and 8.5 including:	–
		☒ techniques, timing, frequency and responsibility	<b>Section 9.1 and Table 9.1</b>
		☒ identify measures for which there is risk of failure	<b>Section 9.2 and Table 9.2</b>
		☒ evaluate the risk and consequence of any residual impacts	
		☒ document any adaptive management strategy proposed	<b>Section 9.2 and Table 9.2</b> <b>Section 7.4</b>
		Identification of measures for mitigating impacts related to:	–
		☒ displacement of resident fauna (as described in BAM Subsection 8.4.1(2.))	<b>Section 7.4,</b>
		☒ indirect impacts on native vegetation and habitat (as described in BAM Subsection 8.4.1(3.))	<b>Section 9.1 and Table 9.1</b> <b>Section 9.2 and Table 9.2</b>
		☒ mitigating prescribed biodiversity impacts (as described in BAM Subsection 8.4.2)	
☒ Details of the adaptive management strategy proposed to monitor and respond to impacts on biodiversity values that are uncertain (BAM Section 8.5)	<b>Section 9.2 and Table 9.2</b>		
<b>Maps and tables</b>			
☒ Table of measures to be implemented before, during and after construction to mitigate and manage impacts of the proposal, including action, outcome, timing and responsibility	<b>Section 9.1 and Table 9.1</b>		
<b>Data</b>			
N/A	–		
<b>Impact summary</b>	Chapter 9	<b>Information</b>	
		Identification and assessment of impacts on TECs and threatened species that are at risk of a serious and irreversible impacts (SAII, in accordance with BAM Section 9.1) including:	–

BDAR Section	BAM Ref.	BAM Requirement	Reference(s) in the Revised BDAR
		<input checked="" type="checkbox"/> addressing all criteria in Subsection 9.1.1 for each TEC listed as at risk of an SAIL present on the subject land	Not applicable
		<input checked="" type="checkbox"/> for each TEC, report the extent of the TEC in NSW	Not applicable
		<input checked="" type="checkbox"/> addressing all criteria in Subsection 9.1.2 for each threatened species at risk of an SAIL present on the subject land	Not applicable
		<input checked="" type="checkbox"/> for each threatened species, report the population size in NSW	Not applicable
		<input checked="" type="checkbox"/> documenting assumptions made and/or limitations to information	Not applicable
		<input checked="" type="checkbox"/> documenting all sources of data, information, references used or consulted	
		<input checked="" type="checkbox"/> clearly justifying why any criteria could not be addressed	
		<input checked="" type="checkbox"/> Identification of impacts requiring offset in accordance with BAM Section 9.2	<b>Section 10.1, Table 10.1</b>
		<input checked="" type="checkbox"/> Identification of impacts not requiring offset in accordance with BAM Subsection 9.2.1(3.)	<b>Section 10.2</b>
		<input checked="" type="checkbox"/> Identification of areas not requiring assessment in accordance with BAM Section 9.3	<b>Section 10.2</b>
		<b>Maps and tables</b>	
		<input checked="" type="checkbox"/> Map showing the extent of TECs at risk of an SAIL within the subject land	Not applicable
		<input checked="" type="checkbox"/> Map showing location of threatened species at risk of an SAIL within the subject land	Not applicable
		Map showing location of:	–
		<input checked="" type="checkbox"/> impacts requiring offset	<b>Figure 8.1, Figure 8.2, Figure 10.1</b>
		<input checked="" type="checkbox"/> impacts not requiring offset	<b>Figure 8.1, Figure 8.2, Figure 10.1</b>
		<input checked="" type="checkbox"/> areas not requiring assessment	<b>Figure 4.5 to Figure 4.9. Appendix A</b>

BDAR Section	BAM Ref.	BAM Requirement	Reference(s) in the Revised BDAR
		<p><b>Data</b></p> <p>Digital shape files of:</p> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> extent of TECs at risk of an SAIL within the subject land</li> <li><input checked="" type="checkbox"/> location of threatened species at risk of an SAIL within the subject land</li> <li><input checked="" type="checkbox"/> boundary of impacts requiring offset</li> <li><input checked="" type="checkbox"/> boundary of impacts not requiring offset</li> <li><input checked="" type="checkbox"/> boundary of areas not requiring assessment</li> <li><input checked="" type="checkbox"/> Maps in jpeg format</li> </ul>	<p>-</p> <p>No applicable</p> <p>To be issued to BCS as separate data package</p> <p>To be issued to BCS as separate data package</p> <p>To be issued to BCS as separate data package</p> <p>To be issued to BCS as separate data package</p>
<b>Impact summary</b>	Chapter 10	<p><b>Information</b></p> <p>Ecosystem credits and species credits that measure the impact of the development on biodiversity values, including:</p> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> future vegetation integrity score for each vegetation zone within the subject land (Equation 25 and Equation 26 in BAM Appendix H)</li> <li><input checked="" type="checkbox"/> change in vegetation integrity score (BAM Subsection 8.1.1)</li> <li><input checked="" type="checkbox"/> number of required ecosystem credits for the direct impacts of the proposal on each vegetation zone within the subject land (BAM Subsection 10.1.2)</li> <li><input checked="" type="checkbox"/> biodiversity risk weighting for each</li> <li><input checked="" type="checkbox"/> number of required species credits for each candidate threatened species that is directly impacted on by the proposal (BAM Subsection 10.1.3)</li> </ul> <p><b>Maps and tables</b></p>	<p>-</p> <p><b>Section 8.1, Table 8.1 and Table 8.2</b></p> <p><b>Section 10.1 and Table 10.1</b></p> <p><b>Section 10.1 and Table 10.1</b></p> <p><b>Section 10.1</b></p>

BDAR Section	BAM Ref.	BAM Requirement	Reference(s) in the Revised BDAR
		<input checked="" type="checkbox"/> Table of PCTs requiring offset and the number of ecosystem credits required	<b>Section 10.1 and Table 10.1</b>
		<input checked="" type="checkbox"/> Table of threatened species requiring offset and the number of species credits required	<b>Section 10.1 and Table 10.1</b>
		<b>Data</b>	
		<input checked="" type="checkbox"/> Submitted proposal in the BAM Calculator	<b>Appendix I</b>
<b>Biodiversity credit report</b>	Chapter 10	<b>Information</b>	
		<input checked="" type="checkbox"/> Description of credit classes for ecosystem credits and species credits at the development or clearing site or land to be biodiversity certified (BAM Section 10.2)	<b>Section 11.1 and Table 11.1</b> <b>Section 11.2</b>
		<input checked="" type="checkbox"/> BAM credit report in pdf format	<b>Appendix I</b>
		<b>Maps and tables</b>	
		<input checked="" type="checkbox"/> Table of credit class and matching credit profile	<b>Section 11.1 and Table 11.1</b> <b>Section 11.2</b>
		<b>Data</b>	
<input checked="" type="checkbox"/> BAM credit report in pdf format	<b>Appendix I</b>		

Appendix E  
**Flora List**

## Vegetation Zone 1 Floristic Data

Appendix Table E.1 Vegetation Zone 1 Floristic Data

Family	Species Name	Growth Form	Zone 1 – PCT 58 – Moderate-Good																																
			22494_42		22494_44		22494_46		22494_48		22494_49		22494_50		22494_61		P_22494_002		P_22494_004		P_22494_005		P_22494_006		P_22494_009		P_22494_014		P_22494_026		P_22494_028		P_22494_032		
			PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC
Aizoaceae	<i>Psilocaulon granulicaule</i>	HTW	0	0	0	0	10	10	20	20	0	0	0	0	0	0	0	0	5	10	10	10	10	10	5	10	1	10	0.2	1	0	0	0	0	
	<i>Tetragonia moorei</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	1	0.1	1
Amaranthaceae	<i>Ptilotus exaltatus</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Ptilotus exaltatus var. exaltatus</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Ptilotus semilanatus</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Ptilotus seminudus</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	1	
Apiaceae	<i>Daucus glochidiatus</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Apocynaceae	<i>Marsdenia australis</i>	Other	0	0	0	0	0	0	0.1	1	0	0	0.1	10	0	0	0.1	1	0.1	1	0.2	10	0	0	0.1	1	0	0	0.1	2	0	0	0	0	
	<i>Parsonia eucalyptophylla</i>	Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	1		
	<i>Rhyncharrhena linearis</i>	Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Asphodelaceae	<i>Asphodelus fistulosus</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Bulbine alata</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Dianella porracea</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Dianella revoluta</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Dianella revoluta var. revoluta</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Dianella sp.</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Asteraceae	<i>Actinobole uliginosum</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Brachyscome ciliaris</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	3	0.1	5	0	0	0	0	0	0	0	0	0	0	0	
	<i>Brachyscome lineariloba</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	1	0	0	0	0	0	0	0	0	0	0.1	3	
	<i>Calotis hispidula</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	10	1	10	0.2	20	0.1	10	0	0	0	0	0.1	20		
	<i>Chrysocephalum apiculatum</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Chthonocephalus pseudevax</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Conyza bonariensis</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Conyza sp.</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Dittrichia graveolens</i>	Exotic	0	0	0	0	0	0	0.1	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Hypochaeris glabra</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Hypochaeris radicata</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Family	Species Name	Growth Form	Zone 1 – PCT 58 – Moderate-Good																																
			22494_42		22494_44		22494_46		22494_48		22494_49		22494_50		22494_61		P_22494_002		P_22494_004		P_22494_005		P_22494_006		P_22494_009		P_22494_014		P_22494_026		P_22494_028		P_22494_032		
			PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC
	<i>Minuria leptophylla</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	1	0	0	0	0	0	0	0	0	0	0	0
	<i>Monoculus monstrosus</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Olearia muelleri</i>	Shrub	0	0	0.3	10	0	0	0	0	0	5	50	0.5	20	2	20	0	0	0	0	0	0	0	0	0	0	0	5	20	0	0	1	5	
	<i>Olearia pimeleoides</i>	Shrub	0.1	10	0.1	5	0	0	0	0	0.2	10	0.1	10	0.5	50	0.1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Onopordum acaulon</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Podolepis capillaris</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0.1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Podolepis jaceoides</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Pycnosorus pleiocephalus</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Reichardia tingitana</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	5	0	0		
	<i>Rhodanthe moschata</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Rhodanthe pygmaea</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Senecio glossanthus</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Sigesbeckia australiensis</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	20	0	0	0	0	0	0	0	0	0	0	
	<i>Sonchus asper</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Sonchus oleraceus</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	1	0.1	1	0.1	1	0.1	1	0.2	5	0.1	1	
	<i>Vittadinia cervicularis</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Vittadinia cuneata</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	2		
	<i>Vittadinia dissecta</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Vittadinia dissecta var. hirta</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Vittadinia pterochaeta</i>	Forb	0.1	10	0.1	20	0	0	0.1	10	0.1	10	0	0	0.1	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Vittadinia sp.</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Waitzia acuminata</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Xerochrysum bracteatum</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Xerochrysum bracteatum subsp. bracteatum</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Boraginaceae	<i>Cynoglossum australe</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Halgania cyanea</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	10			
	<i>Heliotropium europaeum</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Brassicaceae	<i>Arabidella trisecta</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	10			
	<i>Brassica tournefortii</i>	HTW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	20	0.6	50			

Family	Species Name	Growth Form	Zone 1 – PCT 58 – Moderate-Good																																	
			22494_42		22494_44		22494_46		22494_48		22494_49		22494_50		22494_61		P_22494_002		P_22494_004		P_22494_005		P_22494_006		P_22494_009		P_22494_014		P_22494_026		P_22494_028		P_22494_032			
			PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab
	<i>Carrichtera annua</i>	HTW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	10	5	10	0	0	1	50	20	10	30	10	20	10	20	10	20	10	45	20
	<i>Hirschfeldia incana</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Sisymbrium irio</i>	Exotic	0	0	0	0	0.1	10	0.1	5	0.1	5	0.1	5	0	0	0.2	20	0.5	20	0.2	20	0.5	10	0	0	0	0	0.5	20	0	0	0	0	0	
	<i>Stenopetalum lineare</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	59	0	0	0.1	5	0	0	0	0	0	0	0.1	20	0	0	0	0	0		
Campanulaceae	<i>Wahlenbergia communis</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Capparaceae	<i>Apophyllum anomalum</i>	Shrub	0.1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Caryophyllaceae	<i>Silene apetala</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Casuarinaceae	<i>Casuarina pauper</i>	Tree	5	1	15	5	5	7	10	2	10	7	10	6	10	6	20	10	15	9	15	3	20	10	15	3	20	5	20	5	20	3	20	6		
Chenopodiaceae	<i>Atriplex acutibractea</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	1	0	0	0	0	0.1	1	0	0	0	0	0.2	1	0.2	1		
	<i>Atriplex acutibractea subsp. acutibractea</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Atriplex spongiosa</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	1	2	20	0	0			
	<i>Atriplex stipitata</i>	Shrub	5	10	0.2	5	0.2	20	0	0	0.3	30	0.5	20	2	10	2	20	0.1	3	0.2	10	0.1	3	0.5	5	0.2	3	0	0	0	0	0.7	6		
	<i>Chenopodium cristatum</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Chenopodium curvispicatum</i>	Shrub	0.5	20	15	10	0.3	5	0.3	10	2	20	1	50	1	50	5	50	0	0	0	0	0	0	5	20	0	0	0	0	0.1	1	5	20		
	<i>Chenopodium desertorum</i>	Shrub	0	0	0	0	0.1	20	0.5	50	0.1	20	0.5	50	0.1	10	0	0	0	0	0	0	0	0.5	5	0	0	0	0	0	0	0	0	0		
	<i>Chenopodium desertorum subsp. anidiophyllum</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	50	0	0	0.5	5	0	0	0	0	0	0		
	<i>Chenopodium desertorum subsp. desertorum</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	20	2	20	0	0	0	0	0	0.5	20	0	0	6	40			
	<i>Dissocarpus paradoxus</i>	Shrub	0	0	0	0	0.3	20	0	0	0	0	0	0.1	20	5	50	5	10	5	50	10	10	5	20	5	50	0	0	0	0	5	20			
	<i>Dysphania carinata</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Dysphania pumilio</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Einadia nutans</i>	Forb	0.2	20	0.1	10	0	0	0.1	10	0	0	0.1	20	0	0	0	0	0	0	0	0	0	0.1	1	0	0	0	0	0	0	0	0	0	0	
	<i>Enchylaena tomentosa</i>	Shrub	0.1	20	0	0	1	20	0.5	10	1	50	1	50	1	10	5	50	0.5	10	1	10	5	20	2	20	0.5	5	0.5	10	1	20	5	20		
	<i>Maireana appressa</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Maireana brevifolia</i>	Shrub	0	0	0.5	50	1	30	0	0	0	0	0.5	50	0.2	20	0.1	1	0.2	2	0	0	0.1	1	0.2	1	0.2	1	0	0	0.2	2	0.3	3		
	<i>Maireana georgei</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	1	0	0	0	0	0	0	0.1	1	0	0	0.2	5				
	<i>Maireana microphylla</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Family	Species Name	Growth Form	Zone 1 – PCT 58 – Moderate-Good																																
			22494_42		22494_44		22494_46		22494_48		22494_49		22494_50		22494_61		P_22494_002		P_22494_004		P_22494_005		P_22494_006		P_22494_009		P_22494_014		P_22494_026		P_22494_028		P_22494_032		
			PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC
	<i>Maireana ovata</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Maireana pentatropis</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	1	0	0	0	0	0	0	0	0	0	0	0	0	0.5	5
	<i>Maireana sclerolaenoides</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0.1	1	0.1	1	0.2	10	0	0	1	50	1	20	2	50	0	0	1	20			
	<i>Maireana trichoptera</i>	Shrub	2	50	15	10	0	0	0	0	0.5	10	0	0	0	0	1	50	0.2	5	0	0	0	0	0	0	0.2	2	15	50	0	0	15	10	
	<i>Maireana triptera</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	1	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Maireana turbinata</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	1	0.1	2	0.1	1	0	0	
	<i>Rhagodia spinescens</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	5	20	0	0	0	0	0	0	0	0	0	1	10	5	20	2	2			
	<i>Rhagodia ulicina</i>	Shrub	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	1	0	0		
	<i>Salsola australis</i>	Shrub	0	0	0.1	10	0	0	0.1	10	0	0	0.1	10	0.1	10	0	0	0.1	1	0.1	1	0.1	1	0	0	0	0	0.1	1	0	0			
	<i>Sclerolaena diacantha</i>	Shrub	2	10	0	0	0	0	0	0	0	0	0.1	50	5	50	5	50	2	20	0	0	0.5	5	0	0	5	50	5	50	5	25			
	<i>Sclerolaena obliquicuspis</i>	Shrub	0	0	15	30	60	20	15	15	20	20	30	10	0.1	50	5	50	40	50	40	10	40	10	40	10	35	10	15	50	40	50	50	60	
	<i>Sclerolaena parviflora</i>	Shrub	0.1	5	0	0	0	0	0	0	0.1	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Convolvulaceae	<i>Convolvulus remotus</i>	Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Crassulaceae	<i>Crassula colorata</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	1	10	0	0	5	10	5	10	5	10	0.5	20	2	10	0	0	1	1		
Cucurbitaceae	<i>Citrullus amarus</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Cupressaceae	<i>Callitris verrucosa</i>	Tree	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Cyperaceae	<i>Schoenus subaphyllus</i>	Grass & grasslike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Euphorbiaceae	<i>Euphorbia drummondii</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Fabaceae (Caesalpinioideae)	<i>Senna artemisioides nothosubsp. artemisioides</i>	Shrub	0.5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Senna artemisioides nothosubsp. coriacea</i>	Shrub	2	10	0	0	0	0	0	0	0	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Senna artemisioides nothosubsp. coriacea</i>	Shrub	0	0	0.2	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Senna artemisioides subsp. filifolia</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0		
	<i>Senna artemisioides subsp. petiolaris</i>	Shrub	0.5	10	1	10	0	0	0	0	0.5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Senna artemisioides subsp. X artemisioides</i>	Shrub	0	0	0.3	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Senna artemisioides subsp. X coriacea</i>	Shrub	0	0	0	0	0	0	0.1	1	0	0	5	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

Family	Species Name	Growth Form	Zone 1 – PCT 58 – Moderate-Good																																
			22494_42		22494_44		22494_46		22494_48		22494_49		22494_50		22494_61		P_22494_002		P_22494_004		P_22494_005		P_22494_006		P_22494_009		P_22494_014		P_22494_026		P_22494_028		P_22494_032		
			PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC
	<i>Senna artemisioides</i> subsp. <i>x petiolaris</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	1	0.2	1	0	0	0	0
Fabaceae (Faboideae)	<i>Aotus subspinescens</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Eutaxia microphylla</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Medicago laciniata</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	50	0.5	20	0	0	0	0	0	0	0	
	<i>Medicago minima</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Fabaceae (Mimosoideae)	<i>Acacia colletioides</i>	Shrub	5	10	0	0	0	0	0	0	0.1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	1	0	0	0	0	5	4	
	<i>Acacia oswaldii</i>	Tree	0.5	10	0.1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Acacia sclerophylla</i> var. <i>sclerophylla</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Acacia</i> sp.	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	1	0	0	0	0	0	0	0	
Geraniaceae	<i>Erodium crinitum</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Goodeniaceae	<i>Goodenia pinnatifida</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Goodenia</i> sp.	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Goodenia willisiana</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Scaevola spinescens</i>	Shrub	0.5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Lamiaceae	<i>Salvia verbenaca</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Westringia rigida</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Lomandraceae	<i>Lomandra effusa</i>	Grass & grasslike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Loranthaceae	<i>Amyema preissii</i>	Other	0.2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Malvaceae	<i>Sida corrugata</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Sida fibulifera</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Sida intricata</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Myrtaceae	<i>Eucalyptus dumosa</i>	Tree	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	1		
	<i>Eucalyptus gracilis</i>	Tree	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Eucalyptus oleosa</i>	Tree	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	2	
	<i>Eucalyptus oleosa</i> subsp. <i>oleosa</i>	Tree	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Eucalyptus socialis</i>	Tree	0	0	0	0	0	0	0	0.2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Oxalidaceae	<i>Oxalis perennans</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Oxalis</i> sp.	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pittosporaceae	<i>Pittosporum angustifolium</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Plantaginaceae	<i>Plantago turrifera</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Poaceae	<i>Aristida nitidula</i>	Grass & grasslike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Family	Species Name	Growth Form	Zone 1 – PCT 58 – Moderate-Good																																			
			22494_42		22494_44		22494_46		22494_48		22494_49		22494_50		22494_61		P_22494_002		P_22494_004		P_22494_005		P_22494_006		P_22494_009		P_22494_014		P_22494_026		P_22494_028		P_22494_032					
			PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab		
	<i>Aristida vickeryae</i>	Grass & grasslike	0	0	0	0	0	0	0	0	0	0	0	0.1	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Austrostipa eremophila</i>	Grass & grasslike	0	0	0	0	0	0	0.1	20	0.1	50	0.1	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	60
	<i>Austrostipa nitida</i>	Grass & grasslike	0.1	50	0.1	100	0.1	20	0.1	50	0.1	50	0	0	0.1	10	5	20	15	100	5	50	5	50	5	50	5	50	5	50	1	10	20	50	0	0		
	<i>Austrostipa nodosa</i>	Grass & grasslike	0	0	0	0	0	0	0	0	0	0	0	0	0.1	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	1	10	50	
	<i>Bromus sp.</i>	Grass & grasslike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	5	0	0	0	0	0	0	0	0	0	0	0	
	<i>Enneapogon cylindricus</i>	Grass & grasslike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Enneapogon nigricans</i>	Grass & grasslike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Eragrostis cilianensis</i>	Exotic	0	0	0	0	0.1	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Hordeum sp.</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Lolium perenne</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	5	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Paspalidium constrictum</i>	Grass & grasslike	0.2	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Poa sp.</i>	Grass & grasslike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	20	5	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Rostraria pumila</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	10	0	0	0	0	0	0	0	0	0	0	0.1	20	0	0		
	<i>Triodia scariosa</i>	Grass & grasslike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Triodia scariosa subsp. scariosa</i>	Grass & grasslike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Triticum aestivum</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	5	0	0	0	0	0	0	0	0	0	0	0	
	<i>Walwhalleya proluta</i>	Grass & grasslike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Portulacaceae	<i>Calandrinia eremaea</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	20	0	0	0	0	0	0	0	0	0	0	0.2	50	0	0	0	0	0	0		
Proteaceae	<i>Grevillea huegelii</i>	Shrub	0.1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

Family	Species Name	Growth Form	Zone 1 – PCT 58 – Moderate-Good																																
			22494_42		22494_44		22494_46		22494_48		22494_49		22494_50		22494_61		P_22494_002		P_22494_004		P_22494_005		P_22494_006		P_22494_009		P_22494_014		P_22494_026		P_22494_028		P_22494_032		
			PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC
	<i>Hakea leucoptera</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rutaceae	<i>Geijera parviflora</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	1	2	1	0	0	0	0	0	0	5	1	0	0	1	1		
Santalaceae	<i>Exocarpos aphyllus</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	1	0	0	0	0			
Sapindaceae	<i>Alectryon oleifolius</i>	Tree	0.1	1	5	5	5	2	0	0	5	10	1	5	0.2	1	1	1	1	2	2	5	1	0	0	1	1	5	5	2	1	5	4		
	<i>Alectryon oleifolius subsp. canescens</i>	Tree	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Dodonaea viscosa subsp. angustifolia</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0.3	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Dodonaea viscosa subsp. angustissima</i>	Shrub	10	30	0.1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	1		
Scrophulariaceae	<i>Eremophila deserti</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Eremophila glabra</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Eremophila longifolia</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Eremophila oppositifolia</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	4		
	<i>Myoporum montanum</i>	Shrub	1	5	0.3	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Myoporum platycarpum</i>	Shrub	0	0	0	0	0	0	5	2	0	0	0.1	1	0	0	2	2	3	2	0	0	0	0	0	0	2	1	0.2	1	0	0	0		
	<i>Myoporum platycarpum subsp. platycarpum</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0		
Solanaceae	<i>Solanum esuriale</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Thymelaeaceae	<i>Pimelea microcephala subsp. microcephala</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Zygophyllaceae	<i>Roepera apiculata</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	20	10	0	0	0	0	0	0	0	0	3	20	0	0	0	0	10	20		
	<i>Roepera eremaea</i>	Forb	0	0	0	0	0	0	0	0	0	0.1	10	0.1	10	1	20	0	0	0	0	0.1	2	0	0	0	0	0	0	15	50	25	15		
	<i>Roepera glauca</i>	Forb	0	0	0.1	10	0	0	0	0	0	0.1	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Roepera ovata</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Zygophyllum apiculatum</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Zygophyllum eremaeum</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Zygophyllum ovatum</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

## Vegetation Zone 2 & 3 Floristic Data

Appendix Table E.2 Vegetation Zone 2 & 3 Floristic Data

Family	Species Name	Growth Form	Zone 2 – PCT 58 – Derived-Weedy								Zone 3 – PCT 58 – Weedy-Understory													
			22494_45		22494_47		22494_58		P_22494_010		P_22494_020		P_22494_023		P_22494_036		P_22494_021		P_22494_33		P_22494_034		P_22494_35	
			PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab
Aizoaceae	<i>Psilocaulon granulicaule</i>	HTW	5	50	0	0	0.1	10	0	0	0	0	0	0	5	100	0	0	0	0	10	150	0	0
	<i>Tetragonia moorei</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Amaranthaceae	<i>Ptilotus exaltatus</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	5	0	0	0	0	0	0
	<i>Ptilotus exaltatus</i> var. <i>exaltatus</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Ptilotus semilanatus</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Ptilotus seminudus</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apiaceae	<i>Daucus glochidiatus</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apocynaceae	<i>Marsdenia australis</i>	Other	0	0	0	0	0	0	0	0	0	0	0.1	1	0	0	0	0	0	0	0	0	0	0
	<i>Parsonsia eucalyptophylla</i>	Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Rhyncharhena linearis</i>	Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Asphodelaceae	<i>Asphodelus fistulosus</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0.1	1	0	0	0	0	0	0	0	0	0	0
	<i>Bulbine alata</i>	Forb	0	0	0	0	0.1	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Dianella porracea</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Dianella revoluta</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Dianella revoluta</i> var. <i>revoluta</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Dianella</i> sp.	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Asteraceae	<i>Actinobole uliginosum</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Brachyscome ciliaris</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Brachyscome lineariloba</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Calotis hispidula</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	100	0	0	0	0	0	0
	<i>Chrysocephalum apiculatum</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Chthonocephalus pseudevax</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Conyza bonariensis</i>	Exotic	0	0	0	0	0.1	30	0	0	0	0	0	0	0.1	2	0	0	0	0	0.1	20	0	0
	<i>Conyza</i> sp.	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	15	0.1	2
	<i>Dittrichia graveolens</i>	Exotic	0.1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Hypochaeris glabra</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0.2	15	0	0	1	50	0.5	15	0.1	2
	<i>Hypochaeris radicata</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Minuria leptophylla</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	50	0	0	0	0	0	0
	<i>Monoculus monstrosus</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Olearia muelleri</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	1	0	0	0.5	5
	<i>Olearia pimeleoides</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
	<i>Onopordum acaulon</i>	Exotic	0	0	0.1	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	1	0	0
	<i>Podolepis capillaris</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Family	Species Name	Growth Form	Zone 2 – PCT 58 – Derived-Weedy										Zone 3 – PCT 58 – Weedy-Understory											
			22494_45		22494_47		22494_58		P_22494_010		P_22494_020		P_22494_023		P_22494_036		P_22494_021		P_22494_33		P_22494_034		P_22494_35	
			PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab
	<i>Podolepis jaceoides</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Pycnosorus pleiocephalus</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Reichardia tingitana</i>	Exotic	0	0	0	0	0	0	0	0	0.1	1	0	0	0	0	0.1	1	0	0	0	0	0	0
	<i>Rhodanthe moschata</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Rhodanthe pygmaea</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Senecio glossanthus</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Sigesbeckia australiensis</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Sonchus asper</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	5	0	0	0	0
	<i>Sonchus oleraceus</i>	Exotic	0	0	0	0	0.1	50	1	50	0.1	1	0.1	2	0	0	0.1	1	0	0	3	150	0	0
	<i>Vittadinia cervicularis</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	15	0	0	0	0	0
	<i>Vittadinia cuneata</i>	Forb	0	0	0	0	0	0	0	0	0.2	10	0	0	0.1	2	0	0	0	0	0.1	2	0.3	15
	<i>Vittadinia dissecta</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Vittadinia dissecta var. hirta</i>	Forb	0	0	0	0	1	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Vittadinia pterochaeta</i>	Forb	0	0	0.1	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	1
	<i>Vittadinia sp.</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	5	0	0	0
	<i>Waitzia acuminata</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Xerochrysum bracteatum</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	1	0	0	0	0	0
	<i>Xerochrysum bracteatum subsp. bracteatum</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	1	0	0	0
Boraginaceae	<i>Cynoglossum australe</i>	Forb	0.1	20	0	0	0.1	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Halgania cyanea</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Heliotropium europaeum</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0.1	1	0	0	0	0	0	0	0	0	0
Brassicaceae	<i>Arabidella trisecta</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Brassica tournefortii</i>	HTW	0	0	0	0	0	0	5	50	0.2	10	0.2	5	0	0	0	0	0	0	0	0	0	0
	<i>Carrichtera annua</i>	HTW	0	0	0.1	5	0.1	100	20	1000	30	1000	45	0	20	1000	45	1000	20	900	25	1000	30	1000
	<i>Hirschfeldia incana</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	2	50	0	0	0	0	0	0	0
	<i>Sisymbrium irio</i>	Exotic	0.1	10	0.1	5	0.1	10	0	0	0	0	0	0	8	250	0	0	15	250	15	250	0	0
	<i>Stenopetalum lineare</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Campanulaceae	<i>Wahlenbergia communis</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Capparaceae	<i>Apophyllum anomalum</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Caryophyllaceae	<i>Silene apetala</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	1	0	0	0
Casuarinaceae	<i>Casuarina pauper</i>	Tree	0	0	0	0	0	0	0	0	0	0	0	0	0	15	3	5	2	5	2	15	6	6
Chenopodiaceae	<i>Atriplex acutibractea</i>	Shrub	0	0	0	0	0	0	0	0	1	10	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Atriplex acutibractea subsp. acutibractea</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	10	0	0	0.1	1	1
	<i>Atriplex spongiosa</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Atriplex stipitata</i>	Shrub	0	0	0	0	0.1	5	0.1	1	0.1	1	0	0	1	50	0.5	10	0.2	5	5	20	10	50
	<i>Chenopodium cristatum</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0.1	1	0	0	0	0	0	0	0	0	0

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			22494_45		22494_47		22494_58		P_22494_010		P_22494_020		P_22494_023		P_22494_036		P_22494_021		P_22494_33		P_22494_034		P_22494_35	
			PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab
	<i>Chenopodium curvispicatum</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	5	0.1	3	0.2	2	0	0
	<i>Chenopodium desertorum</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0.2	5	0	0	0	0	0	0	2	10
	<i>Chenopodium desertorum</i> <i>subsp. anidiophyllum</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	15	1	10	0.2	20
	<i>Chenopodium desertorum</i> <i>subsp. desertorum</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0.1	1	0	0	0.2	5	0	0	0	0	0	0
	<i>Dissocarpus paradoxus</i>	Shrub	0.2	5	0.1	5	0	0	5	50	5	100	2	20	0.2	5	0	0	0	0	0.1	5	0.1	5
	<i>Dysphania carinata</i>	Forb	0	0	0.1	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Dysphania pumilio</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Einadia nutans</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Enchylaena tomentosa</i>	Shrub	0.2	20	0	0	0	0	0	0	0.1	1	0.5	5	0	0	0.5	5	8	250	4	20	8	15
	<i>Maireana appressa</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	150	
	<i>Maireana brevifolia</i>	Shrub	0.2	1	0	0	0.2	5	0	0	0	0	1	10	0	0	0	0	0.1	3	0.1	1	0	0
	<i>Maireana georgei</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Maireana microphylla</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Maireana ovata</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	25	0	0	0	0
	<i>Maireana pentatropis</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	15	0.1	1	0.2	3
	<i>Maireana sclerolaenoides</i>	Shrub	0	0	0	0	0	0	0.5	20	1	20	0	0	0	0	10	100	0	0	0	0	0	0
	<i>Maireana trichoptera</i>	Shrub	0	0	0	0	0	0	0.1	1	0.5	5	0	0	0	0	1	10	0.5	25	0	0	0	0
	<i>Maireana triptera</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Maireana turbinata</i>	Shrub	0	0	0	0	0	0	0.1	1	0.1	1	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Rhagodia spinescens</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Rhagodia ulicina</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Salsola australis</i>	Shrub	0.2	20	0	0	0	0	0	0	0	0	0	0	0.3	4	0	0	0.1	1	0	0	0.1	1
	<i>Sclerolaena diacantha</i>	Shrub	0	0	0	0	0	0	2	50	1	10	0.1	1	0.2	10	15	500	0.2	20	1	100	0.5	20
	<i>Sclerolaena obliquicuspis</i>	Shrub	60	100	0.5	30	1	50	30	500	30	500	20	100	25	1000	1	10	20	500	15	500	15	100
	<i>Sclerolaena parviflora</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	3	0.8	40
Convolvulaceae	<i>Convolvulus remotus</i>	Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Crassulaceae	<i>Crassula colorata</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cucurbitaceae	<i>Citrullus amarus</i>	Exotic	0.2	5	0.2	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cupressaceae	<i>Callitris verrucosa</i>	Tree	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cyperaceae	<i>Schoenus subaphyllus</i>	Grass & grasslike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Euphorbiaceae	<i>Euphorbia drummondii</i>	Forb	0	0	0.1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fabaceae (Caesalpinioideae)	<i>Senna artemisioides</i> <i>nothosubsp. artemisioides</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Senna artemisioides</i> <i>nothosubsp. coriacea</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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			22494_45		22494_47		22494_58		P_22494_010		P_22494_020		P_22494_023		P_22494_036		P_22494_021		P_22494_33		P_22494_034		P_22494_35	
			PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab
	<i>Senna artemisioides nothosubsp. coriacea</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Senna artemisioides subsp. filifolia</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	2	0	0	0	0	0	0
	<i>Senna artemisioides subsp. petiolaris</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Senna artemisioides subsp. X artemisioides</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Senna artemisioides subsp. X coriacea</i>	Shrub	0	0	0	0	10	30	0	0	0	0	0	0	0	0	0	0	1	3	2	3	0	0
	<i>Senna artemisioides subsp. x petiolaris</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	5	1	3
Fabaceae (Faboideae)	<i>Aotus subspinescens</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Eutaxia microphylla</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Medicago laciniata</i>	Exotic	0.1	5	0.1	5	0	0	20	1000	30	1000	25	0	20	1000	1	50	0	0	0	0	0	0
	<i>Medicago minima</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fabaceae (Mimosoideae)	<i>Acacia colletioides</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Acacia oswaldii</i>	Tree	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Acacia sclerophylla var. sclerophylla</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Acacia sp.</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Geraniaceae	<i>Erodium crinitum</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Goodeniaceae	<i>Goodenia pinnatifida</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Goodenia sp.</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Goodenia willisiana</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	20	0	0	0	0	0	0
	<i>Scaevola spinescens</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lamiaceae	<i>Salvia verbenaca</i>	Exotic	0	0	0.1	20	0.1	20	0	0	0.5	20	0	0	3	100	0	0	0	0	0	0	0	0
	<i>Westringia rigida</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lomandraceae	<i>Lomandra effusa</i>	Grass & grasslike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Loranthaceae	<i>Amyema preissii</i>	Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Malvaceae	<i>Sida corrugata</i>	Forb	0	0	0	0	0	0	0	0	0	0	0.2	2	0	0	0	0	0	0	0	0	0	0
	<i>Sida fibulifera</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0.1	1	0	0	0	0	0	0	0	0
	<i>Sida intricata</i>	Shrub	0	0	0	0	5	100	0	0	0	0	0	0	0.1	1	0	0	0	0	0	0	0	0
Myrtaceae	<i>Eucalyptus dumosa</i>	Tree	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Eucalyptus gracilis</i>	Tree	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Eucalyptus oleosa</i>	Tree	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Eucalyptus oleosa subsp. oleosa</i>	Tree	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Eucalyptus socialis</i>	Tree	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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			22494_45		22494_47		22494_58		P_22494_010		P_22494_020		P_22494_023		P_22494_036		P_22494_021		P_22494_33		P_22494_034		P_22494_35	
			PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab
Oxalidaceae	<i>Oxalis perennans</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Oxalis sp.</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pittosporaceae	<i>Pittosporum angustifolium</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Plantaginaceae	<i>Plantago turrifera</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Poaceae	<i>Aristida nitidula</i>	Grass & grasslike	0	0	0.2	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Aristida vickeryae</i>	Grass & grasslike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Austrostipa eremophila</i>	Grass & grasslike	0	0	0	0	0.1	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Austrostipa nitida</i>	Grass & grasslike	0.1	50	0	0	0	0	20	100	0	0	0	0	0	0	20	100	5	30	0.3	30	5	150
	<i>Austrostipa nodosa</i>	Grass & grasslike	0	0	0	0	0	0	0	0	10	50	10	100	2	150	5	20	0	0	0	0	0	0
	<i>Bromus sp.</i>	Grass & grasslike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Enneapogon cylindricus</i>	Grass & grasslike	0	0	3	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Enneapogon nigricans</i>	Grass & grasslike	0	0	0	0	0	0	0	0	0	0	0	0	0.5	30	0	0	0	0	0	0	0	0
	<i>Eragrostis cilianensis</i>	Exotic	0.1	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Hordeum sp.</i>	Exotic	0.1	10	0	0	1	1000	0	0	0.1	1	0.1	5	0	0	0	0	0	0	0	0	0	0
	<i>Lolium perenne</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Paspalidium constrictum</i>	Grass & grasslike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Poa sp.</i>	Grass & grasslike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Rostraria pumila</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Triodia scariosa</i>	Grass & grasslike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Triodia scariosa subsp. scariosa</i>	Grass & grasslike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Triticum aestivum</i>	Exotic	0	0	0	0	0	0	0.2	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<i>Walwhalleya proluta</i>	Grass & grasslike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Portulacaceae	<i>Calandrinia eremaea</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Proteaceae	<i>Grevillea huegelii</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	1	0	0	0	0	0	0	
	<i>Hakea leucoptera</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Rutaceae	<i>Geijera parviflora</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Santalaceae	<i>Exocarpos aphyllus</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	
Sapindaceae	<i>Alectryon oleifolius</i>	Tree	0	0	0	0	0	0	0	0.1	2	2	7	0	0	5	10	10	7	15	15	2	7	

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			22494_45		22494_47		22494_58		P_22494_010		P_22494_020		P_22494_023		P_22494_036		P_22494_021		P_22494_33		P_22494_034		P_22494_35		
			PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC
	<i>Alectryon oleifolius subsp. canescens</i>	Tree	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Dodonaea viscosa subsp. angustifolia</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Dodonaea viscosa subsp. angustissima</i>	Shrub	0	0	0	0	0	0	0	0	0.1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Scrophulariaceae	<i>Eremophila deserti</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Eremophila glabra</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Eremophila longifolia</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Eremophila oppositifolia</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Myoporum montanum</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Myoporum platycarpum</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	2	5	4	3	0	0	0
	<i>Myoporum platycarpum subsp. platycarpum</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Solanaceae	<i>Solanum esuriale</i>	Forb	0.1	5	0	0	0.1	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Thymelaeaceae	<i>Pimelea microcephala subsp. microcephala</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Zygophyllaceae	<i>Roepera apiculata</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Roepera eremaea</i>	Forb	0	0	0	0	0	0	0	0	0	0	1	10	0	0	0	0	0	0	0	0	0	0	0
	<i>Roepera glauca</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Roepera ovata</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Zygophyllum apiculatum</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	100	0	0	0	0	0
	<i>Zygophyllum eremaeum</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	50	0.3	20	0.2	10	0
	<i>Zygophyllum ovatum</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	15	2	50	0

## Vegetation Zone 4 Floristic Data

Appendix Table E.3 Vegetation Zone 4 Floristic Data

Family	Species Name	Growth Form	Zone 4 – PCT 170 – Moderate-Good																							
			22494_53		22494_54		22494_56		22494_59		22494_63		P_22494_007		P_22494_011		P_22494_012		P_22494_015		P_22494_025		P_22494_031			
			PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab		
Aizoaceae	<i>Psilocaulon granulicaule</i>	HTW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Tetragonia moorei</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Amaranthaceae	<i>Ptilotus exaltatus</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Ptilotus exaltatus var. exaltatus</i>	Forb	0.1	5	0	0	0	0	0	0	0	0	0	0	0.1	1	0	0	0	0	0	0	0	0		
	<i>Ptilotus semilanatus</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Ptilotus seminudus</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0.1	1	0.1	1	0.2	3	0.2	5	0	0		
Apiaceae	<i>Daucus glochidiatus</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Apocynaceae	<i>Marsdenia australis</i>	Other	0.1	5	0.1	10	0.1	5	0.1	10	0.3	20	0.1	1	0.1	2	0	0	0	0	0	0	0	0		
	<i>Parsonsia eucalyptophylla</i>	Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Rhyncharrhena linearis</i>	Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Asphodelaceae	<i>Asphodelus fistulosus</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Bulbine alata</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Dianella porracea</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Dianella revoluta</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Dianella revoluta var. revoluta</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Dianella sp.</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Asteraceae	<i>Actinobole uliginosum</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Brachyscome ciliaris</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Brachyscome lineariloba</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Calotis hispidula</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Chrysocephalum apiculatum</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Chthonocephalus pseudevax</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Conyza bonariensis</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Conyza sp.</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Dittrichia graveolens</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Hypochaeris glabra</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Hypochaeris radicata</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Minuria leptophylla</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Monoculus monstrosus</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Olearia muelleri</i>	Shrub	0.1	10	0.5	10	0	0	0.1	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Olearia pimeleoides</i>	Shrub	2	100	0	0	0	0	0	0	0.1	10	0	0	0	0	0	0	0	0	0	0	0	0		

Family	Species Name	Growth Form	Zone 4 – PCT 170 – Moderate-Good																							
			22494_53		22494_54		22494_56		22494_59		22494_63		P_22494_007		P_22494_011		P_22494_012		P_22494_015		P_22494_025		P_22494_031			
			PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab
	<i>Onopordum acaulon</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Podolepis capillaris</i>	Forb	0.1	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Podolepis jaceoides</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Pycnosorus pleiocephalus</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Reichardia tingitana</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Rhodanthe moschata</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Rhodanthe pygmaea</i>	Forb	0	0	0	0	0	0	0	0	0	0	0.1	5	0	0	0	0	0	0	0	0	0	0		
	<i>Senecio glossanthus</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Sigesbeckia australiensis</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Sonchus asper</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Sonchus oleraceus</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	1	0	0		
	<i>Vittadinia cervicularis</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Vittadinia cuneata</i>	Forb	0	0	0	0	0	0	0	0	0	0	0.1	2	0.2	2	0	0	0	0	0	0	0	0		
	<i>Vittadinia dissecta</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Vittadinia dissecta var. hirta</i>	Forb	0.1	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Vittadinia pterochaeta</i>	Forb	0.1	20	0	0	0.1	20	0.1	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Vittadinia sp.</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Waitzia acuminata</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Xerochrysum bracteatum</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Xerochrysum bracteatum subsp. bracteatum</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Boraginaceae	<i>Cynoglossum australe</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Halgania cyanea</i>	Shrub	0	0	0	0	0	0.1	20	0.2	50	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Heliotropium europaeum</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Brassicaceae	<i>Arabidella trisecta</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Brassica tournefortii</i>	HTW	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	10	0.5	50	0	0	0	0	0		
	<i>Carrichtera annua</i>	HTW	0	0	0	0	0	0.1	10	0	0	2	50	1	50	1	100	5	109	0	0	0	0	0		
	<i>Hirschfeldia incana</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Sisymbrium irio</i>	Exotic	0.1	1	0	0	0	0	0	0	0	0.2	20	0	0	0	0	0	0	0	0	0	0	0		
	<i>Stenopetalum lineare</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	3	0	0	0	0	0		
Campanulaceae	<i>Wahlenbergia communis</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Capparaceae	<i>Apophyllum anomalum</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Caryophyllaceae	<i>Silene apetala</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Casuarinaceae	<i>Casuarina pauper</i>	Tree	0	0	0	0	0	0	0	3	1	0	0	1	1	0	0	0	0	0	0	0	0	0		
Chenopodiaceae	<i>Atriplex acutibractea</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Atriplex acutibractea subsp. acutibractea</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

Family	Species Name	Growth Form	Zone 4 – PCT 170 – Moderate-Good																							
			22494_53		22494_54		22494_56		22494_59		22494_63		P_22494_007		P_22494_011		P_22494_012		P_22494_015		P_22494_025		P_22494_031			
			PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab
	<i>Atriplex spongiosa</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Atriplex stipitata</i>	Shrub	0	0	0	0	0	0	0.1	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Chenopodium cristatum</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Chenopodium curvispicatum</i>	Shrub	0.3	10	0.1	5	0.3	20	0.3	10	0.3	10	0	0	0.2	2	0	0	0.2	1	0.3	3	0	0		
	<i>Chenopodium desertorum</i>	Shrub	0.2	20	0.1	5	0.1	10	0	0	0.3	30	5	50	0	0	0	0	0	0	0	0	0	0		
	<i>Chenopodium desertorum subsp. anidiophyllum</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	1	20	5	50	0.5	20	0	0	0	0		
	<i>Chenopodium desertorum subsp. desertorum</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Dissocarpus paradoxus</i>	Shrub	0	0	0	0	0	0	0	0	0	0	5	50	0	0	0	0	0	0	0	0	0	0		
	<i>Dysphania carinata</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Dysphania pumilio</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Einadia nutans</i>	Forb	0	0	0	0	0.1	10	0	0	0.1	10	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Enchylaena tomentosa</i>	Shrub	0.1	10	0	0	1	50	0.1	10	1	100	1	10	2	20	1	20	1	5	0.2	2	0	0		
	<i>Maireana appressa</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	2	5	50	20	100	0	0		
	<i>Maireana brevifolia</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Maireana georgei</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0.1	1	0	0	0	0	0	0	0	0		
	<i>Maireana microphylla</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Maireana ovata</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Maireana pentatropis</i>	Shrub	0	0	0	0	0	0	0	0	0	0	5	20	2	10	2	20	0	0	10	50	0	0		
	<i>Maireana sclerolaenoides</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	1	20	1	20	0.5	10	5	50	0	0		
	<i>Maireana trichoptera</i>	Shrub	0.1	20	0.5	50	0.1	10	0.1	10	0.1	10	0	0	0	0	0.1	1	0	0	0	0	0	0		
	<i>Maireana triptera</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Maireana turbinata</i>	Shrub	0.1	10	0.1	20	0.1	20	0.1	10	0.2	50	0	0	0	0	0	0	0	0	0.1	1	0	0		
	<i>Rhagodia spinescens</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Rhagodia ulicina</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Salsola australis</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Sclerolaena diacantha</i>	Shrub	0	0	0	0	0	0	0	0	0.1	10	3	20	5	50	2	50	20	100	1	20	0	0		
	<i>Sclerolaena obliquicuspis</i>	Shrub	1	100	0.5	50	0.1	20	1	100	0.1	10	20	100	25	500	30	500	1	20	0	0	0	0		
	<i>Sclerolaena parviflora</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Convolvulaceae	<i>Convolvulus remotus</i>	Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Crassulaceae	<i>Crassula colorata</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Cucurbitaceae	<i>Citrullus amarus</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Cupressaceae	<i>Callitris verrucosa</i>	Tree	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Cyperaceae	<i>Schoenus subaphyllus</i>	Grass & grasslike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Euphorbiaceae	<i>Euphorbia drummondii</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

Family	Species Name	Growth Form	Zone 4 – PCT 170 – Moderate-Good																							
			22494_53		22494_54		22494_56		22494_59		22494_63		P_22494_007		P_22494_011		P_22494_012		P_22494_015		P_22494_025		P_22494_031			
			PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab
Fabaceae (Caesalpinioidea e)	<i>Senna artemisioides</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>nothosubsp. artemisioides</i>																									
	<i>Senna artemisioides</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>nothosubsp. coriacea</i>																									
	<i>Senna artemisioides</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>nothosubsp. coriaceae</i>																									
	<i>Senna artemisioides</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	4	0	0	0	0	
	<i>subsp. filifolia</i>																									
<i>Senna artemisioides</i>	Shrub	0.5	5	0.5	5	0.1	10	1	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
<i>subsp. petiolaris</i>																										
<i>Senna artemisioides</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
<i>subsp. X artemisioides</i>																										
<i>Senna artemisioides</i>	Shrub	0.1	5	3	6	0	0	0	0	0.1	5	0	0	0	0	0	0	0	0	0	0	0	0	0		
<i>subsp. X coriacea</i>																										
<i>Senna artemisioides</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
<i>subsp. x petiolaris</i>																										
Fabaceae (Faboideae)	<i>Aotus subspinescens</i>	Shrub	0	0	0	0	0	0	0.1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Eutaxia microphylla</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Medicago laciniata</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Medicago minima</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Acacia colletioides</i>	Shrub	0	0	0	0	0	0	1	2	0	0	0.5	1	0	0	0	0	0	0	0	0	0	0		
<i>Acacia oswaldii</i>	Tree	0	0	0.5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	2	0	0			
<i>Acacia sclerophylla</i> var. <i>sclerophylla</i>	Shrub	0	0	0	0	0	0	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
<i>Acacia</i> sp.	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Geraniaceae	<i>Erodium crinitum</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Goodeniaceae	<i>Goodenia pinnatifida</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Goodenia</i> sp.	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Goodenia willisiana</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Scaevola spinescens</i>	Shrub	2	4	0.1	1	0	0	0	0	0.5	5	0	0	0	0	0	0	0	0	0	0	0	0		
Lamiaceae	<i>Salvia verbenaca</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Westringia rigida</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	2	0	0		
Lomandraceae	<i>Lomandra effusa</i>	Grass & grasslike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Loranthaceae	<i>Amyema preissii</i>	Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Malvaceae	<i>Sida corrugata</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Sida fibulifera</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Sida intricata</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Myrtaceae	<i>Eucalyptus dumosa</i>	Tree	5	5	0	0	0	0	5	1	0	0	5	1	10	1	10	2	10	3	15	5	0	0		
	<i>Eucalyptus gracilis</i>	Tree	0	0	0	0	0	0	10	2	0	0	0	0	0	0	5	1	20	5	15	5	0	0		

Family	Species Name	Growth Form	Zone 4 – PCT 170 – Moderate-Good																							
			22494_53		22494_54		22494_56		22494_59		22494_63		P_22494_007		P_22494_011		P_22494_012		P_22494_015		P_22494_025		P_22494_031			
			PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab		
	<i>Eucalyptus oleosa</i>	Tree	0	0	20	3	5	6	0	0	0	0	25	3	25	4	0	0	0	0	0	0	0	0		
	<i>Eucalyptus oleosa subsp. oleosa</i>	Tree	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	4	0	0	0	0		
	<i>Eucalyptus socialis</i>	Tree	10	7	1	1	5	6	5	2	15	5	0	0	0	0	20	6	0	0	15	5	20	2		
Oxalidaceae	<i>Oxalis perennans</i>	Forb	0.1	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Oxalis sp.</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Pittosporaceae	<i>Pittosporum angustifolium</i>	Shrub	0	0	0	0	0	0	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Plantaginaceae	<i>Plantago turrifera</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Poaceae	<i>Aristida nitidula</i>	Grass & grasslike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Aristida vickeryae</i>	Grass & grasslike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Austrostipa eremophila</i>	Grass & grasslike	0	0	0	0	0	0	5	500	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Austrostipa nitida</i>	Grass & grasslike	0.1	20	0.1	20	0.1	50	1	100	0.1	10	10	100	5	50	10	100	5	50	1	10	0	0		
	<i>Austrostipa nodosa</i>	Grass & grasslike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Bromus sp.</i>	Grass & grasslike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Enneapogon cylindricus</i>	Grass & grasslike	0.2	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Enneapogon nigricans</i>	Grass & grasslike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Eragrostis cilianensis</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Hordeum sp.</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Lolium perenne</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Paspalidium constrictum</i>	Grass & grasslike	0.1	20	0.1	20	0.1	20	0	0	0.2	30	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Poa sp.</i>	Grass & grasslike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Rostraria pumila</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Triodia scariosa</i>	Grass & grasslike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Triodia scariosa subsp. scariosa</i>	Grass & grasslike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Triticum aestivum</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Walwhalleya proluta</i>	Grass & grasslike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Portulacaceae	<i>Calandrinia eremaea</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Proteaceae	<i>Grevillea huegelii</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

Family	Species Name	Growth Form	Zone 4 – PCT 170 – Moderate-Good																							
			22494_53		22494_54		22494_56		22494_59		22494_63		P_22494_007		P_22494_011		P_22494_012		P_22494_015		P_22494_025		P_22494_031			
			PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab
	<i>Hakea leucoptera</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Rutaceae	<i>Geijera parviflora</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Santalaceae	<i>Exocarpos aphyllus</i>	Shrub	0.1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Sapindaceae	<i>Alectryon oleifolius</i>	Tree	0	0	0	0	0	0	0	0	10	15	1	1	0	0	0	0	0	0	0	0	0	0	0	
	<i>Alectryon oleifolius subsp. canescens</i>	Tree	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	
	<i>Dodonaea viscosa subsp. angustifolia</i>	Shrub	1	10	0.1	5	0	0	1	15	0.5	20	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Dodonaea viscosa subsp. angustissima</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	1	0.2	1	0	0	0	0	0	
Scrophulariaceae	<i>Eremophila deserti</i>	Shrub	0	0	0	0	2	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Eremophila glabra</i>	Shrub	0	0	0	0	0	0	0.1	5	0	0	0	0	0	0	0	0	0	0	0.2	1	0	0	0	
	<i>Eremophila longifolia</i>	Shrub	0	0	0	0	15	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Eremophila oppositifolia</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Myoporum montanum</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Myoporum platycarpum</i>	Shrub	0	0	0	0	0	0	0	0	0.5	1	5	2	0	0	0	0	0	0	0	0	0	0	0	
	<i>Myoporum platycarpum subsp. platycarpum</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	5	2	0	0	0	0	0	0	0	0	0	
Solanaceae	<i>Solanum esuriale</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Thymelaeaceae	<i>Pimelea microcephala subsp. microcephala</i>	Shrub	0.2	1	0	0	0.1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Zygophyllaceae	<i>Roepera apiculata</i>	Forb	0	0	0	0	0	0	0	0	0	0	10	50	10	100	10	100	15	50	10	50	0	0	0	
	<i>Roepera eremaea</i>	Forb	0	0	0	0	0	0	0	0	0.1	5	0.1	2	0	0	0	0	0.1	1	0	0	0	0	0	
	<i>Roepera glauca</i>	Forb	0.1	10	0.1	20	0	0	0.1	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Roepera ovata</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	2	0.5	10	0	0	0	
	<i>Zygophyllum apiculatum</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Zygophyllum eremaeum</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Zygophyllum ovatum</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

## Vegetation Zone 5 & 6 Floristic Data

Appendix Table E.4 Vegetation Zone 5 & 6 Floristic Data

Family	Species Name	Growth Form	Zone 5 – PCT 170 – Derived-Native										Zone 6 – PCT 170 – Derived-Weedy												
			22494_55		22494_60		P_22494_008		P_22494_019		P_22494_027		22494_57		22494_62		P_22494_013		P_22494_017		P_22494_018		P_22494_037		
			PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	
Aizoaceae	<i>Psilocalon granulicaule</i>	HTW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	10	0	0
	<i>Tetragonia moorei</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Amaranthaceae	<i>Ptilotus exaltatus</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Ptilotus exaltatus var. exaltatus</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Ptilotus semilanatus</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Ptilotus seminudus</i>	Forb	0	0	0	0	1	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apiaceae	<i>Daucus glochidiatus</i>	Forb	0	0	0	0	0	0	0.1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apocynaceae	<i>Marsdenia australis</i>	Other	0	0	0	0	0	0	0.1	1	0.1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Parsonsia eucalyptophylla</i>	Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Rhyncharrhena linearis</i>	Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Asphodelaceae	<i>Asphodelus fistulosus</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	20	0	0	0	0	0
	<i>Bulbine alata</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Dianella porracea</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Dianella revoluta</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Dianella revoluta var. revoluta</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Dianella sp.</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Asteraceae	<i>Actinobole uliginosum</i>	Forb	0	0	0	0	5	1000	0.2	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Brachyscome ciliaris</i>	Forb	0	0	0	0	0	0	0.2	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Brachyscome lineariloba</i>	Forb	0	0	0	0	0	0	0.2	50	0.1	5	0	0	0	0	0	0	0.1	5	0	0	0	0	0
	<i>Calotis hispidula</i>	Forb	0	0	0	0	0	0	2	1000	0.5	100	0	0	0	0	0	0	0.5	50	0	0	0	0	0
	<i>Chrysocephalum apiculatum</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Chthonocephalus pseudevax</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Conyza bonariensis</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	50	0	0	0	0	0	0	0	0
	<i>Conyza sp.</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Dittrichia graveolens</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Hypochaeris glabra</i>	Exotic	0	0	0	0	0	0	0.1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	40
	<i>Hypochaeris radicata</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0.1	10	0.1	50	0	0	0	0	0	0	0	0	0
	<i>Minuria leptophylla</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Monoculus monstrosus</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Olearia muelleri</i>	Shrub	0	0	0.2	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Olearia pimeleoides</i>	Shrub	0	0	0	0	0	0	0	0	0.5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	

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			22494_55		22494_60		P_22494_008		P_22494_019		P_22494_027		22494_57		22494_62		P_22494_013		P_22494_017		P_22494_018		P_22494_037	
			PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab
	<i>Onopordum acaulon</i>	Exotic	0	0	0.1	10	0	0	0	0	0	0	0.1	10	0.1	10	0	0	0	0	0.2	5	0	0
	<i>Podolepis capillaris</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Podolepis jaceoides</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Pycnosorus pleiocephalus</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Reichardia tingitana</i>	Exotic	0	0	0	0	0	0	0.1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Rhodanthe moschata</i>	Forb	0	0	0	0	0.1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Rhodanthe pygmaea</i>	Forb	0	0	0	0	10	1000	0	0	0	0	0	0	0	0	0	0.2	50	0	0	0	0	0
	<i>Senecio glossanthus</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Sigesbeckia australiensis</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Sonchus asper</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Sonchus oleraceus</i>	Exotic	0	0	0	0	0	0	0.1	2	0.1	2	0	0	0	0	0.1	5	0.2	10	0.1	1	0.5	15
	<i>Vittadinia cervicularis</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Vittadinia cuneata</i>	Forb	0	0	0	0	1	50	0	0	0.2	2	0	0	0	0	0	0.1	1	0	0	1	25	
	<i>Vittadinia dissecta</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Vittadinia dissecta var. hirta</i>	Forb	0	0	0	0	0	0	0	0	0	0	1	100	0.2	50	0	0	0	0	0	0	0	0
	<i>Vittadinia pterochaeta</i>	Forb	0.5	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Vittadinia sp.</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Waitzia acuminata</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Xerochrysum bracteatum</i>	Forb	0	0	0	0	0	0	0	0.2	10	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Xerochrysum bracteatum subsp. bracteatum</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	1
Boraginaceae	<i>Cynoglossum australe</i>	Forb	0	0	0	0	0	0	0	0	0	0	1	50	0.5	50	0	0	0	0	0	0	0	0
	<i>Halgania cyanea</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Heliotropium europaeum</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Brassicaceae	<i>Arabidella trisecta</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Brassica tournefortii</i>	HTW	0	0	0	0	0	0	5	100	0.1	10	0	0	0	0	0.1	1	5	50	5	50	0	0
	<i>Carrichtera annua</i>	HTW	0.1	50	0.1	10	2	100	10	1000	40	1000	0.1	20	0.1	100	30	1000	20	1000	30	1000	15	800
	<i>Hirschfeldia incana</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Sisymbrium irio</i>	Exotic	0.1	100	0	0	0.2	20	0	0	0	0	0.1	20	0.1	10	0	0	0	0	0	0	10	1000
	<i>Stenopetalum lineare</i>	Forb	0	0	0	0	0.1	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Campanulaceae	<i>Wahlenbergia communis</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	1	0	0	0	0	0
Capparaceae	<i>Apophyllum anomalum</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Caryophyllaceae	<i>Silene apetala</i>	Exotic	0	0	0	0	0.2	20	0.2	50	0.1	5	0	0	0	0	0	0	0	0	0	0	0	0
Casuarinaceae	<i>Casuarina pauper</i>	Tree	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chenopodiaceae	<i>Atriplex acutibractea</i>	Shrub	0	0	0	0	0	0	0.1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Atriplex acutibractea subsp. acutibractea</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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			22494_55		22494_60		P_22494_008		P_22494_019		P_22494_027		22494_57		22494_62		P_22494_013		P_22494_017		P_22494_018		P_22494_037	
			PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab
	<i>Atriplex spongiosa</i>	Forb	0	0	0	0	0	0	0	0	0.2	1	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Atriplex stipitata</i>	Shrub	1	50	2	50	0	0	0	0	0	0	0.5	10	10	100	0.2	2	0	0	0.2	5	5	20
	<i>Chenopodium cristatum</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Chenopodium curvispicatum</i>	Shrub	10	100	0.2	10	0	0	0.1	1	1	20	0	0	0	0	0	0	0	0	0	0	1	15
	<i>Chenopodium desertorum</i>	Shrub	5	100	0	0	0	0	0	0	0	0	0	0	0.1	5	0	0	0	0	0	0	0	0
	<i>Chenopodium desertorum subsp. anidiophyllum</i>	Shrub	0	0	0	0	5	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	5
	<i>Chenopodium desertorum subsp. desertorum</i>	Shrub	0	0	0	0	0	0	15	100	0.5	20	0	0	0	0	0	0	0	0	0.1	1	0	0
	<i>Dissocarpus paradoxus</i>	Shrub	1	50	0	0	5	100	0	0	0	0	0	0	0	0	5	50	0.5	20	0	0	0.2	10
	<i>Dysphania carinata</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Dysphania pumilio</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Einadia nutans</i>	Forb	0.2	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Enchylaena tomentosa</i>	Shrub	0.5	50	0.3	30	0	0	0	0	0.5	5	0.1	10	0.1	20	0	0	0	0	0.2	1	10	15
	<i>Maireana appressa</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Maireana brevifolia</i>	Shrub	1	20	0.2	5	0.1	1	0	0	0.1	1	0	0	0.1	10	0	0	0	0	0	0	0	0
	<i>Maireana georgei</i>	Shrub	0	0	0	0	0	0	10	100	0.5	20	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Maireana microphylla</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Maireana ovata</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Maireana pentatropis</i>	Shrub	0	0	0	0	5	50	20	50	1	10	0	0	0	0	0	0	0	0	0	0	2	20
	<i>Maireana sclerolaenoides</i>	Shrub	0	0	0	0	0.5	20	0	0	5	50	0	0	0	0	0.2	10	0	0	0.1	1	0	0
	<i>Maireana trichoptera</i>	Shrub	1	50	0	0	0	0	0.5	10	5	50	0.2	50	0	0	0	0	0	0	0.3	3	0	0
	<i>Maireana triptera</i>	Shrub	0	0	0	0	1	10	0.5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Maireana turbinata</i>	Shrub	0	0	0.1	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Rhagodia spinescens</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Rhagodia ulicina</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Salsola australis</i>	Shrub	15	300	0	0	0	0	0	0	0	0	0.2	10	0.2	10	0	0	0	0	0	0	0.1	1
	<i>Sclerolaena diacantha</i>	Shrub	0	0	0.1	100	5	59	5	100	6	70	0	0	0	0	1	20	15	500	0	0	0.3	30
	<i>Sclerolaena obliquicuspis</i>	Shrub	1	100	0.1	100	20	100	0	0	0	0	0.3	50	0.1	50	30	100	0.2	5	30	100	25	1000
	<i>Sclerolaena parviflora</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0.1	5	0	0	0	0	0	0	0	0
Convolvulaceae	<i>Convolvulus remotus</i>	Other	0	0	0	0	0	0	0	0	0	0	0.1	10	0.1	10	0	0	0	0	0	0	0	0
Crassulaceae	<i>Crassula colorata</i>	Forb	0	0	0	0	0.5	1000	0.5	500	0.5	1000	0	0	0	0	0	0	1	1000	0	0	0	0
Cucurbitaceae	<i>Citrullus amarus</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0.1	5	0	0	0	0	0	0	0	0	0	0
Cupressaceae	<i>Callitris verrucosa</i>	Tree	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cyperaceae	<i>Schoenus subaphyllus</i>	Grass & grasslike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Euphorbiaceae	<i>Euphorbia drummondii</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0.1	10	0	0	0	0	0	0	0	0

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			22494_55		22494_60		P_22494_008		P_22494_019		P_22494_027		22494_57		22494_62		P_22494_013		P_22494_017		P_22494_018		P_22494_037	
			PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab
Fabaceae (Caesalpinioidea e)	<i>Senna artemisioides</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>nothosubsp. artemisioides</i>																							
	<i>Senna artemisioides</i> <i>nothosubsp. coriacea</i>	Shrub	0	0	0.2	1	0	0	0	0	0	0	0	0	0.1	5	0	0	0	0	0	0	0	
	<i>Senna artemisioides</i> <i>nothosubsp. coriacea</i>	Shrub	0.1	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Senna artemisioides</i> <i>subsp. filifolia</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Senna artemisioides</i> <i>subsp. petiolaris</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0.5	5	0.5	20	0	0	0	0	0	0	0	
	<i>Senna artemisioides</i> <i>subsp. X artemisioides</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<i>Senna artemisioides</i> <i>subsp. X coriacea</i>	Shrub	0	0	0	0	0	0	0	0	0.1	1	0.2	5	0	0	0	0	0	0	0	0	0		
<i>Senna artemisioides</i> <i>subsp. x petiolaris</i>	Shrub	0.1	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Fabaceae (Faboideae)	<i>Aotus subspinescens</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Eutaxia microphylla</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Medicago laciniata</i>	Exotic	0	0	0	0	30	1000	2	20	3	100	0	0	0	0	30	1000	40	1000	5	100	0	0
	<i>Medicago minima</i>	Exotic	0	0	0	0	0	0	0	0	2	100	0	0	0	0	0	0	0	20	1000	0	0	
Fabaceae (Mimosoideae)	<i>Acacia colletioides</i>	Shrub	0.1	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Acacia oswaldii</i>	Tree	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Acacia sclerophylla</i> var. <i>sclerophylla</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Acacia</i> sp.	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Geraniaceae	<i>Erodium crinitum</i>	Forb	0	0	0	0	0.2	5	1	20	0.2	5	0	0	0	0	0	2	50	0	0	0	0	
Goodeniaceae	<i>Goodenia pinnatifida</i>	Forb	0	0	0	0	0	0	0.2	50	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Goodenia</i> sp.	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Goodenia willisiana</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Scaevola spinescens</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Lamiaceae	<i>Salvia verbenaca</i>	Exotic	0	0	0	0	0.2	5	0	0	0	0	0.1	20	0.1	20	0	0	5	100	0.2	20	0	0
	<i>Westringia rigida</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Lomandraceae	<i>Lomandra effusa</i>	Grass & grasslike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Loranthaceae	<i>Amyema preissii</i>	Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Malvaceae	<i>Sida corrugata</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Sida fibulifera</i>	Forb	0	0	0	0	0.1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Sida intricata</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0.1	10	0	0	0	0	0	0	0	0	
Myrtaceae	<i>Eucalyptus dumosa</i>	Tree	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Eucalyptus gracilis</i>	Tree	0	0	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

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			PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab
	<i>Eucalyptus oleosa</i>	Tree	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Eucalyptus oleosa subsp. oleosa</i>	Tree	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	11
	<i>Eucalyptus socialis</i>	Tree	5	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	1	5	5
Oxalidaceae	<i>Oxalis perennans</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Oxalis sp.</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pittosporaceae	<i>Pittosporum angustifolium</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Plantaginaceae	<i>Plantago turrifera</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Poaceae	<i>Aristida nitidula</i>	Grass & grasslike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Aristida vickeryae</i>	Grass & grasslike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Austrostipa eremophila</i>	Grass & grasslike	1	200	0.1	50	0	0	0	0	0	0	0	0	0.1	50	0	0	0	0	0	0	0	0
	<i>Austrostipa nitida</i>	Grass & grasslike	0.1	50	0.1	50	20	100	25	1000	0	0	0	0	0.1	50	1	20	10	100	5	100	5	500
	<i>Austrostipa nodosa</i>	Grass & grasslike	0	0	0	0	0	0	0	0	40	1000	0	0	0	0	0	0	0	0	0	0	15	800
	<i>Bromus sp.</i>	Grass & grasslike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	20	0	0	0	0
	<i>Enneapogon cylindricus</i>	Grass & grasslike	0	0	0	0	0	0	0.1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Enneapogon nigricans</i>	Grass & grasslike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Eragrostis cilianensis</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Hordeum sp.</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0.1	1000	0.1	10	0	0	0	0	0	0	0	0
	<i>Lolium perenne</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	1	0	0
	<i>Paspalidium constrictum</i>	Grass & grasslike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Poa sp.</i>	Grass & grasslike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Rostraria pumila</i>	Exotic	0	0	0	0	0.1	20	0.2	100	0.2	20	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Triodia scariosa</i>	Grass & grasslike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Triodia scariosa subsp. scariosa</i>	Grass & grasslike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Triticum aestivum</i>	Exotic	0	0	0	0	0	0	0.2	20	0	0	0	0	0	0	0.1	5	0.1	10	0.2	20	0	0
	<i>Walwhalleya proluta</i>	Grass & grasslike	0.1	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Portulacaceae	<i>Calandrinia eremaea</i>	Forb	0	0	0	0	0	0	0	0	0.2	20	0	0	0	0	0	0	0	0	0	0	0	0
Proteaceae	<i>Grevillea huegelii</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Family	Species Name	Growth Form	Zone 5 – PCT 170 – Derived-Native										Zone 6 – PCT 170 – Derived-Weedy											
			22494_55		22494_60		P_22494_008		P_22494_019		P_22494_027		22494_57		22494_62		P_22494_013		P_22494_017		P_22494_018		P_22494_037	
			PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab
	<i>Hakea leucoptera</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Rutaceae	<i>Geijera parviflora</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Santalaceae	<i>Exocarpos aphyllus</i>	Shrub	0	0	0.3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Sapindaceae	<i>Alectryon oleifolius</i>	Tree	0.1	5	0.5	1	0	0	0	0	2	10	0	0	0	0	0	0	0	0	0	0	0	
	<i>Alectryon oleifolius subsp. canescens</i>	Tree	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Dodonaea viscosa subsp. angustifolia</i>	Shrub	0.1	5	0.5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Dodonaea viscosa subsp. angustissima</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	20	0	0	0	0	
Scrophulariaceae	<i>Eremophila deserti</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Eremophila glabra</i>	Shrub	0	0	0	0	0.1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Eremophila longifolia</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Eremophila oppositifolia</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	10	0	0	0	0	
	<i>Myoporum montanum</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Myoporum platycarpum</i>	Shrub	0.1	5	0	0	0	0	0.2	1	0.2	1	0	0	0	0	0	0	0	0	0	0	0	
	<i>Myoporum platycarpum subsp. platycarpum</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Solanaceae	<i>Solanum esuriale</i>	Forb	0.5	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Thymelaeaceae	<i>Pimelea microcephala subsp. microcephala</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Zygophyllaceae	<i>Roepera apiculata</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	5	0	0	
	<i>Roepera eremaea</i>	Forb	0.1	10	0	0	0	0	0	0	15	500	0	0	0	0	0	0	0	0	0	0	0	
	<i>Roepera glauca</i>	Forb	0.5	100	0.1	5	0	0	0	0	0	0	0	0.1	5	0	0	0	0	0	0	0	0	
	<i>Roepera ovata</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Zygophyllum apiculatum</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Zygophyllum eremaeum</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Zygophyllum ovatum</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	250	

## Vegetation Zone 7 & 8 Floristic Data

Appendix Table E.5 Vegetation Zone 7 & 8 Floristic Data

Family	Species Name	Growth Form	Zone 7 – 170 Weedy-US																											
			Zone 7 – 170 Weedy-US		22494_41		22494_43		22494_51		22494_52		22494_64		22494_65		P_22494_001		P_22494_003		P_22494_016		P_22494_024		P_22494_029		P_22494_030			
			PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab
Aizoaceae	<i>Psilocaulon granulicaule</i>	HTW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Tetragonia moorei</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Amaranthaceae	<i>Ptilotus exaltatus</i>	Forb	0	0	0	0	0	0	0.1	5	0.1	5	0	0	0.1	5	0	0	0	0	0.5	20	0.2	10	0.2	10	0	0		
	<i>Ptilotus exaltatus var. exaltatus</i>	Forb	0	0	0	0	0	0	0	0	0	0	0.1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Ptilotus semilanatus</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Ptilotus seminudus</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	1	0.1	2	0.2	5	0	0	0.1	2	0	0		
Apiaceae	<i>Daucus glochidiatus</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	500	0	0	0	0	0	0	0	0		
Apocynaceae	<i>Marsdenia australis</i>	Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	5	0	0	0	0	0	0	0	0	0	0		
	<i>Parsonsia eucalyptophylla</i>	Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	3	0		
	<i>Rhyncharhena linearis</i>	Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	2	0	0	0	0	0	0	0	0	0	0		
Asphodelaceae	<i>Asphodelus fistulosus</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Bulbine alata</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Dianella porracea</i>	Forb	0	0	0	0	0.1	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Dianella revoluta</i>	Forb	0	0	0	0	0	0	0	0	0	0	0.2	20	0.5	100	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Dianella revoluta var. revoluta</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	1	0.1		
	<i>Dianella sp.</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	1	0	0	0		
Asteraceae	<i>Actinobole uliginosum</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	10	0	0	0	0	0	0		
	<i>Brachyscome ciliaris</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Brachyscome lineariloba</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	50	0.5	100	0.2	20	0	0	0	0	0.2	20		
	<i>Calotis hispidula</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	100	0.1	10	0.1	5	0	0	0	0	0	0.2	20		
	<i>Chrysocephalum apiculatum</i>	Forb	0	0	0.1	5	0	0	0	0	0	0	0.1	5	0.1	5	0	0	0	0	0	0	0	0	0	0	0.1	1		
	<i>Chthonocephalus pseudevax</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	500	0	0	0	0	0	0	0	0		
	<i>Conyza bonariensis</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Conyza sp.</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Dittrichia graveolens</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Family	Species Name	Growth Form	Zone 8 – PCT 171 – Moderate-Good																											
			Zone 7 – 170 Weedy-US																											
			P_22494_022		22494_41		22494_43		22494_51		22494_52		22494_64		22494_65		P_22494_001		P_22494_003		P_22494_016		P_22494_024		P_22494_029		P_22494_030			
PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab			
	<i>Hypochaeris glabra</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Hypochaeris radicata</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Minuria leptophylla</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Monoculus monstrosus</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	5	0	0	0	0	0	0	0	0	0		
	<i>Olearia muelleri</i>	Shrub	0	0	0.3	5	0.2	5	0.1	10	0.1	10	0.5	20	0	0	5	20	0	0	0	0	1	5	0.1	1	0	0		
	<i>Olearia pimeleoides</i>	Shrub	0	0	0.5	30	0	0	0	0	0	0	0	0.1	1	0.1	1	0	0	0.1	1	0	0	2	10	0	0			
	<i>Onopordum acaulon</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	<i>Podolepis capillaris</i>	Forb	0	0	0.1	10	0	0	0	0	0	0	0.1	5	0.1	5	0	0	0.1	1	0	0	0	0	0	0	0.1	5		
	<i>Podolepis jaceoides</i>	Forb	0	0	0	0	0.1	10	0	0	0.1	10	0.1	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Pycnosorus pleiocephalus</i>	Forb	0.1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Reichardia tingitana</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Rhodanthe moschata</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Rhodanthe pygmaea</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	500	0	0	0	0	0	0	0	0	0		
	<i>Senecio glossanthus</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	1	0.1	10	0	0	0	0	0	0	0		
	<i>Sigesbeckia australiensis</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Sonchus asper</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Sonchus oleraceus</i>	Exotic	0.1	2	0	0	0	0	0	0	0	0	0	0	0	0.1	1	0.1	2	0	0	0.1	1	0	0	0.1	1	1		
	<i>Vittadinia cervicularis</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Vittadinia cuneata</i>	Forb	0.2	10	0	0	0	0	0	0	0	0	0	0	0	0.2	5	0.1	2	0.1	10	0.1	2	0.1	10	0.1	2	2		
	<i>Vittadinia dissecta</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	1	0	0	
	<i>Vittadinia dissecta var. hirta</i>	Forb	0	0	0	0	0	0	0	0.1	50	0	0	0.1	10	0.1	1	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Vittadinia pterochaeta</i>	Forb	0	0	0.1	100	0	0	0.1	50	0.1	50	0.1	10	0.1	10	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Vittadinia sp.</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Waitzia acuminata</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	1	2	500	0.2	10	0	0	0	0	0	0	0	0	
	<i>Xerochrysum bracteatum</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Xerochrysum bracteatum subsp. bracteatum</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Boraginaceae	<i>Cynoglossum australe</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Halgania cyanea</i>	Shrub	0	0	5	300	0.2	50	0	0	0	0	0	0	5	300	0	0	1	20	0	0	0	0	5	50	0.2	10		

Family	Species Name	Growth Form	Zone 7 – 170 Weedy-US																											
			Zone 7 – 170 Weedy-US		22494_41		22494_43		22494_51		22494_52		22494_64		22494_65		P_22494_001		P_22494_003		P_22494_016		P_22494_024		P_22494_029		P_22494_030			
			PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab
	<i>Heliotropium europaeum</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Brassicaceae	<i>Arabidella trisecta</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	1	
	<i>Brassica tournefortii</i>	HTW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	10	0.1	1	0	0	0.2	20	
	<i>Carrichtera annua</i>	HTW	30	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
				0																										
	<i>Hirschfeldia incana</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Sisymbrium irio</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	10	0.5	29	0	0	0	0	0	0	0	0	0	
	<i>Stenopetalum lineare</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	50	0	0	0.2	50	0	0	0.2	20	0.2	20	0		
Campanulaceae	<i>Wahlenbergia communis</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Capparaceae	<i>Apophyllum anomalum</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Caryophyllaceae	<i>Silene apetala</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	5	0	0	0	0	0	0.1	20		
Casuarinaceae	<i>Casuarina pauper</i>	Tree	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Chenopodiaceae	<i>Atriplex acutibractea</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Atriplex acutibractea subsp. acutibractea</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Atriplex spongiosa</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Atriplex stipitata</i>	Shrub	0.5	5	0	0	0	0	0	0	0.2	10	0	0	0	0	0	0	0	0.2	5	0	0	0	0	0	0	0		
	<i>Chenopodium cristatum</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Chenopodium curvispicatum</i>	Shrub	0	0	0.2	5	0.1	5	0.1	10	0.2	20	0.1	10	0.1	5	0	0	0	0	0.3	3	0	0	0.2	1	2	20		
	<i>Chenopodium desertorum</i>	Shrub	0	0	0.1	10	0.1	10	1	100	0	0	0.2	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Chenopodium desertorum subsp. anidiophyllum</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	1	
	<i>Chenopodium desertorum subsp. desertorum</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	50	5	20	1	20	0.5	5	0.2	5	2	20		
	<i>Dissocarpus paradoxus</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Dysphania carinata</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Dysphania pumilio</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Einadia nutans</i>	Forb	0	0	0	0	0	0	0	0	0.1	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<i>Enchylaena tomentosa</i>	Shrub	1	5	0.1	50	0.1	10	0.1	5	0.2	20	0	0	0.1	10	5	20	10	29	0.5	5	0	0	0.1	1	0.2	1			

Family	Species Name	Growth Form	Zone 8 – PCT 171 – Moderate-Good																											
			Zone 7 – 170 Weedy-US																											
			P_22494_022		22494_41		22494_43		22494_51		22494_52		22494_64		22494_65		P_22494_001		P_22494_003		P_22494_016		P_22494_024		P_22494_029		P_22494_030			
PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab			
	<i>Maireana appressa</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Maireana brevifolia</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Maireana georgei</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	1	0	0	0.1	1	0	0		
	<i>Maireana microphylla</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0.2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Maireana ovata</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Maireana pentatropis</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	20	0	0	0.5	5	0	0	0	0	0.1	1		
	<i>Maireana sclerolaenoides</i>	Shrub	2	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	10	0.5	10	2	20	0.2	10	0.1	1			
	<i>Maireana trichoptera</i>	Shrub	25	100	0.2	20	0	0	0	0	0.1	30	0	0	0.1	10	0.1	1	10	59	0.2	5	0	0	0	0	0.2	2		
	<i>Maireana triptera</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	20	0	0	0	0	0	0	0	0		
	<i>Maireana turbinata</i>	Shrub	0	0	0	0	0	0	0	0	0.5	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Rhagodia spinescens</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	10	50	0	0	0	0	0	0	0	0	0	0	0		
	<i>Rhagodia ulicina</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	5	0	0	0	0	0	0	0		
	<i>Salsola australis</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Sclerolaena diacantha</i>	Shrub	0	0	0.1	5	0	0	0	0	0	0	0	0	0	5	50	10	50	5	50	2	20	5	50	2	20	0		
	<i>Sclerolaena obliquicuspis</i>	Shrub	0.2	2	0	0	0.1	20	0.2	20	5	100	0.1	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Sclerolaena parviflora</i>	Shrub	0	0	0.1	10	0	0	0.1	10	0.1	10	0.1	10	0	0	0.1	1	0.1	2	0.2	10	0.5	50	0.5	20	2	20		
Convolvulaceae	<i>Convolvulus remotus</i>	Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Crassulaceae	<i>Crassula colorata</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	1	100	1	500	0.2	100	0	0	0	0	0	0	0		
Cucurbitaceae	<i>Citrullus amarus</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Cupressaceae	<i>Callitris verrucosa</i>	Tree	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0		
Cyperaceae	<i>Schoenus subaphyllus</i>	Grass & grasslike	0	0	0	0	0	0	0	0	0	0	0	0	0.3	300	0	0	0	0	0	0	0	0	0	0	0	0		
Euphorbiaceae	<i>Euphorbia drummondii</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Fabaceae (Caesalpinioideae)	<i>Senna artemisioides</i> nothosubsp. <i>artemisioides</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Senna artemisioides</i> nothosubsp. <i>coriacea</i>	Shrub	0	0	0.1	5	0	0	0	0	0	0.3	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Senna artemisioides</i> nothosubsp. <i>coriacea</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

Family	Species Name	Growth Form	Zone 8 – PCT 171 – Moderate-Good																													
			Zone 7 – 170 Weedy-US																													
			P_22494_022	22494_41	22494_43	22494_51	22494_52	22494_64	22494_65	P_22494_001	P_22494_003	P_22494_016	P_22494_024	P_22494_029	P_22494_030																	
PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab			
	<i>Senna artemisioides subsp. filifolia</i>	Shrub	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0		
	<i>Senna artemisioides subsp. petiolaris</i>	Shrub	0	0	0.3	1	0.1	5	0	0	0.5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Senna artemisioides subsp. X artemisioides</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0		
	<i>Senna artemisioides subsp. X coriacea</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	1	0	0	0	0	0	0	0	0		
	<i>Senna artemisioides subsp. x petiolaris</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	2	0	0	0	0	0	0	0	0	0	0.2	1			
Fabaceae (Faboideae)	<i>Aotus subspinescens</i>	Shrub	0	0	0	0	1	10	10	100	0	0	15	30	0.5	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Eutaxia microphylla</i>	Shrub	0	0	0.1	1	0	0	0	0	0	0	0.2	5	0	0	0	0	0	0	0	0	0	0.1	1	0	0	0	0	0		
	<i>Medicago laciniata</i>	Exotic	30	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Medicago minima</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Fabaceae (Mimosoideae)	<i>Acacia colletioides</i>	Shrub	0	0	0.3	2	0	0	0	0	0	0	0	0	0	0	0.1	1	1	1	0	0	0	0	0	0	0	0	0	0		
	<i>Acacia oswaldii</i>	Tree	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	5	0	0	0			
	<i>Acacia sclerophylla var. sclerophylla</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Acacia sp.</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Geraniaceae	<i>Erodium crinitum</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	1	0.2	20	0	0	0	0	0	0	0	0		
Goodeniaceae	<i>Goodenia pinnatifida</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Goodenia sp.</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	30	0	0	0	0	0	0	0	0		
	<i>Goodenia willisiana</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	20	0	0	0	0	0	0	0.1	2	0	0		
	<i>Scaevola spinescens</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Lamiaceae	<i>Salvia verbenaca</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	5	0	0	0	0	0	0	0	0	0	0		
	<i>Westringia rigida</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	10	0	0	0.5	1	0			
Lomandraceae	<i>Lomandra effusa</i>	Grass & grasslike	0	0	0	0	0	0	0	0.3	5	0	0	0.1	20	0	0	0	0	0.5	5	0.2	5	0	0	0	0	0	0	0		
Loranthaceae	<i>Amyema preissii</i>	Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Malvaceae	<i>Sida corrugata</i>	Forb	0.1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Sida fibulifera</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	<i>Sida intricata</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Myrtaceae	<i>Eucalyptus dumosa</i>	Tree	5	1	5	3	2	5	10	10	1	1	5	10	2	1	0	0	0	0	10	5	25	5	10	3	0	0	0			
	<i>Eucalyptus gracilis</i>	Tree	10	2	10	5	0	0	5	5	5	2	0	0	0	0	0	0	20	10	15	10	0	0	15	6	5	2	0			
	<i>Eucalyptus oleosa</i>	Tree	0	0	0	0	5	10	0	0	0	0	0	0	0	0	25	7	0	0	0	0	0	0	0	0	0	0	0	0		

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			P_22494_022	22494_41	22494_43	22494_51	22494_52	22494_64	22494_65	P_22494_001	P_22494_003	P_22494_016	P_22494_024	P_22494_029	P_22494_030																	
PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab			
	<i>Eucalyptus oleosa subsp. oleosa</i>	Tree	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
	<i>Eucalyptus socialis</i>	Tree	0	0	20	10	20	15	20	20	10	4	5	10	5	6	5	1	15	5	20	10	20	5	15	6	35	10				
Oxalidaceae	<i>Oxalis perennans</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	1	0	0	0	0	0	0	0	0				
	<i>Oxalis sp.</i>	Forb	0.1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Pittosporaceae	<i>Pittosporum angustifolium</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Plantaginaceae	<i>Plantago turrifera</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	1	0	0	0	0	0	0	0	0				
Poaceae	<i>Aristida nitidula</i>	Grass & grasslike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	<i>Aristida vickeryae</i>	Grass & grasslike	0	0	0	0	0	0	0.1	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	<i>Austrostipa eremophila</i>	Grass & grasslike	0.5	5	0	0	0	0	0	0	0.1	10	0.1	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	<i>Austrostipa nitida</i>	Grass & grasslike	1	10	0.1	50	0.1	50	0.1	50	0.2	50	0.1	50	0.1	20	5	50	0	0	5	50	1	10	1	20	5	50				
	<i>Austrostipa nodosa</i>	Grass & grasslike	0	0	0	0	0	0	0	0	0	0	0.1	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	<i>Bromus sp.</i>	Grass & grasslike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	<i>Enneapogon cylindricus</i>	Grass & grasslike	0	0	0	0	0	0	0	0	0	0	0.1	30	0.1	10	0	0	0	0	0	0	0	0	0	0	0	0				
	<i>Enneapogon nigricans</i>	Grass & grasslike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	<i>Eragrostis cilianensis</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	<i>Hordeum sp.</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	<i>Lolium perenne</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	<i>Paspalidium constrictum</i>	Grass & grasslike	0	0	5	500	0	0	0	0	0.1	50	0	0	0	0	1	20	0.1	1	0.2	5	0	0	0	0	0	0				
	<i>Poa sp.</i>	Grass & grasslike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	<i>Rostraria pumila</i>	Exotic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	5	0.1	10	0.1	10	0	0	0	0	0	0				
	<i>Triodia scariosa</i>	Grass & grasslike	0	0	0.5	20	10	100	10	100	0.2	5	10	100	20	200	0	0	7	5	0	0	0	0	0	0	0	0				
	<i>Triodia scariosa subsp. scariosa</i>	Grass & grasslike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	5	0	0	15	20	40	50	10	5	30	50				
	<i>Triticum aestivum</i>	Exotic	0.1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
	<i>Walwhalleya proluta</i>	Grass & grasslike	0	0	0	0	0	0	0	0	0	0	0	0	0.1	5	0	0	0	0	0	0	0	0	0	0	0	0				
Portulacaceae	<i>Calandrinia eremaea</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	20	0	0	0.1	10	0	0	0	0	0	0				

Family	Species Name	Growth Form	Zone 7 – 170 Weedy-US																											
			Zone 7 – 170 Weedy-US		22494_41		22494_43		22494_51		22494_52		22494_64		22494_65		P_22494_001		P_22494_003		P_22494_016		P_22494_024		P_22494_029		P_22494_030			
			PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab	PC	Ab
Proteaceae	<i>Grevillea huegelii</i>	Shrub	0	0	0	0	0	0	0.1	5	0	0	0	0	0	0	0	0	0	0	0	0.5	2	0	0	0	0	0	0	
	<i>Hakea leucoptera</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0.2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Rutaceae	<i>Geijera parviflora</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Santalaceae	<i>Exocarpos aphyllus</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0.2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Sapindaceae	<i>Alectryon oleifolius</i>	Tree	0	0	0	0	0	0	0	0	0.1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Alectryon oleifolius subsp. canescens</i>	Tree	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Dodonaea viscosa subsp. angustifolia</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0.2	5	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Dodonaea viscosa subsp. angustissima</i>	Shrub	0.2	1	0.2	5	0	0	0.2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	1	0	0
Scrophulariaceae	<i>Eremophila deserti</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Eremophila glabra</i>	Shrub	1	1	0	0	0.3	5	0	0	0	0	0.1	5	0	0	1	5	0	0	0	0	0.2	1	0	0	0	0	0	
	<i>Eremophila longifolia</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Eremophila oppositifolia</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Myoporum montanum</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	1	0	0	0	0	0	0	0	0	0	0	0	
	<i>Myoporum platycarpum</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	2	
	<i>Myoporum platycarpum subsp. platycarpum</i>	Shrub	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Solanaceae	<i>Solanum esuriale</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Thymelaeaceae	<i>Pimelea microcephala subsp. microcephala</i>	Shrub	0	0	0	0	0	0	0	0	0.1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Zygophyllaceae	<i>Roepera apiculata</i>	Forb	2	20	0	0	0	0	0	0	0	0	0	0	0	0	2	20	0.1	2	0	0	0	0	0	0	0	0	0	
	<i>Roepera eremaea</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	1	0.1	1	0.5	20	0	0	2	20	0.5	5		
	<i>Roepera glauca</i>	Forb	0	0	0	0	0	0	0	0	0.1	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Roepera ovata</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	2	0	0	0	0	
	<i>Zygophyllum apiculatum</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Zygophyllum eremaeum</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Zygophyllum ovatum</i>	Forb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

## Glossary

PC – Percentage Cover

Ab – Abundance

HTW – High Threat Weed

Appendix F

# Vegetation Integrity Data

**Appendix Table F.1 Vegetation Integrity Data**

Plot	Zone	COMPOSITION						STRUCTURE						FUNCTION										
		Tr	Sh	Gr	Fb	Fn	Ot	Tr	Sh	Gr	Fb	Fn	Ot	Regen	Stem Classes (cm)					No. Large Trees	No. Hollow Trees	Litter (%)	Logs (m)	HTW
														>5	5-10	10-20	20-30	30-50	50-80					
22494_42	1	3	16	2	2	0	1	5.6	29.5	0.3	0.3	0	0.2	1	0	0	1	1	0	3	0	48	11.8	0
22494_44	1	3	13	1	3	0	0	20.1	48.1	0.1	0.3	0	0	1	1	1	1	1	0	5	0	39	22.3	0
22494_46	1	2	7	1	0	0	0	10	62.9	0.1	0	0	0	0	1	1	0	0	0	0	0	55	41.2	10
22494_48	1	1	7	2	2	0	1	10	21.5	0.2	0.2	0	0.1	0	1	1	1	1	0	4	0	25.8	7.9	20
22494_49	1	3	10	2	1	0	0	15.2	24.8	0.2	0.1	0	0	1	0	1	1	1	0	2	0	33	39.2	0
22494_50	1	2	12	2	3	0	1	11	44.8	0.2	0.3	0	0.1	1	1	1	1	1	0	1	0	37	8.7	0
22494_61	1	2	12	2	3	0	0	10.2	6	0.2	0.3	0	0	0	2	1	1	1	0	2	0	45.2	57.4	0
P_22494_002	1	2	15	1	6	0	1	21	40.3	5	22.3	0	0.1	1	1	1	1	1	0	1	0	33	14.5	20
P_22494_004	1	2	14	2	1	0	1	16	56	15.1	0.1	0	0.1	0	1	1	1	0	0	0	0	2.6	2.5	10
P_22494_005	1	2	10	2	4	0	1	17	52.6	10	5.4	0	0.2	0	1	1	1	1	0	2	2	5.4	15	10
P_22494_006	1	2	7	2	8	0	0	25	60.3	5.1	7.5	0	0	0	1	1	0	0	0	0	0	7.4	21	11
P_22494_009	1	1	12	1	2	0	1	15	56.9	5	5.2	0	0.1	0	1	1	1	1	0	1	2	18.4	10	25
P_22494_014	1	2	12	1	3	0	0	21	45.4	5	3.6	0	0	0	1	1	0	0	0	0	0	11	22	31
P_22494_026	1	2	15	1	4	0	1	25	50.8	5	2.4	0	0.1	0	1	1	1	0	0	0	0	18.4	6	20.2
P_22494_028	1	2	11	2	3	0	0	22	52.9	1.1	17.1	0	0	0	1	1	1	1	0	1	1	14	17	20.5
P_22494_032	1	4	21	3	8	0	1	45	105.5	40	36.5	0	0.2	0	1	1	1	0	0	0	0	38	17	45.6
22494_45	2	0	5	1	2	0	0	0	60.8	0.1	0.2	0	0	0	0	0	0	0	0	0	0	64	2.7	5
22494_47	2	0	2	2	3	0	0	0	0.6	3.2	0.3	0	0	0	0	0	0	0	0	0	0	31	0	0.1
22494_58	2	0	5	1	4	0	0	0	16.3	0.1	1.3	0	0	0	0	0	0	0	0	0	0	79	0	0.2
P_22494_010	2	0	7	1	0	0	0	0	37.8	20	0	0	0	0	0	0	0	0	0	0	0	6	0	25
P_22494_020	2	1	10	1	1	0	0	0.1	38.9	10	0.2	0	0	0	0	0	0	0	0	0	0	0.6	29.5	30.2
P_22494_023	2	1	6	1	2	0	1	2	23.7	10	1.2	0	0.1	0	0	0	0	0	0	0	0	1.4	0	45.2
P_22494_036	2	0	7	2	3	0	0	0	27	2.5	0.3	0	0	0	0	0	0	0	0	0	0	10	25	25
P_22494_021	3	2	12	2	4	0	0	20	33.7	25	1.6	0	0	1	1	1	0	1	0	2	1	7.8	6	45
P_22494_034	3	2	13	1	5	0	0	20	34.6	0.3	0.8	0	0	0	1	1	1	1	0	1	0	5	70	35
P_22494_33	3	2	15	1	4	0	0	15	33.5	5	1.7	0	0	0	1	1	1	0	0	0	0	9	20	20
P_22494_35	3	2	15	1	4	0	0	17	44.5	5	2.8	0	0	0	1	1	1	1	1	3	0	11	26	30
22494_53	4	2	14	3	6	0	1	15	7.8	0.4	0.6	0	0.1	1	1	1	0	0	0	0	0	74	3	0
22494_54	4	3	10	2	1	0	1	21.5	5.5	0.2	0.1	0	0.1	1	0	1	0	1	0	1	0	60	0	0
22494_56	4	2	10	2	2	0	1	10	18.9	0.2	0.2	0	0.1	1	1	1	1	0	0	0	0	59	2.5	0
22494_59	4	3	15	2	2	0	1	20	7.1	6	0.2	0	0.1	0	1	1	0	0	0	0	0	24.2	12.4	0.1
22494_63	4	3	13	2	2	0	1	28	4	0.3	0.2	0	0.3	1	1	1	1	0	0	0	1	59	8.7	0
P_22494_007	4	3	8	1	4	0	1	31	44.5	10	10.3	0	0.1	0	1	1	1	0	0	0	0	33	5	2
P_22494_011	4	4	9	1	4	0	1	37	41.3	5	10.4	0	0.1	1	1	1	1	0	0	0	0	28.6	2	1
P_22494_012	4	3	9	1	2	0	0	35	41.4	10	10.1	0	0	0	1	1	0	0	0	0	0	10.4	1	1.2

Plot	Zone	COMPOSITION						STRUCTURE						FUNCTION										
		Tr	Sh	Gr	Fb	Fn	Ot	Tr	Sh	Gr	Fb	Fn	Ot	Regen	Stem Classes (cm)					No. Large Trees	No. Hollow Trees	Litter (%)	Logs (m)	HTW
														>5	5-10	10-20	20-30	30-50	50-80					
P_22494_015	4	3	9	1	5	0	0	45	30.4	5	15.5	0	0	0	1	1	1	0	0	0	1	76.2	0	5.5
P_22494_025	4	4	9	1	3	0	0	45.2	37	1	10.7	0	0	0	1	1	1	0	0	0	0	50.4	10	0
P_22494_031	4	1	0	0	0	0	0	20	0	0	0	0	0	0	1	0	0	0	0	0	0	23	5	0
22494_55	5	3	14	3	5	0	0	6.1	36	1.2	1.8	0	0	1	0	0	0	0	0	0	0	16.4	0	0.1
22494_60	5	2	11	2	1	0	0	5.5	4.2	0.2	0.1	0	0	1	0	1	1	0	0	0	0	60	8	0.1
P_22494_008	5	0	9	1	9	0	0	0	41.7	20	18	0	0	0	0	0	0	0	0	0	0	3.4	0	2
P_22494_019	5	0	9	2	8	0	1	0	51.4	25.1	4.4	0	0.1	1	0	0	0	0	0	0	0	9.4	0	15
P_22494_027	5	1	12	1	9	0	1	2	20.4	40	17.1	0	0.1	0	0	0	0	0	0	0	0	1.8	15	40.1
22494_57	6	0	7	0	2	0	1	0	2	0	2	0	0.1	0	0	0	0	0	0	0	0	70	0	0.1
22494_62	6	0	10	2	4	0	1	0	11.4	0.2	0.9	0	0.1	0	0	0	0	0	0	0	0	64	0	0.1
P_22494_013	6	0	5	1	0	0	0	0	36.4	1	0	0	0	0	0	0	0	0	0	0	0	0.8	3	30.1
P_22494_017	6	0	5	2	7	0	0	0	30.7	10.2	4	0	0	0	0	0	0	0	0	0	0	1	0	25
P_22494_018	6	1	6	1	1	0	0	0.5	30.9	5	0.2	0	0	1	0	0	0	0	0	0	0	0.6	10	36
P_22494_037	6	2	9	2	3	0	0	15	43.7	20	6.1	0	0	1	0	0	0	0	0	0	0	31	180	15
P_22494_022	7	2	8	2	5	0	0	15	30.9	1.5	2.5	0	0	1	1	0	1	0	0	0	2	2.8	6	30
22494_41	8	3	14	3	3	0	0	35	7.6	5.6	0.3	0	0	1	1	1	0	0	0	0	0	53	3.9	0
22494_43	8	3	9	2	2	0	0	27	2.2	10.1	0.2	0	0	1	1	1	0	0	0	0	0	60	0	0
22494_51	8	3	9	3	2	0	0	35	11.9	10.2	0.2	0	0	0	1	1	0	0	0	0	0	58	3.7	0
22494_52	8	4	10	5	6	0	0	16.1	7	0.9	0.6	0	0	1	1	1	0	0	0	0	0	76.8	5.5	0
22494_64	8	2	12	5	6	0	0	10	17.2	10.4	0.7	0	0	1	1	1	0	0	0	0	0	71	0	0
22494_65	8	2	7	6	6	0	0	7	6.1	20.7	1	0	0	9	1	1	0	0	0	0	0	63	0	0
P_22494_001	8	2	13	3	11	0	2	30	33.1	9	4.2	0	0.2	1	1	1	1	0	0	0	4	38	35	0
P_22494_003	8	3	11	2	17	0	0	36	49.6	7.1	7.7	0	0	1	1	0	0	0	0	0	0	42.5	3	0
P_22494_016	8	3	14	4	14	0	0	45	9.6	20.7	3.7	0	0	0	1	1	0	0	0	0	0	67	0	0.2
P_22494_024	8	2	8	3	4	0	0	45	11.3	41.2	0.5	0	0	0	1	1	0	0	0	0	0	45	2	0.1
P_22494_029	8	4	11	2	7	0	1	43	13.6	11	2.9	0	0.1	1	1	0	0	0	0	0	0	42	7	0
P_22494_030	8	2	14	2	9	0	0	40	10.2	35	1.6	0	0	1	1	0	0	0	0	0	0	26.4	15	0.2

Appendix G  
**Weather**

**Appendix Table G.1 Weather Data**

Date	Daily Data		Monthly Data		
	Min-Max Temp (°C)	Rainfall (mm)	Min-Max Temp (°C) mean	Rainfall total (mm)	Relative Humidity (%) mean
19/10/2022	8.8 – 25.2	0	11.5 – 22.5	85.1	121.9
20/10/2022	16.1 – 23.9	0.2			
21/10/2022	16.3 – 26.4	0.1			
22/10/2022	16 – 26.2	0			
23/10/2022	15.6 – 19.2	0			
24/10/2022	16.5 – 23.7	9.5			
25/10/2022	15 – 23.2	7			
26/10/2022	13.2 – 22.8	1.4			
27/10/2022	11.3 – 22	0			
6/02/2023	13.1 – 31.7	0			
7/02/2023	13.8 – 33.2	0			
15/02/2023	12.6 – 36.6	0			
16/02/2023	19.7 – 40.1	0			
17/02/2023	23 – 43.2	0			
18/02/2023	15.6 – 33.1	0			
19/02/2023	14.5 – 35.2	0			
20/02/2023	16.6 – 37.4	0			
21/02/2023	19.8 – 36	0			
22/02/2023	14.6 – 35.5	0			
23/02/2023	18.7 – 35.9	0			
24/02/2023	23.1 – 37	0			
17/03/2023	15 – 31.1	0	13.3 – 29.0	7.3	71
18/03/2023	18.2 – 42.5	0			

Date	Daily Data		Monthly Data		
	Min-Max Temp (°C)	Rainfall (mm)	Min-Max Temp (°C) mean	Rainfall total (mm)	Relative Humidity (%) mean
19/03/2023	16.3 – 30.3	0			
20/03/2023	14.9 – 25	0			
21/03/2023	15.4 – 29.8	1			
22/03/2023	14.8 – 32.4	1.5			
2/04/2023	5 – 21.4	0	9.8 – 23.3	22.7	70
8/04/2023	12.2 – 21.1	0			
9/04/2023	10.3 – 19	0			
10/04/2023	8.8 – 20.3	0			
11/04/2023	3.9 – 20.4	0			
12/04/2023	13.4 – 23.6	1			
13/04/2023	12 – 20	0.6			
28/04/2023	13.1 – 23.3	0			
29/04/2023	5.5 – 19	0.4			
30/04/2023	3.8 – 20	1			
1/05/2023	11.2 – 20.6	0	5.8 – 19.3	12.1	63
2/05/2023	11.1 – 23.2	0.1			
3/05/2023	11.2 – 21.1	0			
5/07/2023	6 – 16.9	0	4.8 – 16.6	34.2	140.7
6/07/2023	6.6 – 15.7	0.1			
7/07/2023	5.9 – 16.3	16.4			
8/07/2023	8.6 – 16.7	0			
9/07/2023	7.3 – 16.3	0.2			
17/10/2023	4.7 – 22.4	0	9.3 – 24.8	34.1	129.7
18/10/2023	6.5 – 27.8	0			

Date	Daily Data		Monthly Data		
	Min-Max Temp (°C)	Rainfall (mm)	Min-Max Temp (°C) mean	Rainfall total (mm)	Relative Humidity (%) mean
19/10/2023	10 – 30.8	0			
20/10/2023	13.3 – 34.6	0			
21/10/2023	14.1 – 23.6	0			
23/02/2024	16 – 26.6	0	16.8 – 34.8	3.8	112.6
24/02/2024	11.3 – 28.5	0			
25/02/2024	10.7 – 34.8	0			
26/02/2024	18.7 – 32.5	0			
27/02/2024	19.9 – 37.8	0			
28/02/2024	21.7 – 43.4	0			
29/02/2024	19.4 – 34.6	0			
15/05/2024	2.4 – 20	0	5.8 – 20.0	19.4	83.1
16/05/2024	3 – 22.6	0			
17/05/2024	5.4 – 23.7	0			
18/05/2024	4.2 – 16.1	0			
19/05/2024	1.4 – 15.6	0			
20/05/2024	5.8 – 17.7	1.5			
12/08/2024	5.9 – 23.7	0	5.5 – 19.8	7.4	76.7
13/08/2024	7 – 23.9	0			
14/08/2024	6.9 – 25.7	0			
15/08/2024	9.4 – 26.4	0			
16/08/2024	12.1 – 20.7	3			
17/08/2024	10.4 – 17.4	0.2			
18/08/2024	4.7 – 18.6	1.2			
19/08/2024	3.8 – 21.9	0			

Date	Daily Data		Monthly Data		
	Min-Max Temp (°C)	Rainfall (mm)	Min-Max Temp (°C) mean	Rainfall total (mm)	Relative Humidity (%) mean
20/08/2024	11.3 – 0	0.4			

Appendix H

# Expert Report



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## **Mallee Wind Farm Desert Mouse and Painted Burrowing Frog**

### **Expert Advice**

September 2024



Desert Mouse showing distinctive orange eye-ring

#### **Limitations Statement**

In preparing this document Ecological Horizons Pty Ltd makes no warranty or guarantee, whether expressed or implied, with respect to the information reported or to the findings, observations or conclusions expressed in this document. Further, such information, findings, observations and conclusions are based solely on observations made and information available to Ecological Horizons Pty Ltd at the time of this study

## **Credentials of Expert**

### ***Pseudomys desertor***

Dr Read was recognised as an authority on *Pseudomys desertor* (SF23/131992) for the Mallee Wind Farm Project by the Director South West, Biodiversity and Conservation Division, Department of Planning and Environment on 17 November 2023 (Appendix 1).

Dr John Read ‘rediscovered’ *Pseudomys desertor* in South Australia (Read et al.1999) and has trapped the species at numerous sites in arid and semi arid zone. Dr Read also co-authored the Mammals of Australia section on *P. desertor* (Kerle et al 2008).

Dr Read has had 30 years experience of mammals surveys in chenopod sandplain vegetation associations including many of the dominant plant species found at the Mallee Wind Farm Biodiversity study Area (Rosewood (*Alectryon oleifolius*), White Cypress Pine (*Callitris glaucophylla*), Sugarwood (*Myoporum platycarpum*), Belah (*Casuarina cristata*), dense clumps of Black Bluebush (*Maireana pyramidata*), or Pearl Bluebush (*Maireana sedifolia*), with variable speargrass (*Austrostipa variabilis*), bottlewashers (*Enneapogon* sp.) and copperburr (*Sclerolaena* sp.) on plains.

In addition Dr Read has had 20 years experience trapping in each of 3 additional study areas that either support *P. desertor* (APY Lands) or are in mallee triodia dunefields (Middleback and Immarna) similar to Mallee Cliffs Sandplains and Mallee Cliffs Linear Dunes Mitchell Landscape. Dr Read has also trapped the Wild Deserts sites in Sturt National Park for the past 8 years, where the only record of *P. desertor* was recorded in NSW for the past decade

### ***Neobatrachus pictus***

Dr Read was recognised as an authority on *Neobatrachus pictus* (SF23/131995) for the Mallee Windfarm Project by Director South West, Biodiversity and Conservation Division, Department of Planning and Environment on 17 November 2023 (Appendix 1).

Dr John Read has conducted extensive research into the ecology, diet, habitats and abnormality profiles of closely related *Neobatrachus sudelli* – involving sampling over 5000 frogs (Read 1999, Read and Owens 1999). In addition, Dr Read has conducted frog surveys and research for many frog species (Read and Owens 1999, Read 2000, Read et al 2015a) including long term monitoring in similar environments to Mallee Cliffs at the study sites listed above.

## Methods

This expert report has been prepared for Umwelt (Australia) Pty Limited, on behalf of the Spark Renewables Pty Ltd, to determine whether *Pseudomys desertor* or *Neobatrachus pictus* are likely to occur within the Mallee Wind Farm Development Footprint. This expert report has been prepared in accordance with the requirements of Box 3 of the Biodiversity Assessment Method ('BAM'; DPIE 2020).

Ecological Horizons arranged for Alex Holmes of GHD to compile regional records (including through use of BioNet database and regional ecological connections) and conduct field inspections of the Mallee Wind Farm for *Neobatrachus pictus* and suitable habitat for *Pseudomys desertor* (Appendix 2). Ecological Horizons have worked with Alex and trust and value his ecological skills, local knowledge and thoroughness and discussed with Alex optimum times and habitats for surveying both species. The GHD report is included in Appendix 2 of this report

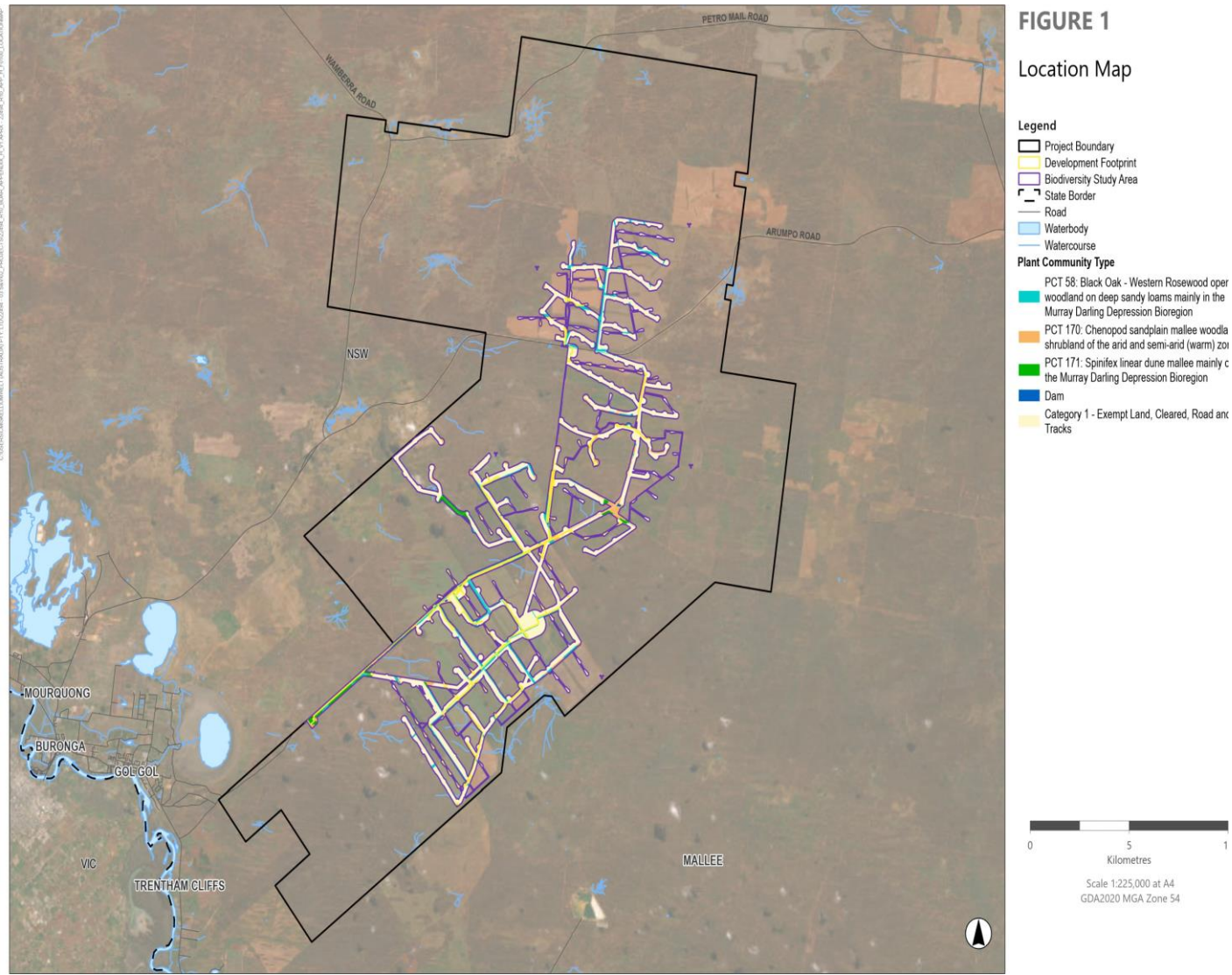
This assessment was aided by the extensive vertebrate surveys conducted within the Mallee Cliffs National Park (directly adjacent to the Development Footprint) primarily completed by the Australian Wildlife Conservancy (AWC) since 2016, which failed to detect either species. Across the AWC-NSW Parks Partnership Projects there have been 34,087 records of 171 fauna species. Prior to this, records within the national park go back to 1965 producing an additional 12,419 records and 84 species.

## Results

Resident populations of both species are considered to be of unlikely to occur on the Biodiversity Study Area and Development Footprint (Figure 1) for three reasons

- 1) Scarcity of nearby records (including from the intensively surveyed Mallee Cliffs National Park) suggest that the Project lies on, or just beyond, the periphery of the consistently occupied range of both species, even though animal distributions are inherently dynamic.
- 2) The habitat of the project area is 'heavily disturbed' (GHD 2024), without the extensive tracts of *Triodia* hummockland or sedges that typify *P. desertor* habitat or ephemeral swamps or rockholes used by *N. pictus*.
- 3) The site appraisal failed to locate either species or likely habitat for either species within the Biodiversity Study Area and Development Footprint (GHD 2024)

**Figure 1 Mallee Windfarm Development footprint**



**FIGURE 1**  
Location Map

- Legend**
- Project Boundary
  - Development Footprint
  - Biodiversity Study Area
  - State Border
  - Road
  - Waterbody
  - Watercourse
- Plant Community Type**
- PCT 58: Black Oak - Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion
  - PCT 170: Chenopod sandplain mallee woodland of the arid and semi-arid (warm) zone
  - PCT 171: Spinifex linear dune mallee mainly in the Murray Darling Depression Bioregion
  - Dam
  - Category 1 - Exempt Land, Cleared, Road and Tracks

0 5 10  
Kilometres  
Scale 1:225,000 at A4  
GDA2020 MGA Zone 54

Image Source: ESRI Basemap (2024) Data source: NSW DESI (2024), VIC DELWP (2023), spark (2024), Umwelt (2024)

## Discussion

The Desert mouse, unlike other small rodents is unlikely to be overlooked, even by many members of the public, due to its combination of long fur and especially distinctive orange eye ring. Hence the lack of records from the region are unlikely to be attributed to confusion with other rodents. Similarly, Painted burrowing frogs can really only be confused with Trilling frogs (*N. sudelli*) which have also not been recorded in the region and hence the absence of local Painted burrowing frog records is also unlikely to be attributed to misidentification.

*Pseudomys desertor* is susceptible to predation by feral cats and probably foxes. Because they are a folivore *P. desertor* are active for longer periods, including before dark and hence potentially more vulnerable to predators, including birds of prey than truly nocturnal rodents. The susceptibility of medium sized rodents to feral cats (Read *et al.* 2024) means that it is highly unlikely that a population of *P. desertor* could be sustained in the largely cleared Biodiversity Study Area.

Although reliant upon access to breeding ponds *Neobatrachus pictus* can move considerable distances through incremental nightly movements over cumulative rainfall events over several years. Hence dispersing animals can be found in suboptimal, even marginal habitat at considerable distances from reliable, or even intermittently suitable breeding ponds. However, the lack of suitable breeding sites in or near the Biodiversity Study Area render the site highly unlikely to be of significance for *N. pictus*.

## Conclusions

The expert opinion provided here of resident or important populations of either *P. desertor* and *N. pictus* being unlikely at the Mallee Wind Farm is supported by the conclusions from the GHD site report and the lack of records from the comprehensive, long term local data from the adjacent Mallee Cliffs National Park.

However, expert opinion also suggests that should the Mallee Wind Farm proposal progress to development, there are still tangible benefits that can be provided to the local biodiversity. Infrastructure projects can make a positive contribution to conservation by addressing, as well as not exacerbating, key threats (e.g. Read 2003). For example, reduction in regional feral cat densities through proactive management can lead to profound improvements in small mammal diversity and abundance, both within (Moseby *et al.* 2019) and beyond (Pedler *et al.* 2016) conservation management areas. Other opportunities for positive biodiversity benefits could arise from revegetating with endemic plant species, including rare species, and assisting with regional control of overabundant herbivores, potentially including feral species and

kangaroos. Striving to provide positive biodiversity benefits may offset inevitable localised impacts from infrastructure developments.

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<https://doi.org/10.1071/WR23138>



**Department of Planning and Environment**

Dr John Read  
[ecological67@gmail.com](mailto:ecological67@gmail.com)

Our ref: SF23/131992  
Sender's ref: BE 23 10

17 November 2023

Dear Dr Read

**Approval of Name as an expert for Desert Mouse (*Pseudomys desertor*)**

Thank you for your application dated 23 September 2023 to the Biodiversity and Conservation Division (BCD) of the Department of Planning and Environment.

BCD has reviewed the information provided in support of this request and is satisfied that you meet the definition of a species expert for Desert Mouse (*Pseudomys desertor*) in accordance with section 5.3 (Box 3) of the Biodiversity Assessment Method.

Please note that this formal recognition of you as an expert only applies to the Mallee Wind Farm project within the Wentworth Local Government Area.

If you require any further information regarding this matter, please contact Andrew Fisher, Senior Team Leader Planning, via [rog.southwest@environment.nsw.gov.au](mailto:rog.southwest@environment.nsw.gov.au) or 02 6022 6023.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Adam Vey'.

Adam Vey  
**Director South West**  
**Biodiversity and Conservation Division**  
**Department of Planning and Environment**



## Department of Planning and Environment

Dr John Read  
[ecological67@gmail.com](mailto:ecological67@gmail.com)

Our ref: SF23/131995  
Sender's ref: BE 23 11

17 November 2023

Dear Dr Read

### **Approval of Dr John Read as an expert for Painted Burrowing Frog (*Neobatrachus pictus*)**

Thank you for your application dated 23 September 2023 to the Biodiversity and Conservation Division (BCD) of the Department of Planning and Environment.

BCD has reviewed the information provided in support of this request and is satisfied that you meet the definition of a species expert for Painted Burrowing Frog (*Neobatrachus pictus*) in accordance with section 5.3 (Box 3) of the Biodiversity Assessment Method.

Please note that this formal recognition of you as an expert only applies to the Mallee Wind Farm project within the Wentworth Local Government Area.

If you require any further information regarding this matter, please contact Andrew Fisher, Senior Team Leader Planning, via [rog.southwest@environment.nsw.gov.au](mailto:rog.southwest@environment.nsw.gov.au) or 02 6022 6023.

Yours sincerely

A handwritten signature in black ink, appearing to read "Adam Vey".

Adam Vey  
**Director South West**  
**Biodiversity and Conservation Division**  
**Department of Planning and Environment**

Appendix 2. GHD 2024 report

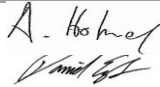


# Mallee Wind Desert Mouse and Painted Burrowing Frog advice

→ **The Power of Commitment**



Umwelt (Australia) Pty Ltd

16 August 2024

<b>Project name</b>		Mallee Wind Desert Mouse and Painted Burrowing Frog advice					
<b>Document title</b>		Mallee Wind Desert Mouse and Painted Burrowing Frog advice					
<b>Project number</b>		12648079					
<b>File name</b>		12648079_REP_Mallee Wind Desert Mouse and Painted Burrowing Frog advice					
<b>Status Code</b>	<b>Revision</b>	<b>Author</b>	<b>Reviewer</b>		<b>Approved for issue</b>		
			<b>Name</b>	<b>Signature</b>	<b>Name</b>	<b>Signature</b>	<b>Date</b>
S0		E. Pacholli	A Holmes		A Holmes		02/08/24
S3		E. Pacholli	A Holmes		A Holmes		09/08/24
S4		E. Pacholli	A Holmes D Eyles	 	A Holmes		16/8/24
[Status code]							
[Status code]							

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➔ **The Power of Commitment**

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# Introduction

## Purpose of this report

GHD Pty Ltd (GHD) has been engaged by Umwelt (Australia) Pty Limited (Umwelt) for ecological services to support the assessment of the proposed Mallee Wind Farm project. Umwelt require local ecological knowledge to assess the likelihood of occurrence of two threatened species listed under the New South Wales Biodiversity Conservation (BC) Act 2016, specifically the Desert Mouse (*Pseudomys desertor*) and Painted Burrowing Frog (*Neobatrachus pictus*) and also require the preparation of a summary report on these species to support a separate expert report to be prepared by Dr John Read from Ecological Horizons. Our local GHD ecologists have extensive experience with both species, including conducting previous trapping programs for *P. desertor* in central Australia/NSW and nocturnal surveys for *N. pictus* in Victoria and in NSW where this species is poorly known.

## Scope and limitations

*This report: has been prepared by GHD for Umwelt (Australia) Pty Ltd and may only be used and relied on by Umwelt (Australia) Pty Ltd for the purpose agreed between GHD and Umwelt (Australia) Pty Ltd as set out in section 1.1 of this report.*

*GHD otherwise disclaims responsibility to any person other than Umwelt (Australia) Pty Ltd arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.*

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*The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.*

*The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report (refer section(s) 1.3 of this report). GHD disclaims liability arising from any of the assumptions being incorrect.*

## Accessibility of documents

*If this report is required to be accessible in any other format, this can be provided by GHD upon request and at an additional cost if necessary.*

*GHD has prepared this report on the basis of information provided by Umwelt (Australia) Pty Ltd and others who provided information to GHD (including Government authorities)], which GHD has not independently verified or checked beyond the agreed scope of work. GHD does not accept liability in connection with such unverified information, including errors and omissions in the report which were caused by errors or omissions in that information.*

## Assumptions

The scope did not include a detailed assessment or targeted surveys for Desert Mouse (*Pseudomys desertor*) or any other flora, fauna or aquatic assessments. As a result, in the future additional species may be present that were not observed during this assessment.

The BioNet Atlas (BioNet) database can be used to search a defined geographical area to produce species lists of flora and fauna that have been recorded within the searched area. The database lists are only as accurate as the quality and quantity of data that have been recorded and documented from the area.

Location details for many records (typically older records) have a relatively low degree of accuracy (e.g., within 1 km).

These datasets are not exhaustive. In other words, many locations locally and across New South Wales have a low level of documented survey effort for one or more groups of flora and fauna. During field surveys, it is not uncommon to find species at locations for which there are few or no previous nearby database records.

Maps presented in this report displaying site information should not be relied on for the detailed design during the construction process. Data collected and presented in maps is accurate to +/- 5 m.

## Species Information

### Painted Burrowing Frog (*Neobatrachus pictus*)

#### Species description

The Painted Burrowing Frog (*Neobatrachus pictus*) is a large frog, ranging from 46 to 58 mm in length. It has grey, light brown or yellow dorsal head and body with dark brown or olive green patches and a thin, light yellowish vertebral stripe. The underside of the body is smooth and white (NPWS 2000). The eye is particularly prominent and has a vertical pupil and the tympanum (eardrum) is not visible. Fingers are cylindrical and unwebbed, whereas the toes are fully webbed, with a black shovel-shaped lump on the undersurface, used for burrowing (NPWS 2000). The call is a long and musical trill.

Animals can be distinguished from the more widespread Sudell's Frog (*Neobatrachus sudelli*) by the lack of baggy skin around the groin, although this is a subjective morphological feature and not considered a highly reliable means to differentiate the species (A. Holmes pers. obs.). Other distinguishing features from *N. sudelli* is the call length, *N. pictus* has a longer call that approximately doubles that of *N. sudelli* (NPWS 2000). The most reliable way to differentiate the two species is via chromosomal analysis.



Figure 1 Painted Burrowing Frog from the Chalka Creek, Hattah-Kulkyne National Park, Vic.

## Life cycle

The Painted Burrowing Frog can breed at all times of year however is dependent on heavy rainfall events (approximately >25mm in 24 hours). Breeding usually occurs in shallow ephemeral pools, however has also been observed in dams, around swamps and on roads. Breeding can occur from late summer through to early spring with each breeding period lasting only a few days. After breeding occurs the species burrows beneath the soil surface. Once below the soil surface this species may remain dormant for up to three months (NPWS 2000).

## Distribution

The species is distributed primarily across south eastern South Australia and western Victoria with records from three locations within western New South Wales. These records are in Balranald (2014), west of Pooncarie (2000) and within Scotia sanctuary (1995) (ALA, 2024a). The species is considered to have no critical habitat within New South Wales, likely due to the sparsity of records (NPWS 2000).

Due to the breeding events being reliant on heavy rainfall there may be an underestimation of the distribution or abundance of the species. However, the infrequent *N. pictus* occurrence within NSW is likely to be attributed to several factors including difficulty in species identification, access to suitable breeding habitat during rainfall events and the likelihood that the species is at the edge of its' distribution in western NSW.

## Habitat requirements

The habitat for Painted Burrowing Frog ranges widely, they have been observed in grasslands, mallee, farmland and cleared areas. The species is found after heavy rainfall events. During breeding the species utilizes leaf litter, fallen logs and large rocks for shelter (NPWS 2000).

## Desert Mouse (*Pseudomys desertor*)

### Species description

The Desert Mouse (*Pseudomys desertor*) is a solitary medium-sized rodent with chestnut brown fur above and a light grey-brown belly. The tail is brown dorsally and lighter around the sides and ventrally and is equal in length or shorter than the head-body length. Species has large eyes with a pale orange eye-ring. Males and females are a similar size (ALA 2024b).



Figure 2 Desert Mouse observed during a trapping program in the Tanami Desert, NT.

## Life cycle

The Desert Mouse has a high reproduction rate with females being fertile on a 7-9 day cycle and become reproductively mature at ten weeks old. Gestation lasts 27-28 days and litter sizes average at three pups (ALA 2024b). The species has large population growth following periods of high rainfall that results in increased vegetation density. (NSW EH, 2024)

## Distribution

The species is distributed throughout arid areas, including Central Australia, central inland Queensland, southern Kimberley and the Pilbara in Western Australia and far western New South Wales. There have been very few records of the Desert Mouse in New South Wales and therefore it is thought that NSW is at the edge of the species distribution. (ALA 2024b).

Recent studies have shown that areas with Dingo presence, the pressure of feral predation of small mammals has been reduced compared to areas without Dingoes (Christopher E. Gordon, 2015). The majority of the Desert Mouse distribution has Dingoes present however, the NSW part of its range does not. This may mean the species would become at an increased risk to predation of feral cats and foxes. Additionally, overgrazing in NSW suppresses the species ability to spread to suitable habitat as it is reliant on dense vegetation.

## Habitat requirements

Desert Mouse is primarily found in sand dune or sand plain habitats with spinifex. They have also been found in spinifex grasslands, open eucalypt, Acacia shrubland, riparian woodlands and samphire. The species is sensitive to overgrazing due to their reliance on habitats featuring dense grass, sedge or dense groundcover. The species is also sensitive to predation, particularly by feral cats and foxes.

Mallee woodland are ecological communities occurring in semi-arid environments dominated by multi-stemmed, low growing eucalypts. They are diverse communities that support a variety of biota that depend on the specific features of the ecosystem to persist. This includes remnant population of other rare and threatened species such as the Malleefowl (*Leipoa ocellata*), Gilberts Whistler (*Pachycephala inornata*) and Southern Scrub-robin (*Drymodes brunneopygia*).

Often mallee woodland and mallee dune habitats occur in combination with spinifex (*Triodia* sp.). Spinifex provides habitats provide important ground-cover needed by a variety of reptiles and ground mammal species. This includes the Desert Mouse (*Pseudomys desertor*).

## Description of area

### Landscape context

The development footprint is located in the Mallee Cliffs Sandplains and Mallee Cliffs Linear Dunes Mitchell Landscape.

The Mallee Cliffs Sandplains landscape is characterised by extensive, slightly undulating sandplain of Quaternary aeolian sands with east-west trending dunes, often with blowouts, partly scalded broad swales and small depressions, relief 6 to 10m. Solonized brown soils, calcareous loamy sand, and texture-contrast soils on the plain, red and brown sands on dunes, non-cracking grey or brown clays in depressions. The landscape consists of Rosewood (*Alectryon oleifolius*), White Cypress Pine (*Callitris glaucophylla*), Sugarwood (*Myoporum platycarpum*), Belah (*Casuarina cristata*), dense clumps of Black Bluebush (*Maireana pyramidata*), or Pearl Bluebush (*Maireana sedifolia*), with variable speargrass (*Austrostipa variabilis*), bottlewashers (*Enneapogon* sp.) and copperburr (*Sclerolaena* sp.) on plains.

The Mallee Cliffs Linear Dunes landscape is characterised by extensive Quaternary dunefields and sandplains, relief to 7m. Deep brownish sands and calcareous earths with dense mallee (*Eucalyptus* sp.), Belah (*Casuarina cristata*) and Rosewood (*Alectryon oleifolius*) with Porcupine Grass (*Triodia irritans*). Narrow swales of calcareous loamy red earths with belah, rosewood, scattered shrubs, variable speargrass (*Austrostipa variabilis*), copperburr (*Sclerolaena* sp.) and forbs.

The Biodiversity Study Area is located around 8km north east of the floodplain of the Murray River. Wetlands in the area include Lake Gol Gol and Gol Gol Swamp.

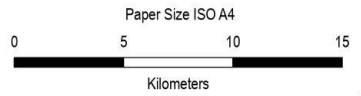
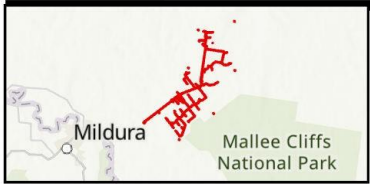
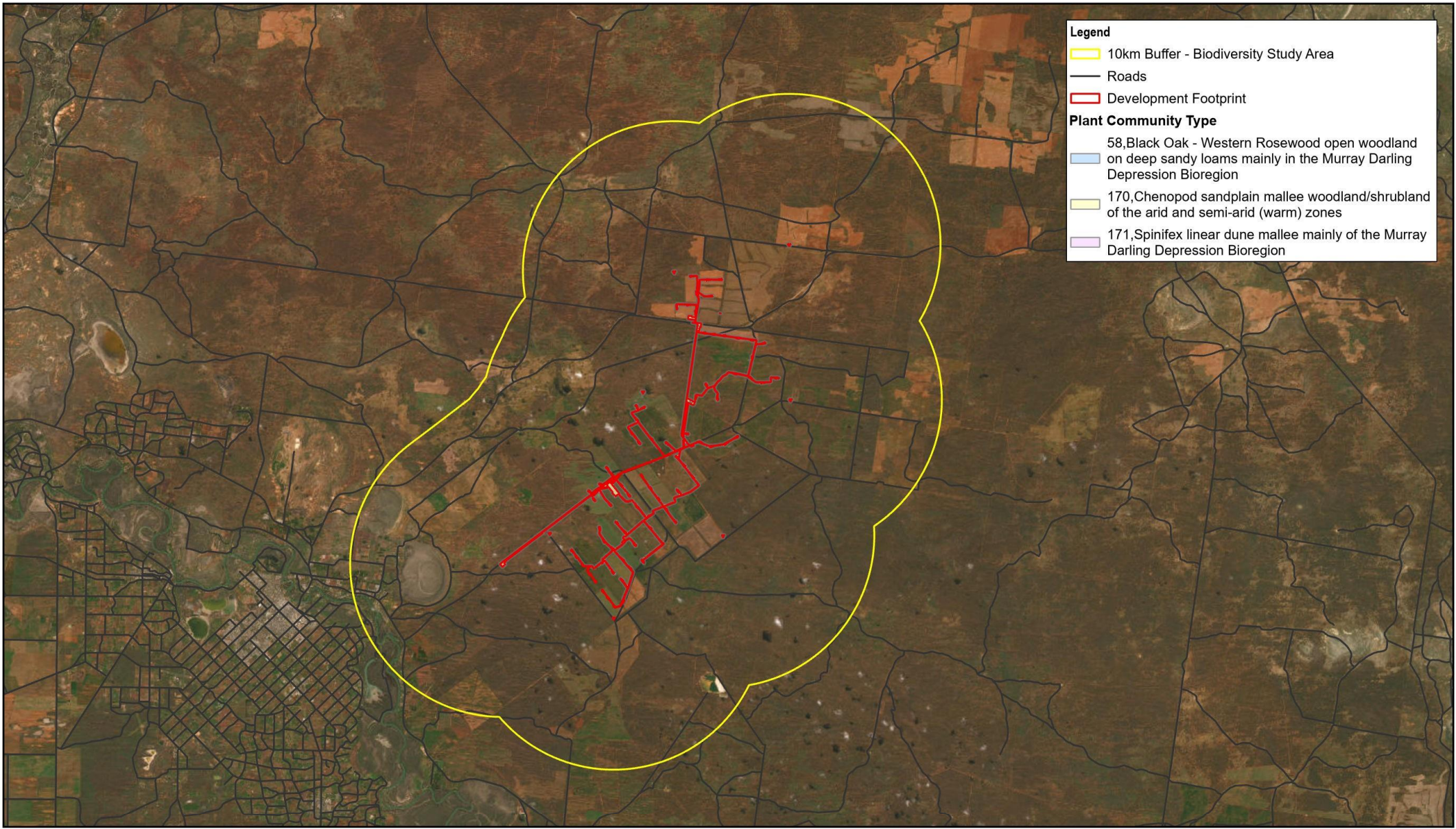
The Biodiversity Study Area is adjacent to Mallee Cliffs National Park in the south-east. Mallee Cliffs National Park is a wildlife conservation area which covers an area of 57969 ha and is managed to protect the sand plain and sand dune land systems and ecological communities (NSW National Parks and Wildlife Service).

### Native vegetation

The development footprint is primarily Plant Community Type (PCT) 170 - Chenopod sandplain mallee woodland/shrubland of the arid and semiarid zones. There are an additional two PCT's with smaller areas. The description and area of each PCT is shown in Figure 3 and are described below (Table 1).

Table 1 Plant community types, status and area mapped within development footprint

PCT ID	Plant community type	Community description	State	Area (ha)
58	Black Oak – Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion	Occurs as a mid-high (about 7 m high) low open woodland or isolated clumps of trees dominated by Black Oak ( <i>Casuarina pauper</i> ) and Western Rosewood ( <i>Alectryon oleifolius</i> subsp. <i>canescens</i> ) with either a shrubby or grassy understorey.  Widely distributed in the far south-western NSW mainly in the Murray Darling Depression Bioregion, generally subject to less than 400 mm of annual rainfall.	Derived- Weedy	3.39
			Moderate-Good	26.81
			Weedy Understorey	0.17
170	Chenopod sandplain mallee woodland/shrubland of the arid and semi-arid (warm) zones	Occurs as a mallee woodland or open mallee shrubland most usually about 8 m tall dominated by several mallee species including White Mallee ( <i>Eucalyptus dumosa</i> ), Red Mallee ( <i>Eucalyptus socialis</i> ), Glossy-leaved Red Mallee ( <i>Eucalyptus oleosa</i> ) and Snap and Rattle ( <i>Eucalyptus gracilis</i> ). Chenopods shrubs form a major component of the understorey.  Occurs on calcareous red-brown, sandy-loam or loamy clay soils, sometimes containing limestone nodules, on eolian sandplains or in inter-dune plains or swales. The largest occurrences of this community are north-west of Balranald forming a transition between the dune mallee and the Riverine Plain, south and east of Mungo National Park, north of Mildura on the Darling River plain and in the Scotia Mallee, and south-east of Menindee.	Derived - native	1.15
			Derived- Weedy	0.06
			Moderate-Good	3.81
			Weedy Understorey	0
171	Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion	Mallee shrubland or open shrubland most about 5 m tall but up to 8 m, most often in a whipstick habit, dominated by a number of mallee species including White Mallee ( <i>Eucalyptus dumosa</i> ), Red Mallee ( <i>Eucalyptus socialis</i> ) and Snap and Rattle ( <i>Eucalyptus gracilis</i> ) and Ridge-fruited Mallee ( <i>Eucalyptus costata</i> ). This community contains a species-rich understorey that is dominated by Porcupine Grass ( <i>Triodia scariosa</i> ).  Occurs on calcareous brown-red sand or loamy sand sometimes overlying grey clay on east-west linear sand dunes mainly in the Murray-Darling Sands Bioregion in south far western plain of NSW extending into South Australia and Victoria. Mainly restricted to the arid zone and semi-arid (warm) climatic zones in NSW.	Moderate-Good	19.12
0	Not classified	Not classified		0
N/A	Non-native vegetation	Structure/Cleared/Road/Track		390.36
Total				444.87



Map Projection: Transverse Mercator  
 Horizontal Datum: GDA2020  
 Grid: GDA2020 MGA Zone 54



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PCT mapping

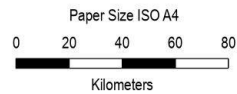
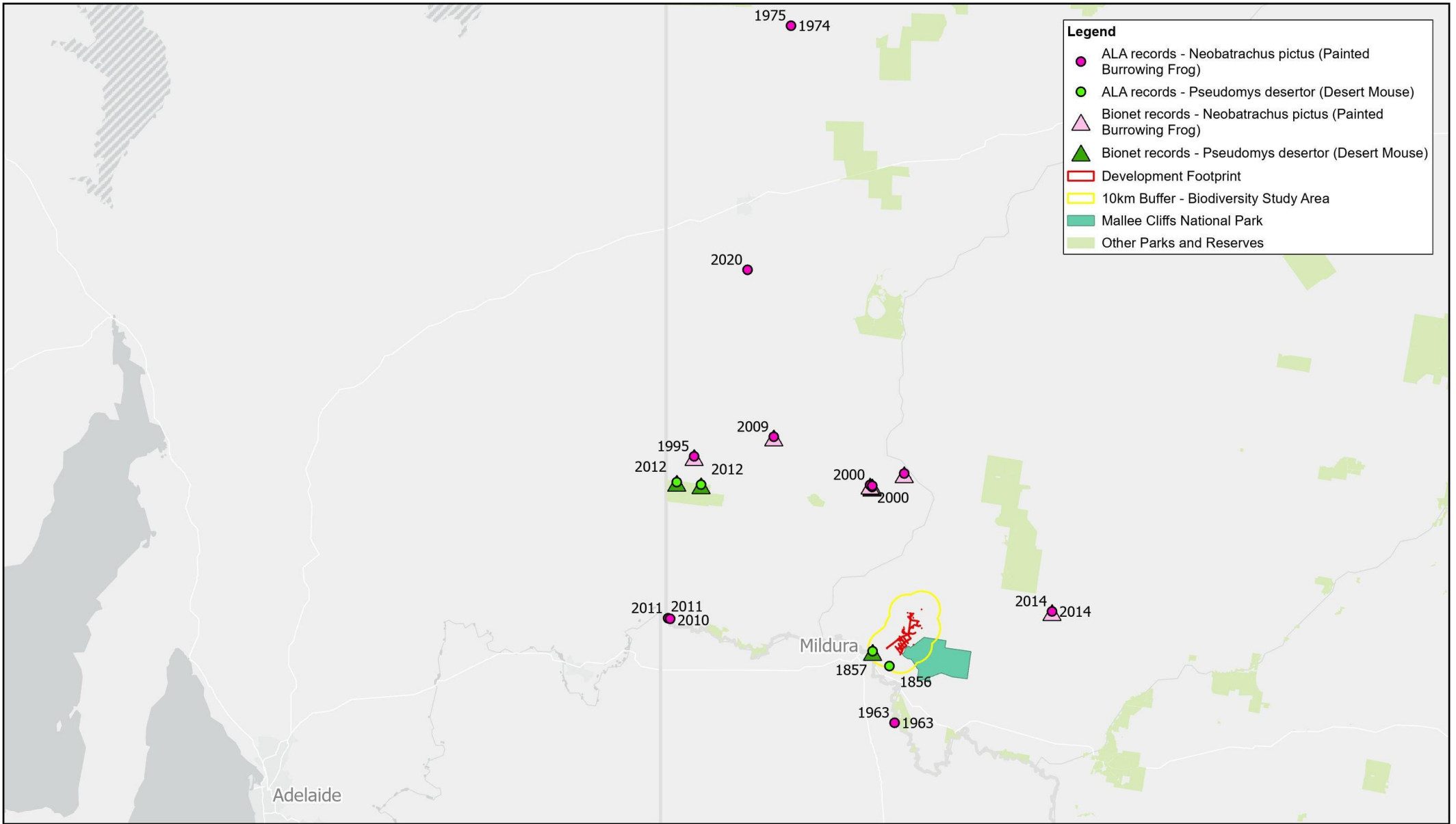
FIGURE 3

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# Assessment of species presence and habitat suitability

## Species records and habitat assessments

The target species for this assessment both have very few or no local records across historical survey effort, particularly in adjacent Mallee Cliffs National Park. Due to the proximity to the development footprint and the frequency and extent of survey at Mallee Cliffs National Park seems to be a good indicator for the likelihood of presence for both species. Historical records from ALA and from BioNet across western New South Wales are displayed in Figure 4



Map Projection: Transverse Mercator  
 Horizontal Datum: GDA2020  
 Grid: GDA2020 MGA Zone 54



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**Historic ALA and  
 Bionet records**

**FIGURE 4**

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## Painted Burrowing Frog (*Neobatrachus pictus*)

Suitable habitat for the Painted Burrowing Frog (*Neobatrachus pictus*) is primarily dependent on rainfall as opposed to vegetation type. This could lead to suitable habitat becoming present within the development footprint.

The closest record to the development footprint is from 2014 with one individual in Balranald, 90km away from the development footprint. Until 2021 there had only been two locations within NSW with records of the Painted Burrowing Frog, Scotia Sanctuary and west of Pooncarie.

The Development Footprint appears to support suboptimal habitat for this species with no previous records, appears to be on the edge of the species distribution with the closest record being 90 km away in 2014. The Development Footprint is also a considerable distance from the next closest records within NSW which are over 100km away from 2000.

## Desert Mouse (*Pseudomys desertor*)

There are two records nearby to the development footprint however they are from 1856 and 1857 prior to exotic species such as the feral cat and fox becoming established as important threats to this species in western NSW. The next closest records of the Desert Mouse are from 2012 within the Tarawi Nature Reserve over 200km northwest. This record could be associated with the high rainfall within the two years prior which allowed the species to recolonize Tarawi Nature Reserve. Yearly rainfall statistics for the closest weather stations to Tarawi Nature Reserve is the Mildura Airport (station no. 076031) and Pooncarie Mail Agency (station no. 047029), a summary of these statistics can be seen in Table 2 ( (BOM, 2024). The other record of Desert Mouse within NSW was in 2008 within Sturt National Park, approximately 500km north, where a singular male was detected (OEH 2024).

Table 2 Annual Rainfall Data from Mildura and Pooncarie

Year	Annual Rainfall in Mildura (mm)	Annual Rainfall in Pooncarie (mm)
2008	202.0	227.4
2009	233.0	228.6
2010	591.2	567.1
2011	657.4	533.1
2012	214.6	N/A
2013	216.4	201.9

Approximately 364 hectares of mallee woodland and spinifex dunes is predicted to occur throughout the Biodiversity Study Area. These habitats are the species preferred habitat however threats of predation and overgrazing likely limit the species ability to recolonise the area.

The infrequency of records within New South Wales in general and the age of the records nearby to the development footprint (1800s) indicate that the Development Footprint is unlikely to be within the species' current distribution.

## Recent surveys in the region

### Mallee Cliffs National Park

There has been extensive survey effort completed within the Mallee Cliffs National Park (directly adjacent to the Development Footprint) primarily completed by the Australian Wildlife Conservancy (AWC) from 2016 to present day. These surveys are done under the AWC-NSW Parks Partnership Projects. Across the AWC-NSW Parks Partnership Projects there have been 34,087 records of 171 species. Prior to this, records within the national park go back to 1965 producing an additional 12,419 records and 84 species.

Neither target species of the Painted Burrowing Frog or the Desert Mouse have been detected throughout the history of survey effort within Mallee Cliffs National Park despite extensive survey effort. Various survey methods were utilized including live trapping (box, cage, pitfall and funnel), camera traps, acoustic recorder deployment and spotlight transects across the standard monitoring sites. A summary of the threatened species that have been detected within the park is below (Table 3).

#### Status

EPBC Act - Commonwealth Environment Protection and Biodiversity Conservation Act 1999. BC Act - Biodiversity Conservation Act 2016 or Fisheries Management Act 1994.

CE – Critically Endangered

EN – Endangered population

V – Vulnerable

Table 3 Threatened Species detected within Mallee Cliffs National Park

Scientific Name	Common Name	EPBC/BC Act Listing
<b>Mammals</b>		
<i>Cercartetus concinnus</i>	Western Pygmy Possum	- / EN
<i>Chalinolobus picatus</i>	Little Pied Bat	- / VU
<i>Ningauai yvonneae</i>	Southern Ningauai	- / VU
<i>Nyctophilus corbeni</i>	Corben's Long-eared Bat	VU / VU
<i>Saccolaimus flaviventris</i>	Yellow-bellied Sheath-tail-bat	- / VU
<i>Vespadelus baverstocki</i>	Inland Forest Bat	- / VU
<b>Aves</b>		
<i>Aphelocephala leucopsis</i>	Southern Whiteface	VU / VU
<i>Artamus cyanopterus cyanopterus</i>	Dusky Woodswallow	- / VU
<i>Certhionyx variegatus</i>	Pied Honeyeater	- / VU
<i>Cinclosoma castanotum</i>	Chestnut Quail-thrush	- / VU
<i>Circus assimilis</i>	Spotted Harrier	- / VU
<i>Climacteris picumnus victoriae</i>	Brown Treecreeper (eastern subspecies)	- / VU
<i>Daphoenositta chrysoptera</i>	Varied Sittella	- / VU

<i>Drymodes brunneopygia</i>	Southern Scrub-robin	- / VU
<i>Epthianura albifrons</i>	White-fronted Chat	- / VU
<i>Falco subniger</i>	Black Falcon	- / VU
<i>Haliaeetus leucogaster</i>	White-bellied Sea-Eagle	- / VU
<i>Hieraetus morphnoides</i>	Little Eagle	- / VU
<i>Hylacola cautus</i>	Shy Heathwren	- / VU
<i>Leipoa ocellata</i>	Malleefowl	VU / EN
<i>Lichenostomus cratitius</i>	Purple-gaped Honeyeater	- / VU
<i>Lophochroa leadbeateri</i>	Pink Cockatoo	- / VU
<i>Melanodryas cucullata cucullata</i>	South-eastern Hooded Robin	EN / EN
<i>Melithreptus gularis gularis</i>	Black-chinned Honeyeater (eastern subspecies)	- / VU
<i>Pachycephala inornata</i>	Gilbert's Whistler	- / VU
<i>Petroica phoenicea</i>	Flame Robin	- / VU
<i>Polytelis anthopeplus monarchoides</i>	Regent Parrot (eastern subspecies)	VU / EN

Scientific Name	Common Name	EPBC/BC Act Listing
<b>Reptilia</b>		
<i>Aprasia inaurita</i>	Mallee Worm-lizard	- / EN
<i>Cyclodomorphus melanops elongatus</i>	Mallee Slender Blue-tongue Lizard	- / EN
<i>Strophurus elderi</i>	Jewelled Gecko	- / VU
<i>Tiliqua occipitalis</i>	Western Blue-tongued Lizard	- / VU

## 2021 GHD site visit

In late 2021 GHD were engaged by Spark Renewables to conduct a preliminary biodiversity constraints assessment to support the development of the Mallee Wind Farm project. The purpose of this report was to identify the Plant Community Types (PCTs) and potential habitat for fauna species that have the potential to be impacted by the proposal and provide advice on potential investigations required to be undertaken during preparation of a Biodiversity Development Assessment Report (BDAR). For both species of interest, it was determined that they cannot be reliably predicted to occur within the development footprint despite the presence of potentially suitable habitat. During this assessment a preliminary field survey was conducted in which neither target species was detected. (GHD 2022).

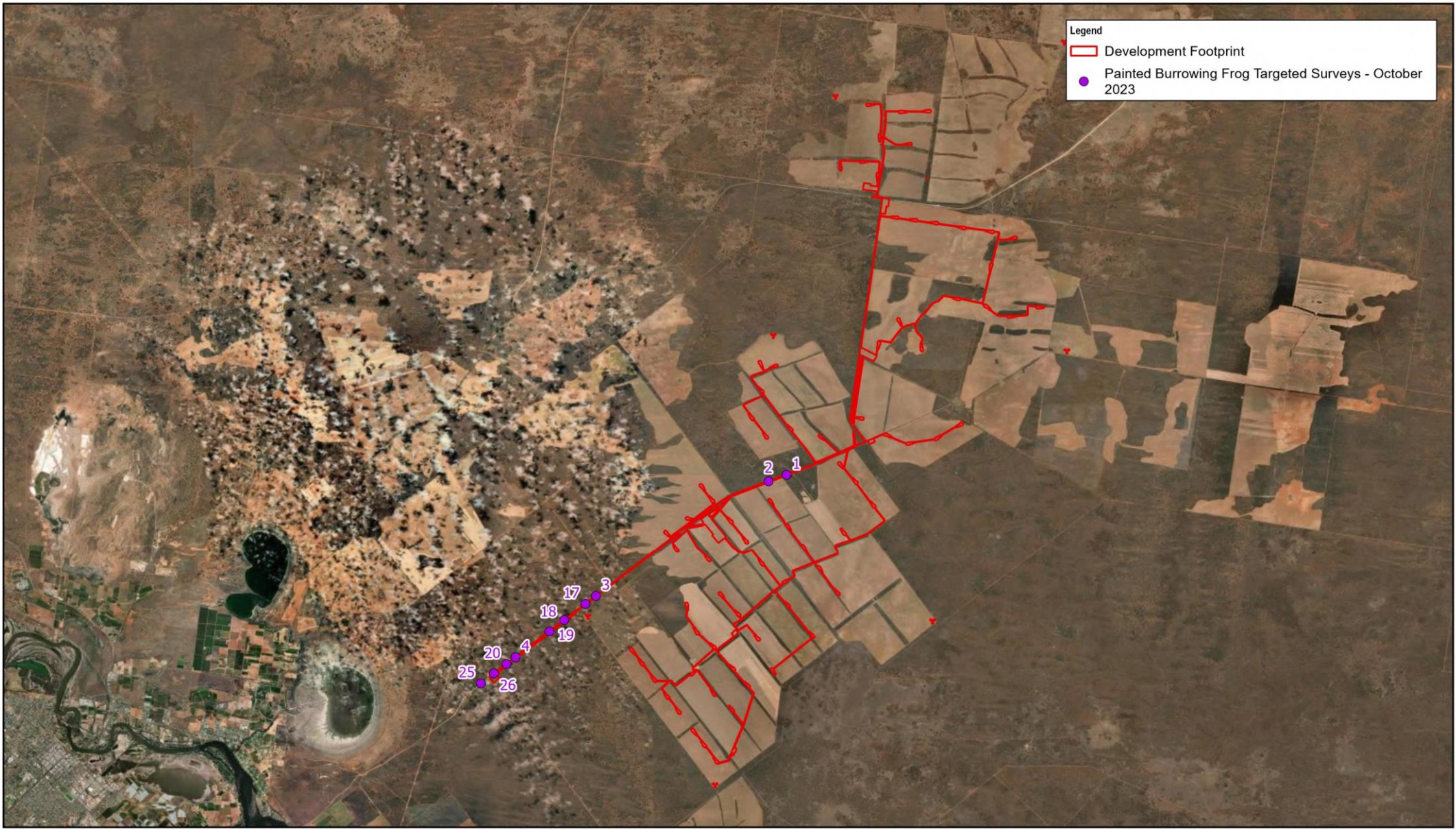
Previous work determined the likelihood of occurrence for the target species to be as follows: *Table 4 Likelihood of occurrence table for target species*

Common Name Scientific Name	BC Status	EPBC Status	Habitat association	Likelihood of occurrence
--------------------------------	--------------	----------------	---------------------	-----------------------------

Desert Mouse <i>Pseudomys desertor</i>	CE	-	Most records of the Desert Mouse come from sand dune or sand plain habitats dominated by Spinifex ( <i>Triodia</i> spp.). Depends on a dense groundcover of grasses, sedges or shrubs; survives in small pockets of habitat and expands into other areas following rains and subsequent vegetation growth. Found to be most abundant in areas with the least historical grazing pressure and disturbance, including fire.	<b>Low:</b> Some potentially suitable habitat could occur in the Biodiversity Study Area. The species has not been previously recorded in the locality.
Painted Burrowing Frog <i>Neobatrachus pictus</i>	E	-	Widespread in southeastern South Australia and western Victoria but found at only two locations in NSW, in Scotia Sanctuary, adjacent to the South Australian border and in an area to the west of Pooncarie. Inhabit open grassland, mallee, woodland, farmland and cleared areas and are usually found in or around flooded areas after periods of heavy rainfall, including grassy marshes, lagoons, flooded claypans, temporary roadside pools, ditches, mallee swales and farm dams.	<b>Low:</b> Suitable habitat predicted to occur in the Biodiversity Study Area during flooding events

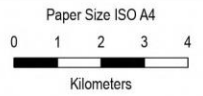
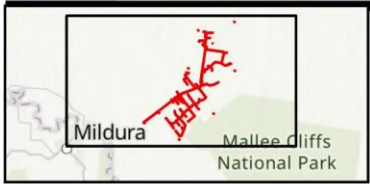
Additionally, this report determined from the BAM calculator that neither target species had relevant habitat constraints that would need further investigation.

After this preliminary biodiversity assessment two targeted species surveys were completed for the Painted Burrowing Frog. Survey methods aligned with the specific requirements for Painted Burrowing Frog under NSW Survey Guide for Threatened Frogs (NSW DPIE, 2020). Aural-visual surveys were completed over two separate non-consecutive nights following heavy rainfall (27mm). Surveys were completed around the edges of potential breeding habitat both known prior to survey and opportunistic additional areas that were temporarily inundated (NSW DPIE, 2020). Survey effort is displaying in Figure 5.



**Legend**

- ▭ Development Footprint
- Painted Burrowing Frog Targeted Surveys - October 2023



Map Projection: Transverse Mercator  
 Horizontal Datum: GDA2020  
 Grid: GDA2020 MGA Zone 54

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 Mouse and Painted Burrowing Frog

Project No. 12618872  
 Revision No. 0  
 Date 9/08/2024

**Painted Burrowing Frog  
 Targeted Surveys - October 2023**

**FIGURE 5**

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This found all areas along the development footprint were heavily disturbed with no aquatic vegetation. There were no Painted Burrowing Frog detected across the sites despite some low quality suitable habitat being present. It was raining while conducting the first night of survey, there were no frogs within sites however, there were many *Limnodynastes tasmaniensis* and *Limnodynastes dumerilii* seen on the road. The results of the targeted surveys are summarised in Table 5.

Table 5 Results of Painted Burrowing Frog targeted survey

Site	Date & Time	Weather	Notes
Site 1	03/10/2023 N/A	27mm rain, 15 degrees	Site not accessible
Site 2	03/10/2023 N/A	27mm rain, 15 degrees	Site not accessible
Site 3	03/10/2023 21:15	27mm rain, 15 degrees	Water in site, no frog activity at all. Appears to be more disturbed than when previous photo taken.
Site 4	03/10/2023 22:25	27mm rain, 15 degrees	No frog activity.
Site 18	03/10/2023	27mm rain, 15 degrees	No frog activity.
Site 19	03/10/2023	27mm rain, 15 degrees	2 areas of water. No frog activity.
Site 20	03/10/2023	27mm rain, 15 degrees	No frog activity.
Site 1	11/10/2023 19:45	24 degrees, no wind	Two small 2x2m wet areas.
Site 2	11/10/2023 20:05	24 degrees, no wind	25x5m area of water
Site 3	11/10/2023	24 degrees, no wind	Dry. (PBF3b as was not marked right). Photo taken
Site 17	11/10/2023 20:30	24 degrees, no wind	2 wet areas 1x1m and 3x2m
Site 18	11/10/2023 20:55	24 degrees, no wind	Two large deep pools of water. 23x8m and 15x6m. <i>Limnodynastes tasmaniensis</i> x2 calling.
Site 19	11/10/2023 21:10	24 degrees, no wind	Four pools. 4x3m, 1x1m, 4x4m, 9x4m with 1x <i>Limnodynastes tasmaniensis</i> calling in bigger pond.
Site 4	11/10/2023 21:45	24 degrees, no wind	Site is now dry but damp. Two <i>Limnodynastes tasmaniensis</i> seen.
Site 20	11/10/2023 22:10	24 degrees, no wind	2x2m wet area.
Site 26	11/10/2023	24 degrees, no wind	Dry.
Site 25	11/10/2023 22:35	24 degrees, no wind	Wet area 8x6m. 1x <i>Limnodynastes tasmaniensis</i> .

## Conclusion

Based upon the lack of historical records and lack of suitable habitat there is a low likelihood that the Painted Burrowing Frog (*Neobatrachus pictus*) is present within the development footprint provided. This species requires temporary pools of water, such as claypans or floodplains, to breed and burrow into moist soil during dry periods (ALA 2024a). The development footprint is dominated by dry sandy soils and lacks extensive surface water features that could support the Painted Burrowing Frog.

Despite potentially suitable habitat being present for the Desert Mouse (*Pseudomys desertor*), the sparse records accompanied with high predation pressure, overgrazing and disturbed vegetation within the development footprint, it is unlikely the species is present. The Desert Mouse is a small nocturnal rodent that inhabits semi-arid and arid areas with spinifex or hummock grasslands (ALA 2024b). The development footprint contains some patches of spinifex, but they are highly degraded and isolated by cleared areas. The high survey effort within the adjacent Mallee Cliffs National Park through the partnership with the Australian Wildlife Conservancy would be expected to detect the species if present. Previous survey effort completed by GHD did not detect the Painted Burrowing Frog and determined the likelihood for presence to be low due to lack of suitable habitat.

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Appendix I

# BAM Credit Report

## Proposal Details

Assessment Id	Proposal Name	BAM data last updated *
00049809/BAAS19021/24/00049811	Mallee Wind Farm 2024	05/08/2025
Assessor Name	Report Created	BAM Data version *
James Ian Garnham	25/03/2026	Current classification (live - default) (82)
Assessor Number	BAM Case Status	Date Finalised
BAAS19021	Finalised	25/03/2026
Assessment Revision	BOS entry trigger	Assessment Type
6		Major Projects

\* Disclaimer: BAM data last updated may indicate either complete or partial update of the BAM calculator database. BAM calculator database may not be completely aligned with Bionet.

## Ecosystem credits for plant communities types (PCT), ecological communities & threatened species habitat

Zone	Vegetation zone name	TEC name	Current Vegetation integrity score	Change in Vegetation integrity (loss / gain)	Area (ha)	Sensitivity to loss (Justification)	Species sensitivity to gain class	BC Act Listing status	EPBC Act listing status	Biodiversity risk weighting	Potential SAI	Ecosystem credits
<b>Black Oak - Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion</b>												
1	58_mod_good	Not a TEC	79.4	79.4	26.8	PCT Cleared - 50%	High Sensitivity to Gain			1.75		931

2	58_derived_weedy	Not a TEC	35.9	35.9	3.4	PCT Cleared - 50%	High Sensitivity to Gain			1.75		53
3	58_weedy_understorey	Not a TEC	75.2	75.2	0.17	PCT Cleared - 50%	High Sensitivity to Gain			1.75		6
										<b>Subtotal</b>	<b>990</b>	
<b>Chenopod sandplain mallee woodland/shrubland of the arid and semi-arid (warm) zones</b>												
4	170_mod_good	Not a TEC	61.9	61.9	3.8	PCT Cleared - 41%	High Sensitivity to Gain			1.50		89
5	170_derived_native	Not a TEC	38.3	38.3	1.2	PCT Cleared - 41%	High Sensitivity to Gain			1.50		17
6	170_derived_weedy	Not a TEC	44	44.0	0.06	PCT Cleared - 41%	High Sensitivity to Gain			1.50		1
										<b>Subtotal</b>	<b>107</b>	
<b>Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion</b>												
7	171_mod_good	Not a TEC	74.5	74.5	19	PCT Cleared - 19%	High Sensitivity to Gain			1.50		529
										<b>Subtotal</b>	<b>529</b>	
										<b>Total</b>	<b>1626</b>	

## Species credits for threatened species

Vegetation zone name	Habitat condition (Vegetation Integrity)	Change in habitat condition	Area (ha)/Count (no. individuals)	Sensitivity to loss (Justification)	Sensitivity to gain (Justification)	BC Act Listing status	EPBC Act listing status	Potential SAI	Species credits

## Appendix J

# **Additional Survey Information to Satisfy CPHR Submission Item 5.1**

## Briefing Note

To	Simon Maffei
E	Simon.maffei@dcceew.nsw.gov.au
Cc	Michael Todd
E	Michael.todd@dcceew.nsw.gov.au
From	James Garnham
Date	19 September 2025
<b>Subject</b>	<b>Additional Survey Information to Satisfy Response to Submissions Item 5.1 of the Mallee Wind Farm (SSD-53293710) BDAR</b>

### Purpose

This briefing note has been prepared following a meeting with NSW Conservation Programs Heritage and Regulation (CPHR) held on 3 September 2025 to discuss item 5.1 of its agency advice (refer DOC24/925566) provided for the Mallee Wind Farm Project (SSD-53293710) as part of the submissions phase of the NSW planning pathway.

Item 5.1 specifically notes:

*“Demonstrate that targeted bird surveys have been completed in accordance with the BAM and Threatened Biodiversity Profiles Data Collection (TBDC) for candidate bird species, or complete additional surveys.”*

The aim of this briefing note is to provide additional details of survey effort to CPHR, including survey tracks, to demonstrate areas where targeted and opportunistic survey was undertaken for candidate bird species.

### Outcomes

This briefing note provides additional details surrounding the targeted survey effort for candidate bird species within the Development Footprint and Biodiversity Study Area (BSA) to demonstrate survey adequacy in accordance with the TBDC. This includes survey effort displayed on separate figures for each candidate species.

**Umwelt is therefore seeking formal endorsement from CPHR that the survey effort information provided in this briefing note is adequate and that no further surveys are required for the pink cockatoo, regent parrot, square-tailed kite, little eagle, white-bellied sea-eagle or black-breasted buzzard.**

# 1.0 Introduction

Umwelt (Australia) Pty Ltd (Umwelt) have been engaged by Spark Renewables (Spark) to prepare a Biodiversity Development Assessment Report (BDAR) in accordance with the NSW Biodiversity Assessment Method (BAM) 2020 for the Mallee Wind Farm (SSD-53293710) (the Project). In November 2024, the BDAR was submitted as part of the Environmental Impact Statement (EIS). The Project is currently within the Response to Submissions (RtS) phase. During the RtS, the NSW CPHR of the NSW Department of Climate Change, Energy, the Environment and Water (DCCEEW) provided agency advice from its review of the Project EIS and BDAR (refer DOC24/925566) which included key issues identified as part of the biodiversity component of the Project.

On 3 September 2025, Umwelt met with CPHR to discuss Item 5.1 of the RtS, which states:

*“Demonstrate that targeted bird surveys have been completed in accordance with the BAM and Threatened Biodiversity Profiles Data Collection (TBDC) for candidate bird species, or complete additional surveys”.*

The aim of the meeting was to discuss the targeted surveys undertaken for candidate bird species as part of the Project, specifically for the following species:

- Pink Cockatoo (*Lophochroa leadbeateri*).
- Regent Parrot (eastern subspecies) (*Polytelis anthopeplus monarchoides*).
- Square-tailed Kite (*Lophoictinia isura*).
- Little Eagle (*Hieraaetus morphnoides*).
- White-bellied Sea-eagle (*Haliaeetus leucogaster*).
- Black-breasted Buzzard (*Hamirostra melanosternon*).

Details of survey effort for these species were presented during the meeting.

## 1.1 Purpose

The purpose of this briefing note is to provide additional details, including survey tracks to demonstrate areas where targeted and opportunistic survey was undertaken for these species during the development of the BDAR.

## 2.0 Survey Effort Details

As detailed in the BDAR (Umwelt 2024), the targeted survey methods used for each species correspond to the seasonal survey requirements of each species and included diurnal bird surveys, bird and bat utilisation surveys (BBUS) and breeding habitat searches. The following sections provide specific details of the survey effort for each species.

### 2.1 Pink Cockatoo

The seasonal survey requirement for pink cockatoo is September to December according to the TBDC. Seasonal surveys relate to the breeding period.

The habitat constraint for this species credit species is breeding habitat in the form of hollow-bearing trees that are living or dead with hollows greater than 10 cm diameter.

Targeted surveys were conducted for pink cockatoo in the form of BBUS and minimum 20-minute diurnal bird surveys. Survey effort for each method is shown in **Table 2.1**.

**Table 2.1 Details of Survey Effort Conducted for Pink Cockatoo**

Survey Type	Oct 2022	Nov 2022	Feb 2023	Mar 2023	Apr/May 2023	July 2023	Oct 2023	Feb 2024	May 2024	Aug 2024
BBUS	-	60	63	-	60	60	69	89	90	90
Diurnal bird survey	-	20	5	-	34	15	11	24	25	18
Opportunistic transect surveys	9 days	-	8 days	7 days	-	-	-	-	-	-
Total no. of surveys	9 days	80	68 surveys/ 8 days	7 days	94	75	80	113	115	108

Shaded columns are seasons within seasonal survey requirement for pink cockatoo breeding period.

During the seasonal survey period for the pink cockatoo a total of 129 BBUS (94.5 survey hours) and 31 diurnal bird surveys were conducted.

Searches for habitat constraints were also conducted during all biodiversity survey efforts across the BSA, specifically flora transects and diurnal fauna habitat surveys. These were undertaken in October 2022, February 2023 and March 2023 and were used to rule out habitat features. Where suitable habitat was identified, GPS location, tree species, hollow size and location (spout, trunk, branch) were recorded within digital survey platforms. Any hollows with suitable sizes for either species were revisited often during concurrent biodiversity surveys, to investigate for any changes in occupation with the latest re-visit being in August 2024 concurrent with winter BBUS.

Targeted surveys and opportunistic transect surveys for the pink cockatoo are shown on **Figure 2.1** which also shows habitat features recorded in the Project Boundary.

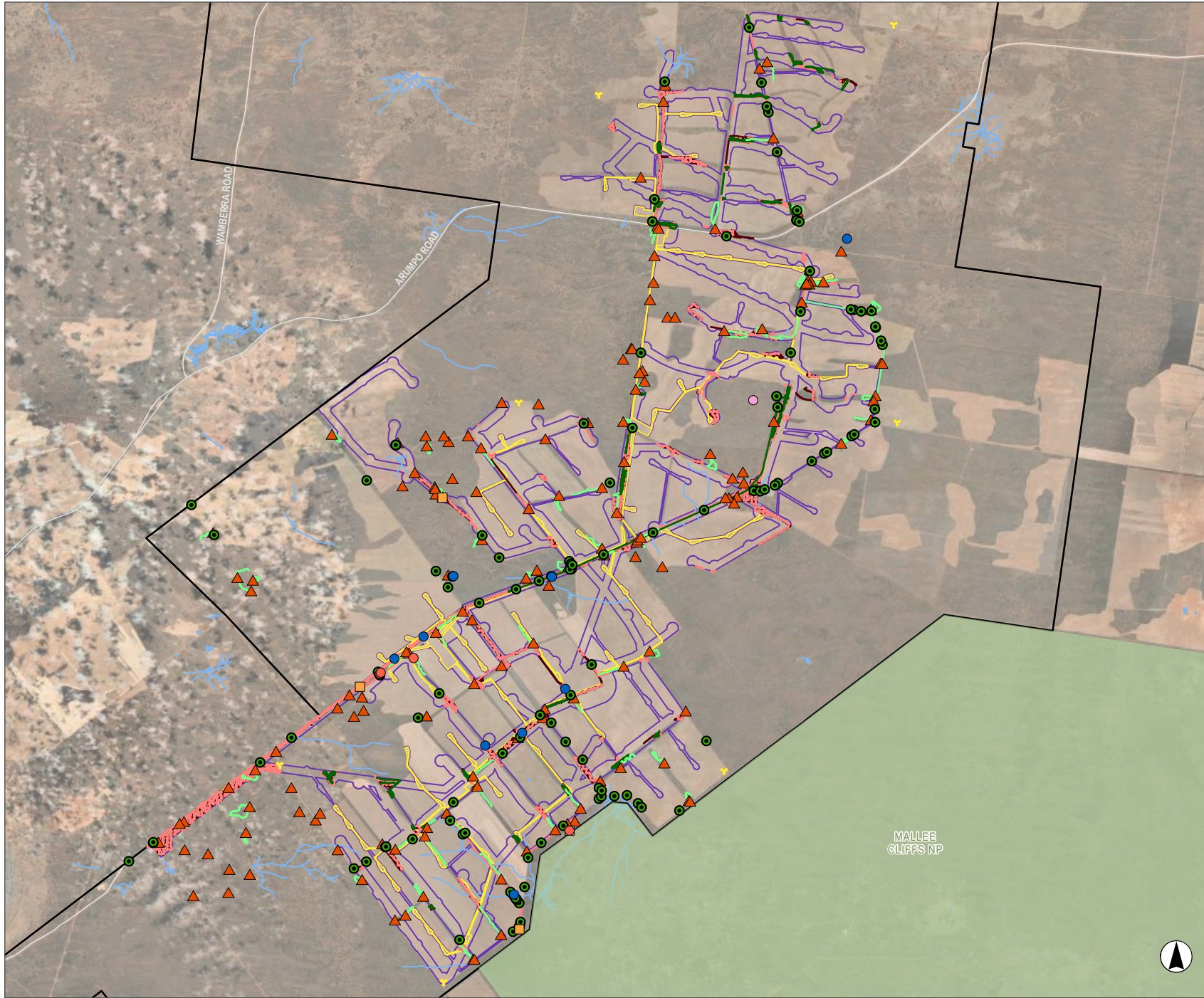
Four (4) hollow-bearing trees were recorded during surveys with an additional hollow-bearing tree recorded post BDAR finalisation during the August 2024 BBUS. Of these, three (3) trees contained suitable size hollows for pink cockatoo. Despite eight (8) seasons of BBUS and diurnal bird surveys,

the pink cockatoo has not been recorded to date in the BSA. Details of hollow-bearing trees recorded during the surveys are provided in **Table 2.2**.

**Table 2.2 Details of Suitable Hollow-bearing Trees for Pink Cockatoo in the Project Boundary**

Tree species	No. of hollows <2.5 cm	No. of hollows 2.5-5 cm	No. of hollows 5-10 cm	No. of hollows 10-30 cm	No. of hollows >30 cm	Location in Project
River red gum ( <i>Eucalyptus camaldulensis</i> )	0	5	2	0	0	Approx. 770 m and 668 m east of the Development Footprint and BSA, respectively
Mallee	0	2	0	1	0	Within the BSA. Approx. 990 m west of Development Footprint
Mallee	0	0	2	0	0	Approx. 1200 m and 1046 m east of the Development Footprint and BSA, respectively
Black oak ( <i>Casuarina pauper</i> )	0	0	0	1	0	Approx 5 m east m of Development Footprint and BSA
Eucalyptus sp.	0	0	2	3	0	Approx 810 m south-west of Development Footprint and approx. 185 m west of the BSA.

Shaded cells indicate suitable hollow sizes for pink cockatoo

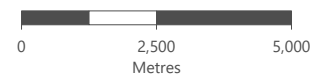


**FIGURE 2.1**

**Survey effort: Pink Cockatoo**

**Legend**

- Project Boundary
- Development Footprint
- Biodiversity Study Area
- NPWS Estates
- Road
- Watercourse
- Waterbody
- Habitat Features**
- Hollow Bearing Tree
- Stick Nest (likely raptor) - unoccupied
- Stick Nest (likely raven) - unoccupied
- Wedge-tailed Eagle Stick Nest - active until spring 2024 (tree fallen over)
- Targeted surveys**
- BBUS Vantage Point
- ▲ Diurnal Bird Survey
- Diurnal Bird Survey Transects
- Opportunistic surveys**
- Threatened species transects (March 2023)
- Threatened species transects (February 2023)
- Threatened species transects (October 2022)



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## 2.2 Regent Parrot (eastern subspecies)

The seasonal survey requirement for Regent Parrot is August to November according to the TBDC.

The habitat constraint for this species credit species is breeding habitat in the form of hollow-bearing trees that are living or dead *E. camaldulensis* with hollows greater than 5 cm diameter, greater than 5 m above the ground or trees with diameter at breast height (DBH) of greater than 40 cm, within 1 km of watercourses or billabongs. Trees can be isolated but within 20 km of mallee. The Project Boundary is further than 1 km from watercourses or billabongs with the only nearby sources of water being small farm dams.

Targeted surveys were conducted for regent parrot in the form of BBUS and minimum 20-minute diurnal bird surveys. Survey effort for each method is shown in **Table 2.3**.

**Table 2.3 Details of Survey Effort Conducted for Regent Parrot**

Survey Type	Oct 2022	Nov 2022	Feb 2023	Mar 2023	Apr/May 2023	July 2023	Oct 2023	Feb 2024	May 2024	Aug 2024
BBUS	-	60	63	-	60	60	69	89	90	90
Diurnal bird survey	-	20	5	-	34	15	11	24	25	18
Opportunistic transect surveys	9 days	-	8 days	7 days	-	-	-	-	-	-
Total no. of surveys	9 days	80	68 surveys/ 8 days	7 days	94	75	80	113	115	108

Shaded columns are seasons within seasonal survey requirement for regent parrot breeding period.

During the seasonal survey period for the regent parrot, a total of 219 BBUS (139.5 survey hours) and 49 diurnal bird surveys were conducted.

Searches for habitat constraints were also conducted during all biodiversity survey efforts across the BSA. These were undertaken in October 2022, February 2023 and March 2023. Where suitable habitat was identified, GPS location, tree species, hollow size and location (spout, trunk, branch) were recorded within digital survey platforms. Any hollows within suitable size for either species were revisited often during concurrent biodiversity surveys, to investigate for any changes in occupation with the latest re-visit being in August 2024 concurrent with winter BBUS.

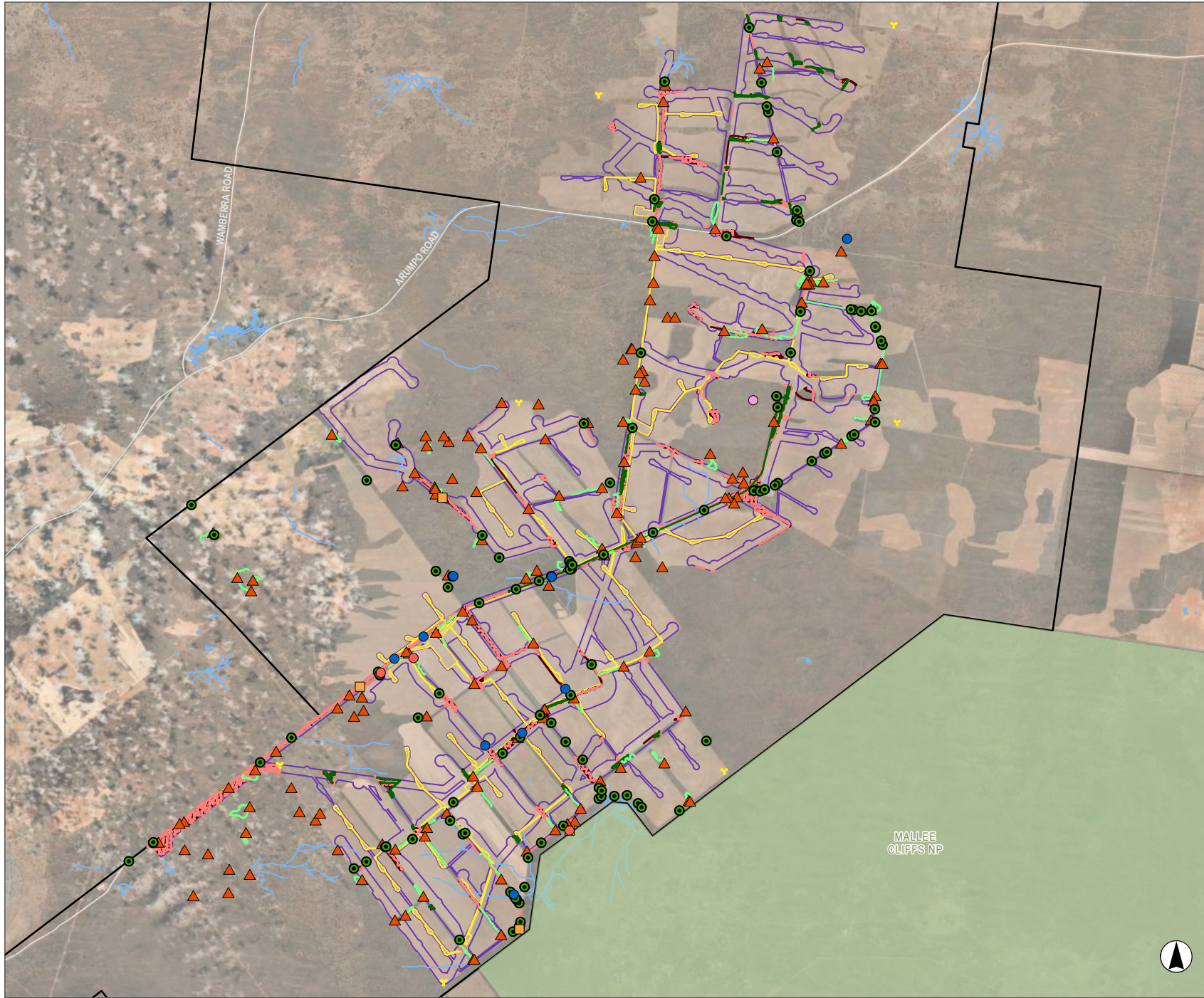
Targeted surveys and opportunistic surveys for the regent parrot are shown on **Figure 2.2** which also shows habitat features recorded in the Project Boundary.

Four (4) hollow-bearing trees were recorded during surveys with an additional hollow-bearing tree was recorded post BDAR finalisation during the August 2024 BBUS. Each of these trees contained suitable size hollows for regent parrot. Three (3) flocks of regent parrot were recorded during BBUS outside the breeding season during May 2024 surveys. Flock sizes ranged from 12 to 16 individuals. The species has not been recorded in the Project Boundary during the breeding period. Details of hollow-bearing trees recorded during surveys are provided in **Table 2.4**.

**Table 2.4 Details of Suitable Hollow-bearing Trees for Regent Parrot in the Project Boundary**

Tree species	No. of hollows <2.5 cm	No. of hollows 2.5-5 cm	No. of hollows 5-10 cm	No. of hollows 10-30 cm	No. of hollows >30 cm	Location in Project
River red gum ( <i>Eucalyptus camaldulensis</i> )	0	5	2	0	0	Approx. 770 m and 668 m east of the Development Footprint and BSA, respectively
Mallee	0	2	0	1	0	Within the BSA. Approx. 990 m west of Development Footprint
Mallee	0	0	2	0	0	Approx. 1200 m and 1046 m east of the Development Footprint and BSA, respectively
Black oak ( <i>Casuarina pauper</i> )	0	0	0	1	0	Within 50 m buffer of Development Footprint and BSA
Eucalyptus sp.	0	0	2	3	0	Approx 810 m south-west of Development Footprint and approx. 185 m west of the BSA.

Shaded cells indicate suitable hollow sizes for regent parrot

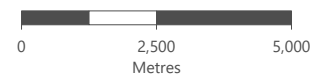


**FIGURE 2.2**

**Survey effort: Regent Parrot**

**Legend**

- Project Boundary
- Development Footprint
- Biodiversity Study Area
- NPWS Estates
- Road
- Watercourse
- Waterbody
- Habitat Features**
- Hollow Bearing Tree
- Stick Nest (likely raptor) - unoccupied
- Stick Nest (likely raven) - unoccupied
- Wedge-tailed Eagle Stick Nest - active until spring 2024 (tree fallen over)
- Targeted surveys**
- BBUS Vantage Point
- ▲ Diurnal Bird Survey
- Diurnal Bird Survey Transects
- Opportunistic surveys**
- Threatened species transects (March 2023)
- Threatened species transects (February 2023)
- Threatened species transects (October 2022)



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## 2.3 Square-tailed Kite

The seasonal survey requirement for square-tailed kite is September to January according to the TBDC.

The habitat constraint for this species credit species is breeding habitat in the form of large-stick nests in trees that are live (occasionally dead) large old trees within vegetation. These nests can be recorded year-round; however require surveys during breeding season to determine which species they belong to.

Targeted surveys were conducted for square-tailed kite in the form of BBUS and minimum 20-minute diurnal bird surveys.

Survey effort for each method is shown in **Table 2.5**.

**Table 2.5 Details of Survey Effort Conducted for Square-tailed Kite**

Survey Type	Oct 2022	Nov 2022	Feb 2023	Mar 2023	Apr/May 2023	July 2023	Oct 2023	Feb 2024	May 2024	Aug 2024
BBUS	-	60	63	-	60	60	69	89	90	90
Diurnal bird survey	-	20	5	-	34	15	11	24	25	18
Opportunistic transect surveys	9 days	-	8 days	7 days	-	-	-	-	-	-
Total no. of surveys	9 days	80	68 surveys/ 8 days	7 days	94	75	80	113	115	108

Shaded columns are seasons within seasonal survey requirement for square-tailed kite breeding period.

During the seasonal survey period for the square-tailed kite, a total of 129 BBUS (94.5 hours) and 31 diurnal bird surveys were conducted. A further 452 BBUS and 121 diurnal bird surveys were conducted outside the seasonal survey time for this species.

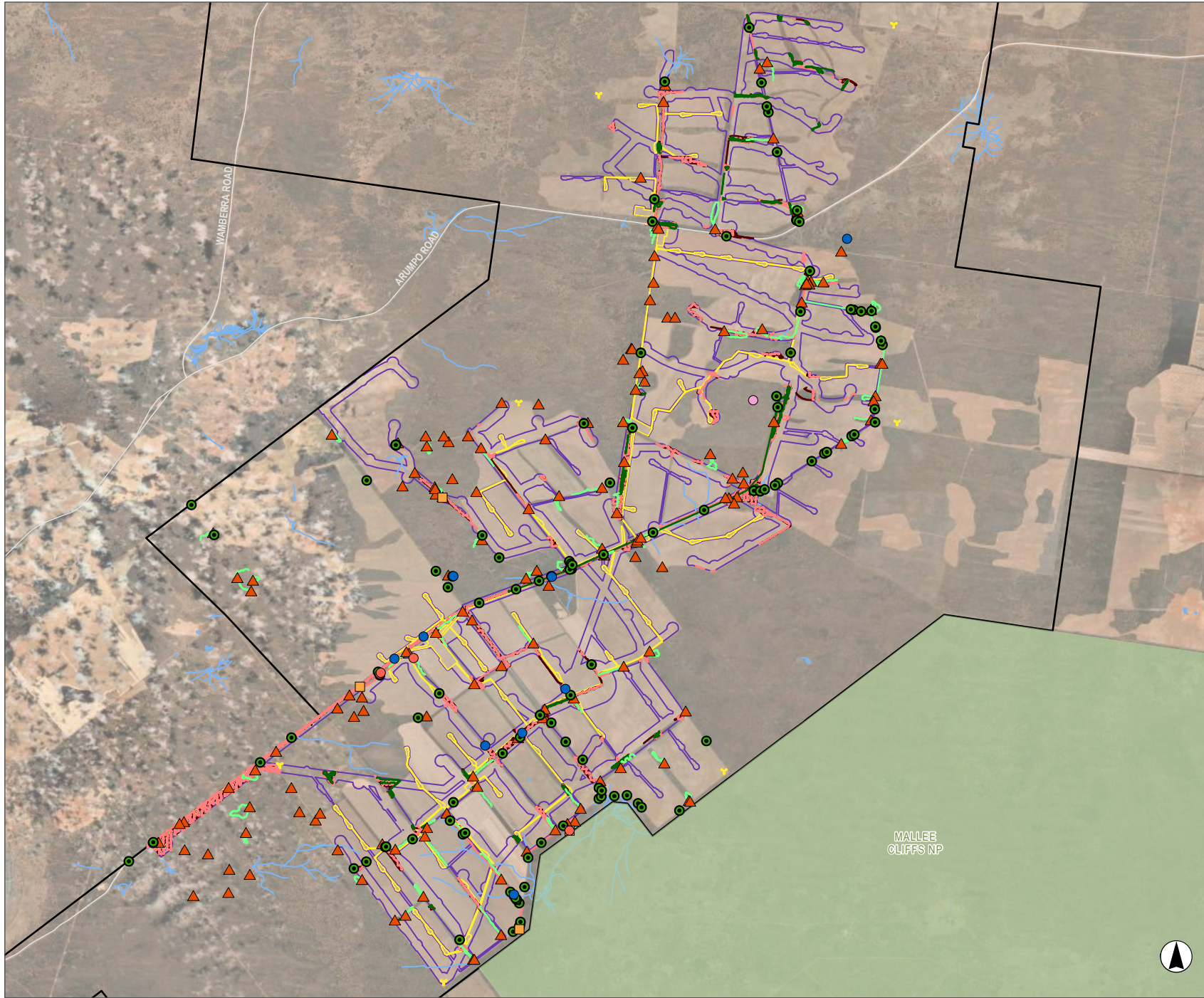
Searches for habitat constraints were also conducted during all biodiversity survey efforts across the BSA. These were undertaken in October 2022, February 2023 and March 2023. Where habitat features were identified, GPS locations and relevant ecological data was recorded within digital survey platforms. Ecologists would investigate the stick nest using 10 x 40 magnification binoculars to identify the size of the stick nest, evidence of occupation, and suspected species. Any stick nests were revisited often during concurrent biodiversity surveys, to investigate for any changes in occupation with the latest re-visit being in August 2024 concurrent with winter BBUS.

Active raptor nests have been recorded in the broader Project Boundary; however only unoccupied potential raptor nest trees have been recorded within the BSA. Identified nest trees were visited over two (2) breeding seasons in 2022 and 2023 to detect evidence of use. It is noted that an active wedgetail eagle nest within the Project Boundary was identified in 2022, however August 2024 surveys confirmed that the tree with this nest has fallen over and the nest is no longer being actively used.

Targeted surveys and opportunistic surveys for the square-tailed kite are shown on **Figure 2.3** which also shows habitat features recorded in the Project Boundary. One record of square-tailed kite was made during March 2023 surveys. No stick nests recorded during surveys were identified as being used by this species. Details of stick nests recorded during surveys are provided in **Table 2.6**.

**Table 2.6 Details of Stick Nests Recorded in the Project Boundary**

<b>Habitat Feature</b>	<b>Breeding Activity</b>	<b>Species</b>	<b>Location in Project Boundary</b>	<b>Notes</b>
Large-stick nest	Unoccupied	Likely raptor	Approx. 320 m north-west of Development Footprint; within BSA.	Inactive
Stick nest	Unoccupied	Likely raptor	Approx. 5 m north of the Development Footprint; within BSA.	Inactive
Stick nest	Unoccupied	Likely raptor	Approx. 770 m south east of Development Footprint and approx. 190 m south east of BSA.	Inactive
Stick nest	Unoccupied	Likely raptor	Approx. 30 m west of Development Footprint; within BSA.	Inactive
Stick nest	Unoccupied	Likely raptor	Approx. 1 km north of Development Footprint and approx. 1.9 km north east of BSA.	Inactive
Large-stick nest	Occupied	Wedge-tailed eagle	Approx. 1.3 km east of Development Footprint and approx. 780 m west of BSA.	Tree no longer standing
Stick nest	Unoccupied	Likely raptor	Approx. 70 m east of Development Footprint; within BSA.	Inactive
Stick nest	Unoccupied	Likely raven	Approx. 60 m east of Development Footprint; within BSA.	Inactive
Stick nest	Unoccupied	Likely raven	Approx. 70 m north east of Development Footprint; within BSA.	Inactive
Large-stick nest	Unoccupied	Likely raptor	Approx. 820 m north west of Development Footprint and approx. 785 m north west of BSA.	Inactive
Large-stick nest	Unoccupied	Likely raptor	Approx. 900 east of Development Footprint and approx. 720 m east of BSA.	Inactive for some time as evidenced by structural deterioration

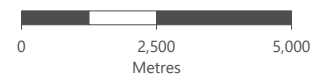


**FIGURE 2.3**

**Survey effort: Square-tailed Kite**

**Legend**

- Project Boundary
- Development Footprint
- Biodiversity Study Area
- NPWS Estates
- Road
- Watercourse
- Waterbody
- Habitat Features**
- Hollow Bearing Tree
- Stick Nest (likely raptor) - unoccupied
- Stick Nest (likely raven) - unoccupied
- Wedge-tailed Eagle Stick Nest - active until spring 2024 (tree fallen over)
- Targeted surveys**
- BBUS Vantage Point
- ▲ Diurnal Bird Survey
- Diurnal Bird Survey Transects
- Opportunistic surveys**
- Threatened species transects (March 2023)
- Threatened species transects (February 2023)
- Threatened species transects (October 2022)



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## 2.4 Little Eagle

The seasonal survey requirement for little eagle is August to October according to the TBDC. The habitat constraint for this species credit species is breeding habitat in the form of large-stick nests.

Targeted surveys were conducted for little eagle in the form of BBUS and minimum 20-minute diurnal bird surveys.

Survey effort for each method is shown in **Table 2.7**.

**Table 2.7 Details of Survey Effort Conducted for Little Eagle**

Survey Type	Oct 2022	Nov 2022	Feb 2023	Mar 2023	Apr/May 2023	July 2023	Oct 2023	Feb 2024	May 2024	Aug 2024
BBUS	-	60	63	-	60	60	69	89	90	90
Diurnal bird survey	-	20	5	-	34	15	11	24	25	18
Opportunistic transect surveys	9 days	-	8 days	7 days	-	-	-	-	-	-
Total no. of surveys/days	9 days	80	68 surveys/8 days	7 days	94	75	80	113	115	108

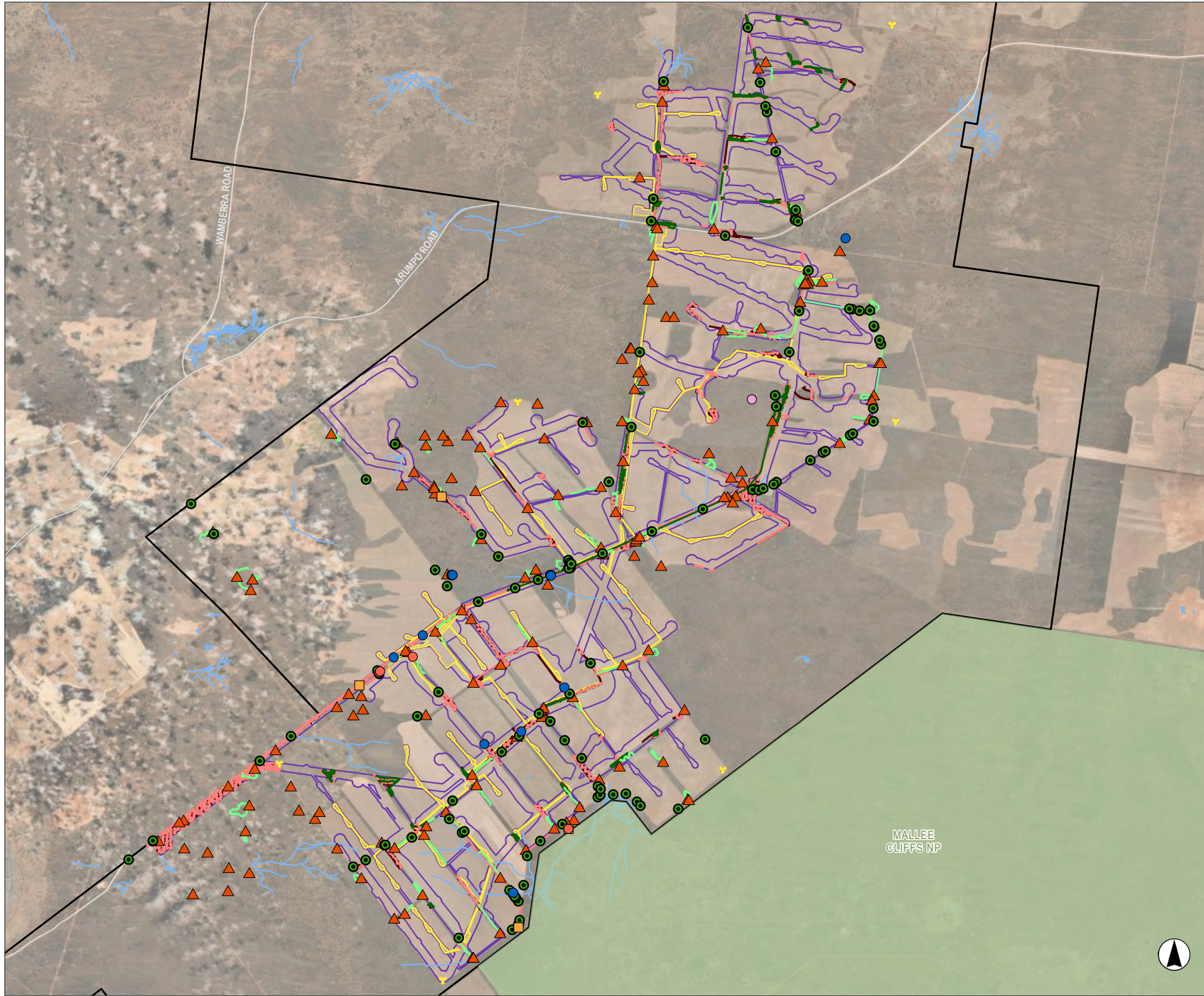
Shaded columns are seasons within seasonal survey requirement for little eagle breeding period.

During the seasonal survey period for the little eagle, a total of 159 BBUS (79.5 survey hours) and 29 diurnal bird surveys were conducted. A further 422 BBUS and 123 diurnal bird surveys were conducted outside the seasonal survey time for this species.

Searches for habitat constraints were also conducted during all biodiversity survey efforts across the BSA. These were undertaken in October 2022, February 2023 and March 2023. Where habitat features were identified, GPS locations and relevant ecological data was recorded within digital survey platforms. Ecologists would investigate the stick nest using 10 x 40 magnification binoculars to identify the size of the stick nest, evidence of occupation, and suspected species. Any stick nests were revisited often during concurrent biodiversity surveys, to investigate for any changes in occupation with the latest re-visit being in August 2024 concurrent with winter BBUS.

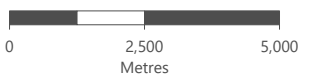
Active raptor nests have been recorded in the broader Project Boundary; however only unoccupied potential raptor nest trees have been recorded within the BSA. Identified nest trees were visited over two breeding seasons to detect evidence of use. It is noted that an active wedgetail eagle nest within the Project Boundary was identified in 2022, however August 2024 surveys confirmed that the tree with this nest has fallen over and the nest is no longer being actively used.

Targeted surveys and opportunistic surveys for the little eagle are shown on **Figure 2.4** which also shows habitat features recorded in the Project Boundary. Three (3) records of little eagle were made during surveys; two (2) individuals during December 2022 surveys and one (1) individual in February 2023 surveys. No stick nests recorded during surveys were identified as being used by this species. Details of stick nests recorded during surveys are provided in **Table 2.6**.



**FIGURE 2.4**  
Survey effort: Little Eagle

- Legend**
- Project Boundary
  - Development Footprint
  - Biodiversity Study Area
  - NPWS Estates
  - Road
  - Watercourse
  - Waterbody
- Habitat Features**
- Hollow Bearing Tree
  - Stick Nest (likely raptor) - unoccupied
  - Stick Nest (likely raven) - unoccupied
  - Wedge-tailed Eagle Stick Nest - active until spring 2024 (tree fallen over)
- Targeted surveys**
- BBUS Vantage Point
  - ▲ Diurnal Bird Survey
  - Diurnal Bird Survey Transects
- Opportunistic surveys**
- Threatened species transects (March 2023)
  - Threatened species transects (February 2023)
  - Threatened species transects (October 2022)



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## 2.5 White-bellied Sea-eagle

The seasonal survey requirement for white-bellied sea-eagle is July to December according to the TBDC.

The habitat constraint for this species credit species is breeding habitat in the form of large-stick nests that are in living or dead mature trees within suitable vegetation within 1 km of a rivers, lakes, large dams or creeks, wetlands and coastlines.

Targeted surveys were conducted for white-bellied sea-eagle in the form of BBUS and minimum 20-minute diurnal bird surveys.

Survey effort for each method is shown in **Table 2.8**.

**Table 2.8 Details of Survey Effort Conducted for White-bellied Sea-eagle**

Survey Type	Oct 2022	Nov 2022	Feb 2023	Mar 2023	Apr/May 2023	Jul 2023	Oct 2023	Feb 2024	May 2024	Aug 2024
BBUS	-	60	63	-	60	60	69	89	90	90
Diurnal bird survey	-	20	5	-	34	15	11	24	25	18
Opportunistic transect surveys	9 days	-	8 days	7 days	-	-	-	-	-	-
Total no. of surveys/days	9 days	80	68 survey days/ 8 days	7 days	94	75	80	113	115	108

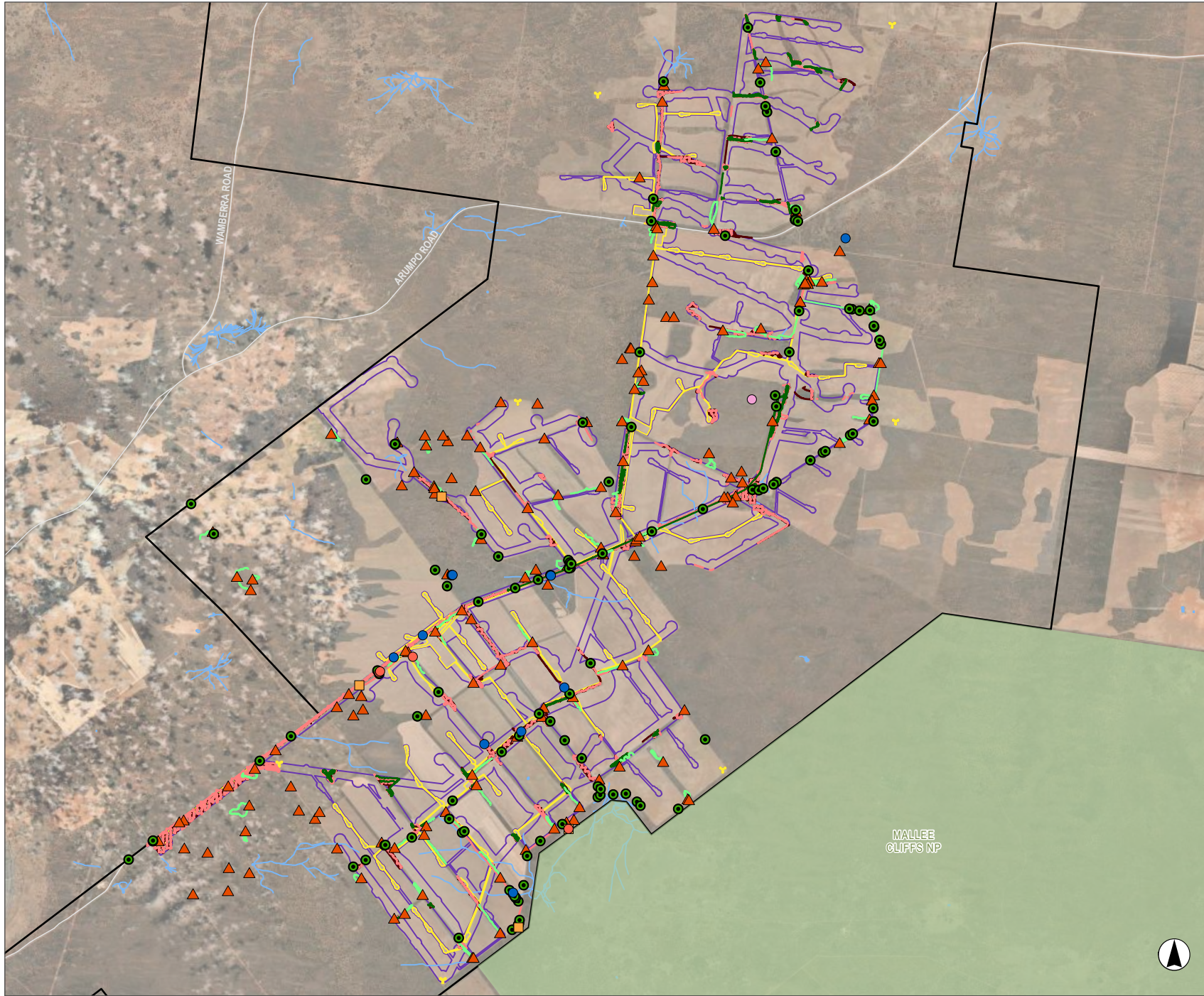
Shaded columns are seasons within seasonal survey requirement for white-bellied sea-eagle breeding period.

During the seasonal survey period for the white-bellied sea-eagle, a total of 279 BBUS (199.5 survey hours) and 64 diurnal bird surveys were conducted. A further 392 BBUS and 106 diurnal bird surveys were conducted outside the seasonal survey time for this species.

Searches for habitat constraints were also conducted during all biodiversity survey efforts across the BSA. These were undertaken in October 2022, February 2023 and March 2023. Where habitat features were identified, GPS locations and relevant ecological data was recorded within digital survey platforms. Ecologists would investigate the stick nest using 10 x 40 magnification binoculars to identify the size of the stick nest, evidence of occupation, and suspected species. Any stick nests were revisited often during concurrent biodiversity surveys, to investigate for any changes in occupation with the latest re-visit being in August 2024 concurrent with winter BBUS.

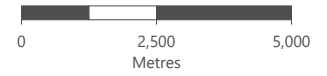
Active raptor nests have been recorded in the broader Project Boundary; however only unoccupied potential raptor nest trees have been recorded within the BSA. Identified nest trees were visited over two breeding seasons to detect evidence of use. It is noted that an active wedgetail eagle nest within the Project Boundary was identified in 2022, however August 2024 surveys confirmed that the tree with this nest has fallen over and the nest is no longer being actively used.

Targeted surveys and opportunistic surveys for the white-bellied sea-eagle are shown on **Figure 2.5** which also shows habitat features recorded in the Project Boundary. White-bellied sea-eagle was not recorded during any survey and no stick nests recorded during surveys were identified as being used by this species. Details of stick nests recorded during surveys are provided in **Table 2.6**.



**FIGURE 2.5**  
Survey effort: White-bellied Sea-eagle

- Legend**
- Project Boundary
  - Development Footprint
  - Biodiversity Study Area
  - NPWS Estates
  - Road
  - Watercourse
  - Waterbody
- Habitat Features**
- Hollow Bearing Tree
  - Stick Nest (likely raptor) - unoccupied
  - Stick Nest (likely raven) - unoccupied
  - Wedge-tailed Eagle Stick Nest - active until spring 2024 (tree fallen over)
- Targeted surveys**
- BBUS Vantage Point
  - ▲ Diurnal Bird Survey
  - Diurnal Bird Survey Transects
- Opportunistic surveys**
- Threatened species transects (March 2023)
  - Threatened species transects (February 2023)
  - Threatened species transects (October 2022)



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## 2.6 Black-breasted Buzzard

The seasonal survey requirement for black-breasted buzzard is September to November according to the TBDC.

The habitat constraint for this species credit species is breeding habitat in the form of large-stick nests within 40 m of riparian woodland on inland watercourses/waterholes containing dead or dying eucalypts. The Project Boundary does not contain riparian woodland on inland watercourses/waterholes and the only nearby water sources exist in the form of small farm dams.

Targeted surveys were conducted for black-breasted buzzard in the form of BBUS and minimum 20-minute diurnal bird surveys.

Survey effort for each method is shown in **Table 2.9**.

**Table 2.9 Details of Survey Effort Conducted for Black-breasted Buzzard**

Survey Type	Oct 2022	Nov 2022	Feb 2023	Mar 2023	Apr/May 2023	July 2023	Oct 2023	Feb 2024	May 2024	Aug 2024
BBUS	-	60	63	-	60	60	69	89	90	90
Diurnal bird survey	-	20	5	-	34	15	11	24	25	18
Opportunistic transect surveys	9 days	-	8 days	7 days	-	-	-	-	-	-
Total no. of surveys/days	9 days	80	68 surveys/8 days	7 days	94	75	80	113	115	108

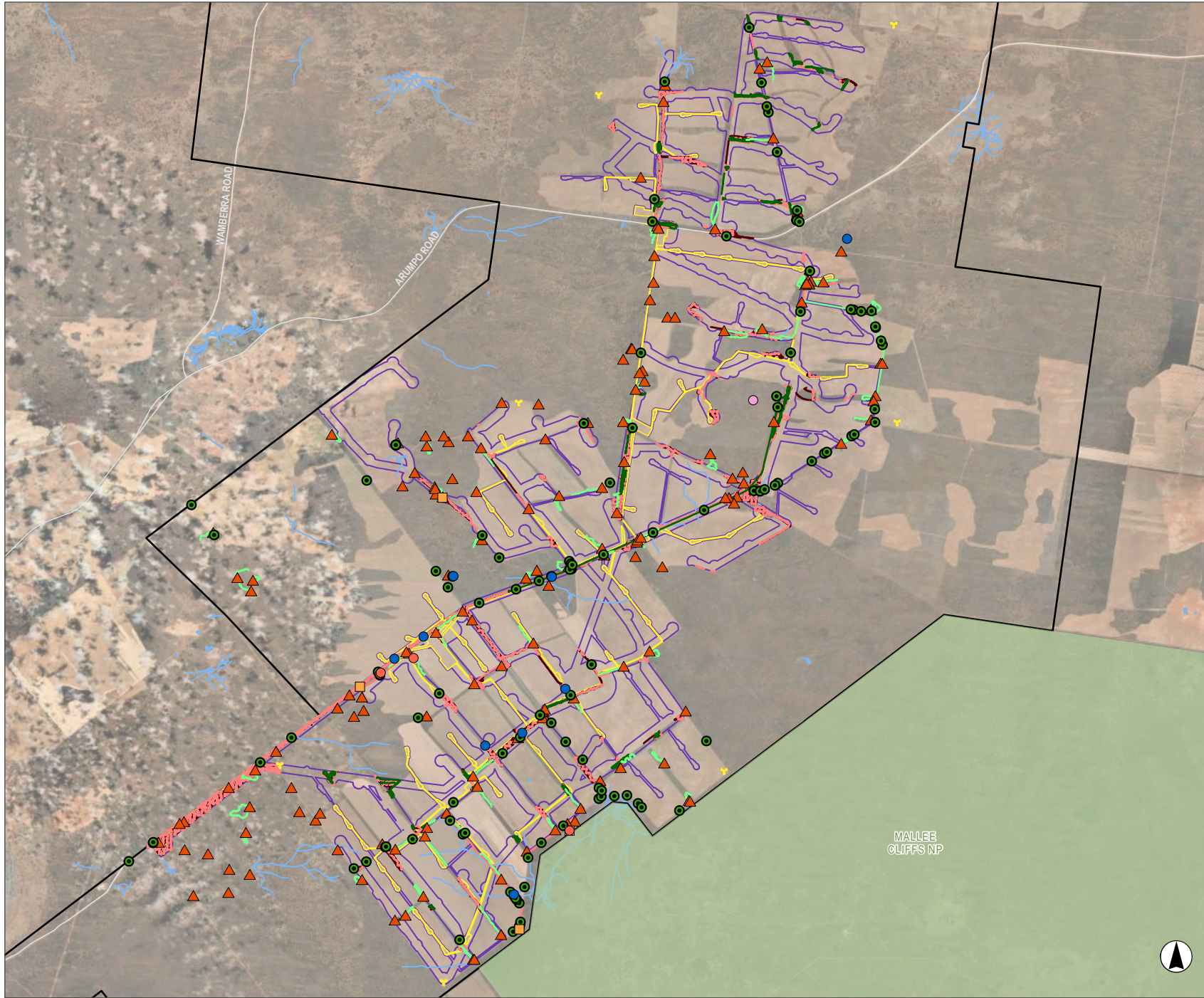
Shaded columns are seasons within seasonal survey requirement for black-breasted buzzard breeding period.

During the seasonal survey period for the black-breasted buzzard, a total of 129 BBUS (94.5 survey hours) and 31 diurnal bird surveys were conducted. A further 452 BBUS and 121 diurnal bird surveys were conducted outside the seasonal survey time for this species.

Searches for habitat constraints were also conducted during all biodiversity survey efforts across the BSA. These were undertaken in by two (2) ecologists in suitable habitat over 24 days in October 2022, February 2023 and March 2023. Where habitat features were identified, GPS locations and relevant ecological data was recorded within digital survey platforms. Ecologists would investigate the stick nest using 10 x 40 magnification binoculars to identify the size of the stick nest, evidence of occupation, and suspected species. Any stick nests were revisited often during concurrent biodiversity surveys, to investigate for any changes in occupation with the latest re-visit being in August 2024 concurrent with winter BBUS.

Active raptor nests have been recorded in the broader Project Boundary; however only unoccupied potential raptor nest trees have been recorded within the BSA. Identified nest trees were visited over two (2) breeding seasons to detect evidence of use. It is noted that an active wedgetail eagle nest within the Project Boundary was identified in 2022, however August 2024 surveys confirmed that the tree with this nest has fallen over and the nest is no longer being actively used.

Targeted surveys and opportunistic surveys for the black-breasted buzzard are shown on **Figure 2.6** which also shows habitat features recorded in the Project Boundary. Black-breasted buzzard was not recorded during any survey and no stick nests recorded during surveys were identified as being used by this species. Details of stick nests recorded during surveys are provided in **Table 2.6**.

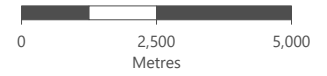


**FIGURE 2.6**

**Survey effort: Black-breasted Buzzard**

**Legend**

- Project Boundary
- Development Footprint
- Biodiversity Study Area
- NPWS Estates
- Road
- Watercourse
- Waterbody
- Habitat Features**
- Hollow Bearing Tree
- Stick Nest (likely raptor) - unoccupied
- Stick Nest (likely raven) - unoccupied
- Wedge-tailed Eagle Stick Nest - active until spring 2024 (tree fallen over)
- Targeted surveys**
- BBUS Vantage Point
- ▲ Diurnal Bird Survey
- Diurnal Bird Survey Transects
- Opportunistic surveys**
- Threatened species transects (March 2023)
- Threatened species transects (February 2023)
- Threatened species transects (October 2022)



Scale 1:140,000 at A4  
GDA2020 MGA Zone 54



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## 3.0 Conclusion

The survey effort undertaken for candidate bird species for the Mallee Wind Farm Project demonstrates a comprehensive and targeted approach to meeting the requirements of Item 5.1 of the RtS. Across all candidate threatened bird species including pink cockatoo, regent parrot, square-tailed kite, little eagle, white-bellied sea-eagle and black-breasted buzzard, surveys were conducted in accordance with the BAM 2020 and TBDC.

Efforts included extensive diurnal bird surveys, BBUS, opportunistic transect surveys, and detailed habitat constraint searches. These were strategically timed to align with seasonal survey windows and were repeated across multiple seasons to ensure robustness. Habitat features were revisited to monitor changes in occupation, with the latest assessments conducted in August 2024.

The volume, timing, and methodological rigor of the surveys, alongside the identification and documentation of suitable habitat features, provide strong evidence that the survey effort is adequate and consistent with regulatory expectations.

**Umwelt is therefore seeking formal endorsement from CPHR that the survey effort information provided in this briefing note is adequate and that no further surveys are required for the pink cockatoo, regent parrot, square-tailed kite, little eagle, white-bellied sea-eagle or black-breasted buzzard.**



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