

Passifloraceae	<i>Passiflora edulis*</i>	Common Passionfruit		1							0.1							0.1
Iridaceae	<i>Paterosnia glabrata</i>	Leafy Purple-flag	Forb (FG)	1				0.2	0.2									
Proteaceae	<i>Persoonia levis</i>	Broad-leaved Geebung	Shrub (SG)	1		2			0.5								0.5	
Proteaceae	<i>Persoonia linearis</i>	Narrow-leaved Geebung	Shrub (SG)	1					0.8	0.2		1	0.2					0.3
Thymelaeaceae	<i>Pimelea linifolia</i>	Slender Rice Flower	Shrub (SG)	1													0.5	
Pittosporaceae	<i>Pittosporum undulatum</i>	Sweet Pittosporum	Shrub (SG)	1		0.5	0.5		0.3			0.2	0.1	0.5		0.5		2
Fabaceae	<i>Platylobium formosum</i>	Handsome Flat-pea	Shrub (SG)	1					10	10		10	8					0.5
Poaceae	<i>Poa affinis</i>		Grass & grasslike (GG)	1						10			5					
Podocarpaceae	<i>Podocarpus elatus</i>	Plum Pine	Tree (TG)	1							0.1							
Fabaceae	<i>Podolobium ilicifolium</i>	Prickly Shaggy Pea	Shrub (SG)	1					0.1	0.2								
Araliaceae	<i>Polyscias sambucifolia</i>	Elderberry Panax	Shrub (SG)	1		1		0.5	0.1	5	0.2		0.2	0.2	0.2	2	1	0.1
Acanthaceae	<i>Pseuderanthemum variabile</i>	Pastel Flower	Forb (FG)	1							0.5							0.2
Dennstaedtiaceae	<i>Pteridium esculentum</i>	Bracken	Fern (EG)	1	0.1	3		0.2	3	0.3		5	2					
Fabaceae	<i>Pultenaea daphnoides</i>	Large-leaf Bush Pea	Shrub (SG)	1									0.1					
Fabaceae	<i>Pultenaea rosmarinifolia</i>		Shrub (SG)	1		0.1									0.1			
Fabaceae	<i>Pultenaea villosa</i>	Hairy Bush-pea	Shrub (SG)	1									0.1					
Uvulariaceae	<i>Schelhammera undulata</i>	Lilac Lily	Forb (FG)	1						0.1			0.1					
Smilacaceae	<i>Smilax australis</i>	Lawyer Vine	Other (OG)	1							0.1		0.1					0.1
Proteaceae	<i>Lomatia silaifolia</i>	Crinkle Bush	Shrub (SG)	1						0.1		0.2						
Proteaceae	<i>Persoonia laurina</i>	Laurel Geebung	Shrub (SG)	1		0.5		0.5										
Smilacaceae	<i>Smilax glycyphylla</i>	Sarsaparilla	Other (OG)	1		0.1	0.1	2				0.1	0.5		1		0.2	
Solanaceae	<i>Solanum mauritianum*</i>	Wild Tobacco		1							0.1							
Solanaceae	<i>Solanum nigrum*</i>	Black Nightshade, Black-berry Nightshade				1								0.1				
Poaceae	<i>Stenotaphrum secundatum*</i>	Buffalo Grass		1												3		
Menispermaceae	<i>Stephania japonica</i>	Snake vine	Other (OG)	1							0.3							
Strelitziaceae	<i>Strelitzia juncea*</i>	Bird of Paradise		1														0.1
Arecaceae	<i>Syagrus romanzoffiana*</i>	Cocos Palm		1					0.2		0.2							
Myrtaceae	<i>Syncarpia glomulifera</i>	Turpentine	Tree (TG)	1						15	20		10					5
Tremandraceae	<i>Tetradlea juncea</i>	Black-eyed Susan	Shrub (SG)	1		0.1		0.5	0.1	0.1		0.1			0.1	1	0.1	
Poaceae	<i>Themeda triandra</i>	Kangaroo Grass	Grass & grasslike (GG)	1		3		0.2	10	0.2		3		10	1	0.2		0.2
Commelinaceae	<i>Tradescantia fluminensis*</i>	Wandering Jew		1							25							
Apocynaceae	<i>Tylophora paniculata</i>	Thin-leaved Tylophora	Other (OG)	1									0.1					
Asteraceae	<i>Vernonia cinerea</i>		Forb (FG)	1												0.1		
Xanthorrhoeaceae	<i>Xanthorrhoea latifolia</i>		Other (OG)	1				20	0.3									
Xanthorrhoeaceae	<i>Xanthorrhoea macronema</i>		Other (OG)	1		5						15	5	5		2	15	
				142	11	37	19	38	47	46	39	29	42	28	33	38	37	43

	* indicates exotic			18	0	1	6	1	4	5	13	3	2	3	2	3	2	4
	^ indicates non-endemic native eg WA or SA species not naturally occurring				0	0.1	3.6	0.1	0.9	4.7	95.8	1.4	6	2.6	0.3	5	15.5	0.5
					0	0.1	3.6	0.1	0.7	4.7	95	1.4	6	2.6	0.3	5	15.5	0.3
			<b>Composition Condition</b>	<b>Tree (TG)</b>	2	7	3	6	6	7	8	4	6	6	7	7	6	6
				<b>Shrub (SG)</b>	6	13	3	12	14	11	2	10	13	8	12	9	13	10
				<b>Grass &amp; grasslike (GG)</b>	1	7	2	7	5	6	3	4	5	3	6	7	4	6
				<b>Forb (FG)</b>	0	2	0	4	6	6	5	2	2	2	2	6	3	5
				<b>Fern (EG)</b>	1	2	2	3	2	4	3	1	2	1	1	1	1	1
				<b>Other (OG)</b>	1	5	3	5	10	7	5	5	12	4	3	5	8	11
			<b>Structure Condition</b>	<b>Tree (TG)</b>	45	51.2	10.5	67.2	49.5	57.7	42.3	45.2	37.5	66	38.7	45.3	35.8	22.2
				<b>Shrub (SG)</b>	32	22.9	60.7	17.4	13.6	26.2	0.3	32.8	29.5	4.9	6	16.9	47.4	4.1
				<b>Grass &amp; grasslike (GG)</b>	85	17.4	3.5	42.6	23.3	14.8	4.1	16.1	23.5	11.5	31.9	9.8	10.9	1.1
				<b>Forb (FG)</b>	0	0.3	0	3.5	1.8	2.3	1.2	1.2	0.2	1.5	0.4	1.2	0.4	5.6
				<b>Fern (EG)</b>	0.1	3.1	4.5	0.5	3.1	42.4	7.1	5	2.3	0.1	0.1	0.1	0.2	0.1
				<b>Other (OG)</b>	0.1	5.5	8.3	22.4	4.6	1.9	1	17.3	12.3	5.3	1.3	2.9	16.6	2.4
				<b>High Threat Exotics</b>	0	0.1	3.6	0.1	0.7	4.7	95	1.4	6	2.6	0.3	5	15.5	0.3

Format	No. Large Trees	No. HBTs	Avge Litter Cover	Length of Fallen Logs (m)	Stem Class - Presence (1 = present 0 = absent)							High Threat Exotics % cover
					5 - 9	10 - 19	20 - 29	30 - 49	50 - 79	80+	Regen	
	Number	Number	Number with 1 decimal point	Number with 1 decimal point	[0,1]	[0,1]	[0,1]	[0,1]	[0,1]	[0,1]	[0,1]	Number with 1 decimal point
Plot 1	0	0	74	0.0	1	1	1	1	0	0	1	0
Plot 2	4	0	88	0.0	1	1	1	1	1	0	1	0.1
Plot 3	1	2	90	38	1	1	1	1	0	1	1	3.6
Plot 4	2	1	59	3.0	0	0	0	0	0	0	0	0.1
Plot 5	1	0	50	2.5	1	1	1	1	1	0	1	0.7
Plot 6	1	0	15	0.5	1	1	1	1	1	0	1	4.7
Plot 7	1	0	85	26	1	1	1	1	1	0	1	110
Plot 8	2	1	70	14	1	1	1	1	1	0	1	1.4
Plot 9	1	2	95	15	1	1	1	1	1	0	1	6
Plot 10	1	0	35	2	1	1	1	1	1	0	1	2.6

Plot 11	0	0	80	7	1	1	1	1	0	0	1	0.3
Plot 12	1	0	75	3	1	1	1	1	0	1	1	5
Plot 13	1	1	85	5	1	1	1	1	1	0	1	15.5
Plot 14	0	1	70	18	1	1	1	1	0	0	1	0.3

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## **Appendix B – Management Plan**

## Attachment 4: Management Plan

### Instructions for completing the Biodiversity Stewardship Site Management Plan template

This Biodiversity Stewardship Site Management Plan template is to be filled in by the assessor, reviewed by the Owner and included in the Biodiversity Stewardship Site Assessment Report submitted to the BCT as part of an application to establish a Biodiversity Stewardship Site. The standard words and format provided in this template must be used for the management actions.

The BCT will review the management plan and make any necessary amendments in consultation with the Owner. The management plan will be incorporated into the Biodiversity Stewardship Agreement.

There are seven sections to this template:

- Section 1: Management Actions
- Section 2: Fire for Conservation Management Plan
- Section 3: Native Vegetation Management Plan
- Section 4: Threatened Species Habitat Management Plan
- Section 5: Integrated Feral Pest Management Plan
- Section 6: Integrated Weed Management Plan
- Section 7: Monitoring Plan

Orange boxes like this one provide instructions and examples and will be deleted by the BCT before the Biodiversity Stewardship Agreement is processed.

Yellow highlighted fields need to be customised by the Owner. Usually the Owner needs to provide the information required; sometimes the Owner will need to delete or retain provided options. It is important to ensure that, especially where fields are customised, that the management actions are certain, clear and specific so that it is clear what the requirements of the actions are.

The format and wording of standard and additional management actions must not be changed. Enter site specific information into the yellow highlighted fields as required.

Management actions are divided into 'required management actions' and 'active restoration management actions' in accordance with Subsections 13.3.2 and 13.3.3 of the BAM. Required management actions are those management actions that must be implemented on the biodiversity stewardship site to achieve the predicted management gain. Active restoration management actions are those management actions in addition to the required management actions that may be used to create biodiversity credits at a biodiversity stewardship site in addition to the biodiversity credits created for the required management actions.

Both required management actions and active restoration management actions, when included in this management plan for a biodiversity stewardship site, must be undertaken in accordance with the management plan.

## Definitions

In this Management Plan, unless a contrary intention appears, a capitalised word or words has the meaning given in the corresponding row in the table below.

Other terms are defined in the Dictionary.

Word/s	Meaning
<b>Biodiversity Stewardship Site Assessment Report</b>	The document described in <b>Error! Reference source not found.</b>
<b>Biodiversity Stewardship Site Management Actions Map</b>	The map showing Management Zones, management features (e.g. firetrails) and the location of Management Actions in the Biodiversity Stewardship Site
<b>Ecological Burn</b>	Burning of Native Vegetation undertaken to help stimulate Native Plant regeneration, control weeds and enhance Biodiversity
<b>Ecological Burn Map</b>	The map included in the Fire for Conservation Management Plan identifying the areas of the Biodiversity Stewardship Site to be burnt, based on broad habitat zones, during each Ecological Burn
<b>Ecological Burn Unit</b>	An area within the Biodiversity Stewardship Site comprised of one or more Management Zones over which the same regime of ecological burning is applied
<b>Ecosystem Credit</b>	The meaning given in the Biodiversity Assessment Method  Note: This definition may change from time to time, with changes in the Biodiversity Assessment Method, but on the Agreement Date the meaning was: "a measurement of the value of threatened ecological communities, threatened species habitat for species that can be reliably predicted to occur within a PCT, and PCTs generally. Ecosystem credits measure the loss in biodiversity values at a development site and the gain in biodiversity values at a biodiversity stewardship site"
<b>Feral Pest</b>	Pest animal species not native to Australia including fox, cat, pig, goat, horse, avian pests and other miscellaneous species
<b>Fertiliser</b>	The meaning given in the <i>Biosecurity Act 2015</i> (NSW)  Note: This definition may change from time to time with changes in Law, but on the Agreement Date this meaning was: "(a) a substance that consists of or contains nitrogen, phosphorus or potassium (or any combination of nitrogen, phosphorus or potassium) and is manufactured, represented, sold or used as a means for directly or indirectly supplying nutriment for the purpose of enhancing the development, productivity, quality or reproductive capacity of vegetation, other than a substance excluded from this definition by the regulations, or (b) any other substance prescribed by the regulations to be a fertiliser"
<b>Fire for Conservation Management Plan</b>	The plan titled "Fire for Conservation Management Plan" included in Section 2 of this Management Plan
<b>High Threat Exotic Plant Cover</b>	The meaning given to it in the Biodiversity Assessment Method  Note: The definition may change from time to time, with changes in the Biodiversity Assessment Method, but on the Agreement Date this meaning was "plant cover composed of vascular plants not native to Australia that if not controlled will invade and outcompete native plant species"

<b>Word/s</b>	<b>Meaning</b>
<b>High Threat Exotic Species</b>	A vascular plant not native to Australia that if not controlled will invade and outcompete Native Plant species. Also referred to in this Attachment as High Threat Weed Species
<b>Hollow-dependent Threatened Species</b>	Threatened Species for which tree hollows (sometimes of a particular size or with particular characteristics) are a key component of their habitat and are critical for the persistence of that species in the landscape
<b>Integrated Feral Pest Management Plan</b>	The plan titled “Integrated Feral Pest Management Plan” included in Section 5 of this Management Plan
<b>Integrated Weed Management Plan</b>	The plan titled “Integrated Weed Management Plan” included in Section 6 of this Management Plan
<b>Large Woody Debris</b>	Large, fallen dead tree branches and trunks
<b>Living Ground Cover</b>	All living vegetation below 1m in height including native and non-native ground cover species
<b>Local Land Services</b>	The statutory corporation established under the <i>Local Land Services Act 2013</i> (NSW).
<b>Monitoring Plan</b>	The plan titled “Monitoring Plan” included in Section 7 of this Management Plan
<b>Native Vegetation Management Plan</b>	The plan titled “Native Vegetation Management Plan” included in Section 3 of this Management Plan
<b>Other Weed Species</b>	A plant not native to Australia and not otherwise identified as a High Threat Weed Species
<b>PCT</b>	Plant Community Type
<b>Pesticide</b>	<p>The meaning given in Section 5 of the <i>Pesticides Act 1999</i> (NSW)</p> <p>Note: This definition may change from time to time with changes in Law, but on the Agreement Date this meaning was:</p> <p>“(a) an agricultural chemical product (within the meaning of the Agvet Code), or  (b) a veterinary chemical product (within the meaning of the Agvet Code) that:  (i) is represented as being suitable for, or is manufactured, supplied or used for, the external control of ectoparasites of animals, and  (ii) is concentrated and requires dilution or mixing in water before use, and  (iii) is not prescribed under the <a href="#">Stock Medicines Act 1989</a> as a low-risk veterinary chemical product.</p> <p>...a pesticide continues to be regarded as a pesticide even when it is mixed with some other substance (whether or not the other substance is a pesticide). However, a pesticide does not include a prescribed mixture or a mixture of a prescribed class or description”</p>
<b>Photo Point</b>	A location within the Biodiversity Stewardship Site and identified in Part 9.2 of Section 1 of this Management Plan at which a series of photographs is taken in all directions (360°) for the purpose of monitoring change in vegetation condition over time
<b>Rubbish</b>	Any anthropogenic waste material other than that identified in this Management Plan as being used to achieve a specific biodiversity management purpose

<b>Word/s</b>	<b>Meaning</b>
<b>Sediment Trap</b>	A temporary or permanent structure used to collect, trap and store sediment to prevent entry of sediment to a waterway
<b>Species Credits</b>	The meaning given in the Biodiversity Assessment Method.  Note: This definition may change from time to time with changes in the Biodiversity Assessment Method, but on the Agreement Date the meaning was “the class of biodiversity credits created or required for the impact on threatened species that cannot be reliably predicted to use an area of land based on habitat surrogates. Species that require species credits are listed in the Threatened Biodiversity Data Collection”
<b>Species Polygon</b>	An identification of the area or count and location of the suitable habitat for a Species Credit species on the Biodiversity Stewardship Site, prepared as part of the Biodiversity Stewardship Site Assessment Report
<b>Stock</b>	The meaning given in the <i>Local Land Services Act 2013 (NSW)</i> , and including any animal declared to be stock under the <i>Local Land Services Regulation 2014 (NSW)</i>  Note: This definition may change from time to time with changes in Law, but on the Agreement Date the meaning was: “cattle, horses, sheep, goats, camels, alpacas, llamas, pigs, deer, ostriches, emus or, in relation to any specified provision or provisions of this Act, any other kind of animal declared by the regulations to be stock for the purposes of that provision or those provisions”
<b>Targeted Supplementary Planting</b>	Planting of locally indigenous native plants in one or more areas of the Biodiversity Stewardship Site to: a) increase Native Plant species richness and foliage cover of a vegetation zone above the level determined for management gain, and/or b) restore or enhance the native plant species composition and structure of recognisable PCTs, and/or c) improve habitat suitability for specific Threatened Species
<b>Threatened Biodiversity Data Collection</b>	The meaning given to it in the Biodiversity Assessment Method  Note: This definition may change from time to time with changes in the Biodiversity Assessment Method but on the Agreement Date the meaning was “part of the BioNet database, published by DPIE (previously the Office of Environment and Heritage) and accessible from the BioNet website at <a href="http://www.bionet.nsw.gov.au">www.bionet.nsw.gov.au</a> ”
<b>Threatened Species Habitat Management Plan</b>	The plan titled “Threatened Species Habitat Management Plan” included in Section 4 of this Management Plan
<b>Threatened Species Habitat map</b>	The map of Threatened Species locations and Species Polygons within the Biodiversity Stewardship Site
<b>Vegetation Integrity Survey Plot</b>	The meaning given to ‘plot’ in the Biodiversity Assessment Method and described in Section 5.3.4 of the Biodiversity Assessment Method  Note: This definition may change from time to time with changes in the Biodiversity Assessment Method, but on the Agreement Date the meaning was “an area within a vegetation zone in which site attributes are assessed”
<b>Vegetation Zone</b>	The meaning given in the Biodiversity Assessment Method  Note: This definition may change from time to time with changes in the Biodiversity Assessment Method, but on the Agreement Date the meaning was “a relatively homogenous area of native vegetation on a development site, land to be biodiversity certified or a biodiversity stewardship site that is the same PCT and broad condition state”







# Section 1: Management Actions

Management Actions		
<p>Biodiversity Stewardship Site Management Actions Map</p> <p>Figure 1 – Weed Density Map</p> <p>Figure 2 – Boundary Management Map</p>		
<p>The Biodiversity Stewardship Site Management Actions Map is to be produced so that the following features can be clearly identified:</p> <ul style="list-style-type: none"> <li>(a) Vegetation Zones</li> <li>(b) Management Zones</li> <li>(c) Management features (e.g. artificial structures on waterways, erosion, rubbish, fencing, gates, firetrails, access tracks, infrastructure and built assets to be retained).</li> <li>(d) Location of Management Actions in the Biodiversity Stewardship Site.</li> </ul>		
Part 1	Fire management	Timing
1.1 (Required management action)	The Owner must implement and comply with the Fire for Conservation Management Plan.	Ongoing from Agreement Date.




<b>Management Actions</b>		
<b>Part 2</b>	<b>Grazing management</b>	<b>Timing</b>
2.1 (Required management action)	(a) The Owner must not graze Stock on the Biodiversity Stewardship Site.	Ongoing from Agreement Date.

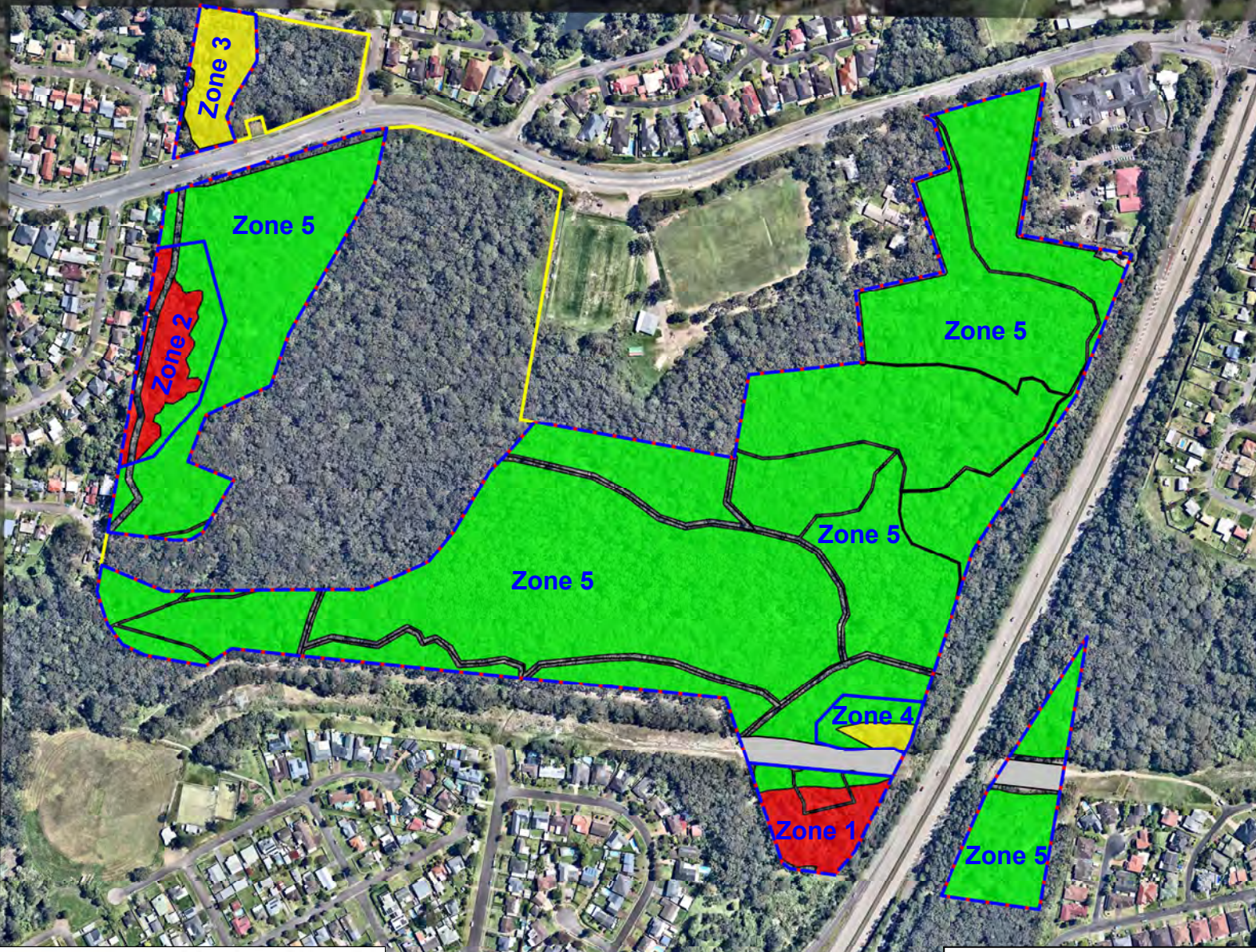
Disclaimer: While all reasonable care has been taken to ensure the information shown on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.

### Legend

-  Stewardship Site Boundary
-  Adjacent Development
-  Easements
-  Weed Management Zones

### Weed Density

-  High
-  Moderate
-  Negligible



Note:  
1. Boundaries are not survey accurate  
2. Do not scale off this plan

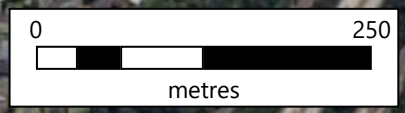


Figure 1 - Weed Management Zones

Date: December 2022






Location: Myall Road, Hillsborough, NSW

Client: Landcom Holding





AEP Ref: 3043

Disclaimer: While all reasonable care has been taken to ensure the information shown on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.

### Legend

-  Cadastre
-  Adjacent Development
-  Easements
-  Firetrail
-  Walking Trail

### Fencelines

-  Unfenced
-  Existing fences
-  Proposed Fence/  
Excluded walking tracks to be fenced
-  Proposed Gates

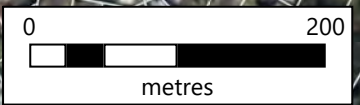
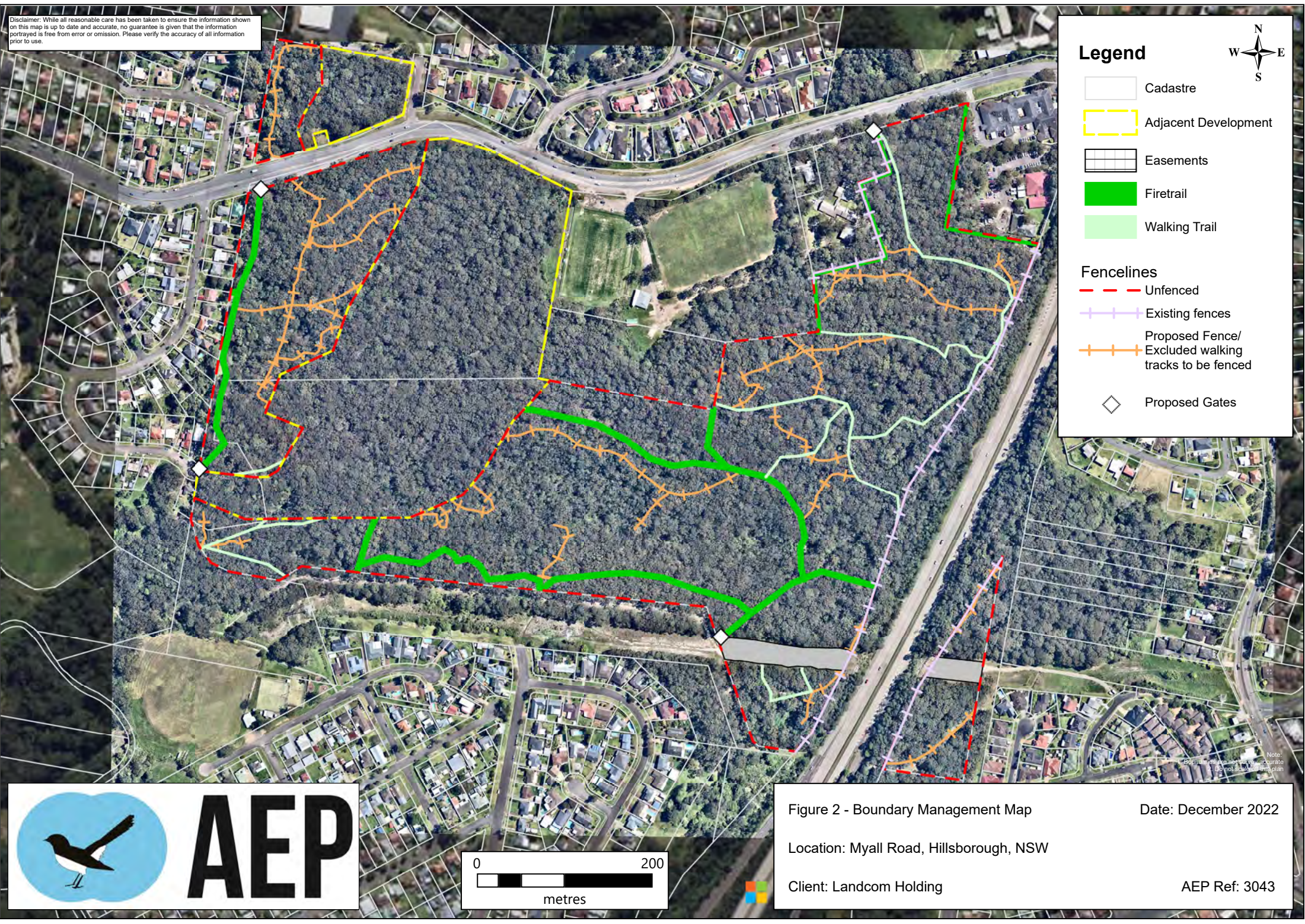


Figure 2 - Boundary Management Map  
Location: Myall Road, Hillsborough, NSW  
Client: Landcom Holding

Date: December 2022  
AEP Ref: 3043

Note:  
Boundary lines are not always accurate  
and do not scale to this plan

2.2 (Required management action)	This part is not applicable.	
2.3 (Required management action)	If, at any time, the Owner observes Stock in any area of the Biodiversity Stewardship Site, other than an area where grazing is permitted, the Owner must take necessary measures to remove the Stock from the area immediately.	Ongoing from Agreement Date
<b>Part 3</b>	<b>Native Vegetation management</b>	<b>Timing</b>
3.1 (Required management action)	Native Vegetation on the Biodiversity Stewardship Site must not be cut down, felled, thinned, logged, killed, destroyed, poisoned, ringbarked, uprooted, burnt or otherwise removed, except: (a) in accordance with Part 3.6.4 of this section; (b) it is specifically permitted or required as part of a Management Action; or (c) it is essential to a carry out an action permitted under clause 6 of this Deed.	Ongoing from Agreement Date
3.2 (Required management action)	Where Part 3.1 of this section permits Native Vegetation on the Biodiversity Stewardship Site to be burnt, it may only occur in accordance with the Fire for Conservation Management Plan.	Ongoing from Agreement Date
3.3 (Required management action)	Native Vegetation must be managed on the Biodiversity Stewardship Site to improve Threatened Species habitat if required as part of a Management Action for Threatened Species on the Biodiversity Stewardship Site under this Deed.	Ongoing from First Payment Date.
3.4 (Required management action)	(a) Except as permitted by Part 3.4(b), and to as far an extent practicable, the Owner must prevent nutrients from Fertilisers and other sources (other than those that would occur as a result of natural ecosystem function) from entering the Biodiversity Stewardship Site, including waterways within the Biodiversity Stewardship Site. (b) Fertilisers and Pesticides must not be applied on the Biodiversity Stewardship Site, except where permitted or required as part of a Management Action specified in the Native Vegetation Management Plan. Use of Fertilisers for establishing Native Vegetation through planting or seeding, use of herbicides for controlling weeds or use of Pesticides for controlling feral pests may be undertaken in accordance with best practice management when required to undertake Management Actions specified in the Native Vegetation Management Plan.	Ongoing from Agreement Date
3.5 (Active restoration action)	“This Part 3.5 is not applicable.” Native Vegetation and habitat management and augmentation must be implemented as set out in Part 3.6 (including sub-parts 3.6.1 to 3.6.5) and in Part 3.7 in accordance with Management Actions specified in the Native Vegetation Management Plan.  If no native vegetation and habitat management and augmentation active restoration activities are proposed, replace the above part with: “This Part 3.5 is not applicable.” and delete Part 3.6 (including sub-parts 3.6.1 to 3.6.5) and Part 3.7.	Ongoing from First Payment Date.
	a) This Part 3.6 is not applicable.	

	If no Targeted Supplementary Planting is proposed, replace the above part with: "This Part 3.6 is not applicable." and delete Parts 3.6.1 to 3.6.5.	
3.6.1 (Active restoration action)		
3.6.2 (Active restoration action)		
3.6.3 (Active restoration action)		
3.6.4 (Active restoration action)		
3.6.5 (Active restoration action)		
3.7 (Active restoration action)	"This Part is not applicable." .	Ongoing from First Payment Date.
<b>Part 4</b>	<b>Threatened Species habitat management and enhancement</b>	<b>Timing</b>
4.1 (Required management action)	The Owner must protect breeding habitat features and sites for all Threatened Species for which Species Credits or Ecosystem Credits have been created. Known breeding sites of Threatened Species on the Biodiversity Stewardship Site are shown on the Threatened Species Habitat map.	Ongoing from Agreement Date
4.2 (Required management action)	The Owner must undertake all Management Actions described in the Threatened Species Habitat Management Plan. The Threatened Species Management Plan is to include all practical and relevant management actions identified in the Threatened Biodiversity Data Collection for a Threatened Species for which Species Credits or Ecosystem Credits have been created. TBDC actions: Powerful Owl – none listed in TBDC. Squirrel Glider – Application of ecological fire management. Black-eyed Susan – none listed in TBDC.	Ongoing from First Payment Date
4.3 (Active restoration action)	This Part is not applicable If no habitat enhancement active restoration activities are proposed, replace the above part with: "This Part is not applicable." and delete Parts 4.3.1 – 4.3.4.	Ongoing from First Payment Date
4.3.1		

(Active restoration action)		Ongoing from First Payment Date
4.3.2 (Active restoration action)		Ongoing from First Payment Date
4.3.3 (Active restoration action)	This Part is not applicable.	
4.3.4 (Active restoration action)	This Part is not applicable.	
<b>Part 5</b>	<b>Hydrology Management</b>	
5.1 (Active restoration action)		
5.2 (Active Restoration Action)		
5.3 (Active restoration action)		
5.4 (Active restoration action)		
5.5 (Active restoration action)		
<b>Part 6</b>	<b>Integrated Feral Pest Control</b>	<b>Timing</b>
6.1 (Required management action)	The Owner must implement and comply with the Integrated Feral Pest Management Plan.	Ongoing from First Payment Date

<b>Part 7</b>	<b>Integrated weed management and control of High Threat Exotic Plants</b>	<b>Timing</b>
7.1 (Required management action)	The Owner must implement the Integrated Weed Management Plan. The Integrated Weed Management Plan must include measures to: <ul style="list-style-type: none"> <li>(a) control the spread of High Threat Exotic Species and other weed species within the Biodiversity Stewardship Site.</li> <li>(b) undertake fine-scale intensive removal of High Threat Exotic and other exotic vegetation.</li> </ul>	Ongoing from First Payment Date
7.2 (Active restoration action)	This part is not applicable	
<b>Part 8</b>	<b>Management of human disturbance</b>	<b>Timing</b>
8.1 (Required management action)	<ul style="list-style-type: none"> <li>(a) Dead timber (whether standing or fallen and including branches and leaf litter) must not be removed from or moved within the Biodiversity Stewardship Site except for the personal (non-commercial) use by the Owner for firewood for one dwelling only or for repair of fencing (not for construction of fencing).</li> <li>(b) The Owner must document in writing any dead timber used for firewood or for fencing repair and keep such records in accordance with the record keeping requirements described in Part 1 Attachment 3 of the Deed and the Monitoring Plan. The Owner must record the approximate amount of dead timber collected from the Biodiversity Stewardship Site for use as firewood or for fencing (in lineal metres), the location from which the dead timber was collected and the date it was collected (month, year).</li> </ul>	Ongoing from Agreement Date
8.2 (Required management action)	<ul style="list-style-type: none"> <li>(a) The Owner must take all reasonable steps to prevent, control and remedy erosion on the Biodiversity Stewardship Site.</li> <li>(b) This part is not applicable</li> </ul>	Ongoing from First Payment Date
8.3 (Required management action)	The Owner must not: <ul style="list-style-type: none"> <li>(a) remove, or cause or permit to be removed, rocks from the Biodiversity Stewardship Site; or</li> <li>(b) move, or cause or permit to be moved, rocks within the Biodiversity Stewardship Site.</li> </ul>	Ongoing from Agreement Date
8.4 (Required management action)	<ul style="list-style-type: none"> <li>(a) This part is not applicable</li> <li>(b) This part is not applicable</li> </ul> No rubbish identified	Ongoing from First Payment Date
8.5 (Required management action)	The Owner must take all reasonable steps to remove Rubbish deposited by others on the Biodiversity Stewardship Site, or which is otherwise present on the Biodiversity Stewardship Site.	Ongoing from First Payment Date
8.6 (Required management action)	The Owner must not store, dispose of, or cause or permit to be disposed of, any Rubbish on the Biodiversity Stewardship Site.	Ongoing from Agreement Date



<p>8.7 (Required management action)</p>	<p>The Owner must install and maintain fencing and signage to deter human disturbance including Rubbish dumping. Signage must be obtained from the NSW BCT.</p> <p>When installing and maintaining fencing and signage, the Owner must meet the following requirements:</p> <p>Existing intact boundary fencing will be maintained as part of the Stewardship Agreement (as shown in Blue).</p> <p>Temporary fencing is to be erected around existing tracks that will no longer be in use. This will deter use for natural regeneration.</p> <p>The remainder of the BSSAR land will remain unfenced.</p> <p>If only fencing or signage are to be installed and maintained delete reference to the other in the highlighted section of the above part. If both fencing and signage are to be installed and maintained, replace 'and/or' with 'and' in the highlighted section of the above part.</p> <p>Signage should be located at points of access and other practical locations interfacing with adjoining properties. For Biodiversity Stewardship Sites that may be located fully within private landholdings, there should be at least one Biodiversity Stewardship Site sign to be placed at the main access gate to the site.</p>	<p>Signage must be installed within 2 months of the First Payment Date</p> <p>All other requirements in Part 8.7 are ongoing from First Payment Date</p>
<p>8.8 (Required management action)</p>	<p>The locations of existing and proposed fencing, gates, firetrails and access tracks (where permitted or required by a Management Action) on the Biodiversity Stewardship Site, are identified on the Biodiversity Stewardship Site Management Actions Map.</p>	<p>On Agreement Date</p>
<p>8.9 (Required management action)</p>	<p>(a) Existing firetrails and access tracks within the Biodiversity Stewardship Site (identified on the Biodiversity Stewardship Site Management Actions Map), where retained, must be maintained to permit the carrying out of Management Actions.</p> <p>(b) All existing firetrails and access tracks within the Biodiversity Stewardship Site must be maintained to control and minimise erosion.</p>	<p>Ongoing from Agreement Date</p>
<p><b>Part 9</b></p>	<p><b>Monitoring</b></p>	<p><b>Timing</b></p>
<p>9.1 (Required Management action)</p>	<p>The Owner must undertake monitoring in accordance with the Monitoring Plan.</p>	<p>Ongoing as specified in Section 7 – Monitoring Plan</p>
<p>9.2 (Required management action)</p>	<p>The Owner must establish permanent Photo Points at locations within the Biodiversity Stewardship Site as described in the Monitoring Plan</p>	<p>Ongoing from Agreement Date</p>
<p>9.3 (Required management action)</p>	<p>The Owner must conduct, or arrange for the conduct of, an inspection of the Biodiversity Stewardship Site at the times, and having regard to the purpose, set out in the Monitoring Plan.</p>	<p>Ongoing as specified in Section 7 – Monitoring Plan</p>
<p>9.4 (Required management action)</p>	<p>(a) The Owner must establish permanent Vegetation Integrity Survey Plots within 12 months after the Agreement Date with the purpose of providing a baseline for assessing Biodiversity outcomes in the future.</p> <p>(b) The Vegetation Integrity Survey Plots must be permanently marked and labelled using steel posts (i.e. star picket or equivalent durable post).</p> <p>(c) The Owner must record the location and label of each of the Vegetation Integrity Survey Plots in the Monitoring Plan using the format described therein.</p>	<p>Within 12 months of the Agreement Date and ongoing thereafter</p>

9.5 (Required management action)	<p>(a) The Owner must monitor the Biodiversity Stewardship Site for evidence of plant disease or dieback within the Native Vegetation present on the site.</p> <p>(b) The Owner must report any evidence of plant or animal disease on the site to the NSW BCT as soon as practicable.</p>	Ongoing as specified in Section 7 – Monitoring Plan
9.6 (Active restoration action)	<p>The monitoring plan must contain measurable performance targets related to the active restoration management actions such as:</p> <p style="text-align: center;">This part is not applicable</p> <p>If active restoration management actions are not proposed within the Biodiversity Stewardship Site, replace the above part with:</p> <p style="text-align: center;">“This part is not applicable.”</p>	Ongoing as specified in Section 7 – Monitoring Plan

## Section 2: Fire for Conservation Management Plan

### Completing the fire for conservation management plan

A table is provided below for the fire conservation management plan. Add additional sections to the table if required. The plan must include, but is not limited to:

- a map identifying the areas to be burnt during each Ecological Burn (the Ecological Burn Map). Areas to be burnt are to be based on broad habitat zones across the Biodiversity Stewardship Site.
- the year the last fire went through, the type of fire and the extent of the fire and location, where known
- frequency of natural fires in the area of the Biodiversity Stewardship Site, where known
- a description of locations and Management Zones where Ecological Burns will be conducted and areas that will not be burnt
- the methods that will be used for Ecological Burns
- the fire frequency intervals recommended for the vegetation types and Threatened Species present, including any required adjustment to the schedule in the event of a wildfire or activities undertaken under the Rural Fires Act 1997 (NSW) to ensure minimum frequency between Ecological Burns
- the fire intensity for the recommended vegetation types
- the time of year suitable for Ecological Burns
- clear, measurable objectives and performance indicators to demonstrate how the management action will achieve gain on the Biodiversity Stewardship Site.

Requirements for monitoring the performance of the Fire for Conservation Management Plan are set out in Section 7 – Monitoring Plan and include:

- methods for monitoring the outcomes of Ecological Burns
- reporting and assessing the results from monitoring
- the diary for recording actions taken in accordance with the Fire for Conservation Management Plan

1. Previous known fire events affecting the land that is the Biodiversity Stewardship Site are described in the table in this plan titled 'Fire history for previous 20 years (or longer if known)' to provide an indication of local fire conditions including intensity and frequency.
2. The Owner must carry out Ecological Burns for each Management Zone according to the following:
  - (a) the method and frequency described in the table in this plan titled 'Ecological Burning actions';
  - (b) the areas to be burnt identified in the Ecological Burn Map;
  - (c) the requirements for each vegetation type or Threatened Species as described in the table in this plan titled 'Fire requirements for vegetation types and threatened species'.
  - (d) the following NSW Rural Fire Service publications:
    - (i) 'Rules and Notes for implementation of the Threatened Species Hazard Reduction List for the Bush Fire Environmental Assessment Code';
    - (ii) 'Threatened Species Hazard Reduction List – Part 1 – Plants';
    - (iii) 'Threatened Species Hazard Reduction List – Part 2 – Animals'; and
    - (iv) Threatened Species Hazard Reduction List – Part 3 – Threatened Ecological Communities'; and
  - (e) establish a mosaic-pattern of different burn ages (i.e. time since fire) across Ecological Burn Units (as displayed on the Ecological Burn Map) to ensure the Biodiversity Stewardship Site retains refuge areas for native fauna at all times.
3. The Owner must take the fire frequencies recommended in BioNet or other published sources of any Threatened Species on the Biodiversity Stewardship Site into consideration when determining the frequency of Ecological Burns.
4. The Owner must avoid areas containing Threatened Species when constructing fire containment lines.

5. The Owner must implement the activities (if any) described in the table in this plan titled 'Other fire management activities'.
6. The Owner must meet the performance measures described in the table in this plan titled 'Fire Management Performance Measures'.
7. The Owner must implement the monitoring and inspections of fires as described in the Monitoring Plan.

Where Species Credits are generated on the Biodiversity Stewardship Site the Species Polygon must be displayed on the Map of areas to be burnt during each Ecological Burn. Where the fire regime of the species credit species differs from that of the surrounding vegetation the management plan must demonstrate how the species polygon will be treated or excluded to ensure inappropriate fire regimes do not adversely impact the species;

**Fire history for previous 20 years (or longer if known)**

Year of fire	Hazard reduction, wildfire burn or Ecological Burn and extent of fire	Management Zone/s
1996 - 1997	Wildfire	Small portion of A and B Management Zones.

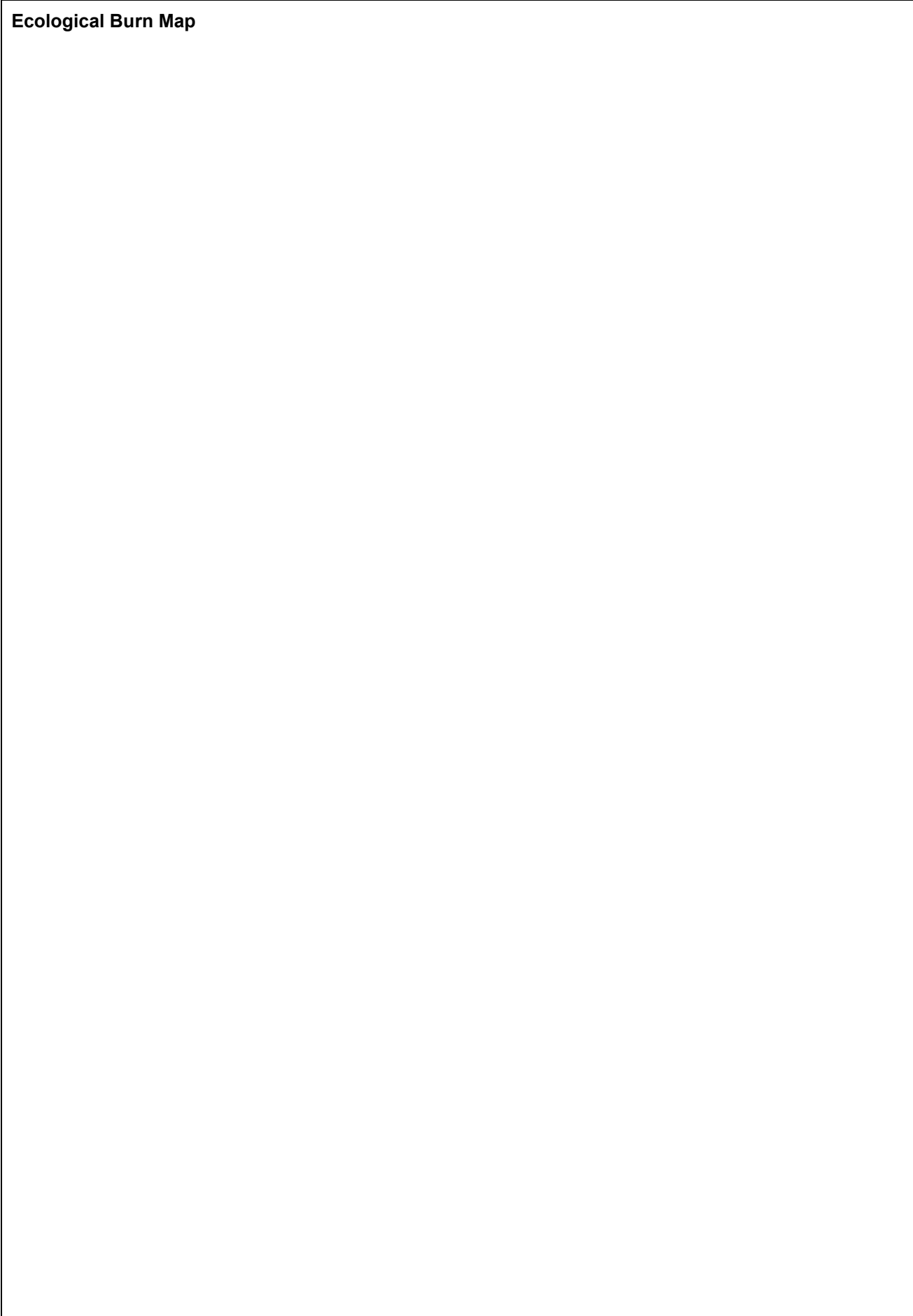
**Fire requirements for vegetation types and Threatened Species**

Vegetation type and/or Threatened Species	Fire frequency required	Time of year for burning	Fire intensity required	Adjustment required due to wildfires or activities undertaken under the Rural Fires Act 1997 (NSW)
PCT 1138 - Scribbly Gum - Smooth-barked Apple - Red Bloodwood shrubby forest of the Lower Hunter, Sydney Basin Bioregion	Dry Sclerophyll Forests (Shrubby sub-formation);  7 – 30yrs	Preference for Autumn burning, although consideration of known threatened species within burn block is required.  Occasional early spring low intensity burn may be desirable.	Occasional intervals greater than 25 years may be desirable	Wildfire resets the fire frequency period.  No slashing, trittering or tree removal.
PCT 1627 – Smooth-barked Apple - Turpentine - Sydney Peppermint heathy woodland on sandstone ranges of the Central Coast	Dry Sclerophyll Forests (Shrubby sub-formation);  7 – 30yrs	Preference for Autumn burning, although consideration of known threatened species within burn block is required.  Occasional early spring low intensity burn may be desirable.	Occasional intervals greater than 25 years may be desirable	Wildfire resets the fire frequency period.  No slashing, trittering or tree removal.
PCT 1649 - Smooth-barked Apple - Red Mahogany - Swamp Mahogany - Melaleuca sieberi heathy swamp woodland of coastal lowlands	Swamp sclerophyll Forest  Avoid high frequency fire  No fire more than once every 7 – 35yrs	Preference for Autumn burning, although consideration of known threatened species within burn block is required.	Some intervals greater than 20 years may be desirable.	Wildfire resets the fire frequency period.  No slashing, trittering or tree removal.

Black Eyed Susan ( <i>Tetratheca juncea</i> )	Unknown	Avoid flowering period between early to mid-spring.	Avoid high intensity fires	No slashing, trittering or tree removal of known habitat
Squirrel Glider ( <i>Petaurus norfolcensis</i> )	Unknown	Avoid breeding season of November to December	Low to moderate intensity not impacting on tree hollows	No removal of trees Protect tree hollows
Powerful Owl ( <i>Ninox strenua</i> )	Unknown	Avoid breeding season of June to August	Low to moderate intensity not impacting on tree hollows	No removal of trees Protect tree hollows
Ecological Burning actions				
Management Zone/s	Actions	Supervision & extinguishing techniques	Time of year for Ecological Burn	Frequency (years)
Burn Block A	Confirm containment lines and water supplies are accessible and adequate Minimise smoke emission near power lines Prepare Prescribed burn plan Traffic management along Myall Rd and Newcastle City Bypass	Contract burning or RFS supervision Mop-up containment lines to 20m Undertake risk assessment and make fire ground safe	Autumn	First burn in 2029 then every 7 – 35yrs
BB B	Confirm containment lines and water supplies are accessible and adequate Minimise smoke emission near power lines Prepare Prescribed burn plan Traffic management along Myall Rd and Newcastle City Bypass	Contract burning or RFS supervision Mop-up containment lines to 20m Undertake risk assessment and make fire ground safe	Autumn	First burn in 2029 then every 7 – 30yrs
BB C	Confirm containment lines and water supplies are accessible and adequate Minimise smoke emission near power lines Prepare Prescribed burn plan Traffic management along Myall Rd and Newcastle City Bypass	Contract burning or RFS supervision Mop-up containment lines to 20m Undertake risk assessment and make fire ground safe	Autumn	First burn in 2029 then every 7 – 30yrs
BB D	Confirm containment lines and water supplies are accessible and adequate Minimise smoke emission near power lines Prepare Prescribed burn plan	Contract burning or RFS supervision Mop-up containment lines to 20m	Autumn	First burn in 2029 then every 7 – 30yrs













	Traffic management along Myall Rd and Newcastle City Bypass	Undertake risk assessment and make fire ground safe		
BB E	Confirm containment lines and water supplies are accessible and adequate Minimise smoke emission near power lines Prepare Prescribed burn plan Traffic management along Myall Rd and Newcastle City Bypass	Contract burning or RFS supervision Mop-up containment lines to 20m Undertake risk assessment and make fire ground safe	Autumn	First burn in 2029 then every 7 – 35yrs
Fire Exclusion Zone (FEZ) 1	The remaining vegetation is excluded due to the adjoining residential, nursing home and other small community buildings. This will ensure these areas are protected to mitigate disturbance levels	Direct attack and ignition	N/A	Exclude all fire
<b>Other fire management activities (where required)</b>				
<p><b>Fire trail maintenance:</b></p> <p>Maintain all identified trails to category 7 capacity. Annual maintenance prior to summer to ensure wildfire suppress access is provided.</p> <p><b>Water provisions:</b></p> <p>Confirm vehicle access to water sources on neighbouring properties and authority to access water.</p> <p><b>Temporary containment lines:</b></p> <p>Temporary containment lines to be rehabilitated following application of prescribed burn.</p> <p><b>Post Burning assessments:</b></p> <p>Post burning assessment to be completed and reported to NSW RFS for data capture and records.</p> <p><b>Asset Protection Zones:</b></p> <p>Ensure all asset protection zones adjacent to burn blocks within development area are sign posted and delineated with non-combustible bollards to reduce vegetation creep over time.</p>				

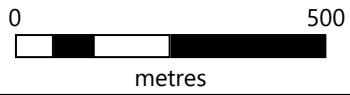
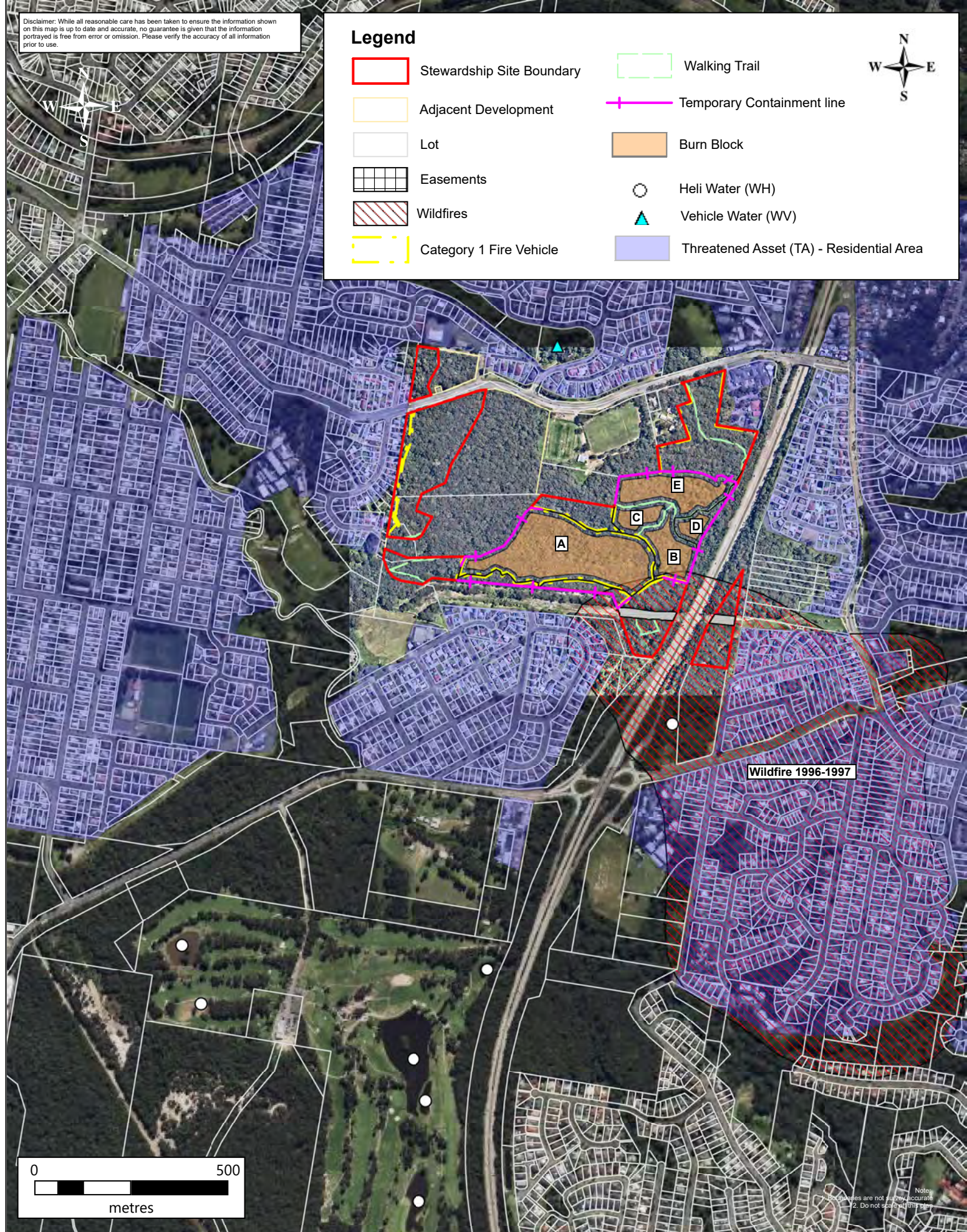
**Ecological Burn Map**



Disclaimer: While all reasonable care has been taken to ensure the information shown on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.

### Legend

- |                                                                                   |                           |                                                                                     |                                          |
|-----------------------------------------------------------------------------------|---------------------------|-------------------------------------------------------------------------------------|------------------------------------------|
|  | Stewardship Site Boundary |  | Walking Trail                            |
|  | Adjacent Development      |   | Temporary Containment line               |
|  | Lot                       |   | Burn Block                               |
|  | Easements                 |  | Heli Water (WH)                          |
|  | Wildfires                 |  | Vehicle Water (WV)                       |
|  | Category 1 Fire Vehicle   |   | Threatened Asset (TA) - Residential Area |



Notes:  
Boundaries are not survey accurate.  
Do not rely on this map.



Title: Figure 3 - Ecological Burn Map

Date: December 2022

Location: Myall Road, Hillsborough, NSW

BOAMs Ref: 37000

Client: Landcom Holding

AEP Ref: 3014



<b>Fire Management Performance Measures</b>	
<b>Management Zone/s</b>	<b>Performance indicator (e.g. % Management Zone burnt)</b>
BB A	Reduce the fire fuel loads throughout 60-90% of the burn block burnt from 'High Overall Fuel Hazard (OFH)' to 'Low OFH' through the application of ground ignition.
BB B	Reduce the fire fuel loads throughout 60-90% of the burn block burnt from 'High OFH' to 'Low OFH' through the application of ground ignition.
BB C	Reduce the fire fuel loads throughout 60-90% of the burn block burnt from 'High OFH' to 'Low OFH' through the application of ground ignition.
BB D	Reduce the fire fuel loads throughout 60-90% of the burn block burnt from 'High OFH' to 'Low OFH' through the application of ground ignition. Exclude fire from Powerful Owl nest site.
BB E	Reduce the fire fuel loads throughout 60-90% of the burn block burnt from 'High OFH' to 'Low OFH' through the application of ground ignition.
FEZ 1	Exclude fire by direct attack.

## Section 3: Native Vegetation Management Plan

### Completing the Native Vegetation Management Plan

A table is provided below for completing the Native Vegetation Management Plan. Add additional fields to the table as required.

The description and location (Management Zones) of native vegetation management actions to be undertaken by the Owner are listed in the Native Vegetation Management Plan.

This plan includes some management actions listed as required Native Vegetation Management actions in Section 13.3.2 of the BAM (2016) ("Required management actions"). It may also include actions to manage and augment threatened Native Vegetation and Threatened Species habitat where approved as active restoration management actions (Section 13.3.3 of the BAM). Active restoration management actions may be approved where it can be demonstrated that management and/or augmentation is feasible for the target Plant Community Type or Threatened Species of the proposed active restoration activity.

The Native Vegetation Management Plan must:

- (i) identify the target PCTs for which management and augmentation will be undertaken and Management Zones where actions will be undertaken;
- (ii) specify the requirements for the ongoing management and maintenance within the Biodiversity Stewardship Site; and
- (iii) detail ongoing monitoring requirements for the relevant PCTs and include measures of success and contingencies in the event of failure.

Where hydrology management activities are proposed, the Native Vegetation Management Plan must:

- (i) identify the PCT for which hydrology management will be undertaken;
- (ii) specify the requirements for the ongoing management and maintenance of hydrology within the Biodiversity Stewardship Site; and
- (iii) detail ongoing monitoring requirements for the relevant PCT and include measures of success and contingencies in the event of failure.

The locations and extent of areas proposed for Native Vegetation Management must be clearly identified and mapped.

Where Targeted Supplementary Planting is proposed as an active restoration management action to manage and/or augment Native Vegetation or Threatened Species habitat, the Native Vegetation Management Plan must include detailed prescriptions for planting schedules, including:

- species list per Management Zone
- planting method – specify whether plants are to be tubestock, direct seeding or another method
- number of plants per area – for tubestock, the number of plants should be rounded to the nearest 100 if there are more than 1,000 plants or to the nearest 10 if there are 1,000 plants or fewer;
- timing – described as the number of months (or Year if relevant) for completion of planting after First Payment Date.
- Management of supplementary planting includes watering, slashing, scalping, spraying of weeds, and plant replacement.

Appropriate site treatment (e.g. weed control) of each area of planting or seeding identified in the planting schedule must be identified in the Native Vegetation Management Plan and undertaken prior to such planting.

The Native Vegetation Management Plan must set out the period following planting or seeding over which grazing must be excluded from areas of Targeted Supplementary Planting. The period may be expressed as a date following planting or seeding, or as a minimum height that must be obtained by all planted or seeded plants before grazing is permitted.

The Native Vegetation Management Plan must contain clear, measurable objectives and performance indicators to demonstrate how the Management Action will achieve gain on the Biodiversity Stewardship site.

Requirements for monitoring the performance of the Native Vegetation Management Plan are set out in Section 7 – Monitoring Plan and include:

- methods for monitoring the outcomes of Native Vegetation Management
- reporting and assessing the results from monitoring
- the diary for recording actions taken in accordance with the Fire for Conservation Management Plan

1. The Owner must carry out Native Vegetation Management for each Management Zone according to the method and frequency described in the table in this plan titled 'Native Vegetation Management Actions';
2. The Owner must undertake Targeted Supplementary Planting in accordance with the table in this plan titled 'Targeted Supplementary Planting Schedule at the Biodiversity Stewardship Site'.
3. The Owner must meet the performance measures described in the table in this plan titled 'Native Vegetation Management Performance Measures'.
4. The Owner must implement the monitoring of Native Vegetation management as described in the Monitoring Plan.

### Native Vegetation Management Actions

Management Zone	Description of Vegetation Management action	Frequency and timing	Management Action Type (Required or Active)
1, 2, 3, and 4	<p>Primary Weeding</p> <p>Undertake primary removal of HTE and other priority weeds (in particular Lantana &amp; Camphor Laurel) from all management zones within areas mapped as moderate to high density.</p> <p>Undertake follow up weeding of HTE weeds from previously treated areas.</p> <p>80% reduction in cover of HTEs.</p>	<p>Year 1</p> <p>Year 2</p> <p>Year 3</p>	Required
1, 2, 3, 4, 5	<p>Maintenance Weeding</p> <p>Undertake ongoing maintenance of HTE and other priority weeds in all management zones, including previous primary treatments, and areas mapped as low density.</p> <p>Increase in species abundance from natural regeneration following primary treatment.</p>	Year 3 - ongoing	Required
1, 2, 3, 4, 5	Implement prescribed burning in accordance with Fire for Conservation Management Plan.	2023 - ongoing	Required
1, 2, 3, 4, 5	Undertake vegetation monitoring in accordance with the Monitoring Plan	Year 1 - ongoing	Required

### Targeted Supplementary Planting Schedule at the Biodiversity Stewardship Site

Species' common name	Species scientific name	Management Zone/s of planting	Number of plants per area	Planting method	Timing (months or Year)
	NA – No Active Restoration proposed				

<b>Native Vegetation Management Performance Measures</b>			
<b>Management Zone/s</b>	<b>Management Action</b>	<b>Performance indicator (e.g. % of Management Zone treated per year, % survival rate of plantings, species abundance).</b>	<b>Timing</b>
1, 2, 3, 4	Primary Weeding	80% reduction in cover of HTEs Observed increase in species abundance from natural regeneration following primary treatment.	Year 1 Year 3
All	Maintenance Weeding	Community composition, structure, and function continues to improve in line with predicted VI under management.	Year 2 ongoing

## Section 4: Threatened Species Habitat Management Plan

### Completing the Threatened Species Habitat Management Plan

A table is provided below for completing the Threatened Species Habitat Management Plan. Add additional fields to the table as required.

The description and location (Management Zones) of threatened species habitat management actions to be undertaken by the Owner are listed in the Threatened Species Habitat Management Plan.

This plan includes some management actions listed as required management actions in Section 13.3.2 of the BAM (2016) ("Required management actions"). It may also include actions to enhance and augment threatened species habitat where approved as active restoration management actions (Section 13.3.3 of the BAM).

Active restoration management actions relating to Threatened Species Habitat Management may be approved where it can be demonstrated that restoration of habitat is feasible for the target species of the proposed active restoration activity.

The Threatened Species Habitat Management Plan must:

- (i) identify the target Threatened Species for which habitat enhancement will be undertaken and the species polygon in which habitat enhancement actions will be implemented;
- (ii) specify the requirements for the ongoing management and maintenance of habitat enhancement within the Biodiversity Stewardship Site; and
- (iii) detail ongoing monitoring requirements for the relevant species and include measures of success and contingencies in the event of failure.

Where hydrology management activities are proposed, the Threatened Species Habitat Management Plan must:

- (i) identify the Threatened Species and their species polygon for which hydrology management will be undertaken;
- (ii) specify the requirements for the ongoing management and maintenance of hydrology within the Biodiversity Stewardship Site; and
- (iii) detail ongoing monitoring requirements for the relevant species and include measures of success and contingencies in the event of failure.

The locations and extent of areas proposed for threatened species habitat management must be clearly identified and mapped on the Threatened Species Habitat Map. Breeding sites identified on the Biodiversity Stewardship Site must also be mapped on the Threatened Species Habitat Map and protected from disturbance.

Where Targeted Supplementary Planting is proposed as an active restoration management action to improve habitat suitability for specific Threatened Species, this should be identified in the Threatened Species Management Plan with reference made to relevant activities in the Native Vegetation Management Plan.

Habitat enhancement measures may include the installation of artificial nesting boxes, breeding ponds, relocation of fallen logs, relocation and securing of dead hollow bearing stags and/or the relocation of rocks. The Threatened Species Habitat Management Plan must include detailed prescriptions for the ongoing management, replacement and maintenance of installed habitat structures.

Where habitat enhancement measures include the installation of habitat structures, the Threatened Species Habitat Management Plan must:

- (i) specify the target Threatened Species, and type of habitat structures to be installed.
- (ii) Specify the number and location of each type of habitat structure to be installed.
- (iii) provide for ongoing management, replacement and maintenance of the installed habitat structures.

- (iv) detail the ongoing monitoring requirements for the installed habitat structures and include measures of success and contingency actions in the event of failure of the habitat structures to improve roosting and breeding habitat for target Threatened Species; and
- (v) provides reference material to support evidence of the target Threatened Species' use of the habitat structures.

The Threatened Species Habitat Management Plan must contain clear, measurable objectives and performance indicators to demonstrate how the Management Action will achieve gain on the Biodiversity Stewardship site.

Requirements for monitoring the performance of the Threatened Species Habitat Management Plan are set out in Section 7 – Monitoring Plan and include:

- methods for monitoring the outcomes of Threatened Species Habitat Management
- reporting and assessing the results from monitoring
- the diary for recording actions taken in accordance with the Threatened Species Habitat Management Plan

1. The Owner must carry out the Management Actions for each Management Zone according to the method and frequency described in the table in this plan titled 'Threatened Species Habitat Management Actions';
2. The Owner must meet the performance measures described in the table in this plan titled 'Threatened Species Habitat Management Performance Measures'.
3. The Owner must implement the monitoring of Threatened Species habitat management as described in the Monitoring Plan.







**Threatened Species Habitat map**













Disclaimer: While all reasonable care has been taken to ensure the information shown on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.

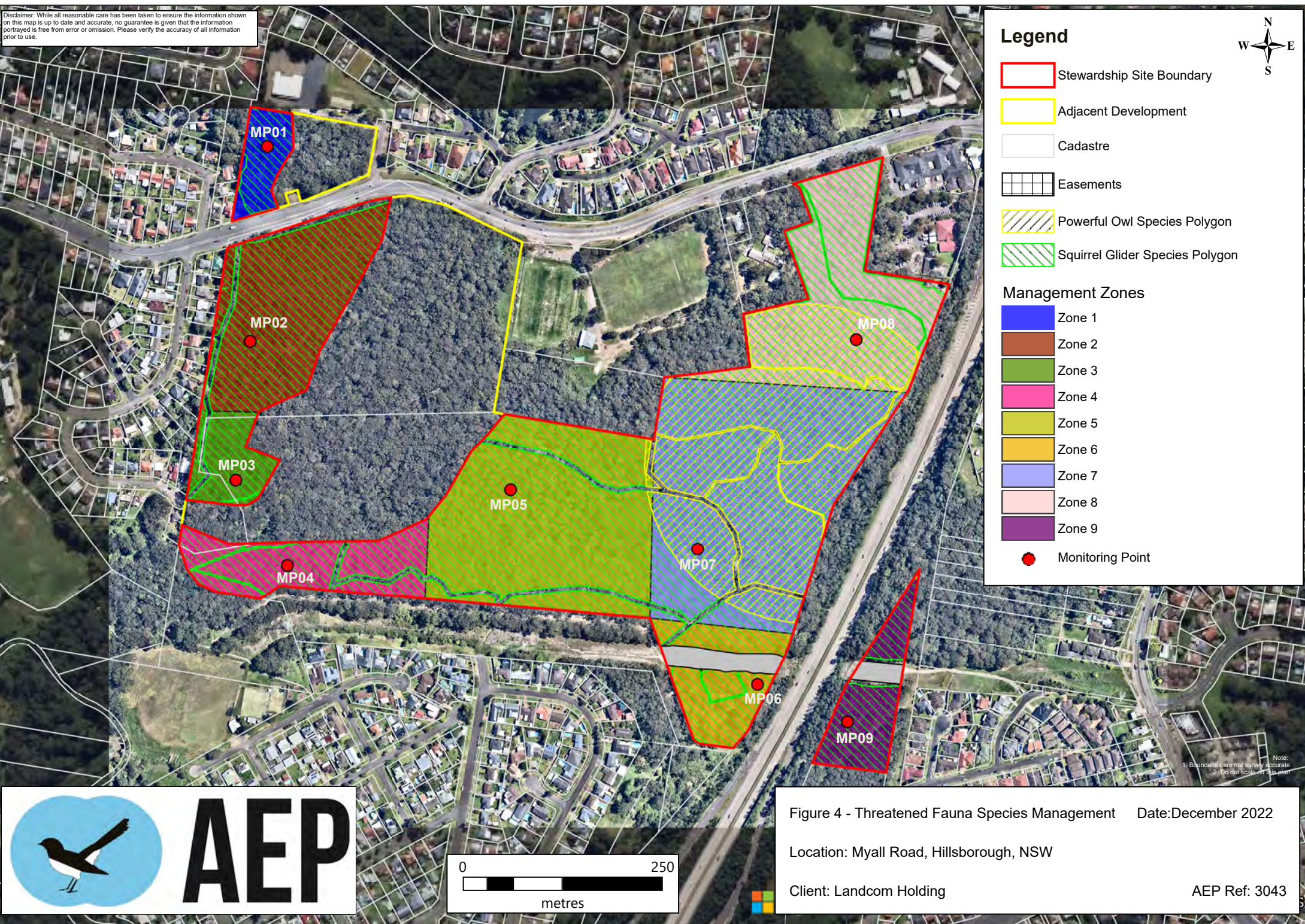


### Legend

-  Stewardship Site Boundary
-  Adjacent Development
-  Cadastre
-  Easements
-  Powerful Owl Species Polygon
-  Squirrel Glider Species Polygon

### Management Zones

-  Zone 1
-  Zone 2
-  Zone 3
-  Zone 4
-  Zone 5
-  Zone 6
-  Zone 7
-  Zone 8
-  Zone 9
-  Monitoring Point



Note:  
1. Boundaries are not survey accurate  
2. Do not scale on this plan

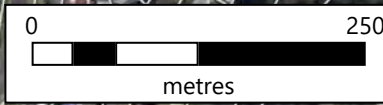







Figure 4 - Threatened Fauna Species Management    Date: December 2022  
 Location: Myall Road, Hillsborough, NSW  
 Client: Landcom Holding    AEP Ref: 3043













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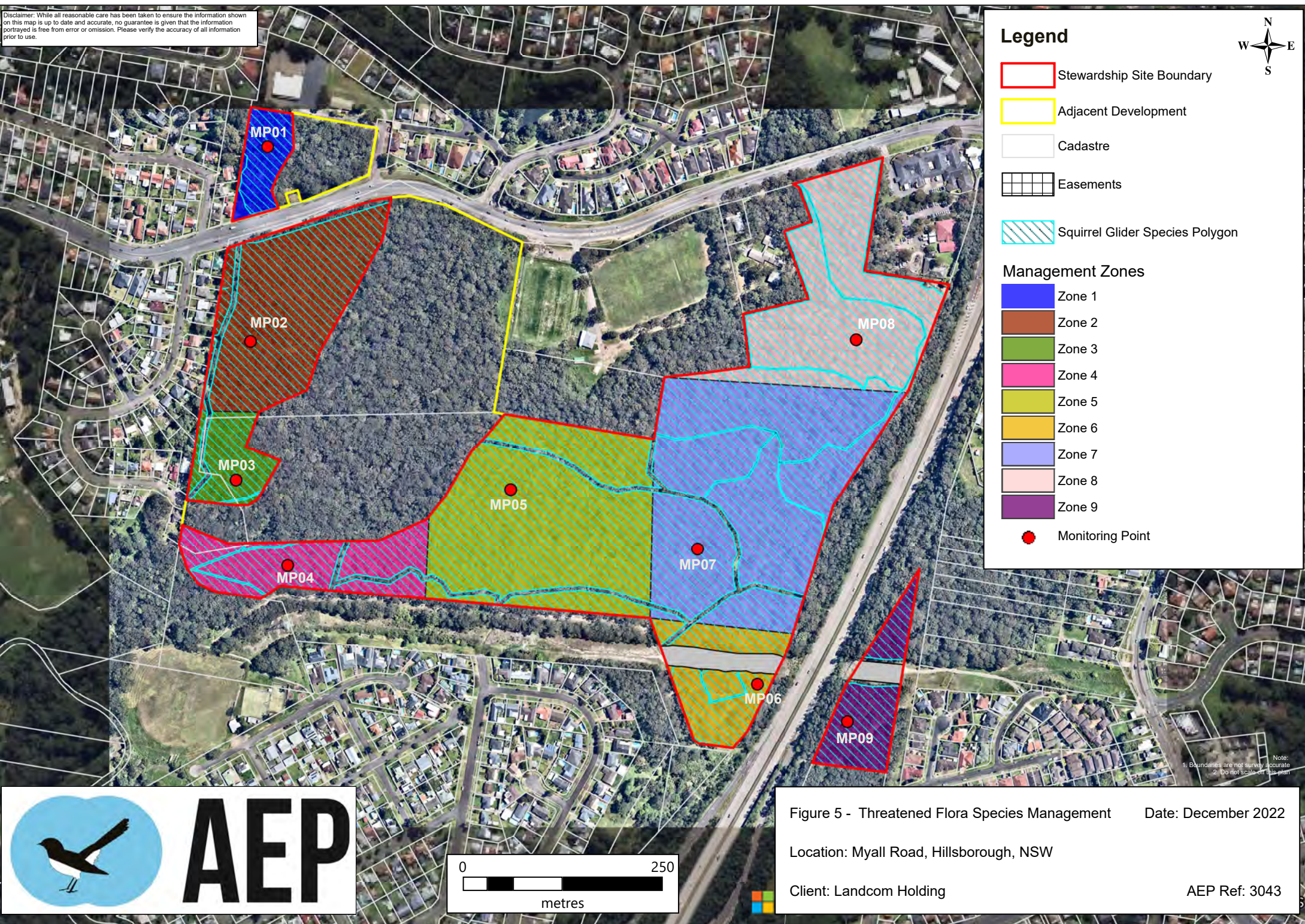


### Legend

-  Stewardship Site Boundary
-  Adjacent Development
-  Cadastre
-  Easements
-  Squirrel Glider Species Polygon

### Management Zones

-  Zone 1
-  Zone 2
-  Zone 3
-  Zone 4
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-  Monitoring Point



Note:  
1. Boundaries are not survey accurate  
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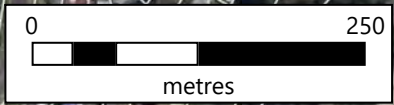


Figure 5 - Threatened Flora Species Management Date: December 2022

Location: Myall Road, Hillsborough, NSW

Client: Landcom Holding

AEP Ref: 3043

### Threatened Species Habitat Management Actions

Name of Threatened Species	Description of habitat management action	Management Zone/s	Frequency and timing	Management Action Type (Required or Active)
Squirrel Glider	Ensure plain wire fencing is utilised for installation of temporary fencing.	All	Ongoing	Required
Black-eyed Susan	<p>Protect from maintenance and other edge effects along site boundary, easements, and tracks. Ensure protective fencing is installed along the site boundary / development interface adjacent to Tetratheca populations.</p> <p>Protect from damage during subdivision construction and property boundary maintenance by neighbours.</p> <p>Reduce and maintain weed densities at low levels, as per Native Vegetation Management Plan. Only manual weeding to be undertaken within species polygon areas (no foliar spraying). Large exotic canopy trees to be eradicated to remain in-situ.</p> <p>Vehicle movements only on identified access tracks.</p>	1, 3, 4	Ongoing	Required
Powerful Owl	<p>Monitor nest sites for breeding activity.</p> <p>Apply low-intensity, mosaic pattern fuel reduction regimes. Ensure protection of nest sites during ecological burns via adequate burn planning.</p>	4	Ongoing	Required

### Threatened Species Habitat Management Performance Measures

Management Zone/s	Management Action	Performance indicator (e.g. % of Management Zone treated per year, % survival rate of plantings, species abundance, number of nestboxes occupied).	Timing
All	Required	Species resources increase in line with predicted VIS improvement	Ongoing

## Section 5: Integrated Feral Pest Management Plan

### Completing the compulsory Integrated Feral Pest Management Plan

A table is provided below for the integrated feral pest management plan. Add additional fields to the table if required. The plan must include, but is not limited to:

- a description of the target fauna species e.g foxes, cats, pigs, goats, avian pests, horses, other miscellaneous species as relevant
- consideration of relevant current DPIE and other pest management programs
- the methods of feral pest control in each Management Zone determined in accordance with best management practice
- the frequency and timing of pest control actions in each Management Zone
- clear, measurable objectives and performance indicators to demonstrate how the management action will achieve gain on the Biodiversity Stewardship site.

All pest species identified as requiring management on a Biodiversity Stewardship site must be included in the integrated feral pest management plan.

Separate management plans may be developed for each pest species.

When the management plan is reviewed, control activities may be amended, deleted or added to take into account pest species found on the site at that time.

Details of monitoring to assess the effectiveness of Integrated Feral Pest Management activities are to be described in Section 7 – Monitoring Plan and are to include:

- methods for monitoring the success of pest animal control actions
- reporting and assessing the results from monitoring
- a timetable and measures for inspections to identify new pest species that may negatively impact on Threatened Species on the Biodiversity Stewardship site
- a diary for recording actions taken in accordance with the integrated feral pest management plan

1. Feral Pests existing on the Biodiversity Stewardship Site, and their extent or severity of impact, as at the Agreement Date are listed in the table below titled “Feral pests”.
2. The table below titled “Methods considered” lists possible methods of control of Feral Pests and the suitability of such methods to the Biodiversity Stewardship Site.
3. The Owner must control Feral Pests for each Management Zone according to the method and frequency described in the table below titled “Methods of control”. The methods of control will apply to the Feral Pests listed in the ‘Feral pests’ table.
4. The Owner should seek advice from Local Land Services on how to effectively and legally implement Feral Pest control prior to commencing any control methods on the Biodiversity Stewardship Site. If any methods advised or recommended by Local Land Services differ from those identified in this Integrated Feral Pest Management Plan, the Owner must advise the NSW BCT in writing prior to commencing control activities.
5. The Owner must carry out such activities as are specified (if any) in the table below titled “Other Management Activities”.
6. The Owner must implement monitoring of existing and new Feral Pests on the Biodiversity Stewardship Site, as described in the Monitoring Plan and with reference to the performance measures specified in the table below titled “Integrated Feral Pest Management Performance Measures”.
7. The Owner must complete the templates in the Monitoring Plan titled “Diary template for Feral Pest management” and “Template for reporting of monitoring activities – Feral Pest management” to record implementation of this Integrated Feral Pest Management Plan and monitoring activities.

### Feral Pests

Pest	Name of Feral Pest (e.g. foxes, cats, pigs, goats, avian pests, horses, other miscellaneous species)	Description of extent/severity of impact	Management Zone/s

A	Hare / Rabbits	None observed, assumed intermittent presence.	All
B	Cat	None observed, assumed intermittent presence.	All
C	Dog / Fox	None observed. No active den sites observed. Assumed intermittent presence. In accordance with conditions of consent, on lead dog walking is permissible on fire trails and walking trails only. Signage at entrance points is to include information regarding these restrictions.	All
D	Feral Deer / Goats / Pigs	None observed, no evidence of activity/herbivory observed, assumed not present.	All
E	Misc., Horses, wandering livestock etc.	None observed, no evidence of activity/herbivory observed, assumed not present.	All
<b>Methods considered</b>			
<b>Pest type</b>	<b>Name and description of program or method</b>		<b>Describe suitability</b>
A	Monitor for presence.  If required bait with pindone poison in line with Local Land Services (LLS) guidelines;		Shooting poses lower off target threat to native herbivores and secondary poisoning of higher order predators.
B	Monitor for presence.  Trap with fresh meat baits free of poison;		Cage trapping is simple and effective over small areas. Shooting is highly specialised and labour intensive.
C	Bait with 1080 poison in line with Local Land Services (LLS) guidelines;		Baiting most likely to be successful, trapping and shooting pose lower off target threat to native carnivores
<b>Methods of control</b>			
<b>Management Zone/s</b>	<b>Feral Pest type</b>	<b>Method of control</b>	<b>Frequency and timing</b>
All	C	Bait with 1080 poison in line with Local Land Services (LLS) guidelines;	As needed or in conjunction with control programs by neighbouring landholders
<b>Other management activities</b>			

<b>Integrated Feral Pest Performance Measures</b>	
<b>Feral Pest species</b>	<b>Performance indicator (e.g. numbers treated/year, level of threat abatement to be achieved, total area to be treated (in hectares)).</b>
Dog / Fox	Level of activity/sign kept to current standards or better, ie intermittent usage.

### Section 6 - Integrated Weed Management Plan

#### Completing the compulsory Integrated Weed Management Plan

A table is provided below for the Integrated Weed Management Plan. Add additional sections to the table if required.

The plan must include, but is not limited to:

- a description of the high threat weeds and other weeds present on the Biodiversity Stewardship Site and their locations, linked to each Management Zone where weeds are present
- the method/s of weed control in each Management Zone
- the frequency of weed control activities at the site, taking into account management practices where weeds are providing habitat for native species
- the timing of any planting of native plant species required in each Management Zone to provide alternative habitat for native species affected by weed control activities

When the management plan is reviewed, weed control activities may be amended, deleted or added to take into account the weed species on the site at the time of the review.

The Integrated Weed Management Plan must contain clear, measurable objectives and performance indicators to demonstrate how the weed management actions will achieve gain on the Biodiversity Stewardship Site.

Details of monitoring to assess the effectiveness of Integrated Weed Management activities are to be described in Section 7 – Monitoring Plan and are to include:

- methods for monitoring the success of integrated weed management
- reporting and assessing the results from monitoring
- a timetable/measures for inspections to identify new weed species
- a diary for recording actions taken in accordance with the Integrated Weed Management Plan

1. The weeds present, and their locations, on the Biodiversity Stewardship Site as at the Agreement Date are listed in the table below titled “Weed Species present”.
2. The permitted methods of control of weeds on the Biodiversity Stewardship Site for each weed type are listed in the table below titled “Methods of Weed control”.
3. Other Management Actions to control weeds (if any) are specified in the table below titled “Other Weed management activities”.
4. The Owner must implement the monitoring and inspection of existing and new weeds on the Biodiversity Stewardship Site as described in the Monitoring Plan and with reference to the performance measures listed in the table below titled “Integrated Weed Management Performance Measures”.

<b>Weed species present</b>					
	<b>Common name of Weed</b>	<b>Scientific name of Weed</b>	<b>High Threat</b>	<b>Description of infestation (e.g. intensity [% Projected Foliage Cover (PFC)] &amp; location within zone)</b>	<b>Management Zone/s</b>

			<b>Weed Species (Y/N)</b>		
A	Lantana	<i>Lantana camara</i>	Y	Low to high density infestations occur throughout all management zones. Highest densities occur within Zone 1, 2, 3 and 4 predominantly within wet sclerophyll/gullies, requiring significant primary control. Higher slopes grading to dry sclerophyll contain low to negligible infestations.	All
B	Camphor Laurel	<i>Cinnamomum camphora</i>	Y	Low to high density infestations occur throughout the majority of management zones. Highest densities (mature individuals) occur within Zone 1, 2, and 4, predominantly within wet sclerophyll/gullies, requiring significant primary control. Higher slopes grading to dry sclerophyll contain low to negligible infestations.	All
C	Panic Veldtgrass	<i>Ehrharta erecta</i>		Scattered occurrences at low densities, predominantly within Zone 5. Target during maintenance works.	2
D	Asparagus Fern	<i>Asparagus aethiopicus</i>	Y	Scattered occurrences at low densities. Target during maintenance works.	2, 5
E	Small-leaved Privet	<i>Ligustrum sinense</i>	Y	High density in Zone 2 and 3, will require primary weeding. Scattered occurrences at low densities throughout Zone 5. Target during maintenance works.	2, 3, 5
F	Large-leaved Privet	<i>Ligustrum lucidum</i>	Y	High density in Zone 2, will require primary weeding. Scattered occurrences at low densities throughout Zone 5. Target during maintenance works.	2, 5
G	Ochna	<i>Ochna serrulata</i>	Y	High density in Zone 2, will require primary weeding. Scattered occurrences at low densities throughout Zone 5. Target during maintenance works.	2, 3, 5
H	Flatweed	<i>Hypochaeris radicata</i>		Scattered occurrences at low densities. Target during maintenance works.	2
I	Japanese Sacred Bamboo	<i>Nandina domestica</i>		Scattered occurrences at low densities. Target during maintenance works.	2
J	Common Passionfruit	<i>Passiflora edulis</i>		Scattered occurrences at low densities. Target during maintenance works.	2, 3
K	Wild Tobacco	<i>Solanum mauritianum</i>		Scattered occurrences at low densities. Target during maintenance works. Zone 1	2
L	Black Nightshade	<i>Solanum nigrum</i>		Scattered occurrences at low densities. Target during maintenance works.	2
M	Buffalo Grass	<i>Stenotaphrum</i>		Scattered occurrences at low densities. Target during maintenance works.	5

		<i>secundatum</i>			
N	Bird of Paradise	<i>Strelitzia juncea</i>		Scattered occurrences at low densities. Target during maintenance works.	3
O	Cocos Palm	<i>Syagrus romanzofiana</i>		Scattered occurrences at low densities. Target during maintenance works.	2, 5
P	Wandering Jew	<i>Tradescantia fluminensis</i>		High density occurrence in Zone 2. Primary weeding will be required.	2
Q	Crofton Weed	<i>Ageratina adenophora</i>		Scattered occurrences at low densities. Target during maintenance works.	5

<b>Methods of Weed control</b>			
<b>Management Zone/s</b>	<b>Weeds</b>	<b>Method of Weed control</b>	<b>Frequency and timing</b>
All	Lantana	<p>Manual removal of smaller plants which can be hand pulled and left to dry off the ground.</p> <p>Cut and paint application of Glyphosate of larger plants.</p> <p>Large patches can be controlled via foliar application of herbicide. Chemical selection to be fit for purpose, i.e. selective where possible to limit off target damage to native grasses and sedges.</p>	<p>Primary works within the first 2 years</p> <p>Ongoing maintenance</p> <p>Avoid excessively hot days or prolonged dry conditions</p>
All	<p>Camphor Laurel</p> <p>Small-leaved Privet</p> <p>Large-leaved Privet</p>	<p>Manual removal of small plants where they can be pulled from the soil with roots intact.</p> <p>Larger individual plants to be treated with cut-stump or 'drill and frill' application of Glyphosate.</p> <p>For large, dense infestations cut trees into manageable pieces and pile in such a manner to prevent regrowth from cuttings. Where possible, pile in the open away from desirable native canopy trees to facilitate a pile burn reduction of biomass if suitable conditions occur in the following 6 to 18 months.</p>	<p>Primary works within the first 2 years</p> <p>Ongoing maintenance</p> <p>Spring to Autumn when actively growing</p>
2	Ochna	Stem scrape and paint with Glyphosate.	Ongoing maintenance
2	Wandering Jew	Manual removal and destruction of whole plant (small plants) or apply Glyphosate for larger infestations.	Ongoing maintenance
All	Exotic Grasses	Knock back via foliar spraying, Chemical selection to be fit for purpose, i.e. selective where possible to limit off target damage to native forbs/shrubs.	<p>At least 6 months Prior to revegetation, with follow up applications</p> <p>Ongoing maintenance</p>

<b>Other Weed Management Actions</b>			
<b>Management Zone/s</b>	<b>Weeds</b>	<b>Management Action</b>	<b>Frequency and timing</b>
All	Lantana Camphor Laurel Coral Tree Small-leaved Privet Large-leaved Privet Blackberry Cat's Claw Creeper Whisky Grass	Primary Weeding.  Undertake primary removal of HTE and other priority weeds (in particular Lantana & Camphor Laurel) from all management zones within areas mapped as moderate to high density.  Follow-up Primary Weeding.  Undertake follow up primary weeding of HTE from previously treated areas.	Year 1 and 2  Year 3-4
All	All	Maintenance Weeding. Undertake ongoing maintenance of HTW and other priority weeds in all management zones, including previous primary treatments, and areas mapped as low density.	Year 4 - Ongoing

<b>Integrated Weed Management Performance Measures</b>		
<b>Management Zone/s</b>	<b>Weeds</b>	<b>Performance indicator (e.g. % of Management Zone treated per year, weed PFC/abundance remaining per Management Zone).</b>
All	All	80% reduction in HTE cover within moderate to high infestations within the first 3 years.
All	All	Continual suppression (maintenance weeding) to be undertaken to ensure weeds to remain absent/supressed within the Stewardship site, following primary removal.
All	All	Moderate to high HTE infestations replaced with resilient native vegetation community currently displaced by the infestation.



## Section 7 - Monitoring Plan

1. The Owner must implement monitoring as described in Section 7A.
2. The Owner must complete the diary templates and reports of monitoring activities contained in the more recent of:
  - a) the templates contained in section 7B or;
  - b) the templates published from time to time on the BCT website.

The completed diary templates and reports of monitoring activities relating to a Reporting Period must be submitted with the Annual Report.

### Section 7A – Monitoring methods and frequency

7A.1- Photo Points	<p>(a) The Owner must establish permanent Photo Points at locations specified below within the Biodiversity Stewardship Site and ensure that photographs are taken from each point within 12 months of the Agreement Date and then at least every 12 months thereafter.</p> <p>(b) The Owner must take photographs according to the specifications below and at the locations listed below.</p>		
	<p><b>Locations of Photo Points</b>          Projected coordinate system: [GDA 94 Zone 56]</p>		
	<b>Photo Point reference number</b>	<b>Easting</b>	<b>Northing</b>
	MP1	376091.83	6353637.43
	MP2	376054.65	6353400.34
	MP3	376036.57	6353226.55
	MP4	376208.36	6353133.13
	MP5	376380.14	6353214.50
	MP6	376668.46	6352931.20
	MP7	376614.21	6353140.16
	MP8	376813.11	6353402.35
	MP9	376817.13	6352904.08
	<p>The photographs must:</p> <ol style="list-style-type: none"> <li>(i) be taken in all directions (360°) from the Photo Point.</li> <li>(ii) be taken at the same location, with the same starting direction for the commencement and direction of the sweep, with the camera held at the same location, height and angle;</li> <li>(iii) show exactly the same field of view each monitoring event, to enable comparison across years;</li> <li>(iv) be clear and of suitable resolution to show detail, and taken at appropriate light conditions to display optimal contrast.</li> <li>(v) be dated, and labelled with the corresponding Photo Point reference number.</li> <li>(vi) retained by the Owner for the duration of the Deed.</li> </ol>		
7A.2 - Biodiversity Stewardship Site inspections	<p>Inspection of the Biodiversity Stewardship Site must be undertaken by a suitably qualified person at the times, and having regard to the purpose, set out below:</p>		
	<b>Site inspection</b>		
	<b>A. Purpose</b>	<b>B. Interval (starting from the Agreement Date)</b>	

	To determine the percentage of Living Ground Cover present on the Biodiversity Stewardship Site for the purposes of grazing Stock in accordance with part 2.1 of section 1 of the Management Plan (if applicable).	Every 12 months		
	To determine the physical condition of fencing and gates and whether they are maintained to a standard that can: <ul style="list-style-type: none"> <li>- control the movement of Stock if required under Part 2.2 of Section 1 of the Management Plan</li> <li>- control human disturbance if required under Part 8 in Section 1 of the Management Plan</li> <li>- control the movement of Feral Pests if required under Part 6.1 of Section 1 of the Management Plan</li> </ul>	Every 12 months		
	To determine any human disturbance on the Biodiversity Stewardship Site Note: Part 8 of section 1 of the Management Plan and clause 4 of this Deed place restrictions on human activities on the Biodiversity Stewardship Site	Every 6 months		
	To determine the physical condition of existing firetrails and access tracks within the Biodiversity Stewardship Site, their navigability and evidence of erosion.  The Owner must also document any evidence of erosion within other areas of the Biodiversity Stewardship Site.  Note: Parts 8.2 and 8.9 of Section 1 of the Management Plan contain requirements for erosion control	Every 6 months		
	To determine the presence of Rubbish on the Biodiversity Stewardship Site  Note: Part 8.3 and 8.6 of Section 1 of the Management Plan contains requirements for storing and disposing of Rubbish on the Biodiversity Stewardship Site	Every 6 months		
	Baseline Biodiversity monitoring	Every 5 years		
	To assess the effectiveness of Threatened Species habitat management actions	Every 12 months or as specified in the Threatened Species Habitat Management Plan		
7A.3 - Baseline biodiversity monitoring – Vegetation Integrity Survey Plots	Vegetation Integrity Survey Plots must be established with the purpose of providing a baseline for assessing Biodiversity outcomes in the future at the locations specified below.			
	Locations of Vegetation Integrity Survey Plots Projected coordinate system: [GDA 94 Zone 56]			
	Plot reference	Easting	Northing	Direction of plot (magnetic degrees)
	MP1	376091.83	6353637.43	180
	MP2	376054.65	6353400.34	0

	MP3	376036.57	6353226.55	0
	MP4	376208.36	6353133.13	90
	MP5	376380.14	6353214.50	90
	MP6	376668.46	6352931.20	180
	MP7	376614.21	6353140.16	270
	MP8	376813.11	6353402.35	0
	MP9	376817.13	6352904.08	90
7A.4 - Monitoring	The Owner must carry out monitoring against the performance measures using the methods and frequency specified below.			
<b>Monitoring Fire for conservation management</b>				
	<b>Performance Measure</b>	<b>Management Zone/s</b>	<b>Method of monitoring</b>	<b>Timing</b>
	Exclude fire from Powerful Owl Nest Tree	Zone 7	Walkthrough of nest site species polygon	Annual
	Exclude fire from areas near existing urban development	Zone 1, 2, 6, 8, 9	Walkthrough of excluded area	Annual
	Recruitment of species increasing PCT species closer to benchmark. Removal of any weed regrowth	All	Vegetation Integrity Monitoring Plots	5 -yearly
<b>Monitoring Native Vegetation Management</b>				
	<b>Performance indicator</b>	<b>Management zone(s)</b>	<b>Method of monitoring</b>	<b>Timing</b>
	PCTs VI increasing to reflect benchmark levels	All	Vegetation Integrity Monitoring Plots	5 -yearly
	Weeds to remain absent / suppressed	All	Weed surveys (rapid point)  Vegetation Integrity Monitoring Plots	Annual  5 -yearly
<b>Monitoring Threatened Species Habitat Management</b>				

<b>Performance indicator</b>	<b>Management Zone/s</b>	<b>Threatened species</b>	<b>Method of monitoring</b>	<b>Timing</b>
<b>Habitat is preserved or improved</b>	All	Black-eyed Susan	Area of occupancy transect within species polygons, condition assessment (record species health, weed levels, threatening processes).	5-yearly
<b>Habitat is preserved or improved</b>	7	Powerful Owl	Deploy song meter and stag watch at nest sites during breeding season.	5-yearly
<b>Habitat is preserved or improved</b>	All	Squirrel Glider	Deploy baited cameras at locations where Squirrel Gliders previously recorded.	5-yearly
<b>Monitoring Integrated Feral Pests Management</b>				
<b>Performance indicator</b>	<b>Management Zone/s</b>	<b>Pest species</b>	<b>Method of monitoring</b>	<b>Timing</b>
Level of feral animal signs is not increasing	All	All	Scat / activity search (random meander) in conjunction with annual weed surveys and accessing monitoring plots. Installation of camera traps in suitable areas as identified during annual surveys.	Annually  5-yearly
Level of feral animal signs is not increasing	All	Fox/Wild Dog	Utilise camera traps as part of baiting program to observe night time activity along tracks or edges.	As required
<b>Monitoring Integrated Weed Management</b>				
<b>Performance indicator</b>	<b>Management Zone/s</b>	<b>Weed species</b>	<b>Method of monitoring</b>	<b>Timing</b>
HTE's replaced with resilient native vegetation community currently displaced by the infestation Exotic weeds remain absent / suppressed in stewardship site.	All	All	Rapid point assessment of weed densities at fixed monitoring plots and other areas of identified weed infestations.  Vegetation Integrity Monitoring Plots	Annually  5 Yearly

Ecological response targets for required management actions of each vegetation zone.

Management type	Attribute Type	Attribute	Current value	Year 5 Target	Year 10 Target	Year 15 Target	Year 20 Target
<b>1649 Moderate</b>							
Required management actions	Composition	Tree Richness	2	2.2	2.5	2.7	2.99
		Shrub Richness	6	6.3	6.6	7.0	7.29
		Grass And Grass-like Richness	1	1.2	1.5	1.7	1.9
		Forb Richness	0.1	0.1	0.1	0.1	0.09
		Fern Richness	1	1.1	1.1	1.2	1.28
		Other Richness	1	1.1	1.2	1.3	1.39
	Structure	Tree Cover	45	45.0	45.0	45.0	45
		Shrub Cover	32	32.0	32.0	32.0	32
		Grass And Grass-like Cover	85	85.0	85.0	85.0	85
		Forb Cover	0	0.0	0.1	0.1	0.1
		Fern Cover	0.1	0.1	0.2	0.2	0.2
		Other Cover	0.1	0.1	0.2	0.2	0.2
	Function	Length of Fallen Logs	0.4	0.6	0.7	0.9	1.01
		Litter Cover	44	44.0	44.0	44.0	44
		Regeneration	1	1.0	1.0	1.0	1
<b>1627 Moderate</b>							
Required management actions	Composition	Tree Richness	5.3	5.5	5.7	6.0	6.19
		Shrub Richness	9	10.1	11.2	12.3	13.4

		Grass And Grass-like Richness	4.3	4.8	5.3	5.7	6.21
		Forb Richness	2.7	2.9	3.2	3.4	3.61
		Fern Richness	2.7	2.7	2.7	2.7	2.67
		Other Richness	7.3	7.3	7.3	7.3	7.33
	Structure	Tree Cover	35.2	36.7	38.1	39.6	41
		Shrub Cover	38.8	43.6	48.5	53.3	58.1
		Grass And Grass-like Cover	13.9	18.1	22.2	26.4	30.5
		Forb Cover	0.8	1.2	1.5	1.9	2.2
		Fern Cover	16.4	16.4	16.4	16.4	16.4
		Other Cover	7.5	7.5	7.5	7.5	7.5
	Function	Length of Fallen Logs	17.8	21.9	25.9	30.0	34.08
		Litter Cover	66.7	65.5	64.4	63.2	62
		Regeneration	1	1.0	1.0	1.0	1
<b>1627 Poor</b>							
Required management actions	Composition	Tree Richness	7	7.0	7.0	7.0	7
		Shrub Richness	6	6.6	7.2	7.8	8.39
		Grass And Grass-like Richness	4.5	4.9	5.2	5.6	5.96
		Forb Richness	5	5.2	5.3	5.5	5.6
		Fern Richness	2	2.0	2.0	2.0	2
		Other Richness	8	8.0	8.0	8.0	8
	Structure	Tree Cover	32.3	33.8	35.3	36.7	38.2
		Shrub Cover	2.2	3.3	4.3	5.4	6.4
		Grass And Grass-like Cover	2.6	4.6	6.6	8.6	10.6

		Forb Cover	3.4	3.6	3.9	4.1	4.3
		Fern Cover	3.6	3.6	3.6	3.6	3.6
		Other Cover	1.7	1.9	2.1	2.3	2.5
	Function	Length of Fallen Logs	22	25.1	28.2	31.3	34.34
		Litter Cover	77.5	73.6	69.8	65.9	62
		Regeneration	1	1.0	1.0	1.0	1
<b>1138 Moderate</b>							
Required management actions	Composition	Tree Richness	6	6.1	6.3	6.4	6.55
		Shrub Richness	11.7	12.9	14.1	15.3	16.48
		Grass And Grass-like Richness	5.1	5.5	6.0	6.4	6.89
		Forb Richness	3	3.3	3.5	3.8	4.01
		Fern Richness	1.6	1.6	1.7	1.7	1.76
		Other Richness	5.7	5.7	5.7	5.7	5.71
	Structure	Tree Cover	50.5	50.5	50.5	50.5	50.5
		Shrub Cover	20.7	26.9	33.1	39.2	45.4
		Grass And Grass-like Cover	22	24.9	27.9	30.8	33.7
		Forb Cover	1.3	1.7	2.2	2.6	3
		Fern Cover	1.7	1.7	1.7	1.7	1.7
		Other Cover	10.4	10.4	10.4	10.4	10.4
	Function	Length of Fallen Logs	4.8	7.6	10.3	13.1	15.82
		Litter Cover	66.7	65.5	64.4	63.2	62
		Regeneration	1	1.2	1.4	1.6	1.85

**1138 HighWeed**

Required management actions	Composition	Tree Richness	7	7.0	7.0	7.0	7
		Shrub Richness	9	10.0	10.9	11.9	12.85
		Grass And Grass-like Richness	7	7.2	7.5	7.7	7.98
		Forb Richness	6	6.1	6.3	6.4	6.58
		Fern Richness	1	1.1	1.1	1.2	1.28
		Other Richness	5	5.0	5.0	5.0	5
	Structure	Tree Cover	45.3	45.3	45.3	45.3	45.3
		Shrub Cover	16.9	22.3	27.7	33.0	38.4
		Grass And Grass-like Cover	9.8	14.0	18.2	22.3	26.5
		Forb Cover	1.2	1.6	2.0	2.3	2.7
		Fern Cover	0.1	0.1	0.2	0.2	0.2
		Other Cover	2.9	3.1	3.2	3.4	3.5
	Function	Length of Fallen Logs	3	4.7	6.4	8.1	9.76
		Litter Cover	75	71.8	68.5	65.3	62
		Regeneration	1	1.0	1.0	1.0	1



## Section 7B - Templates for reporting monitoring activities

### Diary template for fire management

The Owner must complete this template following any fire event (including prescribed ecological burns, wildfire and arson) within the Biodiversity Stewardship Site.

Completed templates must be submitted with the next Annual Report.

**Completed by:**

**Date of fire:**

**Cause of fire:**

**Management Zone/s affected:**

**Area burnt (hectares) (attach map):**

**Canopy scorched (%):**

**Leaf litter remaining (%):**

**Intensity of fire:**

**Other comments/observations:**

### Template for the reporting of monitoring activities – Integrated Fire management

The Owner must complete this template for each Management Zone. The template must be completed each year and submitted with the Annual Report.

It is required to be completed by a suitably qualified ecologist or bush regenerator.

**Completed by:**

<b>Date:</b>	
<b>Management Zone/s:</b>	
<b>Date of fires on the Biodiversity Stewardship Site:</b>	
<b>General description of the vegetation structure and species composition at time of reporting</b>	
<b>Observations of the health of threatened flora and its response to previous fires</b>	
<b>Interpretation of other ecological outcomes of previous fires</b>	
<b>Assessment of results of management actions (refer to performance measures)</b>	
<b>Recommendation on the timing and location for future planned fires within the Management Zone(s)</b>	

## Diary template for Native Vegetation management

The Owner must complete this template to record the details of any Native Vegetation Management Actions implemented on the Biodiversity Stewardship site.

Completed templates are to be submitted with the next Annual Report.

**Completed by:**

**Date of activity:**

**Management Zone/s:**

**Description and type of action undertaken** Include details of the Targeted Supplementary Planting, site treatment and other actions.

**Assessment of results of management actions (refer to performance measures).** Include details of the results of the action and how it could be improved in future

**Minor variations from management plan (if any)** (Include details and reasons)

**Template for reporting of monitoring activities – Native Vegetation management**

The Owner must complete this template to record the outcomes of Native Vegetation Management Actions implemented on the Biodiversity Stewardship site.

The template must be completed each year and submitted with the Annual Report.

<b>Management Zone/s</b>	<b>Date</b>	<b>Observations and assessment of monitoring against performance measures</b>

**Diary Template for the reporting of monitoring activities - threatened species habitat management**

The Owner must complete this template to record the details of any Threatened Species Habitat Management Actions implemented on the Biodiversity Stewardship site.

Completed templates are to be submitted with the next Annual Report.

**Completed by:**

**Date of activity:**

**Management zone/s:**

**Description and type of management undertaken** Include details of the target species and the management activity used.

**Assessment of effectiveness of threatened species habitat management action (refer to performance measures).** Include details of the results of the management activity implemented and how it could be improved in future

**Minor variations from management plan (if any)** (Include details and reasons)

## Template for reporting of monitoring activities – Threatened Species Habitat Management

The Owner must complete this template to record the outcomes of Threatened Species Habitat Management Actions implemented on the Biodiversity Stewardship site.

The template must be completed each year and submitted with the Annual Report.

Management Zone/s	Date	Observations and assessment of monitoring against performance measures

## Diary template for Feral Pest management

The Owner must complete this template to record the details of any Feral Pest management control actions implemented on the Biodiversity Stewardship site.

Completed templates are to be submitted with the next Annual Report.

**Completed by:**

**Date of activity:**

**Management zone/s:**

**Description and type of control undertaken** Include details of the target species and the control technique used.

**Assessment of results of control technique action (refer to performance measures).** Include details of the results of the control technique and how it could be improved in future

**Minor variations from management plan (if any)** (Include details and reasons)

### Template for reporting of monitoring activities – Feral Pest management

The Owner must complete this template to record the outcomes of Feral Pest management control actions implemented on the Biodiversity Stewardship site.

The completed template must be submitted with the next Annual Report.

Management Zone/s	Date	Current level of impact on vegetation or threatened fauna species  This column must record impact as Negligible, Minimal, Moderate or High	Observations and assessment of monitoring against performance measures

### Diary Template Integrated Weed management

This template must be completed to record the details of any Integrated Weed Management actions implemented on the Biodiversity Stewardship site. The template must be completed by a suitably qualified bush regenerator or ecologist on behalf of the Owner.

Completed templates are to be submitted with the next Annual Report.

**Completed by:**

**Date of activity:**

**Management Zone:**

**Description and type of control undertaken**

Provide a summary of all weed control activities undertaken within the previous 12 months. As a minimum, this should include number of person hours worked, methods used, type and quantity of chemical used, approximate area (ha) of primary weed treatment and follow-up weed treatment, and the main weeds that were treated. Attach a map of locations worked.



**Assessment of results of control technique action (refer to performance measures).** Include details of the results of weed control activities and how they could be improved in future. Assess effectiveness through evaluation against the relevant performance measures for the management zone.

**Minor variations from management plan (if any)** (Include details and reasons)

**Template for the reporting of monitoring activities – integrated weed management**

This template must be completed annually for each Management Zone by a suitably qualified bush regenerator or ecologist.  
The completed template must be submitted with the next Annual Report.

**Management Zone:**

**Completed by:**

**Date:**

**Weed control summary**

Provide a summary and review of all weed control activities undertaken within the previous 12 months and their effectiveness through evaluation against the relevant performance measures for the management zone. As a minimum, this should include number of person hours worked, methods used, type and quantity of chemical used, approximate area (ha) of primary weed treatment and follow-up weed treatment, and the main weeds that were treated. Attach a map of locations worked.

**Description and recommendations for remaining weed infestations**

Provide a summary of the type and density of the main weeds that remain in the Management Zone, their location (mark on a map if necessary), and describe the recommended techniques for controlling these weeds.

**Condition**

Record each of the following condition measures as either absent, occasional, moderate or frequent when assessed across the part of the management zone where active integrated weed management has commenced

	<b>Absent</b>	<b>Occasional</b>	<b>Moderate</b>	<b>Frequent</b>
Regeneration of native canopy species				
Regeneration of native shrubs				
Regeneration of native groundcovers				
Dieback of native species				
Erosion				

**Comments on condition**

Provide any additional comments on the condition of the Management Zone, including reference to areas where supplementary planting or erosion control is required or has occurred (mark on a map where necessary).

## Annual Reporting Template

Biodiversity Stewardship Site Annual Report					
<b>Location details</b> Biodiversity Stewardship Agreement ID: _____ Name of Owner/s: _____ Reporting period: _____ Property address: _____					
Management action	Required completion time and frequency	Action completed (Yes/No)	Actual completion date/s	Description of actions undertaken (including where undertaken (including reference to Management Zones), any variations and the reasons for variation)	Visual observations and other comments (including reasons for non-completion)
1 Management of fire for conservation					
2 Management of grazing for conservation					
3 Native vegetation management					
4 Threatened species habitat management					
5 Hydrology management					
6 Integrated feral pest management					
7 Integrated weed management					
8 Management of human disturbance					
9 Monitoring					

**Records submitted with this report**

- Photographs taken at the Photo Point locations specified in the Management Plan in the Biodiversity Stewardship Agreement
- Results of any monitoring, inspections or surveys required to be conducted under the Biodiversity Stewardship Agreement. This should include all completed diary templates and completed templates for the reporting of monitoring activities.

**Signature and certification**

I hereby declare that the information supplied in this report is accurate and complies with the reporting requirements under the Biodiversity Stewardship Agreement  
Note: If the land that forms the Biodiversity Stewardship Site is owned by multiple persons, each Owner must sign this Annual Report

Signed:	Signed:
Date:	Date:

## Attachment 5: Dictionary

In this Deed, unless a contrary intention appears, a capitalised word or words has the meaning given in the corresponding row in the table below:

Note: Definitions used only within the Management Plan are defined within the Management Plan and are not defined in this Dictionary

Word/s	Meaning
<b>Aboriginal Objects</b>	<p>The same meaning that “Aboriginal objects” has in the NPW Act</p> <p><i>Note: This definition may change from time to time with changes in Law, but on the Agreement Date this meaning was “Aboriginal object means any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains”</i></p>
<b>Aboriginal Places</b>	<p>The same meaning that “Aboriginal places” has in the NPW Act</p> <p><i>Note: This definition may change from time to time with changes in Law, but on the Agreement Date this meaning was “Aboriginal place means any place declared to be an Aboriginal place under section 84” of the NPW Act</i></p>
<b>Accredited Person</b>	<p>The meaning given to it in section 1.6 of the Biodiversity Conservation Act</p> <p><i>Note: This definition may change from time to time with changes in Law, but on the Agreement Date this meant a person accredited to prepare biodiversity assessment reports in accordance with the Biodiversity Assessment Method, under the scheme for the accreditation that is prepared in draft by the Environment Agency Head and published by the Minister on the NSW legislation website</i></p>
<b>Agreement Date</b>	<p>The date on which the last party executes the Deed, being the date set out in <b>Error! Reference source not found.</b></p>
<b>Annual Contribution</b>	<p>The annual contribution payable in relation to the Biodiversity Stewardship Site, determined in accordance with clause 6.27 of the Biodiversity Conservation Regulations</p>
<b>Annual Report</b>	<p>An annual report for each Reporting Period in the form of, and attaching the information and documents required by, the Annual Reporting Template</p>

Word/s	Meaning
<b>Annual Reporting Template</b>	<p>The form entitled “Annual Reporting Template” which has been available to the Owner by whichever is the most recent of the following:</p> <ul style="list-style-type: none"> <li>– as attached to this Deed in Attachment 4</li> <li>– on the NSW BCT website</li> <li>– as supplied to the Owner by the Minister’s Representative from time to time</li> </ul>
<b>Assessment Date</b>	<p>The date on which the assessment for the preparation of the Site Assessment Report commenced</p>
<b>Attachment</b>	<p>A numbered attachment at the end of this Deed</p>
<b>Authorised Entrant</b>	<p>Any one or more of the following:</p> <ul style="list-style-type: none"> <li>– the Minister</li> <li>– the Minister’s Representative</li> <li>– the Environment Agency Head</li> <li>– an officer of DPIE or the NSW BCT</li> <li>– any other person that the Minister, the Environment Agency Head or an officer of DPIE or the NSW BCT requests the Owner to allow onto the Land to carry out Research and/or Monitoring where the Owner has consented to such request (such consent not to be unreasonably withheld or delayed)</li> </ul>
<b>Authorised Officer</b>	<p>A person who is appointed as an authorised officer under Part 12 of the Biodiversity Conservation Act</p> <p><i>Note: This definition may change from time to time with changes in Law, but on the Agreement Date, the Environment Agency Head may appoint any person (including a class of persons) as an authorised officer</i></p>
<b>Authority</b>	<p>Any federal, state or local government authority, body or department having jurisdiction in relation to the Premises or this Deed and includes any governmental or semi-governmental or local governmental authority, administrative or judicial body or tribunal, department, commission, public authority, agency, minister, statutory corporation or instrumentality</p>

Word/s	Meaning
<b>Biodiversity</b>	The meaning given to it in section 1.5 of the Biodiversity Conservation Act  <i>Note: This definition may change from time to time with changes in Law, but on the Agreement Date this meaning was “the variety of living animal and plant life from all sources, and includes diversity within and between species and diversity of ecosystems”</i>
<b>Biodiversity Assessment Method</b>	The method established under section 6.7 of the Biodiversity Conservation Act
<b>Biodiversity Conservation Act</b>	The <i>Biodiversity Conservation Act 2016</i> (NSW) and any regulations from time to time in force under that Act
<b>Biodiversity Conservation Regulations</b>	The <i>Biodiversity Conservation Regulation 2017</i> (NSW)
<b>Biodiversity Credit</b>	A biodiversity credit created under this Deed
<b>Biodiversity Stewardship Payments Fund</b>	The fund established under Part 6 of the Biodiversity Conservation Act to hold funds from the transfer or retirement of Biodiversity Credits, and other funds
<b>Biodiversity Stewardship Site</b>	The area described in <b>Error! Reference source not found.</b> beside the words “Biodiversity Stewardship Site”

Word/s	Meaning
<b>Biodiversity Values</b>	The meaning given to it in section 1.5 of the Biodiversity Conservation Act  <i>Note: This definition may change from time to time with changes in Law, but on the Agreement Date this meaning was:</i>  <i>“- vegetation integrity—being the degree to which the composition, structure and function of vegetation at a particular site and the surrounding landscape has been altered from a near natural state, - habitat suitability—being the degree to which the habitat needs of threatened species are present at a particular site, - threatened species abundance—being the occurrence and abundance of threatened species or threatened ecological communities, or their habitat, at a particular site, - vegetation abundance—being the occurrence and abundance of vegetation at a particular site, - habitat connectivity—being the degree to which a particular site connects different areas of habitat of threatened species to facilitate the movement of those species across their range, - threatened species movement—being the degree to which a particular site contributes to the movement of threatened species to maintain their lifecycle, - flight path integrity—being the degree to which the flight paths of protected animals over a particular site are free from interference, - water sustainability—being the degree to which water quality, water bodies and hydrological processes sustain threatened species and threatened ecological communities at a particular site”</i>
<b>Business Day</b>	A day that is not: – a Saturday, Sunday, public holiday or bank holiday in Sydney, Australia; or – 24, 27, 28, 29, 30 or 31 of December
<b>Claim</b>	Any claim, damage, demand, liability, Cost, loss, suit, proceeding (whether actual or potential), right of action and claim for compensation
<b>Cost</b>	Any cost, expense, charge, payment, outgoing, loss or other expenditure of any nature whether direct, indirect or consequential and whether accrued or paid and includes legal costs and expenses on whichever is the higher of a full indemnity basis or solicitor and own client basis

Word/s	Meaning
<b>CPI</b>	The Consumer Price Index All Groups number relating to Sydney published from time to time by the Australian Bureau of Statistics (or if that index ceases to be published then such other index which is, in the reasonable opinion of the Minister, a similar index which reflects changes in the cost of living in Sydney at the relevant time)
<b>Deed</b>	This deed and includes any attachments, annexures or schedules attached to this deed
<b>Development</b>	The meaning given to it in section 1.6 of the Biodiversity Conservation Act  <i>Note: This definition may change from time to time with changes in Law, but on the Agreement Date this meaning was:</i> “(a) the use of land, and (b) the subdivision of land, and (c) the erection of a building, and (d) the carrying out of a work, and (e) the demolition of a building or work, and (f) any other act, matter or thing referred to in section 26 of the Environmental Planning and Assessment Act 1979 (NSW) that is controlled by an environmental planning instrument, but does not include the demolition of a temporary structure”
<b>Dictionary</b>	This Attachment 5 and includes any replacement or updated component of such Attachment from time to time
<b>Disclosure Information</b>	The information contained in this Deed, including a copy of the Deed and details of the location of the Land and Management Actions and Management Payments under this Deed
<b>Dispute</b>	A dispute, difference or claim in connection with this Deed (but excluding any dispute, difference or claim in connection with clause <b>Error! Reference source not found.</b> )
<b>Dispute Notice</b>	A notice setting out: – the nature, or subject matter, of the Dispute, including a summary of any efforts made to resolve other than in accordance with the Dispute Resolution Process; – the identity of any other person centrally involved in the Dispute; – the intent to invoke the Dispute Resolution Process; and – (if practicable) the outcomes which the notifying party wishes to achieve
<b>Dispute Resolution Process</b>	The process set out in clauses <b>Error! Reference source not found.</b> and <b>Error! Reference source not found.</b>
<b>DPIE</b>	The Department of Planning, Industry and Environment

Word/s	Meaning
<b>Environment Agency Head</b>	The meaning given to it in section 1.6 of the Biodiversity Conservation Act  <i>Note: This definition may change from time to time with changes in Law, but on the Agreement Date this meaning was “the Secretary of the Department of Planning, Industry and Environment”</i>
<b>First Payment Date</b>	The date of the first occasion when the balance in the Relevant Account is equal to or greater than 100% of the Total Fund Deposit
<b>Force Majeure Event</b>	An event that is beyond the reasonable control of the Owner, including any natural disaster, fire, flood, accident, war, riot, act of terrorism, biohazard, a serious epidemic, or a change in legislation, but only to the extent that such events were beyond the Owner’s reasonable control. A force majeure event does not however include any obligation to pay money, a labour dispute or shortage of materials or labour
<b>Formal Review</b>	A review conducted by an Accredited Person or by an appropriately qualified person to consider the efficacy of the Management Plan, including the Management Actions, and any amendments to the Management Plan that the reviewer considers appropriate to ensure the conservation of Biodiversity and of Biodiversity Values on the Biodiversity Stewardship Site and a written report summarising the findings of that review
<b>Fund Manager</b>	The person appointed from time to time under Part 6 of the Biodiversity Conservation Act as the “fund manager” in respect of the Biodiversity Stewardship Payments Fund, and who, as at the Agreement Date, is the person listed in <b>Error! Reference source not found.</b>
<b>Funding Acknowledgement Guidelines</b>	The Funding Acknowledgement Guidelines for recipients of NSW Government infrastructure grants published by the NSW Government and as updated from time to time
<b>GST Act</b>	<i>A New Tax System (Goods and Services Tax) Act 1999 (Cth).</i>  The expressions “GST”, “Input Tax Credit”, “Recipient”, “Supply”, “Tax Invoice” and “Taxable Supply” have the meanings given to those expressions in the GST Act and “Supplier” means the party who made the Taxable Supply

Word/s	Meaning
<b>Identified Legal Requirements</b>	Any one or more of the requirements listed below: <ul style="list-style-type: none"> <li>– under the <i>Biosecurity Act 2015</i> (NSW): <ul style="list-style-type: none"> <li>+ an emergency order under section 44;</li> <li>+ a control order under section 62;</li> <li>+ a requirement to assist an authorised officer under section 103; or</li> <li>+ a biosecurity direction under section 128;</li> <li>+ a weed control notice issued under and prior to the repeal of the <i>Noxious Weeds Act 1993</i> (NSW);</li> </ul> </li> <li>– under the <i>Local Land Services Act 2013</i> (NSW): <ul style="list-style-type: none"> <li>+ a pest control order under section 130,</li> <li>+ an eradication order under section 144,</li> <li>+ a requirement for destruction of pests under section 152, or</li> <li>+ a requirement to assist an authorised officer under section 179</li> </ul> </li> <li>+ a direction under section 37A of the <i>State Emergency and Rescue Management Act 1989</i> (NSW) in relation to a state of emergency or a direction under section 22A of that Act,</li> <li>– under the <i>Rural Fires Act 1997</i> (NSW): <ul style="list-style-type: none"> <li>+ any notified steps under section 63,</li> <li>+ a direction under section 45 for the prevention, control or suppression of any bush fire,</li> <li>+ a bush fire hazard reduction notice under section 66,</li> <li>+ an emergency fire fighting act within the meaning of that Act,</li> <li>+ emergency bush fire hazard reduction work within the meaning of that Act,</li> <li>+ otherwise as part of any managed bushfire hazard reduction work that is carried out in accordance with a current bushfire hazard reduction certificate that applies to the work or the provisions of any bushfire code applying to the land specified in the certificate</li> </ul> </li> </ul>
<b>Item</b>	A numbered item in the terms schedule at the beginning of this Deed
<b>Land</b>	The land described in <b>Error! Reference source not found.</b> beside the word "Land"
<b>Law</b>	The common law, any requirement of any rule, statute, proclamation, regulation, ordinance or by-law, present or future, and whether state, federal or otherwise and the requirements of any Authority

Word/s	Meaning
<b>Management Action</b>	An obligation to act or an obligation to refrain from doing something set out in section 1-7 of the Management Plan
<b>Management Payments</b>	A payment to be made to the Owner in accordance with clause <b>Error! Reference source not found.</b>
<b>Management Plan</b>	The management plan attached to this Deed in Attachment 4 and includes any replacement or updated component of such Attachment from time to time
<b>Management Zone</b>	An area of a given vegetation zone within the Biodiversity Stewardship Site subject to the same regime of management identified as a management zone on the map immediately below the words "Property Management Actions" included in the Management Plan
<b>Minister's Representative</b>	The person nominated by the Minister to be his or her representative from time to time and who, as at the Agreement Date, is the person set out in <b>Error! Reference source not found.</b>
<b>Monitoring</b>	Observing and making records (in any form) of any one or more of the following: <ul style="list-style-type: none"> <li>– the status of and changes to Biodiversity and Biodiversity Values</li> <li>– the success of the Management Plan in improving Biodiversity</li> <li>– compliance by the Owner with this Deed and the Biodiversity Conservation Act</li> </ul>
<b>Native Plant</b>	The meaning given to it in section 5 of the NPW Act <p><i>Note: This definition may change from time to time with changes in Law, but on the Agreement Date this meaning was "native plant means any tree, shrub, fern, creeper, vine, palm or plant that is native to Australia, and includes the flower and any other part thereof"</i></p>
<b>Native Vegetation</b>	The meaning given to it in section 1.6 of the Biodiversity Act <p><i>Note: This definition may change from time to time with changes in Law, but on the Agreement Date this meant any plants (including trees, saplings, shrubs, scrub, groundcover) native to New South Wales (ie established in New South Wales before European settlement)</i></p>
<b>New Owner</b>	Any transferee, assignee or novatee of part or all of the Owner's interest under this Deed, including by way of a sale of the Land, or any part of the Land



Word/s	Meaning
<b>Nominated Bank Account</b>	The bank account nominated by the Owner in accordance with clause <b>Error! Reference source not found.</b> or as updated from time to time in accordance with clause <b>Error! Reference source not found.</b>
<b>Note</b>	Any indented or italicised text in this point 8 font and prefaced by the word "Note:"
<b>Notice Address</b>	The address set out in <b>Error! Reference source not found., Error! Reference source not found., Error! Reference source not found.</b> or <b>Error! Reference source not found.</b> beside the words "Address for service of notices" for the party to whom the notice is to be given
<b>Notified Occupant</b>	Any Occupant that the Minister is aware of because the Owner has provided the notification required under clause <b>Error! Reference source not found.</b>
<b>NPW Act</b>	The <i>National Parks and Wildlife Act 1974</i> (NSW) and any regulations from time to time in force under that Act
<b>NSW BCT</b>	The Biodiversity Conservation Trust of New South Wales established under the Biodiversity Conservation Act
<b>Occupancy Agreement</b>	Any lease or licence or other agreement which permits entry to or occupancy of any part of the Land (including the Biodiversity Stewardship Site)
<b>Occupant</b>	Any person who occupies any part of the Land pursuant to an Occupancy Agreement (but does not include an Owner)
<b>Ongoing</b>	In relation to the timing of carrying out a Management Action means commencing on the Agreement Date or First Payment Date (as indicated) and continuing in perpetuity, unless specified otherwise
<b>Operational Deficit</b>	The meaning given to it in the Biodiversity Conservation Regulations  <i>Note: This definition may change from time to time with changes in Law, but on the Agreement Date this meant the balance of the biodiversity stewardship site account is less than the total present value of all scheduled management payments in respect of the biodiversity stewardship site for the period starting from the most recent anniversary of the date on which the biodiversity stewardship agreement was entered into and extending to perpetuity.</i>

Word/s	Meaning
<b>Operational Deficit Threshold</b>	The meaning given to it in the Biodiversity Conservation Regulations  <i>Note: This definition may change from time to time with changes in Law, but on the Agreement Date this meant:</i>  <i>(a) 20% of the total present value of all scheduled management payments in respect of the biodiversity stewardship site for the period starting from the most recent anniversary of the date on which the biodiversity stewardship agreement was entered into and extending to perpetuity, or</i>  <i>(b) such other amount as the Minister determines, having regard to the advice of the Fund Manager</i>
<b>Owner</b>	The person described as "Owner" at Part A at the beginning of this Deed, any successor or assign under clause <b>Error! Reference source not found.</b> and any person who is an "owner" within the meaning given to that term in section 1.6 of the Biodiversity Conservation Act  <i>Note: This definition may change from time to time with changes in Law, but on the Agreement Date this meaning was that owner of land includes:</i>  <i>(a) every person who, either at law or in equity:</i>  <i>(i) is entitled to the land for any estate of freehold in possession, or</i> <i>(ii) is a person to whom the Crown has lawfully contracted to sell the land under the Crown Lands Act 1989 (NSW) or any other Act relating to the alienation of lands of the Crown, or</i> <i>(iii) is entitled to receive, or is in receipt of, or if the land were let to a tenant would be entitled to receive, the rents and profits in respect of the land, whether as beneficial owner, trustee, mortgagee in possession or otherwise, and</i>  <i>(b) a person who leases land under the Crown Lands Act 1989, the Crown Lands (Continued Tenures) Act 1989 (NSW) or the Western Lands Act 1901 (NSW), and</i>  <i>(c) any other person who, under the regulations, is taken to be the owner of the land,</i>  <i>but (unless the regulations otherwise provide) does not include a beneficiary of a trust relating to the land</i>

Word/s	Meaning
<b>Owner Associate</b>	Any representative, servant, contractor, consultant, agent, lessee, licensee or invitee of the Owner
<b>Ownership Change Date</b>	The date that the Minister's Representative is notified of a change in Owner of the Land
<b>Payment Amount</b>	Each amount set out in, or calculated in accordance with, the Payment Tables for a Payment Year, increased in accordance with the method set out in clause <b>Error! Reference source not found.</b>
<b>Payment Tables</b>	The tables in <b>Error! Reference source not found.</b> and <b>Error! Reference source not found.</b>
<b>Payment Year</b>	Each 12 month period: <ul style="list-style-type: none"> <li>– commencing on the First Payment Date; and</li> <li>– each yearly anniversary of the First Payment Date</li> </ul>
<b>Permitted Exception</b>	An activity specified in the table in <b>Error! Reference source not found.</b> , provided it is carried out in accordance with the requirements within that table, and only in the Management Zones for which the activity is permitted
<b>Protected Animal</b>	The same meaning that it has in section 1.6 of the Biodiversity Conservation Act <p><i>Note: This definition may change from time to time with changes in Law, but on the Agreement Date this meaning was "an animal of a species listed or referred to in Schedule 5 of the Biodiversity Conservation Act" and "animal means any animal, whether vertebrate or invertebrate and in any stage of biological development, but does not include:</i></p> <p>(a) humans, or</p> <p>(b) fish within the meaning of the Fisheries Management Act 1994 (NSW)"</p>
<b>Protected Person</b>	Each and all of the following: <ul style="list-style-type: none"> <li>– the Minister</li> <li>– the Minister's Representative</li> <li>– the Environment Agency Head</li> <li>– the employees or officers of DPIE</li> <li>– the NSW BCT</li> <li>– the members and committees of the Board of the NSW BCT</li> <li>– the employees and officers of the NSW BCT</li> <li>– any other person acting under the delegation, direction or control of the Minister, the Minister's Representative, the Environment Agency Head or the NSW BCT for any purpose</li> <li>– the Crown in right of the State of New South Wales</li> </ul>

Word/s	Meaning
<b>Registration</b>	Registration of this Deed, or the variation or termination of this Deed, in the Register kept under the <i>Real Property Act 1900</i> (NSW) and includes, where the context allows, an application to register this Deed and "Register" has a corresponding meaning
<b>Registration Date</b>	The date on which the Minister receives notification from the Registrar-General that this Deed has been registered under Section 5.12 of the Biodiversity Conservation Act
<b>Relevant Account</b>	The biodiversity stewardship site account within the Biodiversity Stewardship Payments Fund kept by the Fund Manager in accordance with the Biodiversity Conservation Regulations
<b>Reporting Obligations</b>	The reporting and record keeping requirements as set out in Attachment <b>Error! Reference source not found.</b>
<b>Reporting Period</b>	Each of the following: <ul style="list-style-type: none"> <li>– prior to the First Payment Date: <ul style="list-style-type: none"> <li>+ the 12 month period commencing on the Agreement Date; and</li> <li>+ each subsequent 12 month period commencing on each anniversary of the Agreement Date</li> </ul> </li> <li>– on and from the First Payment Date: <ul style="list-style-type: none"> <li>+ the 12 month period commencing on such First Payment Date; and</li> <li>+ each subsequent 12 month period commencing on each anniversary of the First Payment Date</li> </ul> </li> </ul>
<b>Research</b>	The investigation into and study of facts relating to Biodiversity and Biodiversity Values, and the conservation of Biodiversity and Biodiversity Values
<b>Review Date</b>	<ul style="list-style-type: none"> <li>– Until the first Ownership Change Date, each 5th anniversary of the Agreement Date</li> <li>– On and after the Ownership Change Date, on the Ownership Change Date and each 5th anniversary of the Ownership Change Date</li> </ul>
<b>Sell</b>	To sell, transfer, gift, assign or otherwise dispose of and "Sale" has a corresponding meaning
<b>Site Assessment Report</b>	The report described in <b>Error! Reference source not found.</b>
<b>Site Sketch Plan</b>	A plan in registrable form which is part of this Deed showing the boundaries of the Biodiversity Stewardship Site, but not a deposited plan or subdivision plan which is separate to this Deed

Word/s	Meaning
<b>Site Splitting</b>	A gifting or transfer of part only of the Land, including a Subdivision in preparation for such a gift or transfer  <i>Note: For example, if the Owner wanted the Owner's children to each own part of the Land</i>
<b>Special Conditions</b>	The terms and conditions set out in <b>Error! Reference source not found.</b>
<b>Standard Provisions</b>	Clauses <b>Error! Reference source not found.</b> to <b>Error! Reference source not found.</b> of this Deed, and this Dictionary
<b>Subdivide</b>	To physically or legally (or both) split or separate the Land into portions or to make any application to an Authority for such a split or separation
<b>Templates</b>	The Templates available on the NSW BCT website
<b>Threatened Ecological Community</b>	Vegetation communities that are: <ul style="list-style-type: none"> <li>– known to occur within the Conservation Area and specified as a threatened ecological community in the Site Values Report; or</li> <li>– listed in Schedule 2 to the Biodiversity Conservation Act; or</li> <li>– listed in accordance with the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth)</li> </ul>
<b>Threatened Species</b>	The same meaning as in section 1.6 of the Biodiversity Conservation Act  <i>Note: This definition may change from time to time with changes in Law, but on the Agreement Date a list of threatened species was available at <a href="https://www.legislation.nsw.gov.au/#/view/act/2016/63/sch1">https://www.legislation.nsw.gov.au/#/view/act/2016/63/sch1</a></i>

Word/s	Meaning
<b>Total Fund Deposit</b>	The meaning given to it in section 6.21(7) of the Biodiversity Conservation Act and for this Biodiversity Stewardship Site is the amount specified in <b>Error! Reference source not found.</b>  <i>Note: This definition may change from time to time with changes in Law, but on the Agreement Date this meant, for a site, an amount determined (subject to the regulations) by the Environment Agency Head as the present value of the total of all scheduled management payments in respect of the site (under the biodiversity stewardship agreement) during the life of the agreement. The present value is to be determined by applying the discount rate determined and published by the Environment Agency Head from time to time.</i>
<b>Waste</b>	The meaning given to it in the <i>Protection of the Environment Operations Act 1997</i> (NSW)  <i>Note: This definition may change from time to time with changes in Law, but on the Agreement Date this meaning included:</i>  (a) any substance (whether solid, liquid or gaseous) that is discharged, emitted or deposited in the environment in such volume, constituency or manner as to cause an alteration in the environment, or  (b) any discarded, rejected, unwanted, surplus or abandoned substance, or  (c) any otherwise discarded, rejected, unwanted, surplus or abandoned substance intended for sale or for recycling, processing, recovery or purification by a separate operation from that which produced the substance, or  (d) any processed, recycled, re-used or recovered substance produced wholly or partly from waste that is applied to land, or used as fuel, but only in the circumstances prescribed by the regulations, or  (e) any substance prescribed by the regulations to be waste.  <i>A substance is not precluded from being waste merely because it is or may be processed, recycled, re-used or recovered</i>

## Attachment 6: Reference Papers

## Appendix C – Biodiversity Credit Report



# BAM Biodiversity Credit Report - Stewardship Agreement

## Proposal Details

Assessment Id	Proposal Name	BAM data last updated *
00036999/BAAS19076/22/00037000	3043 Hillsborough BSSAR	19/12/2022
Assessor Name	Assessor Number	BAM Data version *
		56
Proponent Names	Report Created	BAM Case Status
	06/01/2023	Open
Assessment Revision	Assessment Type	Date Finalised
0	Stewardship (for offset sites)	To be finalised

\* 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.

## Additional Information for Approval

### Vegetation Zones With Customized Rate Of Decline

No Changes

### PCTs With Customized Benchmarks

No Changes

### Predicted Threatened Species Not On Site

Name

**Grantiella picta** / Painted Honeyeater

**Thylogale stigmatica** / Red-legged Pademelon

Assessment Id  
00036999/BAAS19076/22/00037000

Proposal Name  
3043 Hillsborough BSSAR



# BAM Biodiversity Credit Report - Stewardship Agreement

## Ecosystem Credit Summary (Number and class of biodiversity credits to be created)

Name of Plant Community Type/ID	Name of threatened ecological community	Area	HBT Cr	No HBT Cr	Total credits to be created
1183-Smooth-barked Apple - Sydney Peppermint - Turpentine heathy open forest on plateaux areas of the Sydney Basin Bioregion	Not a TEC	14.5	100	4	104
1627-Smooth-barked Apple - Turpentine - Sydney Peppermint heathy woodland on sandstone ranges of the Central Coast	Not a TEC	9.3	54	0	54
1649-Smooth-barked Apple - Red Mahogany - Swamp Mahogany - Melaleuca sieberi heathy swamp woodland of coastal lowlands	Swamp Sclerophyll Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	1.9	0	4	4

<b>1183-Smooth-barked Apple - Sydney Peppermint - Turpentine heathy open forest on plateaux areas of the Sydney Basin Bioregion</b>	Class	Trading group	Zone	HBT	Credits	IBRA region
	Sydney Coastal Dry Sclerophyll Forests	Sydney Coastal Dry Sclerophyll Forests <50%	1183_1183 Moderate	Yes	100	Wyong
	Sydney Coastal Dry Sclerophyll Forests	Sydney Coastal Dry Sclerophyll Forests <50%	1183_1183 Moderate HighWeed	No	4	Wyong
	Vegetation Formation (offset variation rules)	Vegetation Class	Zone	HBT	Credits	Offset trading group tier (non TEC's)

## BAM Biodiversity Credit Report - Stewardship Agreement

	Dry Sclerophyll Forests (Shrubby sub-formation)	Sydney Coastal Dry Sclerophyll Forests	1183_1183 Moderate	Yes (including artificial)	100	Tier 4 <50%
	Dry Sclerophyll Forests (Shrubby sub-formation)	Sydney Coastal Dry Sclerophyll Forests	1183_1183 Moderate HighWeed	No	4	Tier 4 <50%
<b>1627-Smooth-barked Apple - Turpentine - Sydney Peppermint heathy woodland on sandstone ranges of the Central Coast</b>	Class	Trading group	Zone	HBT	Credits	IBRA region
	Sydney Coastal Dry Sclerophyll Forests	Sydney Coastal Dry Sclerophyll Forests <50%	1627_1627 Moderate	Yes	52	Wyong
	Sydney Coastal Dry Sclerophyll Forests	Sydney Coastal Dry Sclerophyll Forests <50%	1627_1627 Moderate HighWeed	Yes	2	Wyong
	Vegetation Formation (offset variation rules)	Vegetation Class	Zone	HBT	Credits	Offset trading group tier (non TEC's)
	Dry Sclerophyll Forests (Shrubby sub-formation)	Sydney Coastal Dry Sclerophyll Forests	1627_1627 Moderate	Yes (including artificial)	52	Tier 4 <50%



## BAM Biodiversity Credit Report - Stewardship Agreement

	Dry Sclerophyll Forests (Shrubby sub-formation)	Sydney Coastal Dry Sclerophyll Forests	1627_1627 Moderate HighWeed	Yes (including artificial)	2	Tier 4 <50%
<b>1649-Smooth-barked Apple - Red Mahogany - Swamp Mahogany - Melaleuca sieberi heathy swamp woodland of coastal lowlands</b>	Name of offset trading group (like for like)	Trading group	Zone	HBT	Credits	IBRA region
	Swamp Sclerophyll Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	-	1649_1649 Moderate	No	4	Wyong
	Vegetation Formation (offset variation rules)	Vegetation Class	Zone	HBT	Credits	Offset trading group tier (non TEC's)
	Forested Wetlands	Swamp Sclerophyll Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	1649_1649 Moderate	No	4	Tier 3 - Swamp Sclerophyll Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions

### Species Credit Summary

Species (Class of species credits)	Listing Status	Kingdom	Area/Count	Number of credits created
<b>Ninox strenua</b> / Powerful Owl	Vulnerable	Fauna	8.0	56



## BAM Biodiversity Credit Report - Stewardship Agreement

<b>Petaurus norfolcensis</b> / Squirrel Glider	Vulnerable	Fauna	25.7	162
<b>Tetratheca juncea</b> / Black-eyed Susan	Vulnerable	Flora	25.7	162

## Appendix D – Field Survey Effort

Date	Time	Field Activity	No. of Persons on Site	Company
1 September 2009	NS	Diurnal bird census Diurnal reptile and amphibian searches Habitat survey Opportunistic observation	NS	RPS
2 September 2009	NS	Diurnal bird census Diurnal reptile and amphibian searches Habitat survey Opportunistic observation	NS	RPS
9 September 2009	NS	Diurnal bird census Diurnal reptile and amphibian searches Habitat survey Opportunistic observation	NS	RPS
21 September 2009	NS	Diurnal bird census Diurnal reptile and amphibian searches Habitat survey Opportunistic observation	NS	RPS
22 September 2009	NS	Diurnal bird census Diurnal reptile and amphibian searches Habitat survey Opportunistic observation	NS	RPS
23 September 2009	NS	Diurnal bird census Diurnal reptile and amphibian searches Habitat survey Opportunistic observation	NS	RPS

Date	Time	Field Activity	No. of Persons on Site	Company
24 September 2009	NS	Diurnal bird census Diurnal reptile and amphibian searches Habitat survey Opportunistic observation	NS	RPS
25 September 2009	NS	Diurnal bird census Diurnal reptile and amphibian searches Habitat survey Opportunistic observation	NS	RPS
13 March 2012	4hrs 1400-1700	Opportunistic fauna observation	NS	CEG
14 March 2012	1hr (0800-0900) 1hr (0900-1000) 2hrs (0800-1000)	Diurnal bird census Diurnal reptile and amphibian searches Habitat survey and Opportunistic observation	NS	CEG
15 March 2012	1hr (0800-0900) 1hr (0900-1000) 2hr (0800-1000)	Diurnal bird census Diurnal reptile and amphibian searches Habitat survey and Opportunistic observation	NS	CEG
16 March 2012	1hr (0800-0900) 1hr (0900-1000) 2hr (0800-1000)	Diurnal bird census Diurnal reptile and amphibian searches Habitat survey and Opportunistic observation	NS	CEG

Date	Time	Field Activity	No. of Persons on Site	Company
7 May 2012	8hrs 0830-1630	Opportunistic observation Habitat tree survey / owl pellet searches	NS	CEG
8 May 2012	8.5hrs 0800-1630	Opportunistic observation Habitat tree survey / owl pellet searches	NS	CEG
10 May 2012	6.5hrs 0730-1400	Opportunistic observation Habitat tree survey / owl pellet searches	NS	CEG
17 May 2012	4.5hrs 0930-1330	Diurnal bird census Diurnal reptile and amphibian searches Habitat survey and Opportunistic observation Habitat tree survey / owl pellet searches	NS	CEG
1 August 2012	4 hrs 1100-1300	Diurnal bird census	2	CEG
26 September 2012	4 hrs 0730-1130 4 hrs 1230-1630	Diurnal bird census Diurnal reptile and amphibian searches Habitat survey and Opportunistic observation Habitat tree survey / owl pellet searches	NS	CEG
27 September 2012	4 hrs 0730-1130 3hrs 1230 - 1530	Diurnal bird census Diurnal reptile and amphibian searches Habitat survey and Opportunistic observation Habitat tree survey / owl pellet searches	NS	CEG
3 October 2012	5hrs 0730-1230 4hrs 1330-1730	Diurnal bird census Diurnal reptile and amphibian searches Habitat survey and Opportunistic observation Habitat tree survey / owl pellet searches	NS	CEG

Date	Time	Field Activity	No. of Persons on Site	Company
17 October 2012	4.5hrs 0730-1200	Diurnal bird census Diurnal reptile and amphibian searches Habitat survey and Opportunistic observation Habitat tree survey / owl pellet searches	NS	CEG
18 October 2012	4 hrs 0730-1130 4 hrs 1230-1630	Diurnal bird census Diurnal reptile and amphibian searches Habitat survey and Opportunistic observation Habitat tree survey / owl pellet searches	NS	CEG
19 October 2012	4 hrs 0730-1130 2.5 hrs 1230-1500	Diurnal bird census Diurnal reptile and amphibian searches Habitat survey and Opportunistic observation Habitat tree survey / owl pellet searches	NS	CEG
23 October 2012	4hrs 0730-1130 2.5hrs 1230-1500	Diurnal bird census Diurnal reptile and amphibian searches Habitat survey and Opportunistic observation Habitat tree survey / owl pellet searches	NS	CEG
24 October 2012	4hrs 0730-1130 4.25hrs 1230-1645	Diurnal bird census Diurnal reptile and amphibian searches Habitat survey and Opportunistic observation Habitat tree survey / owl pellet searches	NS	CEG
25 October 2012	4hrs 0730-1130	Diurnal bird census Diurnal reptile and amphibian searches Habitat survey and Opportunistic observation Habitat tree survey / owl pellet searches	NS	CEG
26 February 2013	8hrs (4hrs x 2 observers) 1530-1930	Diurnal bird census Diurnal reptile and amphibian searches Habitat survey and Opportunistic observation	NS	CEG

Date	Time	Field Activity	No. of Persons on Site	Company
		Habitat tree survey / owl pellet searches		
21 September 2009	3hrs	Spotlighting Threatened nocturnal bird and mammal call playback	NS	RPS
22 September 2009	3 hrs	Spotlighting Threatened nocturnal bird and mammal call playback	NS	RPS
20 March 2012	2hrs 1930-2130	Threatened nocturnal bird and mammal call playback survey Targeted nocturnal reptile, bird and mammal spotlight search Opportunistic observation and call detection	NS	CEG
23 March 2012	2hrs 1915-2115	Threatened nocturnal bird and mammal call playback survey Targeted nocturnal reptile, bird and mammal spotlight search Opportunistic observation and call detection	NS	CEG
23 October 2012	2 x 1.5hrs (1900-2030)	Stag watch Hollow Trees 105 & 128 Spotlight	NS	CEG
24 October 2012	2 x 1.5hrs (1900-2030)	Stag watch Hollow Trees 145 & 152 Spotlight	NS	CEG
25 October 2012	2 x 1.5hrs (1900-2030)	Stag watch Hollow Trees 142 & 135 Spotlight	NS	CEG
26 February 2013	3hrs (2 x 1.5hrs) (1930-2100)	Nocturnal bird, amphibian and mammal call playback survey Targeted nocturnal reptile, bird and mammal spotlight	NS	CEG



Date	Time	Field Activity	No. of Persons on Site	Company
		search Opportunistic observation and call detection		
21 September 2009	NS	Anabat bat echolocation call detection x 2 units	NS	RPS
22 September 2009	NS	Anabat bat echolocation call detection x 2 units	NS	RPS
20 March 2012	2 hrs 1930-2130	Anabat bat echolocation call detection x 2 units	NS	CEG
23 March 2012	2 hrs 1915-2115	Anabat bat echolocation call detection x 2 units	NS	CEG
23 October 2012	1.5hrs 1900-2030	Anabat bat echolocation call detection x 2 units	NS	CEG
24 October 2012	1.5hrs 1900-2030	Anabat bat echolocation call detection x 2 units	NS	CEG
25 October 2012	1.5hrs 1900-2030	Anabat bat echolocation call detection x 2 units	NS	CEG
26 February 2013	1.5hrs 1930-2100	Anabat bat echolocation call detection x 2 units	NS	CEG
21 September 2009 22 September 2009 23 September 2009	NS	Arboreal Mammal Elliot 10 B size Elliott traps x 2 transects x 4 nights	NS	CEG

Date	Time	Field Activity	No. of Persons on Site	Company
24 September 2009				
13 March 2012 14 March 2012 15 March 2012	NS	Arboreal Mammal Elliot Trapping 6 B size Elliot traps x 4 transects x 3 nights	NS	CEG
8 May 2012 9 May 2012 10 May 2012	NS	Arboreal Mammal Elliot Trapping 6 B size Elliot traps x 4 transects x 3 nights	NS	CEG
17 October 2012 18 October 2012 19 October 2012	NS	Arboreal Mammal Elliot Trapping 5 B size Elliot traps x 2 transects x 3 nights	NS	CEG
21 September 2009 22 September 2009 23 September 2009 24 September 2009	NS	Small Terrestrial Mammal Elliot 12 A size Elliot traps x 2 transects x 4 nights	NS	RPS
13 March 2012 14 March 2012 15 March 2012	NS	Small Terrestrial Mammal Trapping 9 A size Elliot traps x 4 transects x 3 nights	NS	CEG
17 October 2012 18 October 2012 19 October 2012	NS	Small Terrestrial Mammal Trapping 10 A size Elliot traps x 7 transects x 3 nights 5 A size Elliot traps x 1 transects x 3 nights	NS	CEG
13 March 2012 14 March 2012 15 March 2012	NS	Medium Terrestrial Mammal Trapping 9 B size Elliot traps x 4 transects x 3 nights	NS	CEG

Date	Time	Field Activity	No. of Persons on Site	Company
17 October 2012 18 October 2012 19 October 2012	NS	Medium Terrestrial Mammal Trapping 2 Cage traps x 5 transects x 3 nights	NS	CEG
7/11/2022	NS	Habitat and site survey.	2	AEP
8/11/2022	NS	4x BAM plots.	3	AEP
9/11/2022	NS	5x BAM plots	3	AEP
15/11/2022	NS	3x BAM plots. Weed assessment.	2	AEP
15/11/2022	1900-2200	Spotlighting Call playback Fauna Survey Habitat assessment	2	AEP
16/11/2022	900-1200	2x BAM plots. Weed assessment.	2	AEP
21/11/2022	930-1530	Habitat assessment. Walking track and access rack assessment. Weed assessment.	2	AEP
11/23/2022	1000-1130	Habitat assessment Weed assessment	2	AEP

**Appendix E – Surveyed Candidate Species  
Credit Species**

Species	BC Act	Specified Survey Period (BAM-C)	Habitat Requirements / Habitats Searched / General Notes	Survey Guidelines	RPS, Conacher Environmental Group & AEP Survey Method	Date
<b>Flora</b>						
Charmhaven Apple <i>Angophora inopina</i>	V	All Year	Grows in dry sclerophyll forest on the coast and adjacent ranges. Occurs most frequently in four main vegetation communities: (i) Eucalyptus haemastoma–Corymbia gummifera–Angophora inopina woodland/forest; (ii) Hakea teretifolia–Banksia oblongifolia wet heath; (iii) Eucalyptus resinifera–Melaleuca sieberi–Angophora inopina sedge woodland; (iv) Eucalyptus capitellata–Corymbia gummifera–Angophora inopina woodland/forest. Flowers Spring to Summer.	Parallel walking transects – Maximum distance between transects 20m in open, 10m in dense vegetation For each hectare of potential habitat average field traverse length 1km at 10m separation or 0.5km at 20m separation	100m transects across the entire site (Conacher 2012-2013) Parallel transects approximately 10m apart and random meander surveys covering the entire site (RPS 2010)	Sep & Nov 2010 Mar, May, Sep-Oct 2012 Feb 2013
Thick Lip Spider Orchid <i>Caladenia tessellata</i>	E	Sep-Oct	Generally found in grassy sclerophyll woodland on clay loam or sandy soils, though the population near Braidwood is in low woodland with stony soil. The single leaf regrows each year.	Parallel walking transects – Maximum distance between transects 10m in open, 5m in dense vegetation. For each hectare of potential habitat average field traverse length 2km at 5m separation or 1km at 10m separation	Parallel transects 5m apart under canopy and 10m in open areas	Sep-Oct 2012
Netted Bottle Brush <i>Callistemon linearifolius</i>	V	Oct-Jan	Recorded from the Georges River to Hawkesbury River in the Sydney area, and north to the Nelson Bay area of NSW. Grows in dry sclerophyll forest on the coast and adjacent ranges. Flowers Spring to Summer	Parallel walking transects – Maximum distance between transects 20m in open, 10m in dense vegetation. For each hectare of potential habitat average field traverse length 1km at 10m separation or 0.5km at 20m separation	100m transects across the entire site (Conacher 2012-2013) Parallel transects approximately 10m apart and random meander surveys covering the entire site (RPS 2010)	Sep & Nov 2010 Mar, May, Sep-Oct 2012 Feb 2013
Leafless Tongue Orchid <i>Cryptostylis hunteriana</i>	V	Nov-Jan	A leafless orchid only undetectable when flowering. Does not appear to have well defined habitat preferences, known from a range of communities including swamp-heath and woodland. Associated with Eucalyptus sclerophylla, E. sieberi, Corymbia gummifera and Allocasuarina littoralis. Often occurs in association with more common C. subulata and C. erecta which can signify suitable niche habitat within a locale.	Parallel walking transects – Maximum distance between transects 10m in open, 5m in dense vegetation. For each hectare of potential habitat average field traverse length 2km at 5m separation or 1km at 10m separation. When local reference population is flowering	Parallel transects 5m apart under canopy and 10m in open areas	Feb 2013
White-flowered Wax Plant <i>Cynanchum elegans</i>	E	All Year	The White-flowered Wax Plant usually occurs on the edge of dry rainforest vegetation. Other associated vegetation types include littoral rainforest; Coastal Tea-tree Leptospermum laevigatum – Coastal Banksia Banksia integrifolia subsp. integrifolia coastal scrub; Forest Red Gum Eucalyptus tereticornis aligned open forest and woodland; Spotted Gum Corymbia maculata aligned open forest and woodland; and Bracelet Honeymyrtle Melaleuca armillaris scrub to open scrub.	Parallel walking transects – Maximum distance between transects 10m in open, 5m in dense vegetation. For each hectare of potential habitat average field traverse length 2km at 5m separation or 1km at 10m separation	100m transects across the entire site (Conacher 2012-2013) Parallel transects approximately 10m apart and random meander surveys covering the entire site (RPS 2010)	Sep & Nov 2010 Mar, May, Sep-Oct 2012 Feb 2013
Rough Doubletail <i>Diuris praecox</i>	V	Aug	Known from between Bateau Bay and Smiths Lake Grows on hills and slopes of near-coastal districts in open forests which have a grassy to fairly dense understorey Exists as subterranean tubers most of the year. It produces leaves and flowering stems in winter from Jul to early Sep	Parallel walking transects – Maximum distance between transects 10m in open, 5m in dense vegetation. For each hectare of potential habitat average field traverse length 2km at 5m separation or 1km at 10m separation. When local reference population is flow	Parallel transects 5m apart under canopy and 10m in open areas	Sep 2012
Camfield's Stringybark <i>Eucalyptus camfieldii</i>	V	All Year	Poor coastal country in shallow sandy soils overlying Hawkesbury sandstone. Coastal heath mostly on exposed sandy ridges. Occurs mostly in small scattered stands near the boundary of tall coastal heaths and low open woodland of the slightly more fertile inland areas. Associated species frequently include stunted species of Eucalyptus oblonga (Narrow-leaved Stringybark), E. capitellata (Brown Stringybark) and E. haemastoma (Scribbly Gum).	Parallel walking transects – Maximum distance between transects 40m in open, 20m in dense vegetation. For each hectare of potential habitat average field traverse length 0.5km at 20m separation or 0.25km at 40m separation	100m transects across the entire site (Conacher 2012-2013) Parallel transects approximately 10m apart and random meander surveys covering the entire site (RPS 2010)	Sep & Nov 2010 Mar, May, Sep-Oct 2012 Feb 2013
Small-flower Grevillea <i>Grevillea parviflora subsp. parviflora</i>	V	Aug-Nov	Grows in sandy or light clay soils usually over thin shales, often with lateritic ironstone gravels and nodules. Sydney region occurrences are usually on Tertiary sands and alluvium, and soils derived from the Mittagong Formation. Occurs in a range of vegetation types from heath and shrubby woodland to open forest. In Sydney it has been recorded from Shale Sandstone Transition Forest and in the Hunter in Kurri Sand Swamp Woodland. However, other communities are occupied in other locations where the species can be found.	Parallel walking transects – Maximum distance between transects 15m in open, 10m in dense vegetation. For each hectare of potential habitat average field traverse length 1km at 10m separation or 0.75km at 15m separation	Parallel transects 5m apart under canopy and 10m in open areas	Sep-Oct 2012

Species	BC Act	Specified Survey Period (BAM-C)	Habitat Requirements / Habitats Searched / General Notes	Survey Guidelines	RPS, Conacher Environmental Group & AEP Survey Method	Date
Heath Wrinklewort <i>Rutidosis heterogama</i>	V	All Year	Grows in heath on sandy soils and moist areas in open forest, and has been recorded along disturbed roadsides.	Parallel walking transects – Maximum distance between transects 20m in open, 10m in dense vegetation. For each hectare of potential habitat average field traverse length 1km at 10m separation or 0.5km at 20m separation.	Parallel transects 5m apart under canopy and 10m in open areas	Oct 2012
Black-eyed Susan <i>Tetratheca juncea</i>	V	Sep-Oct	Cryptic shrub – difficult to distinguish the clumped grass like stems from other vegetation when not in flower. Generally found in low open forest/woodland with a mixed shrub understorey and grassy groundcover, also occurs in heathland and moist forest and is most often associated with low nutrient soils of the Awaba Soil Landscape. Confined to the northern portion of the Sydney Basin bioregion and the southern portion of the North Coast bioregion in the local government areas of Wyong, Lake Macquarie, Newcastle, Port Stephens, Great Lakes and Cessnock.	Parallel walking transects – Maximum distance between transects 10m in open, 5m in dense vegetation. For each hectare of potential habitat average field traverse length 2km at 5m separation or 1km at 10m separation. When local reference population is flowering (typically Jul– Aug peak period)	Targeted surveys and counts of <i>Tetratheca juncea</i> were undertaken by RPS (2010) across the site.  100m transects across the entire site (Conacher 2012-2013)  Parallel transects approximately 10m apart and random meander surveys covering the entire site (RPS 2010).  AEP confirmed locations (2022).	Sep & Nov 2010 Sep-Oct 2012 Feb 2013 Nov 2022
<b>Fauna</b>						
Regent Honeyeater <i>Anthochaera phrygia</i>	CE	All Year	This species inhabits dry open forest and woodland, particularly Box-Ironbark woodland, and riparian forests of River Sheoak. Regent Honeyeaters inhabit woodlands that support a significantly high abundance and species richness of bird species. These woodlands have significantly large numbers of mature trees, high canopy cover and abundance of mistletoes. The subject site is not located on the Regent Honeyeater important area habitat map.	Diurnal Bird Survey - Area based survey methods		Sep 2009, Mar, May, Aug, Sep, Oct 2012, Feb 2013, Nov 2022
Bush Stone-curlew <i>Burhinus grallarius</i>	E	All Year	The species has a strong preference for habitats with extensive fallen/standing dead timber including logs. The species is mainly found in western slopes and plains and the Riverina, smaller numbers on Central and North Coast with increasing numbers in Tweed Valley. It may be easier to detect during breeding season, possibly calls all year, but it is unclear how well it responds to playback. The species was allocated to a species credit as experts determined that it cannot be predicted to occur at a site based on vegetation surrogates but can be detected reliably from survey.	Diurnal bird census – Flushing by walking through potential habitat Spotlighting by foot or from a vehicle driven in first gear. Call playback - Sites for Bush Stone-curlew surveys should be 2-4km apart and conducted during the breeding season.	Various summer and winter diurnal bird surveys across all vegetation types; 57x 20min/ha plot warm season 12x 20min/ha plot cool season 7x 20min/ha plot cool season water course 8 call playback nights	Sep 2009, Mar, May, Aug, Sep, Oct 2012, Feb 2013, Nov 2022
Gang-gang Cockatoo <i>Callocephalon fimbriatum</i>	V	Oct-Jan	The species favours tall mountain forests and woodlands (particularly heavily timbered/mature wet sclerophyll forests) in spring and summer. In winter and autumn, the species moves to lower latitudes and occupies drier more open eucalypt forests and woodlands including dry forest in coastal areas and is often found in urban areas.	Area based survey methods	Various summer and winter diurnal bird surveys across all vegetation types; 57x 20min/ha plot warm season 12x 20min/ha plot cool season 7x 20min/ha plot cool season water course	Sep 2009, Mar, May, Aug, Sep, Oct 2012, Feb 2013, Nov 2022
Glossy Black-Cockatoo <i>Calyptorhynchus lathami</i>	V	Jan-Sep	The species inhabits open forest and woodlands of the coast where stands of She-oak occur. The species is dependent on large hollow-bearing eucalypts for nest sites.	Area based survey methods	Various summer and winter diurnal bird surveys across all vegetation types; 57x 20min/ha plot warm season 12x 20min/ha plot cool season 7x 20min/ha plot cool season water course	Sep 2009, Mar, May, Aug, Sep, Oct 2012, Feb 2013, Nov 2022

Species	BC Act	Specified Survey Period (BAM-C)	Habitat Requirements / Habitats Searched / General Notes	Survey Guidelines	RPS, Conacher Environmental Group & AEP Survey Method	Date
Eastern Pygmy-possum <i>Cercartetus nanus</i>	V	Oct-Mar	The species can be found in a broad range of habitats from rainforest through sclerophyll (including Box-Ironbark) forest and woodland to heath, but in most areas woodlands and heath appear to be preferred, except in north-eastern NSW where they are most frequently encountered in rainforest. Feeds largely on nectar and pollen collected from banksias, eucalypts and bottlebrushes; an important pollinator of heathland plants such as banksias; soft fruits are eaten when flowers are unavailable. Also feeds on insects throughout the year; this feed source may be more important in habitats where flowers are less abundant such as wet forests. Shelters in tree hollows, rotten stumps, holes in the ground, abandoned bird-nests, Ringtail Possum ( <i>Pseudocheirus peregrinus</i> ) dreys or thickets of vegetation, (e.g. grass-tree skirts); nest-building appears to be restricted to breeding females; tree hollows are favoured but spherical nests have been found under the bark of eucalypts and in shredded bark in tree forks. Appear to be mainly solitary, each individual using several nests, with males having non-exclusive home-ranges of about 0.68 hectares and females about 0.35 hectares. Young can be born whenever food sources are available, however most births occur between late spring and early autumn.	The minimum survey effort for site under 100ha should be 2 per vegetation community or habitat type for 14 consecutive nights. Effort per stratification unit up to 50 hectares: Spotlighting on foot - 2 x 1 hour and 1km up to 200 hectares of stratification unit, walking at approximately 1km per hour on 2 separate nights	Coastal Plains Open Forest: 24 x 30min spotlight searches 321 Small Elliot Terrestrial Trap nights 36 Cage Trap nights / Elliott B 173 Arboreal Trap nights  Sheltered Open Forest: 6 x 30min spotlight searches 108 Small Elliot Trap nights 18 Cage Trap nights / Elliott B 63 Arboreal Trap nights	Sep 2009, Mar, May, Oct 2012, Feb 2013, Nov 2022
Large-eared Pied Bat <i>Chalinolobus dwyeri</i>	V	Nov-Jan	The species is a full species credit because it cannot be reliably predicted to occur on a site based on vegetation and other landscape features (either foraging or breeding). This species usually gives birth to twins.  SAll threshold is potential breeding habitat and presence of breeding individuals. Potential breeding habitat is PCTs associated with the species within 100m of rocky areas containing caves, or overhangs or crevices, cliffs or escarpments, or old mines, tunnels, culverts, derelict concrete buildings. Surveys must be undertaken as per the Threatened Bat Survey Guide to confirm breeding habitat.  Species mapping polygon for breeding habitat must use high resolution aerial imagery and topographic maps to identify features on the subject land (caves, scarps, cliffs etc). Polygon must be at least 100m wide (or 100m diameter for point locations such as caves) with the breeding habitat features (may be multiple) as the centroid (see Threatened Bat Survey Guide). All breeding habitat on or within 100m of the subject land and the area immediately surrounding the feature must be identified.  All habitat on the subject land should also be mapped if present. Use high resolution aerial imagery and topographic maps to identify potential roost habitat features on the subject land within 2km caves, scarps, cliffs etc. Species polygon boundary should align with PCTs on the subject land to which the species is associated that are within 2km of identified potential roost habitat features.	16 trap nights minimum  Minimum 4 nights of harp trapping or acoustic detectors placed close to exits of caves, mines or tunnels.  Four traps per night over two nights, repeated at least two weeks later is required  Roost search as required (Breeding only)	Acoustic detection (Anabat): 16 nights	Sep 2009, Mar, Oct 2012, Feb 2013
Wallum Froglet <i>Crinia tinnula</i>	V	All year	While found in a range of habitats the species is usually associated with acidic swamps on coastal sand plains. Typically occurs in sedge lands and wet heathlands and can also be found along drainage lines. Breeds in swamps with permanent water as well as shallow ephemeral pools and drainage ditches.	Combination of tadpole surveys, call surveys and nocturnal searches in suitable weather conditions around swamps, dams and flooded roadside ditches. Minimum of one 200-metre transect per water body or inundated area, repeated on a minimum of two separate nights.	Diurnal Search- 11.5hrs Nocturnal search: 4 x 30min (2hrs) spotlight/call playback searches	Sep 2009, Mar, Sep, Oct 2012, Feb 2013
White-bellied Sea-Eagle <i>Haliaeetus leucogaster</i>	V	Jul-Dec	Terrestrial habitat includes coastal dunes, tidal flats, grassland, heathland, woodland and forest. Requires large emergent eucalypts for nesting. Living or dead mature trees within suitable vegetation within 1km of a rivers, lakes, large dams or creeks, wetlands and coastlines.	Area based survey methods. Habitat assessment – 30 minutes searching each relevant habitat.	Various summer and winter diurnal bird surveys across all vegetation types; 57x 20min/ha plot warm season 12x 20min/ha plot cool season 7x 20min/ha plot cool season water course	Sep 2009, Mar, May, Aug, Sep, Oct 2012, Feb 2013, Nov 2022

Species	BC Act	Specified Survey Period (BAM-C)	Habitat Requirements / Habitats Searched / General Notes	Survey Guidelines	RPS, Conacher Environmental Group & AEP Survey Method	Date
Little Eagle <i>Hieraaetus morphnoides</i>	V	Aug-Oct	Little Eagle are a dual credit species. Foraging habitat is considered an ecosystem credit and breeding is considered a species credit. The species nest in live (occasionally dead) large old trees within vegetation. Paddock trees can provide important breeding habitat (there are examples of nest trees in ACT). Breeding habitat is live (occasionally dead) large old trees within suitable vegetation AND 1. the presence of a male and female; or 2. female with nesting material; or 3. an individual on a large stick nest in the top half of the tree canopy. Where a breeding site has been identified in accordance with the BAM the species polygon should be established by providing a circular buffer of 300m around the nest tree. The purpose of the buffer is to minimise disturbance/avoid clearing, for a development application, or to conserve and improve habitat, for a biodiversity stewardship agreement, within the area essential for breeding. This includes habitat suitable for feeding/grooming perches and fledgling requirements. It does not account for foraging habitat. Little eagles are less likely than urban-adapted raptors to readily cross urban or peri-urban spaces to hunt. The 300m buffer is in accordance with the ACT offset guidelines for this species.	Habitat assessment – 30 minutes searching each relevant habitat.	Various summer and winter diurnal bird surveys across all vegetation types; 57x 20min/ha plot warm season 12x 20min/ha plot cool season 7x 20min/ha plot cool season water course Habitat searches/assessment	Sep 2009, Mar, May, Aug, Sep, Oct 2012, Feb 2013, Nov 2022
Swift Parrot <i>Lathamus discolor</i>	E	March- July	This species inhabits Tasmania and breeds during the summer months, and migrates to the eastern mainland during winter months. On the mainland, inhabits dry sclerophyll eucalypt forests and woodlands, in particular, temperate box ironbark woodlands. Also in forests of <i>Eucalyptus tereticornis</i> , <i>E. robusta</i> , <i>Corymbia maculata</i> and <i>C. gummifera</i> in coastal New South Wales/Queensland. The subject site is not located on the Swift Parrot important area habitat map.	Diurnal Bird Survey - Area based survey methods	Diurnal Bird Survey - Area based survey methods	March, May 2012
Green and Golden Bell Frog <i>Litoria aurea</i>	E	Nov-Mar	Habitat for the species includes semipermanent/ephemeral wet areas, within 1km of swamps, waterbodies or wet areas. In high altitude populations calling seasons are restricted to summer months. While chytrid is a potential threat to some populations of the species, other populations are subject to manageable threats. Inhabits marshes, dams and stream-sides, particularly those containing bullrushes ( <i>Typha</i> spp.) or spikerushes ( <i>Eleocharis</i> spp.). Some sites, particularly in the Greater Sydney region occur in highly disturbed areas.	Survey: Refer to the 'NSW Survey Guide for Threatened Frogs' published in Sep 2020, for specific survey requirements.	Diurnal Search- 11.5hrs Nocturnal search: 4 x 30min (2hrs) spotlight/call playback searches	Sep 2009, Mar, Sep, Oct 2012, Feb 2013
Square-tailed Kite <i>Lophoictinia isura</i>	V	Sep-Jan	Found in a variety of timbered habitats including dry woodlands and open forests. Nesting sites generally located along or near water courses, in a fork or on large horizontal limbs. The species is allocated to dual credit because they tend to be sensitive to disturbance around nests. It will be difficult to identify a Kite nest (there are lots of comparable sized stick nests built by other species), especially given Kites have large territories and other stick nesters will undoubtedly also be nesting where Kites might be recorded. Kites will need to be in attendance to confirm breeding sites.	Habitat assessment – 30 minutes searching each relevant habitat.	Various summer and winter diurnal bird surveys across all vegetation types; 57x 20min/ha plot warm season 12x 20min/ha plot cool season 7x 20min/ha plot cool season water course Habitat searches	Sep 2009, Mar, May, Aug, Sep, Oct 2012, Feb 2013, Nov 2022
Little Bent-winged Bat <i>Miniopterus australis</i>	V	Dec-Feb	The habitat constraint for the species is Cave, tunnel, mine, culvert or other structure known or suspected to be used breeding including species records with microhabitat code "IC - in cave;" observation type code "E nest-roost;" with numbers of individuals >500. Any impacts on breeding habitat could be considered potentially serious and irreversible. This species is retained as dual credit because foraging habitat is broad ranging but breeding habitat is highly specific. At lower altitudes this species is usually more abundant	Minimum 4 nights of harp trapping placed close to exits of caves, mines or tunnels.  Two traps per night over two nights, repeated at least two weeks later is required	Acoustic detection (Anabat): 16 nights	Sep 2009, Mar, Oct 2012, Feb 2013



Species	BC Act	Specified Survey Period (BAM-C)	Habitat Requirements / Habitats Searched / General Notes	Survey Guidelines	RPS, Conacher Environmental Group & AEP Survey Method	Date
			during winter months, the lower numbers of individuals from October to February are due to females moving to maternity sites. Additionally, selected <1 for average number of offspring because females do not give birth every time (often miscarry etc.). All breeding habitat including the cave, or other features, used for breeding and the area immediately surrounding this feature must be mapped. Species polygon boundaries should have a 100m radius buffer around an accurate GPS point location centred on the cave/feature entrance. Only five nursery sites /maternity colonies are known in Australia.			
Large Bent-winged Bat <i>Miniopterus orianae oceanensis</i>	V	Dec-Feb	The habitat constraint for the species is Cave, tunnel, mine, culvert or other structure known or suspected to be used breeding including species records with microhabitat code "IC - in cave;" observation type code "E nest-roost;" with numbers of individuals >500. Any impacts on breeding habitat could be considered potentially serious and irreversible. This species is retained as dual credit because foraging habitat is broad ranging but breeding habitat is highly specific. At lower altitudes this species is usually more abundant during winter months, the lower numbers of individuals from October to February are due to females moving to maternity sites. Additionally, selected <1 for average number of offspring because females do not give birth every time (often miscarry etc.). All breeding habitat including the cave, or other features, used for breeding and the area immediately surrounding this feature must be mapped. Species polygon boundaries should have a 100m radius buffer around an accurate GPS point location centred on the cave/feature entrance.	Minimum 4 nights of harp trapping placed close to exits of caves, mines or tunnels. Two traps per night over two nights, repeated at least two weeks later is required	Acoustic detection (Anabat): 16 nights	Sep 2009, Mar, Oct 2012, Feb 2013
Southern Myotis <i>Myotis macropus</i>	V	Oct-Mar	The species is dependent on waterways with pools of 3m wide or greater for foraging (which will be protected under legislation), habitat surrounding waterways is used for breeding and roosting. The species can be detected via survey using appropriate techniques (see Threatened Bat Survey Guide). Constraints based on information from Campbell Susan (2009) So long as it's near water: variable roosting behaviour of the large-footed myotis ( <i>Myotis macropus</i> ). Additionally, selected <1 for ave number of offspring because females do not give birth every (often miscarry etc).  All habitat on the subject land where the subject land is within 200m of a waterbody with pools/ stretches 3m or wider including rivers, creeks, billabongs, lagoons, dams and other waterbodies on the subject land must be mapped. Use aerial imagery to map waterbodies with pools/ stretches 3m or wider on or within 200m of the subject land. Species polygon boundaries should align with PCTs on the subject land to which the species is associated that are within 200m of waterbodies mapped.	16 nights minimum  Minimum 4 nights of harp trapping or acoustic detectors placed close to exits of caves, mines or tunnels. Four traps per night over two nights, repeated at least two weeks later is required  Roost search - 1 per structure (30mins per feature)	Acoustic detection (Anabat): 16 nights	Sep 2009, Mar, Oct 2012, Feb 2013
Barking Owl <i>Ninox connivens</i>		May-Dec	Inhabits woodland and open forest, including fragmented remnants and partly cleared farmland. Roosts in shaded portions of tree canopies. Requires large old trees with hollows for nesting. Barking Owl are a dual credit species. Foraging habitat is considered an ecosystem credit and breeding is considered a species credit	Call playback - Sites should be separated by 800 metres – 1km, and each site must have the playback session repeated as follows: at least 5 visits per site, on different nights. Day habitat search: Search habitat for pellets, and likely hollows. Stag-watching: Observing potential roost hollows for 30mins prior to sunset and 60mins following sunset.	8 call playback nights, day habitat, HBT and pellet searches	Sep 2009, Mar, May, Sep, Oct 2012, Feb 2013, Nov 2022
Powerful Owl <i>Ninox strenua</i>	V	May-Aug	The species inhabits a range of vegetation types from woodland and open sclerophyll forest to tall open wet forest and rainforest. Requires large tree hollows (≥0.5m deep) in large eucalypts (DBH 80-240cm) that are at least 150 years old. Powerful Owl are a dual credit species. Foraging habitat is considered an ecosystem credit and breeding is considered a species credit.	Call playback - Sites should be separated by 800 metres – 1km, and each site must have the playback session repeated at least 5 visits per site, on different nights. Day habitat search: Search habitat for pellets, and likely hollows. Stag-watching: Observing potential roost hollows for 30mins prior to sunset and 60mins following sunset.	8 call playback nights, day habitat, HBT and pellet searches Confirmation of Roost Hollow and Nocturnal survey	Sep 2009, Mar, May, Sep, Oct 2012, Feb 2013, Nov 2022
Eastern Osprey <i>Pandion cristatus</i>		Apr-Nov	The species favours coastal areas, especially the mouths of large rivers, lagoons and lakes. Requires tall dead trees or dead crowns	Area based survey methods. Habitat assessment – 30 minutes searching each relevant habitat.	Various summer and winter diurnal bird surveys across all vegetation types;	Sep 2009, Mar, May, Aug, Sep, Oct

Species	BC Act	Specified Survey Period (BAM-C)	Habitat Requirements / Habitats Searched / General Notes	Survey Guidelines	RPS, Conacher Environmental Group & AEP Survey Method	Date
			of tall live trees for nesting (within 1km of the sea). Eastern Osprey are a dual credit species. Foraging habitat is considered an ecosystem credit and breeding is considered a species credit.		57x 20min/ha plot warm season 12x 20min/ha plot cool season 7x 20min/ha plot cool season water course	2012, Feb 2013, Nov 2022
Squirrel Glider <i>Petaurus norfolcensis</i>	V	Jan-Dec	Inhabits Blackbutt- Bloodwood forest with heath understorey in coastal areas. Lives in family groups. Requires abundant tree hollows for refuge and nesting. Survey year round but sites with bi-pinnate acacia, autumn winter flowering trees and shrubs such as Eucalyptus robusta and Banksia sp (integrifolia etc.) should be subject to a more retracted survey period of between March-August. Relies on large old trees with hollows for breeding and nesting. These trees are also critical for movement and typically need to be closely-connected (i.e. no more than 50 m apart). Important known food plants – Eucalyptus siderophloia/tereticornis/pilularis/robusta, Corymbia maculata/gummifera, Melaleuca quinquenervia, Acacia irrorata/longifolia, Banksia integrifolia/oblongifolia/serrata/spinulosa and Xanthorrhoea spp.	Effort per stratification unit up to 50 hectares: Spotlighting on foot - 2 x 1 hour and 1km up to 200 hectares of stratification unit, walking at approximately 1km per hour on 2 separate nights. Stagwatching - Observing potential roost hollows for 30 minutes prior to sunset and 60 minutes following sunset	Coastal Plains Open Forest: 24 x 30min spotlight searches 36 Cage Trap nights / Elliott B 173 Arboreal Trap nights  Sheltered Open Forest: 6 x 30min spotlight searches 18 Cage Trap nights / Elliott B 63 Arboreal Trap nights	Sep 2009, Mar, May, Oct 2012, Feb 2013, Nov 2022
Koala <i>Phascolarctos cinereus</i>	V	All Year	Inhabit eucalypt woodlands and forests. Feed on the foliage of more than 70 eucalypt species and 30 non-eucalypt species, but in any one area will select preferred browse species. Inactive for most of the day, feeding and moving mostly at night. Spend most of their time in trees, but will descend and traverse open ground to move between trees. Home range size varies with quality of habitat, ranging from less than two ha to several hundred hectares in size.	Call playback - 2 sites per stratification unit up to 200 hectares, plus an additional site per 100 hectares above 200 hectares. Each playback site must have the session conducted twice, on separate nights. Spotlighting on foot - 2 x 1 hour and 1km up to 200 hectares of stratification unit, walking at approximately 1km per hour on 2 separate nights. Habitat assessment - 30 minutes searching each relevant habitat, including trees for scratch marks.	Coastal Plains Open Forest: 24 x 30min spotlight searches  Sheltered Open Forest: 6 x 30min spotlight searches	Sep 2009, Mar, May, Oct 2012, Feb 2013, Nov 2022
Red-crowned Toadlet <i>Pseudophryne australis</i>	V	All Year	All available evidence indicates that the Red-crowned Toadlet is restricted to the Triassic Hawkesbury and Narrabeen Sandstones of the Sydney Geological Basin. The principal vegetation community occupied by this species is Sydney Sandstone Ridgetop Woodland (mainly dominated by Eucalyptus gummifera and Eucalyptus haemastoma, although a number of different associations within this community are utilised depending upon the area. Red-crowned Toadlets usually live in the vicinity of permanently moist soaks or areas of dense ground vegetation or leaf litter along or near head-water stream beds. They prefer the first or second order ephemeral drainage lines commonly called 'feeder creeks' which drain the ridges, benches, cliffs and talus slopes. These watercourses are often dry or reduced to ponded areas for much of the year and only sustain flow for short periods. Under natural conditions these feeder creeks have flows of high water quality and low nutrient loads.	Call detection between July and March is the most common method used to locate the Red-crowned Toadlet. Areas of suitable habitat (any pools of water in drainage lines) should be inspected after rain, with active searches following a period of listening for calls. Males are known to respond to call playback or a loud shout. Tadpoles of this species may be surveyed all year	Diurnal Search- 11.5hrs Nocturnal search: 4 x 30min (2hrs) spotlight/call playback searches	Sep 2009, Mar, Sep, Oct 2012, Feb 2013
Grey-headed Flying-fox <i>Pteropus poliocephalus</i>	V	Oct-Dec	Grey-headed Flying-fox are a dual credit species. Foraging and occasional roost habitat is considered an ecosystem credit while roost camps are considered a species credit. Survey effort included targeted search for roost camps, during all aspects of fieldwork as well as incidental observations during nocturnal survey works.	Spotlighting on foot – 2 x 1 hour and 1km up to 200 hectares of stratification unit, walking at approximately 1km per hour on 2 separate nights	Coastal Plains Open Forest: 24 x 30min spotlight searches  Sheltered Open Forest: 6 x 30min spotlight searches	Sep 2009, Mar, May, Sep, Oct 2012, Feb 2013, Nov 2022
Eastern Cave Bat <i>Vespadelus troughtoni</i>	V	Nov-Jan	Very little is known about the biology of this uncommon species. A cave-roosting species that is usually found in dry open forest and woodland, near cliffs or rocky overhangs; has been recorded roosting in disused mine workings, occasionally in colonies of up to 500 individuals. Occasionally found along cliff-lines in wet eucalypt forest and rainforest. Little is understood of its feeding or breeding requirements or behaviour.	Minimum 4 nights of harp trapping placed close to exits of caves, mines or tunnels. Two traps per night over two nights, repeated at least two weeks later is required	Acoustic detection (Anabat): 16 nights	Sep 2009, Mar, Oct 2012, Feb 2013

## **Appendix F – Surveyed Species Credit Species**

Species	Survey Technique Adhere to Guidelines in Table 15 (Y/N)	Surveyed in Season (Y/N)	BioNet Records (10km)	Geographical Restrictions (Y/N)	Habitat (Present / Condition)	Records from Deployed Equipment	Observed within BSA Site (Y/N)	Species Credits Apply (Y /N)
<b>Flora</b>								
Charmhaven Apple Angophora inopina	Y	Y	N	N	The habitat is present within the subject, BioNet and survey results did not result in the species being observed within the Subject Site.		N	N
Thick Lip Spider Orchid Caladenia tessellata	Y	Y	N	N	The habitat is present within the subject, BioNet and survey results did not result in the species being observed within the Subject Site.		N	N
Netted Bottle Brush Callistemon linearifolius	Y	Y	Y	N	The habitat is present within the subject, BioNet and survey results did not result in the species being observed within the Subject Site.		N	N
Leafless Tongue Orchid Cryptostylis hunteriana	Y	Y	N	N	Does not appear to have well defined habitat preferences, known from a range of communities including swamp heath woodland. BioNet and survey results did not result in the species being observed within the Subject Site.		N	N
White-flowered Wax Plant	Y	Y	N	N	The habitat is not present within the subject, BioNet and survey results also		N	N

Species	Survey Technique Adhere to Guidelines in Table 15 (Y/N)	Surveyed in Season (Y/N)	BioNet Records (10km)	Geographical Restrictions (Y/N)	Habitat (Present / Condition)	Records from Deployed Equipment	Observed within BSA Site (Y/N)	Species Credits Apply (Y /N)
<b>Flora</b>								
Charmhaven Apple Angophora inopina	Y	Y	N	N	The habitat is present within the subject, BioNet and survey results did not result in the species being observed within the Subject Site.		N	N
Thick Lip Spider Orchid Caladenia tessellata	Y	Y	N	N	The habitat is present within the subject, BioNet and survey results did not result in the species being observed within the Subject Site.		N	N
Netted Bottle Brush Callistemon linearifolius	Y	Y	Y	N	The habitat is present within the subject, BioNet and survey results did not result in the species being observed within the Subject Site.		N	N
Leafless Tongue Orchid Cryptostylis hunteriana	Y	Y	N	N	Does not appear to have well defined habitat preferences, known from a range of communities including swamp heath woodland. BioNet and survey results did not result in the species being observed within the Subject Site.		N	N
White-flowered Wax Plant	Y	Y	N	N	The habitat is not present within the subject, BioNet and survey results also		N	N

Species	Survey Technique Adhere to Guidelines in Table 15 (Y/N)	Surveyed in Season (Y/N)	BioNet Records (10km) (Y/N)	Geographical Restrictions (Y/N)	Habitat (Present / Condition)	Records from Deployed Equipment	Observed within BSA Site (Y/N)	Species Credits Apply (Y /N)
Cynanchum elegans					support this result as the species was not observed within the Subject Site.			
Rough Doubletail Diuris praecox	Y	N	Y	Within the Parish boundaries of Newcastle, Kahibah, Wallarah, Tuggerah and Kincumber	The Subject Site located in the Newcastle Parish area contains suitable habitat and has BioNet records within 1500m of the site. Survey results did not result in the species being observed within the Subject Site.		N	N
Camfield's Stringybark Eucalyptus camfieldii	Y	Y	N	N	The habitat is not present within the subject, BioNet and survey results did not result in the species being observed within the Subject Site.		N	N
Small-flower Grevillea Grevillea parviflora subsp. parviflora	Y	Y	N	N	The habitat is present within the subject, BioNet and survey results did not result in the species being observed within the Subject Site.		N	N
Heath Wrinklewort Rutidosis heterogama	Y	Y	N	N	The habitat is present within the subject, BioNet and survey results did not result in the species being observed within the Subject Site.		N	N

Species	Survey Technique Adhere to Guidelines in Table 15 (Y/N)	Surveyed in Season (Y/N)	BioNet Records (10km)	Geographical Restrictions (Y/N)	Habitat (Present / Condition)	Records from Deployed Equipment	Observed within BSA Site (Y/N)	Species Credits Apply (Y /N)
Black-eyed Susan <i>Tetratheca juncea</i>	Y	Y	Y	N	Habitat is present and in good condition. The survey observed this species in many locations.		Y Species recorded in subject site	Y
Fauna								
Bush Stone-curlew <i>Burhinus grallarius</i>	Y	Y	1	Recorded in Blackbutt Reserve from 2014 however this relates to a captive bird. Horseshoe Beach, Newcastle 2010. Single bird reported from Stockland Glendale 2022.	The Bush Stone-curlew is found throughout Australia except for the central southern coast and inland, the far south-east corner, and Tasmania. Only in northern Australia is it still common however and in the south-east it is either rare or extinct throughout its former range.	Marginal habitat is present, and condition varies throughout the site.	N	N
Gang-gang Cockatoo <i>Callocephalon fimbriatum</i>	Y	Y	2	Recorded in New Lambton Heights in 2007.	The Gang-gang Cockatoo is distributed from southern Victoria through south- and central-eastern New South Wales. In New South Wales, the Gang-gang Cockatoo is distributed from the south-	Suitable habitat is present, and condition varies throughout the site.	N	N

Species	Survey Technique Adhere to Guidelines in Table 15 (Y/N)	Surveyed in Season (Y/N)	BioNet Records (10km)	Geographical Restrictions (Y/N)	Habitat (Present / Condition)	Records from Deployed Equipment	Observed within BSA Site (Y/N)	Species Credits Apply (Y /N)
					east coast to the Hunter region, and inland to the Central Tablelands and south-west slopes. It occurs regularly in the Australian Capital Territory. It is rare at the extremities of its range, with isolated records known from as far north as Coffs Harbour and as far west as Mudgee.			
Glossy Black-Cockatoo (Breeding) Calyptorhynchus lathami	Y	Y	3		The species is uncommon although widespread throughout suitable forest and woodland habitats, from the central Queensland coast to East Gippsland in Victoria, and inland to the southern tablelands and central western plains of NSW, with a small population in the Riverina. An isolated population exists on Kangaroo Island, South Australia.	Suitable habitat present, in variable condition throughout the site.	N	N
Eastern Pygmy-possum Cercartetus nanus	Y	Y	1		The Eastern Pygmy-possum is found in south-eastern Australia, from southern Queensland to eastern South Australia and in Tasmania. In NSW it extends from the coast inland as far as the Pilliga, Dubbo, Parkes and Wagga Wagga on the western slopes.	Suitable habitat is present, and condition varies throughout the site.	N	N
Large-eared Pied Bat	Y	Y	1		Found mainly in areas with extensive cliffs and caves, from Rockhampton in	While the species was detected on	N	N



Species	Survey Technique Adhere to Guidelines in Table 15 (Y/N)	Surveyed in Season (Y/N)	BioNet Records (10km)	Geographical Restrictions (Y/N)	Habitat (Present / Condition)	Records from Deployed Equipment	Observed within BSA Site (Y/N)	Species Credits Apply (Y /N)
Chalinolobus dwyeri					Queensland south to Bungonia in the NSW Southern Highlands. It is generally rare with a very patchy distribution in NSW. There are scattered records from the New England Tablelands and North West Slopes.	site using an Anabat detector, comprehensive surveying using harp traps concluded that there is no evidence of breeding on site.		
Wallum Froglet Crinia tinnula	Y	Y	3	N/A	Wallum Froglets are found along the coastal margin from Litabella National Park in south-east Queensland to Kurnell in Sydney.	While dams and waterbodies occur on site, they are generally degraded and constitute sub-optimal habitat for the species.	N	N
White-bellied Sea-Eagle Haliaeetus leucogaster	Y	Y	8	Multiple locations, with higher counts of individuals near Hexham Swamp, Minmi, Cockle Creek and Blackbutt Reserve	Widespread throughout coastal NSW and inland waterways.	Potentially suitable trees for breeding purposes occur on site.	N	N

Species	Survey Technique Adhere to Guidelines in Table 15 (Y/N)	Surveyed in Season (Y/N)	BioNet Records (10km)	Geographical Restrictions (Y/N)	Habitat (Present / Condition)	Records from Deployed Equipment	Observed within BSA Site (Y/N)	Species Credits Apply (Y /N)
Little Eagle Hieraetus morphnoides	Y	Y	1	A single pale-phase individual was observed flying over the Link Road on one occasion during the surveys. Multiple locations. Mostly found near Hexham Swamp, Minmi and Blackbutt Reserve.	The Little Eagle is found throughout the Australian mainland excepting the most densely forested parts of the Dividing Range escarpment. It occurs as a single population throughout NSW.	Potentially suitable trees for breeding purposes occur on site.	N	N
Green and Golden Bell Frog Litoria aurea	Y	Y	-	Records from 1984-1990 in and near Hexham Swamp.	Formerly distributed from the NSW north coast near Brunswick Heads, southwards along the NSW coast to Victoria where it extends into east Gippsland. Records from west to Bathurst, Tumut and the ACT region. Since 1990 there have been approximately 50 recorded locations in NSW, most of which are small, coastal, or near coastal populations. These locations occur over the species' former range, however they are widely separated and isolated. Large populations in NSW are located around	While dams and waterbodies occur on site, they are in degraded condition and constitute sub-optimal habitat for the species.	N	N

Species	Survey Technique Adhere to Guidelines in Table 15 (Y/N)	Surveyed in Season (Y/N)	BioNet Records (10km)	Geographical Restrictions (Y/N)	Habitat (Present / Condition)	Records from Deployed Equipment	Observed within BSA Site (Y/N)	Species Credits Apply (Y /N)
					the metropolitan areas of Sydney, Shoalhaven and mid north coast (one an island population). There is only one known population on the NSW Southern Tablelands.			
Square-tailed Kite (Breeding) <i>Lophoictinia isura</i>	Y	Y	18	Most records located near Hexham Swamp and Blackbutt Reserve.	The Square-tailed Kite ranges along coastal and subcoastal areas from south-western to northern Australia, Queensland, NSW and Victoria. In NSW, scattered records of the species throughout the state indicate that the species is a regular resident in the north, north-east and along the major west-flowing river systems. It is a summer breeding migrant to the south-east, including the NSW south coast, arriving in September and leaving by March.	Potentially suitable trees for breeding purposes occur on site.	N	N
Little Bent-winged Bat <i>Miniopterus australis</i>	Y	Y	107	Records are scattered over the entirety of the 10km <sup>2</sup> search area.	East coast and ranges of Australia from Cape York in Queensland to Wollongong in NSW.	While the species was detected on site using an Anabat detector, comprehensive surveying using harp traps concluded that there is no evidence of breeding on site.	Y	N Breeding habitat not present on site

Species	Survey Technique Adhere to Guidelines in Table 15 (Y/N)	Surveyed in Season (Y/N)	BioNet Records (10km)	Geographical Restrictions (Y/N)	Habitat (Present / Condition)	Records from Deployed Equipment	Observed within BSA Site (Y/N)	Species Credits Apply (Y /N)
Large Bent-winged Bat <i>Miniopterus orianae oceanensis</i>	Y	Y	51	Records are scattered over the entirety of the 10km <sup>2</sup> search area.	Eastern Bentwing-bats occur along the east and north-west coasts of Australia.	While the species was detected on site using an Anabat detector, comprehensive surveying using harp traps concluded that there is no evidence of breeding on site.	Y	N Breeding habitat not present on site
Barking Owl (Breeding) <i>Ninox connivens</i>	Y	Y	3	Record in Blackbutt Reserve from 1985.	The Barking Owl is found throughout continental Australia except for the central arid regions. Although still common in parts of northern Australia, the species has declined greatly in southern Australia and now occurs in a wide but sparse distribution in NSW. Core populations exist on the western slopes and plains and in some northeast coastal and escarpment forests. Many populations crashed as woodland on fertile soils was cleared over the past century, leaving linear riparian strips of remnant trees as the last inhabitable areas. Surveys in 2001 demonstrated that the Pilliga Forest supported the largest population in southern Australia. The owls sometimes extend their home	Large hollows are present on site. Potentially suitable habitat occurs in varying conditions.	N	N

Species	Survey Technique Adhere to Guidelines in Table 15 (Y/N)	Surveyed in Season (Y/N)	BioNet Records (10km)	Geographical Restrictions (Y/N)	Habitat (Present / Condition)	Records from Deployed Equipment	Observed within BSA Site (Y/N)	Species Credits Apply (Y /N)
					range into urban areas, hunting birds in garden trees and insects attracted to streetlights. Extensive wildfires in 2019-20 reduced habitat quality further, burnt many old, hollow-bearing trees needed as refuge by prey species and reduced the viability of some regional owl populations.			
Southern Myotis Myotis macropus	Y	Y	2	Records near Wentworth Creek and Cockle Creek.	The Southern Myotis is found in the coastal band from the north-west of Australia, across the top-end and south to western Victoria. It is rarely found more than 100 km inland, except along major rivers.	Suitable habitat in the form of waterbodies proximate to treed areas are present within the site. The species was not detected during targeted surveys.	N	N
Powerful Owl (Breeding) Ninox strenua	Y	Y	107	Records are scattered over the entirety of the 10km <sup>2</sup> search area, with higher counts around Blackbutt Reserve, the Study Area,	The Powerful Owl is endemic to eastern and south-eastern Australia, mainly on the coastal side of the Great Dividing Range from Mackay to south-western Victoria. In NSW, it is widely distributed throughout the eastern forests from the coast inland to tablelands, with scattered records on the western slopes and plains suggesting occupancy prior to land clearing. Now at low densities throughout most of its eastern range,	Large hollows are present on site. Potentially suitable habitat occurs in varying conditions.	Y Species recorded within the subject site.	Y

Species	Survey Technique Adhere to Guidelines in Table 15 (Y/N)	Surveyed in Season (Y/N)	BioNet Records (10km)	Geographical Restrictions (Y/N)	Habitat (Present / Condition)	Records from Deployed Equipment	Observed within BSA Site (Y/N)	Species Credits Apply (Y /N)
				Jesmond Bushland and north Lake Macquarie	rare along the Murray River and former inland populations may never recover.			
Eastern Osprey (Breeding) Pandion cristatus	Y	Y	-	Most records proximate to Cockle Creek and the Hunter Wetlands Centre	The Osprey has a global distribution with four subspecies previously recognised throughout its range. However, recent studies have identified that there are two species of Osprey - the Western Osprey (P. haliaetus) with three subspecies occurring in Europe, Asia and the Americas and the Eastern Osprey (P. cristatus) occurring between Sulawesi (in Indonesia) Australia and New Caledonia. Eastern Ospreys are found right around the Australian coast line, except for Victoria and Tasmania. They are common around the northern coast, especially on rocky shorelines, islands and reefs. The species is uncommon to rare or absent from closely settled parts of south-eastern Australia. There are a handful of records from inland areas.	Potentially suitable trees for breeding purposes occur on site.	N	N
Squirrel Glider Petaurus norfolcensis	Y	Y	82	Most records occur north of the Study Area and in the Lake	The species is widely though sparsely distributed in eastern Australia, from		Y This species is	Y

Species	Survey Technique Adhere to Guidelines in Table 15 (Y/N)	Surveyed in Season (Y/N)	BioNet Records (10km)	Geographical Restrictions (Y/N)	Habitat (Present / Condition)	Records from Deployed Equipment	Observed within BSA Site (Y/N)	Species Credits Apply (Y /N)
				<p>Macquarie LGA section of the 10km<sup>2</sup> search area.</p> <p>One record adjacent to the Study Area in 2004.</p> <p>This species is recorded in the subject site.</p>	northern Queensland to western Victoria.		recorded in the subject site.	
<p>Koala</p> <p>Phascolarctos cinereus</p>	Y	Y	4	<p>Four (4) records between 1986 and 2015, with the latest occurring in Cameron Park, west of the Study Area.</p> <p>LMCC have indicated a record to approx. 500m west of the NW corner subject site on "Winten Land"</p>	<p>The Koala has a fragmented distribution throughout eastern Australia from north-east Queensland to the Eyre Peninsula in South Australia. In New South Wales, koala populations are found on the central and north coasts, southern highlands, southern and northern tablelands, Blue Mountains, southern coastal forests, with some smaller populations on the plains west of the Great Dividing Range.</p>	<p>Suitable habitat occurs in varying conditions across the site.</p>	N	N

Species	Survey Technique Adhere to Guidelines in Table 15 (Y/N)	Surveyed in Season (Y/N)	BioNet Records (10km)	Geographical Restrictions (Y/N)	Habitat (Present / Condition)	Records from Deployed Equipment	Observed within BSA Site (Y/N)	Species Credits Apply (Y /N)
Red-crowned Toadlet <i>Pseudophryne australis</i>	Y	Y	-	N/A	The Red-crowned Toadlet has a restricted distribution. It is confined to the Sydney Basin, from Pokolbin in the north, the Nowra area to the south, and west to Mt Victoria in the Blue Mountains.	While dams and waterbodies occur on site, they are in degraded condition and constitute sub-optimal habitat for the species.	N	N
Grey-headed Flying-fox (Breeding) <i>Pteropus poliocephalus</i>	Y	Y	259	Multiple records scattered across the entirety of the 10km <sup>2</sup> search area, including within the Study Area.	Grey-headed Flying-foxes are generally found within 200 km of the eastern coast of Australia, from Rockhampton in Queensland to Adelaide in South Australia. In times of natural resource shortages, they may be found in unusual locations.	Suitable foraging habitat is present on site, in varying conditions. However, no evidence of breeding was found.	Y	N Breeding habitat not present on site
Swift Parrot <i>Lathamus discolor</i>	Y	Y	9	Multiple Records present within 10 km of the subject site, including within 2km.	On the mainland, inhabits dry sclerophyll eucalypt forests and woodlands, in particular, temperate box ironbark woodlands. Also in forests of <i>Eucalyptus tereticornis</i> , <i>E. robusta</i> , <i>Corymbia maculata</i> and <i>C. gummifera</i> in coastal New South Wales/Queensland.  Dry sclerophyll woodlands are present in PCT 1183, but only <i>C. gummifera</i> is widespread throughout the subject site.  The subject site is not located on the Swift Parrot important area habitat map.	Suitable habitat occurs in varying conditions across the site.	N	N



Species	Survey Technique Adhere to Guidelines in Table 15 (Y/N)	Surveyed in Season (Y/N)	BioNet Records (10km)	Geographical Restrictions (Y/N)	Habitat (Present / Condition)	Records from Deployed Equipment	Observed within BSA Site (Y/N)	Species Credits Apply (Y /N)
Eastern Cave Bat <i>Vespadelus troughtoni</i>	Y	Y	1	One (1) record in 2001 in Cameron Park.	The Eastern Cave Bat is found in a broad band on both sides of the Great Dividing Range from Cape York to Kempsey, with records from the New England Tablelands and the upper north coast of NSW. The western limit appears to be the Warrumbungle Range, and there is a single record from southern NSW, east of the ACT.	Potentially suitable breeding habitat occurs on site. However, further surveying, including harp trapping and passive acoustic detection, did not find any evidence of site use by the species group.	N	N

## Appendix G – Author CVs

# BONNI YARE

## Curriculum Vitae

*Bonni works with AEP in the role of Ecologist has a Bachelor of Science, majoring in Natural Resource Management. Bonni has experience in a variety of environmental work, in a professional and volunteer capacity, including flora, fauna and aquatic field surveys, reporting, GIS and mapping, habitat restoration and community volunteering.*

### Qualifications

- Bachelor of Science (Natural Resource Management) University of Newcastle, completed in November, 2020

### Further Education & Training

- Bush Regeneration Training
- NSW Driver's Licence: Car (Class "C").
- Chemqual (RTO 70207)
- First Aid (Provide first aid HLTAID003)

### Fields of Competence

- Ecological field surveys, covering terrestrial and aquatic flora and fauna <sup>[1]</sup><sub>[SEP]</sub>
- Growing proficiency at botanical surveys <sup>[1]</sup><sub>[SEP]</sub>

### Relevant Employment History

**2019 – Present**

**Ecologist**

Anderson Environment & Planning, Newcastle

Currently employed by Anderson Environment & Planning to assist in the provision of consulting services to land, property, legal and government sectors. Covering ecological, project management, environmental, planning services, advices, strategy and representation.

**2015 - 2016**

**Green Army Participant**

Bush regeneration / supporting local land care groups

Supported local land care groups and reserve areas in weed removal and site restoration, including tree planting, seed collection and nursery work. Bird surveying and koala surveys were also carried out.

### Relevant Ecological Experience

**2018 - present**

**Field assistance**

Participated as a volunteer in various PhD and Honours projects with the University of Newcastle and University of Technology Sydney. I have experience with small mammal trapping for squirrel gliders, nest box construction, aquatic surveys, infaunal sampling and mark recapture population surveys for *Litoria aurea* (Green and Golden Bell Frog).

**2019 Undergraduate Research Project associated with NPWS**

Undertook flora and habitat surveys for a locally threatened orchid, *Diuris praecox*, supervised volunteers, data analysis and project write up.

**2019 Volunteer Botanical Training Program**  
Australian National Herbarium

Understanding of Herbarium practices, including fieldwork, use of databases, maps and GPS, botanical terminology and up to date taxonomic information, curatorial experience including identification and processing of specimens.

**2018 Stream sampling using macroinvertebrates as bioindicators**  
Newcastle Council

Contracted to finish stream sampling for the community program, Waterbug Blitz, which involved water quality testing of Newcastle's urban streams.

# Craig Anderson

## Curriculum Vitae

*An environmental professional with over 20 years experience providing high level ecological services, advice, strategic direction and management for sectors such as land development, infrastructure, conservation, government, legal, mining & quarrying.*

### Qualifications

- Bachelor of Applied Science (Environmental Assessment & Management) University of Newcastle, New South Wales (1994).
- Completing a Graduate Diploma in Archaeological Heritage through University of New England (one subject to complete).
- NSW Scientific Investigation Licence SL101313
  
- NSW Animal Research Authority
- NSW Accredited Biobanking Assessor No. 150
- NSW Biodiversity Accredited Assessor BAAS: 17002

### Further Education & Training

- Biobank and Biocertification Assessors Training Course / BAAS Fast-track Accreditation Course
- Animal Ethics Training (University of Newcastle / NSW DPI)
- RFS / PIA NSW Consulting Planners Bushfire Training
- Bush Regeneration Training
- OH&S Induction Training / Green Card
- NSW Driver's Licence: Car (Class "C"). Experienced 4WD operator.
- Occupational Health & Safety Training, including legal compliance requirements of Officers (Standard 11 & S1,S2,S3).
- + various other vocational environmental and computer based training sessions.

### Fields of Competence

- Production and peer review of detailed environmental impact assessment documentation. Author and

- / or Manager of hundreds of ecological / environmental / bushfire / historical heritage / archaeological heritage / strategic & statutory planning documents over nearly 25 years of environmental work
- Biobanking & Biodiversity Offset Commissions – initial scoping and feasibility, BAM impact assessments and BDAR reporting, biobank calculations, Stewardship site creation
- Detailed ecological field survey, covering all aspects of terrestrial and aquatic flora and fauna
- Expert witness legal representation
- Ecological Management Planning, ranging from individual species to full ecosystem management
- Project Management and delivery of complex projects, including projects worth more than \$100M
- Project Management (including areas outside environmental sphere)
- Environmental Due Diligence processes for both asset procurement and divestment
- Management and co-ordination of teams producing EIA documentation
- Identification of strategic approval pathways and key project risk evaluation and management
- Extensive experience in conflict resolution, impact mediation and outcome negotiation on large scale and contentious projects
- Environmental peer review and ecological compliance auditing
- Project advocacy and representation with all levels of stakeholders
- Detailed knowledge of land and infrastructure development processes

## **Relevant Employment History**

**2013 – Present**

**Director/Principal Consultant**

Anderson Environment & Planning, Newcastle

**2012- Present**

**Director**

Habitat Indoor/ Outdoor Living, Furniture, Homewares & Design, Newcastle.

**2010-2012**

**General Manager Sustainable Development**

Coal Mining Company, Cockatoo Coal PtyLtd, Newcastle/Sydney/ Brisbane

<b>2009 – 2010</b>	<b>Independent Environmental Expert</b> Donaldson Conservation Trust
<b>2010</b>	<b>Principal- Environment</b> RPS, Development Consultants, Newcastle
<b>2006-2009</b>	<b>Manager Environment Group</b> RPS HSO, Development Consultants, Newcastle
<b>2001-2006</b>	<b>Manager Environment Group/ Director</b> Harper Somers O’Sullivan, Development Consultants, Newcastle
<b>2000-2001</b>	<b>Senior Ecologist &amp; NSW Projects Manager</b> Wildthing Environmental Consultants, Salt Ash.
<b>1996-1999</b>	<b>Ecologist</b> Wildthing Environmental Consultants, Salt Ash.
<b>1995-1996</b>	<b>Ecologist/Environmental Officer</b> Pulver Cooper & Blackley, Engineers & Surveyors, Newcastle.
<b>1995</b>	<b>Environmental Officer/ Cadastral Survey Assistant</b> Kel Nagle Cooper & Associates, Golf Course Design & Construction, Newcastle.

# Ian Benson

## Curriculum Vitae

Ian works with AEP in the role of Director and Principal Ecologist. He is an experienced field ecologist, bird watcher and a regular participant in wader surveys. Ian has previously had a successful career as a project manager with a local geotechnical engineering firm. His background in project management and soil sciences combined with his ecological knowledge is utilised in a diverse array of applications in his current role.

### Qualifications

- Graduate Diploma in Science (Ecology) University of New England (2014)
- Bachelor Engineering (Civil) University of Newcastle (2008)

### Further Education & Training

- Biodiversity Accredited Assessor System (BAAS 18147)
- Advanced Plant Identification (University of New South Wales)
- NSW Class C Driver's Licence. Experienced 4WD operator
- Occupational Health & Safety Training
- Remoted Piloted Aircraft Excluded Category Training with Aviassist Pty Ltd
- Rail Industry Worker
- ARTC Safety Induction for Contractors (NSW)
- ARTC Hunter Bulk Terminal Induction

### Fields of Competence

- Biobanking & Biodiversity Offset Commissions – initial scoping and feasibility, BAM impact assessments and BDAR reporting, biobank calculations, Stewardship site creation
- Detailed knowledge of environmental legislation and approval pathways
- Ecological field survey and habitat assessment covering terrestrial and aquatic flora and fauna. Experienced in camera trap methods particularly targeting cryptic and difficult to identify mammal species.
- Highly proficient at avifauna surveys, including challenging wetland and shorebird environs
- High level of experience undertaking nocturnal survey of arboreal mammals and nocturnal birds
- Project Management



## Relevant Employment History

**2022 – Present**

**Director & Principal Ecologist**

Anderson Environment & Planning, Newcastle

Ian is a Director of Anderson Environment & Planning whilst continuing in the role of Principal Ecologist overseeing a team of approx. 35 professional ecology staff and all aspects of the business including training and management of field and office staff undertaking ecology and bushfire works to assist in the provision of consulting services to land, property, mining industry, legal and government sectors. Covering ecological, project management, environmental, planning services, advices, strategy and representation.

**2019 – 2022**

**Principal Ecologist**

Anderson Environment & Planning, Newcastle

**2018-2019**

**Senior Ecologist**

Anderson Environment & Planning, Newcastle

**2016-2018**

**Ecologist**

Anderson Environment & Planning Newcastle

**2012 – 2016**

**Project Manager**

Douglas Partners, Newcastle

As a project manager with Douglas Partners Ian was responsible for proposal and tender preparation, planning, implementation and reporting of geotechnical and geo-environmental investigations for a broad range of projects including site classification, foundations, pavements, bridges and slope stability. Ian was required to liaise with clients regarding project requirements, project goals and deadlines. He was responsible for the development and implementation of Work Health and Safety Plans as well as Environmental Plans and documentation. This included the development of safe work procedures, safety inspections on site and implementing improved safety procedures with staff. Ian was responsible for ensuring projects were completed on time and on budget whilst meeting the clients' expectations and achieving quality assurance standards.

**2008-2012**

**Geotechnical Engineer**

Douglas Partners, Newcastle

**2013-Current**

**Bird Surveyor**

Hunter Bird Observers Club

Volunteer survey work for Hunter Bird Observers Club for regular wader and water bird counts and Tomago and Kooragang Island.

**2017-Current**

**Birddata Moderator**

BirdLife Australia

Volunteer moderating and vetting bird surveys from Birddata which is the Birdlife Australia Atlas to ensure a robust database for both the Hunter Valley and Central Coast reporting areas totalling approximately 5000 surveys per year.

## Key Project Experience

- Targeted surveys for *Dichanthium setosum* in Glen Innes Region;
- Target surveys for *Eucalyptus cannonii*, Western Rail Coal Unloader, Pipers Flat;
- White-bellied Sea-Eagle nest locating and monitoring Glenning Valley and Chisholm;
- Powerful Owl nest locating and monitoring: Salamander Bay, Soldiers Point, Anna Bay North, Wallsend, Cameron Park and Edgeworth;
- Accredited Assessor for approved Biodiversity Development Assessment Reports:
  - Berkeley Vale Road, Glenning Valley;
  - Railway Road, Warnervale;
  - Barden Ridge Townhouses;
  - McFarlane's Road, Chisholm;
  - Fairlands Road, Medowie;
  - Rosella Rise, Warnervale;
  - Carr's Road, Neath;
  - Jack Grant Avenue, Warnervale;
  - Minnesota Road, Hamlyn Terrace;
  - Bellbird North;
  - Waterford, Chisholm;
- Ecological Assessment Report for Proposed Modification To Approved Western Rail Coal Unloader At Pipers Flat;
- Spot Analysis Techniques surveys: Nelsons Plains, Wallsend, Anna Bay, Boat Harbour, Salamander Bay, North Arm Cove, Warnervale, Hamlyn Terrace, Kincumber, Palmdale, Wyee, Charlestown, Chisholm, Gillieston Heights, Mount Vincent, Radford Park, Cessnock
- Infrastructure;
  - Gwandalan Recycled Water Main;
  - Lower Belford Water Main;
  - Raymond Terrace Rising Main;
  - Astra Street Landfill Rehabilitation Assessment;
- Cat Tracker Pilot Program Associated With The Hunter Estuary Wetlands for Hunter Local Land Services;
- Surveys for Squirrel Glider (*Petaurus norfolcensis*) Warnervale Area June 2020

- Biodiversity Stewardship Agreements including:
  - • Bobs Farm (approved);
  - • Cedar Brush Creek (ready for signing);
  - • Girvan (final assessment);
  - • Mardi (under assessment);
  - • Wallsend (report being drafted);
  - • Ellalong (report being drafted);
  - • Blueys Beach (surveys continuing);
  - • South-West Rocks (surveys continuing).

# **Natalie Black**

## **Curriculum Vitae**

Natalie works with AEP in the role of Senior Environmental Manager. She has extensive knowledge in environmental management, environmental planning, and report writing and assessment. With a detail understanding of planning, catchment management, coastal management and rehabilitation. Natalie has had a successful career with both state and local government in conservation, planning and field investigation roles. Natalie has also gained extensive communication skills and project management through her previous career in lecturing. Her background and experience in the ecological and planning fields is utilised in a diverse array of application in her current role.

### **Qualifications**

- B.Sc (Hons), University of Newcastle, 2002 Sustainable Resource Management and Marine Science.
- Master Planning, University of Technology Sydney 2007.
- Certificate IV Training and Assessment at NSW TAFE 2012.
- BAM Assessor; accreditation number: BAAS19076.

### **Further Education & Training**

- Evidence Gathering and Legal Process (Australian Institute of Environmental Health).
- Conflict Resolution Course (LGSA).
- Report Writing Course (LGSA).
- Powerful Presentation (LGSA).
- NSW Rural Fire Services Bush Fire Assessment
- Relocation of Threatened Species (Botanical Gardens Sydney).
- Sustainable Home Assessment Reduction Revolution.
- Flora and Fauna Survey Assessments Niche Environment and Heritage.
- First Aid TAFE.

### **Fields of Competence**

- Environmental Planning
- Environmental Management and rehabilitation of catchments coastal waterways. Statement of Environmental Effects (preparation and assessing).
- Fish Passage
- Marine ecosystems including; mangroves, seagrasses, algae, Fauna and habitat assessment.
- vegetation.
- Communicating with a wide range of stakeholders.
- Development Application.
- Education in both Environmental and Planning industries.
- Koala Plans of Management.
- Policy Development.

## **Relevant Employment History**

**2019 – Present**

**Senior Environmental Manager**

Anderson Environment & Planning, Newcastle

**2010 - 2019**

**Principal Environmental Planner**

Black Earth

**2003-2010**

**Natural Resource Manager and**

**Development Assessment Officer**

Lismore City

**2002- 2003**

**Jervis Bay Indigenous Fishing Strategy**

# THOMAS STEPHENS

## Curriculum Vitae

*Thomas works with AEP in the role of Ecologist. He is a graduate of environmental science and management, and has industry experience in environmental fields, involving fauna and flora surveying, consultancy projects and natural resource management. His background in environmental fields with his growing ecological knowledge is utilised in a diverse array of applications in his current role.*

### Qualifications

- Bachelor of Environmental Science and Management (Sustainability), The University of Newcastle (2021)

### Further Education & Training

- Class C NSW Driver's License
- Work Health & Safety General Construction Induction
- Senior First Aid
- Work Safely at Heights
- Tree Access Systems Level 1

### Fields of Competence

- Ecological field surveys
- Fauna surveys and trapping
- Natural resource management
- Nest box installation
- Adept experience in operating 4x4 vehicles

### Relevant Employment History

**March 2022 - Present**

**Ecologist**

Anderson Environment & Planning, Newcastle

Currently employed by Anderson Environment & Planning to assist in the provision of consulting services to land, property, legal and government sectors. Covering ecological, project management, environmental, planning services, advices, strategy and representation. Expanding knowledge of field survey methodology, report writing, mapping and data manipulation.

**January 2022 – April 2022**

**Ecologist**

Active Green Services, NSW

**August 2021 – January 2022**

**Ecologist and Bushfire Consultant**

Firebird ecoSultants, Newcastle

### Relevant Volunteer Experience

- Industry Placement (National Parks and Wildlife Service, 2020-2021)

# Tim Moulton

## Curriculum Vitae

*Tim works with AEP in the role of Ecologist. Tim has over 10 years of professional experience managing projects in the fields of ecology, natural area restoration, biodiversity conservation, community education, and construction environmental management. Tim also has 5 years experience working in the field as a bush regenerator.*

### Qualifications

- Bachelor of Environmental Science University of Newcastle (2001)
- Conservation Land Management Certificate II Tafe (2003)
- Master of Environmental Science Southern Cross University (2008)

### Further Education & Training

- Biodiversity Assessment Methodology (BAM) Accredited Assessor (BAAS: 19083)
- NSW Class C Driver's Licence. Experienced 4WD operator.
- OH&S NSW White Card
- Erosion & Sediment Control Training (4 day Blue Book course / CPESC)
- Feral Animal Control training (1080 & Pindone baiting)
- Certificate 3 in Chemical Application (AQF3)

### Fields of Competence

- Ecological field survey, covering terrestrial and aquatic flora and fauna
- Highly proficient at botanical surveys and establishing monitoring programs
- Project Management and auditing
- Restoration Science

### Relevant Employment History

**2019 - present**

**Ecologist**

Anderson Environment & Planning, Newcastle

Currently employed by Anderson Environment & Planning to assist in the provision of consulting services to land, property, mining industry, legal and government sectors. Covering ecological, project management, environmental, planning services, advices, strategy and representation.

**2015 - 2018**

**Senior Project Officer / Ecologist**

Conservation Volunteers Australia / WetlandCare Australia

- Project managing on-ground restoration works including revegetation, site stabilisation, weed control and bush regeneration.
- Facilitating community engagement events, and supervision of volunteers.

- Undertaking site assessments, ecological surveys, and preparing plans of management.
- Scoping and preparing grant applications, managing all aspects of grant delivery, budgets, and reporting.

**2009 - 2015**

**Senior Ecologist / Environmental Scientist**

Onsite Environmental Management

- Undertaking and project managing detailed environmental assessments including flora and fauna surveys, threatened species assessments, management plans and monitoring reports.
- Environmental site management, monitoring and compliance auditing on large scale infrastructure projects and extractive industries.

**2008 - 2009**

**Bush Regenerator / Leading Hand**

Lane Cove Council, Australian Wetlands

- Undertaking bush regeneration activities including removal of environmental/noxious weeds, track construction and maintenance, native seed collection and propagation, fire assisted regeneration, feral animal control and supervision and training of volunteers.
- Supervising bush regeneration and weed management teams.
- Undertaking large scale revegetation works on infrastructure projects involving mass tubestock planting, site stabilisation and maintenance weeding.

**2006 - 2007**

**Ecologist / Environmental Scientist**

GeoLINK Consulting

- Undertaking and project managing detailed environmental assessments including flora and fauna surveys, threatened species assessments, management plans and monitoring reports.
- Monitoring and analysis of wetland, groundwater, and domestic wastewater systems.

**2002 - 2006**

**Bush Regenerator / Leading Hand**

Gondwana Bush Restoration, Willoughby City Council

- Undertaking bush regeneration activities including removal of environmental/noxious weeds, track construction and maintenance, native seed collection and propagation, fire assisted regeneration, feral animal control and translocation of vegetation.
- Supervision and training of bush regeneration teams and volunteers.

**2001 - 2002**

**John Holland Construction**

Environmental Officer

- Environmental site management and monitoring and reporting on large scale infrastructure projects.



## **Relevant Volunteer Experience**

### **2014 - Current Burwood Beach Coastcare - Facilitator (Volunteer)**

Supporting and managing volunteers, on-ground works, promotion and funding opportunities on a monthly basis, to undertake conservation and restoration activities within Glenrock State Conservation Area (NPWS estate).

### **2013 - 2016 Humane Society International – EPBC Act Nomination Support**

Preparation of Threatened Ecological Community (TEC) nominations under the Commonwealth Environment Protection and Biodiversity Conservation Act, 1999 (EPBC Act).

# WARWICK MUIR

## Curriculum Vitae

*Warwick works with AEP in the role of Ecologist. Whilst studying at the University of Newcastle, he conducted ecological field studies as a requirement of his degree courses, gaining experience in the field. He has also undertaken volunteering for higher-level students in field reporting to assist in completion of their studies.*

### Qualifications

- Bachelor of Science (Biology), University of Newcastle (2019)

### Further Education & Training

- First Aid Certificate
- Class C NSW Drivers Licence
- Construction White Card

### Ecological Field Experience

- Riparian vegetation study, including vegetation species and cover surveys, vegetation zone classification and biobanking assessment methods to assess for proposed restoration works.
- Avifauna survey and observation to complete an independently hypothesised animal behaviour investigation in situ.
- Forest and woodland investigations, including vegetation species and cover surveys, habitat appraisal and leaf litter invertebrate observation.
- Macro-bat spotlighting, flight, roost and forage habitat surveys to develop a suggested management strategy for the studied species.

### Relevant Employment History

**Feb 2020 – Current**

**Ecologist**

Anderson Environment & Planning, Newcastle

### Volunteer Experience

- Bush Regeneration Volunteer, Newcastle Landcare
- Field data collection for environmental Honours and PHD candidates in various locations.

**Appendix H – Total Fund Deposit  
Spreadsheet**



## Appendix I – BSSAR BAM Checklist

**Biodiversity Stewardship Site Assessment Report: – (application for a biodiversity stewardship agreement), Stage 1: Biodiversity assessment**

BAM Reference	Information	BSSAR Section	Completed
<b>Report</b>			
<b>Introduction - Chapters 2 and 3</b>	Introduction to the biodiversity assessment including: <ul style="list-style-type: none"> <li>• brief description of proposed biodiversity stewardship site</li> <li>• identification of subject land footprint, including:               <ul style="list-style-type: none"> <li>○ location</li> <li>○ lot and DP numbers</li> </ul> </li> <li>• general description of the subject land</li> </ul>	1.1	Yes
	Sources of information used in the assessment, including reports and spatial data	1.1.4	Yes
	Identification of assessment method applied (i.e. linear or site-based)	1.4.1	Yes
<b>Landscape context - Section 3.1, 3.2 and Appendix E</b>	Identification of site context components and landscape features at the biodiversity stewardship site, including: <ul style="list-style-type: none"> <li>• general description of subject land topographic and hydrological setting, geology and soils</li> <li>• percent native vegetation cover in the assessment area (as described in BAM Section 3.2)</li> <li>• IBRA bioregions and subregions (as described in BAM Subsection 3.1.3(2.))</li> <li>• NSW (Mitchell) landscape features and area (ha) (as described in BAM Section 3(2.))</li> <li>• rivers and streams classified according to stream order (as described in BAM Subsection 3.1.3(3.) and Appendix E)</li> <li>• wetlands within, adjacent to and downstream of the site (as described in BAM Subsection 3.1.3(3.))</li> <li>• connectivity of different areas of habitat (as described in BAM Subsection 3.1.3(5–6.))</li> <li>• areas of geological significance and soil hazard features (as described in BAM Subsections 3.1.3(7.) and 3.1.3(10.))</li> <li>• areas of outstanding biodiversity value occurring on the subject land and assessment area (as described in BAM Subsection 3.1.3(8–9.))</li> </ul>	1.2.1 1.2.2 1.2.3 Figure 2	Yes
<b>Native vegetation - Chapter 4, Appendix A and Appendix H</b>	<ul style="list-style-type: none"> <li>• 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)</li> <li>• 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)</li> <li>• Describe the systematic field-based floristic vegetation survey undertaken in accordance with BAM Section 3.2</li> </ul>	1.3.1 1.3.3 Table 1 Figure 3 Appendix D (Field Survey Effort)	Yes

BAM Reference	Information	BSSAR Section	Completed
	<ul style="list-style-type: none"> <li>Describe the use of more appropriate local data and provide reasons that support the use of more appropriate local data (as described in BAM Subsection 1.4.2 and Appendix A)</li> </ul>		
	<p>For each PCT within the subject land, describe:</p> <ul style="list-style-type: none"> <li>vegetation class</li> <li>extent (ha) within subject land</li> <li>justification of evidence used to identify a PCT (BAM Section 4.2(1–3.))</li> <li>plant species relied upon for identification of the PCT and relative abundance of each species</li> <li>TEC status (BAM Subsection 4.2.2(1–2.))</li> <li>estimate of percent cleared value of PCT (BAM Subsection 4.2.1( 5.))</li> <li>equivalence with mapping units of previous vegetation maps reviewed as part of the assessment (i.e. equivalent mapping units)</li> </ul>	<p>1.4 1.5 Table 2 Table 3 Table 4 Figure 3</p>	<p>Yes</p>
	<p>Describe the vegetation integrity assessment of the subject land, including:</p> <ul style="list-style-type: none"> <li>identification and mapping of vegetation zones (as described in BAM Subsection 4.3.1)</li> <li>assessment of patch size (as described in BAM Subsection 4.3.2)</li> <li>survey effort (i.e. number of vegetation integrity survey plots) as described in BAM Subsection 4.3.4(1–2.)</li> <li>use of relevant benchmark data from BioNet Vegetation Classification (as described in BAM Subsection 4.3.3(5.))</li> <li>list of high threat weed species present on the land</li> </ul>	<p>1.5.3 1.5.4 Table 4 Table 5 Figure 4 Appendix A</p>	<p>Yes</p>
	<p>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):</p> <ul style="list-style-type: none"> <li>identify the PCT or vegetation class for which local benchmark data will be applied</li> <li>identify published sources of local benchmark data (if benchmarks obtained from published sources)</li> <li>describe methods of local benchmark data collection (if reference plots used to determine local benchmark data)</li> <li>provide justification for use of local data rather than BioNet Vegetation Classification benchmark values</li> </ul>	<p>n/a</p>	<p>-</p>
<p><b>Threatened species (optional for biodiversity stewardship agreements) - Chapter 5</b></p>	<p>Describe the review of existing information and any field survey undertaken to assess habitat constraints and microhabitats for threatened species within the subject land.</p>	<p>1.1 1.1.3 1.1.4 1.2.1 1.3.1 Appendix E (Field Survey Effort)</p>	<p>Yes</p>
	<p>Identify ecosystem credit species associated with PCTs on the subject land as outlined in BAM Subsection 5.1.1, including:</p> <ul style="list-style-type: none"> <li>list of ecosystem credit species derived from the TBDC (as described in BAM Subsection 5.1.1 and Section 5.2(1.))</li> </ul>	<p>Table 6 Appendix E (Field Survey Effort)</p>	<p>Yes</p>

BAM Reference	Information	BSSAR Section	Completed
	<ul style="list-style-type: none"> <li>justification for exclusions of any ecosystem credit species based on habitat constraints (as described in BAM Subsection 5.2.2)</li> </ul>		
	Identify candidate species credit species on the subject land as outlined in BAM Subsections 5.2.1–5.2.6, including: <ul style="list-style-type: none"> <li>list of species credit species derived from the TBDC (as described in BAM Subsection 5.1.2)</li> <li>justification for inclusions and exclusions based on habitat constraints (as described in BAM Subsection 5.2.2)</li> <li>list of candidate species credit species with suitable habitat on the subject land (as described in BAM Subsection 5.2.3)</li> </ul>	Table 7	Yes
	From the list of candidate species credit species, identify: <ul style="list-style-type: none"> <li>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.))</li> <li>species for which targeted surveys are to be completed to determine species presence (Subsection 5.2.4(2.b.))</li> <li>species for which an expert report is to be used to determine species presence (Subsection 5.2.4(2.c.))</li> </ul>	Table 7	Yes
	Where use of local data is proposed (BAM Subsection 1.4.2): <ul style="list-style-type: none"> <li>identify relevant species</li> <li>identify aspect of species data</li> <li>identify source of information for local data</li> <li>justify use of local data in preference to database value</li> </ul>	n/a	-
	Describe targeted surveys undertaken to determine the presence of each candidate species credit species, including: <ul style="list-style-type: none"> <li>details of targeted survey effort, timing and weather (as described in BAM Section 5.3)</li> <li>justification of survey method (e.g. citation of peer-reviewed literature) if approach differs from the Department's threatened species survey guidelines or where no relevant guideline has been published</li> <li>survey personnel and relevant experience</li> </ul>	1.3.1 Figure 5 Figure 6 Table 7 Appendix D (Field Survey Effort) Study Certification & Licencing section	Yes
	Describe the use of expert reports where used in place of targeted survey (as described in BAM Section 5.3, Box 3), including: <ul style="list-style-type: none"> <li>justification of the use of an expert report</li> <li>identify the expert and provide evidence of their expert credentials</li> </ul>	n/a	-
	Describe the presence of each candidate species credit species within the subject land based on: <ul style="list-style-type: none"> <li>results of targeted threatened species survey (as described in BAM Section 5.3)</li> <li>results of any expert reports including justification for presence of the species assessed and information considered in making this assessment (as described in BAM Section 5.3, Box 3)</li> </ul>	Table 7 Table 10 Figure 9	Yes



BAM Reference	Information	BSSAR Section	Completed
	For species credit species identified as present within the subject land (determined on basis of survey or expert report): <ul style="list-style-type: none"> <li>determine the species polygons identifying the extent of habitat for the species credit species within the subject land (as described in BAM Subsection 5.2.5(1–5.))</li> <li>describe the habitat features and/or habitat constraints associated with each species credit species within the subject land (as described in BAM Subsection 5.2.5(6.))</li> <li>describe the habitat condition within each species polygon (as described in BAM Subsection 5.2.6)</li> <li>for flora species credit species, provide a count, or an estimation, of the number of individual plants present on the subject land (as described in BAM Subsection 5.2.5(3.))</li> </ul>	1.4 Table 7 Table 10 Figure 9	Yes
<b>Maps</b>			
<b>Introduction - Chapters 2 and 3</b>	Map of the subject land boundary showing the final proposal BSA site	Figure 1	✓
<b>Landscape context - Section 3.1, 3.2 and Appendix E</b>	Site Map <ul style="list-style-type: none"> <li>Boundary of subject land</li> <li>Cadastre of subject land</li> <li>Landscape features identified in BAM Subsection 3.1.3</li> <li>Areas of outstanding biodiversity value within the subject land</li> </ul>	Figure 1	Yes
	Location Map <ul style="list-style-type: none"> <li>Digital aerial photography at 1:1,000 scale or finer</li> <li>Boundary of subject land</li> <li>1500 m buffer area or 500 m buffer for linear site</li> <li>Landscape features identified in BAM Subsection 3.1.3</li> <li>Additional detail (e.g. local government area boundaries) relevant at this scale</li> <li>Areas of outstanding biodiversity value within the assessment area</li> </ul>	Figure 2	Yes
	Landscape features identified in BAM Subsection 3.1.3 and to be shown on the Site Map and/or Location map include: <ul style="list-style-type: none"> <li>IBRA bioregions and subregions</li> <li>NSW (Mitchell) landscape regions</li> <li>rivers, streams and estuaries</li> <li>important and local wetlands</li> <li>connectivity of different areas of habitat</li> <li>areas of geological significance and soil hazard features</li> <li>any additional landscape features identified in any SEARs for the proposal</li> </ul>	Figure 2	Yes
	Map of native vegetation extent within the subject land at scale not greater than 1:10,000 (as described in BAM Section 4.1(1–3.))	Figure 3	Yes

BAM Reference	Information	BSSAR Section	Completed
<b>Native vegetation - Chapter 4, Appendix A and Appendix H</b>	Map of PCTs within the subject land (as described in BAM Section 4.2(1.))	Figure 4	Yes
	Map of vegetation zones within the subject land (as described in BAM Subsection 4.3.1)	Figure 4	Yes
	Map the location of floristic vegetation survey plots and vegetation integrity survey plots relative to PCTs boundaries	Figure 4	Yes
	Map of TEC distribution on the subject land	Figure 4 Figure 5	Yes
	Patch size of native vegetation (as described in BAM Subsection 4.3.2)	1.6.3	Yes
<b>Threatened species (optional for biodiversity stewardship agreements) - Chapter 5</b>	Map of species credit species records within the subject land and species polygons for flora and fauna species (as described in BAM Subsection 5.2.5(1–5.))	Figure 7 Figure 8	Yes
<b>Improving biodiversity values</b>	Map of species polygon, identifying areas that will not generate credits and areas that will be restored to expand species habitat.	Figure 9	Yes
<b>Tables</b>			
<b>Introduction - Chapters 2 and 3</b>	N/A	-	-
<b>Landscape context - Section 3.1, 3.2 and Appendix E</b>	N/A	-	-
<b>Native vegetation - Chapter 4, Appendix A and Appendix H</b>	Table of current vegetation integrity scores for each vegetation zone within the site and including: <ul style="list-style-type: none"> <li>composition condition score</li> <li>structure condition score</li> <li>function condition score</li> </ul>	Table 8	Yes
<b>Threatened species (optional for biodiversity stewardship agreements) - Chapter 5</b>	Table showing ecosystem credit species in accordance with BAM Section 5.1.1, and: <ul style="list-style-type: none"> <li>identifying any ecosystem credit species removed from the list of species on the basis of further assessment In accordance with BAM Subsections 5.2.2)</li> <li>identifying the sensitivity to gain class of each species</li> </ul>	Table 6	Yes
	Table detailing species credit species in accordance with BAM Subsections 5.2.1–5.2.2 and identifying: <ul style="list-style-type: none"> <li>those species identified as candidate species credit species</li> <li>presence on site as determined by targeted survey expert report or important mapped area</li> </ul>	Table 7 Table 10 Appendix C (Biodiversity Credit Report)	Yes
	Table detailing species credit species recorded within the subject land, habitat feature/component associated with the species, its abundance (flora)/extent of habitat (flora and fauna) (as described in BAM Subsection 5.2.6)	Table 7	Yes

BAM Reference	Information	BSSAR Section	Completed
<b>Improving biodiversity values</b>	Table of vegetation zones detailing: <ul style="list-style-type: none"> <li>future vegetation integrity score without management, including averted loss (BAM Subsection 11.4.1)</li> <li>future vegetation integrity score with required and active restoration management (in accordance with BAM Section 4.4, Equation 33 and Equation 34 in Appendix H)</li> <li>change in vegetation integrity score (BAM Section 11.4)</li> <li>gain in vegetation integrity score (Equation 37 in Appendix H)</li> </ul>	Table 13 Table 14	Yes
	Table of required management actions, including: <ul style="list-style-type: none"> <li>future value of vegetation integrity attributes with management (BAM Subsection 11.4.2)</li> </ul>	Table 18	Yes
	Table of active restoration management actions, including: <ul style="list-style-type: none"> <li>future value of vegetation integrity attributes with management (BAM Subsection 11.4.2)</li> </ul>	Table 18	Yes
	Table of PCTs at the biodiversity stewardship site and the number of ecosystem credits created	Table 20	Yes
	Table of threatened species at the biodiversity stewardship site and the number of species credits created	Table 21	Yes
<b>Data</b>			
<b>Introduction - Chapters 2 and 3</b>	N/A	Contents 1.1	Yes
<b>Landscape context - Section 3.1, 3.2 and Appendix E</b>	All report maps as separate jpeg files Individual digital shape files of: <ul style="list-style-type: none"> <li>subject land boundary</li> <li>assessment area (i.e. subject land and 1500 m buffer area) boundary</li> <li>cadastral boundary of subject land</li> <li>areas of native vegetation cover Biodiversity Assessment Method 152 Report section BAM ref. Information Maps &amp; tables (in document) Data (to be supplied)</li> <li>areas of habitat connectivity</li> <li>additional landscape features identified in any SEARs for the proposal</li> </ul>	Figure 1 Figure 2 Figure 3 Figure 4	Yes
<b>Native vegetation - Chapter 4, Appendix A and Appendix H</b>	<ul style="list-style-type: none"> <li>All report maps as separate jpeg files</li> <li>Plot field data (MS Excel format)</li> <li>Plot field data sheets</li> </ul> Digital shape files of: <ul style="list-style-type: none"> <li>PCT boundaries within subject land</li> <li>TEC boundaries within subject land</li> <li>vegetation zone boundaries within subject land</li> <li>floristic vegetation survey and vegetation integrity plot locations</li> </ul>	Appendix A Appendix B Figure 4 Figure 5	Yes

BAM Reference	Information	BSSAR Section	Completed
<b>Threatened species (optional for biodiversity stewardship agreements) - Chapter 5</b>	<ul style="list-style-type: none"> <li>• Digital shape files of species polygons</li> <li>• Species polygon map in jpeg format</li> <li>• Expert reports and any supporting data used to support conclusions of the expert report</li> </ul>	Figure 6 Figure 7 Figure 8	Yes

DRAFT

## **Appendix F – Deferred Commencement DA Conditions of Consent**



23 December 2020

ELTON CONSULTING  
PO Box 1488  
BONDI JUNCTION NSW 1355

## Development Application Notice of Deferred Commencement

Issued under the Environmental Planning and Assessment Act 1979  
Sections 4.16, 4.17 & 4.18 (1)(a)

Development Application No: DA/1284/2013

Property Address: Lot 10 DP 1011323, Lot 1 DP 1168657, Lot 100 DP 811772  
9A Myall Road, GARDEN SUBURB NSW 2289, 82 Myall  
Road, CARDIFF NSW 2285, 69 Myall Road, CARDIFF  
NSW 2285

Description of Development: 66 Residential Lots, 3 Superlots & 3 Conservation Lots Plus  
Roads, Landscaping, On-site Detention and Remediation  
Works

Determination: Approved subject to Deferred Commencement Conditions

Determination Date: 20 December 2020

Consent to operate from: Date of satisfaction of Deferred Commencement Conditions

Consent to lapse on: 20 December 2025

### Part A

#### Conditions of Deferred Commencement

Pursuant to Section 4.16(3) of the EP and A Act 1979, development consent is granted subject that this consent is not to operate until the applicant satisfies the Council, in accordance with the Environment Planning and Assessment Regulation 2000, as to all matters specified below as deferred commencement conditions.

If the evidence is not produced within five (5) years of the date of determination this deferred commencement consent is of no effect, the consent does not operate and no Subdivision Works Certificates can be issued. No development can lawfully occur under this consent unless it operates. This consent does not operate until Council has acknowledged compliance with the deferred commencement conditions in writing.

## 1. Conservation Offset Mechanism

- A Biodiversity Stewardship Agreement (BSA) shall be established in accordance with the *Biodiversity Conservation Act 2016* for all land identified as '*Proposed Conservation Agreement Area*' on Figure 1.1 of '*Addendum Biodiversity Assessment Report Prepared For DA/1284/2016 Proposed 72 Lot Residential Subdivision Myall Road Cardiff (Conacher Consulting (2018))*';
- A Vegetation Management Plan (VMP) for the BSA site shall be produced and must be to the satisfaction of the Biodiversity Conservation Trust (BCT) and Council;
- All biodiversity credits generated from the established BSA site shall be retired to the Biodiversity Conservation Trust and evidence of this must be provided to the BCT and Council;
- A covenant shall be placed on the title of the affected lands identifying that they are the subject of a BSA site offset and that the land cannot be developed. The wording of the covenant shall be to the satisfaction of the BCT and Council and evidence of the creation of this covenant on title shall be produced;
- Funds shall be transferred to the BCT for the purposes of undertaking the biodiversity actions identified in the BSA. The quantum of these funds shall be to the satisfaction of the BCT and evidence of this transfer shall be provided to Council and the BCT.

## 2. Vegetation Management Plan

A person qualified in natural vegetation management, ecology or bush regeneration shall be retained to prepare a Vegetation Management Plan (VMP) for the biodiversity offset site to the satisfaction of the Biodiversity Conservation Trust and Council. Evidence that the VMP has been submitted, to and approved by the BCT is to be provided to Council's Development Planner Flora and Fauna.

The VMP shall include, but not be limited to:

- Details as to fencing and conservation signage on site boundaries,
- Public access and the management of access to the site and within the site;
- The management access by private vehicles and motorbikes;
- The management of opportunistic waste dumping;
- The prohibition of domestic animals;
- Trail rehabilitation and maintenance;
- Weed monitoring and treatment as required,
- Revegetation of disturbed areas with local endemic species characteristic of native vegetation communities onsite,
- Establishment of regular monitoring and response program to protect and enhance habitat for threatened forest owls, squirrel glider and *Tetratheca juncea*,

- Monitoring of VMP works and of key threatened species within the biodiversity offset area. The BCT is to be consulted in this regard, key species include the powerful owl, squirrel glider, *Tetratheca juncea* and threatened mircobats;
- Fire management,
- Pest management;
- Asset Protection Zone management and identification;
- Management of edge effects from the development site including containment of batters, fencing and landscaping species. Note that no civil works from the development are to impact the biodiversity offset lands or other lands;
- Installation of nest boxes and monitoring;
- Vegetation establishment for mine subsidence pothole rectification;
- Fauna structures.

## **Part B**

### **Conditions of Consent**

(Approved subject to the conditions specified in this notice and in accordance with the stamped approved plans).

### **Reason for the Imposition of Conditions**

The reason for the imposition of the following conditions shall ensure, to Council's satisfaction, the objects of the *Environmental Planning and Assessment Act 1979* (as amended) are achieved:

To encourage:

- a) The proper management, development and conservation of natural and artificial resources, including agricultural land, natural areas, forest, minerals, water, cities, towns, and villages for the purpose of promoting the social and economic welfare of the community and a better environment;
  - i. The promotion and co-ordination of the orderly and economic use of development of land;
  - ii. The protection, provision, and co-ordination of communication and utility services;
  - iii. The provision of land for public purposes;
  - iv. The provision and co-ordination of community services and facilities;
  - v. The protection of the environment, including the protection and conservation of native animals and plants including threatened species, populations, and ecological communities and their habitats;
  - vi. Ecologically Sustainable Development; and
  - vii. The provision and maintenance of affordable housing.



- b) To promote the sharing of the responsibility for environmental planning between the different levels of government in the State.
- c) To provide increased opportunity for public involvement and participation in environmental planning and assessment.

## **Administrative Conditions**

### **1. The Approved Development and Compliance with Conditions**

The approval comprises the application, the plans, and the documents set out in the paragraph below and the conditions of consent. The proposed development may only proceed in accordance with these documents.

The development shall be carried out in accordance with the conditions of consent and the following documents (as may be varied by the conditions of consent):-

- a) Statement of Environmental Effects by Elton Consulting dated 2 November 2020
- b) Lot Layout by PAA Design dated 31 May 2018
- c) Master Plan by PAA Design dated January 2013
- d) Concept Civil Design Drawings by SMEC dated 21 January 2013
- e) Traffic Impact Assessment by Better Transport Futures dated February 2013
- f) Addendum Biodiversity Assessment Report prepared for DA/1284/2016 Proposed 72 Lot Residential Subdivision Myall Road Cardiff by Conacher Consulting 2018
- g) Biodiversity Assessment Report by Conacher Environmental Group dated May 2013
- h) Biodiversity Offsets Report by Conacher Environmental Group dated March 2013
- i) Vegetation Management Plan by Conacher Environmental Group dated June 2013
- j) Report on Additional Threatened Forest Owl Surveys & Assessments by Conacher Consulting dated October 2017
- k) Geotechnical Assessments for the North and South Precincts by Douglas Partners, Ref 49427.02 dated October 2011
- l) Mine Subsidence Pothole Assessment by Douglas Partners dated September 2010
- m) Methodology for Remediating Potholes by Douglas Partners dated July 2013
- n) Quantitative Assessment of the Risk to Public Safety from Pothole Subsidence by Douglas Partners dated March 2015

- o) Preliminary Contamination Assessment by Douglas Partners dated October 2011
- p) Preliminary Contamination Assessment by Douglas Partners dated November 2012
- q) Preliminary Contamination Assessment by Douglas Partners dated August 2020
- r) Stormwater Drainage Study by SRB Consulting Civil Engineers dated June 2012
- s) Water Cycle Management Strategy by BMT WBM dated August 2013
- t) Aboriginal Heritage Due Diligence Reports (North & South) by RPS dated June 2012.
- u) Visual Impact Assessment by Paa Design dated January 2013
- v) Infrastructure Assessment by Bannister and Hunter Pty Ltd dated June 2012
- w) Social Impact Assessment by Community Dimensions Pty Ltd dated January 2013
- x) Bushfire Threat Assessment by Conacher Consulting dated July 2020.
- y) Landscaping Plan by Terras Landscape Architects Dated January 2013

It is the responsibility of the person having the benefit of the consent to meet all expenses incurred in undertaking the development including expenses incurred in complying with conditions imposed by this consent.

It is the responsibility of the person having the benefit of the consent to provide all compliance certificates, documentation and other evidence to verify that the conditions and requirements imposed by this consent have been complied with.

## General Terms of Approval and Concurrence Requirements

### 2. Subsidence Advisory NSW – General Terms of Approval

#### GENERAL TERMS OF APPROVAL

Plans, standards and guidelines	
1.	<p>These General Terms of Approval (GTAs) only apply to the subdivision development described in the plans and associated documentation relating to DA/1284/2013 and provided to Subsidence Advisory NSW.</p> <p>Any amendments or subsequent modifications to the development may render these GTAs invalid.</p> <p>If the proposed development is amended or the development consent modified, Subsidence Advisory NSW must be notified to determine if any variations to these GTAs are required.</p>

2.	This approval expires 5 years after the date the approval was granted if construction work has not physically commenced.
3.	Subsidence Advisory NSW is to be notified of any changes to lot numbering and the registered DP number.
4.	<p>Locate and remediate safety risk posed by any shafts, drifts and potholes or sinkholes. A report is to be submitted for Subsidence Advisory NSW's acceptance that this has been completed.</p> <p>Note that Subsidence Advisory NSW records indicate the eastern portion of proposed lot 72 is located over shafts, drifts and that there is a high potential for uncharted shallow abandoned mine workings.</p>
Site Works	
5.	Approval under Clause 22 of the Coal Mine Subsidence Compensation Act 2017 is also required for the erection of all improvements on the land. As a guide, improvements shall comply with Subsidence Advisory NSW nominated Surface Development Guidelines, or otherwise assessed on merit.

### 3. NSW Rural Fire Service – General Terms of Approval

The New South Wales Rural Fire Service (NSW RFS) has reviewed the submitted amended information. General Terms of Approval are now re-issued, under Division 4.8 of the *Environmental Planning and Assessment Act 1979*, and a Bush Fire Safety Authority, under section 100B of the *Rural Fires Act 1997*, are now issued subject to the following conditions.

#### Asset Protection Zones

**Intent of measures is to minimise the risk of bush fire attack and provide protection for emergency services personnel, residents and others assisting firefighting activities.**

1. At the issue of a subdivision certificate that area of the Southern Precinct consisting of the 66 residential allotments and the 2 superlots for future single or medium density housing, must be managed as an inner protection area (IPA) in accordance with the requirements of Appendix 4 of *Planning for Bush Fire Protection 2019*. When establishing and maintaining an IPA the following requirements apply:

- tree canopy cover should be less than 15% at maturity;
- trees at maturity should not touch or overhang the building;
- lower limbs should be removed up to a height of 2m above the ground;
- tree canopies should be separated by 2 to 5m;
- preference should be given to smooth barked and evergreen trees;
- large discontinuities or gaps in vegetation should be provided to slow down or break the progress of fire towards buildings;
- shrubs should not be located under trees;

- shrubs should not form more than 10% ground cover; and clumps of shrubs should be separated from exposed windows and doors by a distance of at least twice the height of the vegetation.
- grass should be kept mown (as a guide grass should be kept to no more than 100mm in height); and
- leaves and vegetation debris should be removed.

2. A 10 metre asset protection zone (APZ) must be applied to all proposed perimeter Lots fronting the bush fire hazard, excluding Lot 68. The APZ must be managed as an inner protection area (IPA) in accordance with the requirements of Appendix 4 of *Planning for Bush Fire Protection 2019*. A restriction on the land use, in accordance with section 88B of the *Conveyancing Act 1919*, shall be placed on these lots requiring the provision of the 10 metre APZ / front boundary setback and prohibits the construction of buildings other than class 10 structures within the APZ. The Council shall be the authority empowered to release, vary or modify the instrument.

3. A 29 metre asset protection zone (APZ) must be applied to the western boundary of proposed Lot 68. A restriction on the land use, in accordance with section 88B of the *Conveyancing Act 1919*, shall be placed on Lot 68 that requires the provision of the 29 metre APZ / boundary setback and prohibits the construction of buildings other than class 10 structures within the APZ. The Council shall be the authority empowered to release, vary or modify the instrument.

#### **Access – Public Roads**

**Intent of measures is to provide safe operational access to structures and water supply for emergency services, while residents are seeking to evacuate from an area.**

4. Public road access must comply with the general requirements of Table 5.3b of *Planning for Bush Fire Protection 2019*.

#### **Water and Utility Services**

**Intent of measures is to provide adequate services of water for the protection of buildings during and after the passage of a bush fire, and to locate gas and electricity so as not to contribute to the risk of fire to a building.**

5. The provision of water, electricity and gas must comply with Table 5.3c of *Planning for Bush Fire Protection 2019*.

#### **4. Water NSW – General Terms of Approval**

General Terms of Approval (GTA) for works requiring a controlled activity approval under the Water Management Act 2000 (WM Act):

- The Office of Water should be notified if any plans or documents are amended and these amendments significantly change the proposed development or result in additional works on waterfront land (which includes (i) the bed of any river together with any land within 40 metres inland of the highest bank of the river, or (ii) the bed of any lake, together with any land within 40 metres of the shore of the lake, or (iii) the bed of any estuary, together with any land within 40 metres inland of the mean high water mark of the estuary).

- Once notified, the Office of Water will ascertain if the amended plans require review or variation/s to the GTA. This requirement applies even if the proposed works are part of Council's proposed consent conditions and do not appear in the original documentation.
- The Office of Water should be notified if Council receives an application to modify the development consent and the modifications change any activities on waterfront land.
- The Office of Water requests notification of any legal challenge to the consent.

The Construction Certificate will not be issued over any part of the site requiring a controlled activity approval until a copy of the approval has been provided to Council.

Plans, Standards and Guidelines	
1.	<p>These General Terms of Approval (GTA) only apply to the controlled activities described in the plans and associated documentation relating to DA/1284/2013 and provided by Council:</p> <ul style="list-style-type: none"> <li>(i) Statement of Environmental Effects prepared by Elton Consulting and Dated 1<sup>st</sup> August 2013</li> <li>(ii) Subdivision Master Plan Prepared by Peter Andrews &amp; Associates, dated 25<sup>th</sup> February 2013</li> </ul> <p>Any amendments or modification to the proposed controlled activities may render these GTA invalid.</p> <p>If the proposed controlled activities are amended or modified, the NSW Office of Water must be notified to determine if any variations to these GTA will be required.</p>
2.	<p>Prior to the commencement of any controlled activity (works) on waterfront land, the consent holder must obtain a Controlled Activity Approval (CAA) under the Water Management Act from the NSW Office of Water. Waterfront land for the purposes of this DA is land and material in or within 40 metres of the top of the bank or shore of the river identified.</p>
3.	<p>The consent holder must prepare or commission the preparation of:</p> <ul style="list-style-type: none"> <li>(i) Works Schedule</li> <li>(ii) Erosion and Sediment Control Plan</li> <li>(iii) Riparian Area Vegetation Management Plan as described in the Biodiversity Assessment Report prepared by Conacher Environmental Group dated May 2013</li> </ul>
4.	<p>All plans must be prepared by a suitable qualified person and submitted to the Office of Water for approval prior to any controlled activity commencing. The following plans must be prepared in accordance with the NSW Office of Water's guidelines located at <a href="http://www.water.nsw.gov.au/Water-Licensing/Approvals/default.aspx">www.water.nsw.gov.au/Water-Licensing/Approvals/default.aspx</a></p> <ul style="list-style-type: none"> <li>(i) Vegetation Management Plans</li> <li>(ii) Laying pipes and cables in watercourses</li> </ul>

	<ul style="list-style-type: none"> <li>(iii) Riparian Corridors</li> <li>(iv) In-stream works</li> <li>(v) Outlet structures</li> <li>(vi) Watercourse crossings</li> </ul>
5.	The consent holder must (i) carry out any controlled activity in accordance with approved plans and (ii) construct and/ or implement any controlled activity by or under the direct supervision of a suitably qualified professional and (iii) when required, provide a certificate of completion to the NSW Office of Water.
Rehabilitation and Maintenance	
6.	The consent holder must carry out a maintenance period of two (2) years after practical completion of the controlled activities, rehabilitation and vegetation management in accordance with a plan approved by the NSW Office of Water.
7.	N/A
Reporting Requirements	
8.	The consent holder must use a suitably qualified person to monitor the progress, completion, performance of works, rehabilitation and maintenance and report to the NSW Office of Water as required.
Security Deposits	
9.	The consent holder must provide a security deposit (bank guarantee or cash bond) – equal to the sum of the cost of complying with the obligations under any approval – to the NSW Office of Water as and when required.
Access-ways	
10.	N/A
11.	The consent holder must not locate ramps, stairs, access ways, cycle paths, pedestrian paths or any other non-vehicular form of access in a riparian corridor other than in accordance with a plan approved by the NSW Office of Water.
Bridge, causeway, culverts, and crossing	
12.	N/A
13.	N/A
Disposal	
14	The consent holder must ensure that no materials or cleared vegetation that may (i) obstruct flow, (ii) wash into the water body, or (iii) cause damage to river banks; are left on waterfront land other than in accordance with a plan approved by the NSW Office of Water.
Drainage and Stormwater	
15.	The consent holder is to ensure that all drainage works (i) capture and convey runoffs, discharges and flood flows to low flow water level in accordance with a plan

	approved by the NSW Office of Water; and (ii) do not obstruct the flow of water other than in accordance with a plan approved by the NSW Office of Water.
16.	The consent holder must stabilise drain discharge points to prevent erosion in accordance with a plan approved by the NSW Office of Water.
17.	The consent holder must establish all erosion and sediment control works and water diversion structures in accordance with a plan approved by the NSW Office of Water. These works and structures must be inspected and maintained throughout the working period and must be removed until the site has been fully stabilised.
Excavation	
18.	The consent holder must ensure that no excavation is undertaken on waterfront land other than in accordance with a plan approved by the NSW Office of Water.
19.	The consent holder must ensure that any excavation does not result in (i) diversion of any river (ii) bed or bank instability or (iii) damage to native vegetation within the area where a controlled activity has been authorised, other than in accordance with a plan approved by the NSW Office of Water.
Maintaining River	
20.	N/A
21.	N/A
River Bed and Bank Protection	
22.	The consent holder must clearly mark (with stakes using a GPS or peg out survey), protect and maintain a riparian corridor with a minimum width of 10 metres measured horizontally landward from the highest bank of the river for the length of the site directly affected by the controlled activity in accordance with a plan approved by the NSW Office of Water.
23.	N/A
Plans, Standards and Guidelines	
24.	N/A
25.	N/A
26.	N/A
27.	N/A

## Fees, Charges and Contributions

### 5. Contribution Toward Provision or Improvement of Amenities or Services

In accordance with the provisions of the *Environmental Planning and Assessment Act 1979* – Sect 7.11 and the Lake Macquarie City Council *Development Contributions Plan Glendale Contributions Catchment - 2015*, the monetary contributions in the attached Contributions Schedule shall be paid to Council for the purposes identified in that Schedule.

From the date this determination is made until payment, the amounts of the contributions payable under the preceding clause shall be indexed and adjusted at the close of business on:

- a) 14 August,
- b) 14 November,
- c) 14 February, and
- d) 14 May;

in each year in accordance with indexation provisions within the Contributions Plan and Directions issued under the *Environmental Planning and Assessment Act 1979* – Sect 7.17. The first date for indexation shall occur on the first abovementioned date after the Notice of Determination becomes effective.

The contributions payable shall be the amounts last indexed and adjusted in accordance with the above. However, if no amount has been indexed and adjusted because the first date for indexation and adjustment has not arrived, the contributions payable shall be those as set out in the table below.

The contributions shall be paid to Council as follows:

- a) Development Applications involving subdivision – prior to the release of the Subdivision Certificate;
- b) Development Applications involving building work – prior to the release of the first Construction Certificate;
- c) Development Applications involving both subdivision and building work – prior to the release of the Subdivision Certificate or first Construction Certificate, whichever occurs first;
- d) Development Applications where no Construction Certificate or Subdivision Certificate is required – prior to the commencement of any construction work or prior to any occupation, whichever occurs first;
- e) Complying Development Certificates - prior to any work authorised by the application or certificate commencing.

It is the professional responsibility of the Certifying Authority to ensure the monetary contributions have been paid to Council in accordance with the above provisions.

Please note that payments made by cheque or electronic transfer - the release of any documentation shall be subject to the clearing of those funds.



Indexation details are available from Council's Development Contribution Section.

A copy of the Lake Macquarie City Council *Development Contributions Plan Glendale Contributions Catchment - 2015* is available on Council's website, or a copy is available at Council's Administrative Building during Council's opening hours.

## CONTRIBUTION FEE SCHEDULE

DESCRIPTION	FEE AMOUNT
GE-Open Space & Recreation Facilities-Capital-CPI	\$925,147.18
GE-Open Space & Recreation Facilities-Land-LVI	\$185,438.27
GE-Open Space & Recreation Facilities-Land-CPI	\$5,037.64
GE-Roads-Capital-R003/R005/R008/R009/R011-CPI	\$63,381.23
GE-Roads-Land-R005/R008-LVI	\$335.78
GE-Public Transport Facilities-CPI	\$5,760.50
GE-Community Facilities-Capital-CPI	\$241,135.65
GE-Community Facilities-Land-LVI	\$31,472.27
GE-Plan Preparation & Administration-CPI	\$49,537.63
	<b>TOTAL \$1,507,246.15</b>

### Conditions to be satisfied prior to the issue of the Subdivision Works Certificate

The person having the benefit of the consent shall comply with each of the following conditions prior to the issue of the Subdivision Works Certificate.

Any documentation required to be submitted for the Subdivision Works Certificate shall be submitted to the Certifying Authority unless otherwise specified.

### 6. Erosion and Sediment Control Plan

An Erosion and Sediment Control Plan shall be prepared in accordance with the requirements of *Development Control Plan 2014 and Guidelines*. The plan shall be submitted to Council for approval.

## **7. Erosion Controls**

An Erosion and Sediment Control Plan (ESCP) or Soil and Water Management Plan (SWMP) shall be prepared in accordance with *Development Control Plan 2014 and Guidelines*. The plan shall include plans and full calculations for all erosion and sediment control measures. The plan shall be submitted to Council for approval.

The plan shall be accompanied by a Statement of Compliance to certify that:

- a) The plan has been developed by an appropriately qualified and experienced professional in erosion and sediment control;
- b) The plan complies with the requirements for the area of disturbance as per *Development Control Plan 2014*;
- c) The plan and associated documents, calculations and drawings, have been prepared to a standard which, if properly implemented, shall achieve the water release criteria of 50mg/L of Total Suspended Solids (TSS); and
- d) All erosion and sediment control measures are in accordance with *Development Control Plan 2014*.

## **8. Landscaping Works**

A Landscaping Plan shall be prepared in accordance with the requirements of *Development Control Plan 2014 and Guidelines*. The plan shall generally be in accordance with the plan prepared by terras landscape architects, dated January 2013 and have regard to the recommendations of the Visual Impact Assessment by PAA Design dated January 2013. Street trees shall be a minimum of 75 litre pot size and be protected by Council's standard tree guard (or approved equivalent).

The Landscaping Plan shall be submitted to Council for approval as a part of the Subdivision Works Certificate application.

## **9. Gross Pollutant Trap**

A design shall be submitted to Council for Gross Pollutant Traps. The design shall be in accordance with the requirements of *Development Control Plan 2014 and associated Guidelines*. Provision shall be made for maintenance access roads and maintenance vehicle parking.

An Operation and Maintenance Plan for the Gross Pollutant Traps shall be submitted. The Operation and Maintenance Plan shall be in accordance with the *Stormwater Quality Improvement Device (SQID) Guidelines*.

## **10. Water Quality Control Facilities**

A design shall be submitted for permanent Stormwater Quality Facilities generally in accordance with the design and plans prepared by SMEC. The design shall be prepared in accordance with the requirements of *Development Control Plan 2014 and Guidelines*.

The design shall include details of the extent and location of fencing, provide details of maintenance access and details of landscaping and species for the facility and its surrounds.

The design shall be modified so as to remove the proposed sediment forebays and replace them with appropriately sized Gross Pollutant Traps with maintenance access provisions.

The plans for the facility shall detail the construction stages, i.e. the plans shall detail the design of the facility as a sediment basin and the plans shall detail the design of the facility in its final form.

An Operation and Maintenance Plan prepared in accordance with *Stormwater Quality Improvement Device (SQID) Guidelines* shall be submitted for approval.

Construction sequencing for the Stormwater Quality Facilities shall be as follows:-

- a) Phase 1 – The facility shall be constructed to operate as a sediment basin initially. All final inlet and outlet structures shall be installed at this stage (unless alternate arrangements have been agreed by Council). The facility shall be maintained as a sediment basin until 80% of the lots draining to it have had housing constructed or a period of two years has passed since the release of the Subdivision Certificate.
- b) Phase 2 – A bond or bank guarantee shall be lodged with Council for the works to complete the SQID. The bond or guarantee shall be to the value determined in accordance with *Subdivision Bonds and Guarantees Policy* and shall have regard to the value of the capital of the landscaping works and 2 years maintenance.
- c) Phase 3 – Once the catchment has been substantially developed (80% of the lots or two years whichever is the lesser), the sediment basin shall be decommissioned and the final approved facility constructed and landscaped.

## **11. Roadways and Drainage Works Standards**

All works for the development shall be designed and constructed in accordance with the following publications (as amended or updated), as applicable: -

- a) *Australian Rainfall and Runoff, 2019.*
- b) *Development Control Plan 2014* and supporting guidelines.
- c) *AUSTROADS Guide to Road Design Guide.*
- d) *Roads and Maritime Services Delineation Guidelines.*
- e) *Managing Urban Stormwater documents (2004)* by Landcom.
- f) *The Constructed Wetlands Manual* - Department of Land and Water Conservation, 1998.
- g) *WSUD Technical Design Guidelines for South East Queensland.*
- h) *Healthy Waterways – Water by Design Guidelines.*

- i) Australian Standards including, but not limited to: -
  - i. *AS1428 - Design for Access and Mobility, Part 1 General Requirements for Access and Part 4 Tactile Indicators,*
  - ii. *AS2890 - Off Street Parking*

Where any inconsistency exists between these documents the relevant standard to be adopted shall be verified in writing with Council.

## **12. Show Lots Clear of 100 Year Flood Level**

Stormwater designs and calculations shall be submitted to show that all lots are clear of the 1:100 year flood level. This condition shall also apply to lots which would be affected by substantial overland flow, which may necessitate the carrying out of works to ensure properly drained and flood free conditions.

Note: Lots that are not 500mm clear of the 1:100 year flood level shall be subject to floor height control and shall be identified as Flood Control Lots.

## **13. Stormwater Detention Required**

Stormwater designs and calculations shall be submitted to Council to show that the development does not increase the peak stormwater discharge or limits of upstream and downstream flooding for floods over the range of 1:1 years to 1:100 years by the inclusion of stormwater detention controls. Designs shall incorporate maintenance access roads and fencing in accordance with Council's standard requirements.

## **14. Disposal of Stormwater to a Watercourse or Council Easement**

Stormwater shall be disposed of to either an existing Council drainage system or natural watercourse.

Where stormwater works shall be located on private property, that is not part of the development site, written authority shall be obtained from the land owner for the works and for the subsequent creation of an easement. The written authority to discharge stormwater across the property and agreement to create an easement for drainage shall be provided to Council.

## **15. Interallotment Drainage (Engineering Plans)**

The engineering plans for the development shall identify any lots that do not drain directly to Council's stormwater drainage systems. For those lots, provision shall be made for interallotment drainage pipelines and associated easements to drain water two metres wide favouring the allotments served. All stormwater shall be disposed of to either an existing formed Council drainage system or a natural watercourse.

Where stormwater works shall be located on private property, that is not part of the development site, written authority shall be obtained from the land owner for the works and for the subsequent creation of an easement.

**16. Stormwater Standards**

A design shall be submitted for stormwater works in accordance with the requirements contained in *Development Control Plan 2014 and Guidelines*. The stormwater design shall meet the requirements of the publications and standards identified in this consent.

**17. Linemarking and Signposting**

The engineering design plans submitted shall include details of any proposed linemarking and sign posting.

All regulatory linemarking and sign posting on public roads shall be submitted to Council's Traffic Facilities and Road Safety Committee for approval. The works shall not commence until approved by the Committee.

**18. Adjustments for Myall Road Intersection**

The subdivision road geometric layout and pavement thickness, materials and seal adjacent to the proposed intersection at Myall Road shall be designed to meet to final design configuration of the intersection.

**19. Pavement Standards**

Residential road pavements shall be designed in accordance with *A Guide To The Design Of New Pavements For Light Traffic* - AUSTRROADS 2006. Main and industrial road pavements shall be designed in accordance with *Pavement Design, A Guide to the Structural Design of Road Pavements* - AUSTRROADS 2012.

Designs for road pavements shall be prepared by a geotechnical consultant and shall be submitted to Council.

Where work shall be undertaken within a classified Main Road the pavement design shall also be submitted to the Roads and Maritime Services for its approval prior.

**20. Submit Road Names for Approval**

Proposed new road names shall be submitted to Council and approved prior to the issue of a Subdivision Works Certificate.

**21. Bushfire Safety Authority from Rural Fire Service**

All the requirements contained in the Bushfire Safety Authority issued by the NSW Rural Fire Service shall be incorporated into the engineering design plans for the development.

A copy of the RFS approval is attached to this consent.

### Non – Perimeter Roads

The Lot layout shall be revised to the satisfaction of Council to facilitate on road parking within the non-perimeter roads. To achieve this outcome, the road reserve for the non-perimeter roads shall be widened by at least a metre so as to provide sufficient width for an 8 metre wide carriageway to be incorporated into the civil design / works. The adjacent lots shall be reduced in depth to accommodate this.

No Parking signage will be required to be erected on one side of the non-perimeter roads so as to maintain an available carriageway width of 5.5 metres at all times. Hydrants shall be installed on the no parking side of the carriageway.

### Perimeter Roads

The design of the perimeter road shall be modified to the satisfaction of Council to incorporate parking bays to the bushland side of the carriageway. The design shall ensure that an 8 metres wide carriageway is available in addition to the parking bays.

No Parking signage shall be erected on the “lot” side of the carriageway.

Hydrants shall be installed on the no parking side of the carriageway.

## **22. Compliance with the Geotechnical Report**

All recommendations contained in the Geotechnical Reports No. 49427.02 prepared by Douglas Partners dated October 2011 shall be incorporated into the engineering design for the subdivision. All works proposed to be undertaken shall embody the relevant recommendations of the Geotechnical Report.

All engineering plans shall be endorsed by a suitably qualified Geotechnical Consultant. The endorsement shall state that the proposed works are in accordance with the recommendations of the aforementioned Geotechnical Report.

## **23. Contamination RAP**

Prior to issue of any Subdivision Works Certificate, a Remediation Action Plan (RAP) shall be prepared and a copy of the RAP provided to Council.

The RAP shall be prepared by a suitably qualified and experienced contaminated land consultant, to the satisfaction of Council and in accordance with:

- (a) “Guidelines for Consultants Reporting on Contaminated Sites” (NSW Office of Environment and Heritage 2011)
- (b) “Managing Land Contamination Planning Guidelines SEPP 55–Remediation of Land” (Department of Urban Affairs and Planning and NSW EPA 1998).

## **24. Compliance Certificate for Works**

An application for a Compliance Certificate and the associated application fee shall be submitted to Council prior to the commencement of works identified on the respective Subdivision Works Certificate.

## 25. Application Fees for Required Certificates

Applications for the following Certificates shall be submitted. For Council to process applications for these certificates the following fees shall be payable:

<b>Subdivision Works Certificate</b>	<b>Please contact Council for fees</b>	Plus <b>\$80</b> Archival Fee	(inc GST)
<b>Compliance Certificate</b>	<b>Please contact Council for fees</b>	Plus <b>\$80</b> Archival Fee	(inc GST)

Applications for these certificates shall be lodged on the approved application form and be accompanied by the appropriate fee.

Where the development includes construction works valued at \$25,000.00 or more, the person having the benefit of the consent shall pay the Long Service Levy, as detailed in the *Building and Construction Industry Long Service Payments Scheme*. The Levy shall be paid prior to the issue of the Construction Certificate. The Levy shall be paid directly to the Long Service Payments Corporation or to Council as agent for the Corporation. The Levy rate is 0.35% of the cost of building and construction works.

The above fees are current for the **2020/2021** financial year and are subject to change each financial year without notice. Confirmation of the relevant fee shall be obtained from Council prior to the lodgement of any application.

## 26. Vegetation Management Plan

Implementation of the VMP shall commence prior to any construction work commencing and shall be carried out in perpetuity as prescribed by the VMP..

Written approval from Council's Development Planner Flora and Fauna shall be obtained and submitted to the Certifying Authority demonstrating that VMP outcomes, including the VMP works schedule and nest box requirements have been met, prior to the issue of the first Subdivision Certificate.

## 27. Contaminated Land Remediation Action Plan

Prior to the issue of a Subdivision Works Certificate, a Remediation Action Plan (RAP) shall be prepared and a copy of the RAP provided to Council.

The RAP shall be prepared by a suitably qualified and experienced contaminated land consultant, to the satisfaction of Council and in accordance with:

- a) *Guidelines for Consultants Reporting on Contaminated Sites* (NSW Office of Environment and Heritage 2011)
- b) *Managing Land Contamination Planning Guidelines SEPP 55–Remediation of Land* (Department of Urban Affairs and Planning and NSW EPA 1998).

## **28. Subdivision Works Certificate for Works**

An application for a Subdivision Works Certificate and the associated fee shall be submitted to Council.

The application shall include detailed engineering plans and specifications (including a Design Certification Report and Checklists in accordance with *the Lake Macquarie City Council Engineering Guidelines*) relating to the works.

### **Conditions to be satisfied prior to the commencement of works**

The person having the benefit of the consent shall comply with each of the following conditions prior to the commencement of works.

## **29. Retention of Trees and Native Vegetation**

All native trees and vegetation on the site shall be retained and protected in accordance with *Development Control Plan 2014 Guidelines – Tree Preservation and Native Vegetation Management Guidelines* (Section 6) and the *Australian Standard AS4970-2009 – Protection of Trees on Development Sites* unless it:

- a) has been identified for removal on the approved plans or documentation; or
- b) has been identified for selective removal, or is exempt under the 10/50 Clearing Entitlement Area as deemed by the NSW Rural Fire Service.

Exclusion fencing shall be installed around all native vegetation that shall be retained on and adjoining the site to minimise damage, prior to the commencement of works. The person having the benefit of the consent shall notify Councils Development Planner Flora and Fauna when exclusion fencing has been installed. Vegetation exclusion fencing shall be maintained in good working order for the duration of works.

If any works within the development precinct(s) are proposed that are adjacent to the development precinct boundaries and may impact native trees within the conservation lots or other adjacent land. The works shall be redesigned to the satisfaction of Council so as to not impact those trees. An arborist report may be required to inform the design solution.

## **30. Nest Box Installation**

A qualified ecologist or wildlife carer shall supervise installation of nest boxes.

Unless otherwise agreed with the BCT and Councils Development Planner Flora Fauna, nest boxes shall be installed:

- a) At a ratio of 1:1 for every hollow bearing tree removed;
- b) At least two weeks prior to clearing and maintained for two years;
- c) At least four metres above ground;
- d) Of a design suitable for species that may be residing in trees marked for removal;



- e) Of a durable material (ie; marine ply or equivalent).
- f) Of a design that is consistent with NSW Government 2011, Biodiversity Guidelines: *Protecting and managing biodiversity on RTA projects - Guide 8: Nest boxes*, prepared by Roads and Traffic Authority, September 2011 and NSW Government 2008, *Guidelines for the design, construction and placement of nestboxes*, prepared by Department of Environment, Climate Change and Water, Biodiversity Conservation Section.
- g) At an orientation that is suitable for the species that the nest box has been designed. Micro bat nest boxes shall be orientated at a north to north westerly aspect. Bird and mammal boxes shall be orientated at an east facing aspect;
- h) In a manner that minimises damage to the trees and surrounding vegetation; and
- i) With a unique number affixed that can be read from the ground.

A plan shall be provided showing the location of nest boxes in relation to the development. The number affixed to the bottom of each nest box shall also be shown on the plan.

### **31. Service of Public Utilities**

Arrangements shall be made with the relevant supply authorities and companies for the servicing of all lots in the subdivision with water, sewer, underground electricity and underground telecommunications facilities. Where available, reticulated gas shall be provided to the lots by arrangements with the local gas authority.

Where required by the Commonwealth Government's *Fibre in New Development's Policy*, the applicant shall arrange for the installation of optical fibre cabling in accordance with the NBN Co. Limited's specification.

No clearing of vegetation shall occur within the lots proposed as conservation offset lots for the provision of services to the development.

### **32. Details Required Prior to Commencement**

Construction works in accordance with this development consent shall not commence until: -

- a) a Subdivision Works Certificate has been issued by: -
  - i. Council, or
  - ii. an appropriately Accredited certifier accredited in accordance with the *Building Professionals Board Accreditation Scheme*, and
- b) the person having the benefit of the development consent: -
  - i. has appointed a Certifying Authority, and
  - ii. has notified the consent authority and Council (if the Council is not the consent authority) of the appointment, and

- c) the person having the benefit of the development consent has given at least two days notice to Council of the intention to commence works.

In accordance with Council's authority under Section 138 of *The Roads Act 1993*, a Private Certifier shall not issue a Certificate for any works within an existing public road. For works within an existing public road reserve, a Public Works Certificate application shall be lodged with Council.

Where Council is the Certifying Authority for a subdivision, an application for a Subdivision Works Certificate can only be made to Council.

A fee for applications for Subdivision Works Certificates shall be required to be paid in accordance with Council's fees and charges for Subdivision Works Certificates.

### **33. Dilapidation Survey Report**

A dilapidation survey report shall be prepared by a suitably qualified person and lodged with Council. The dilapidation survey report shall cover public infrastructure including roads and stormwater drainage on the roads adjoining the development and along any approved haulage routes. Where existing buildings may be damaged by the proposed works, these buildings shall be included in the report.

The report shall include a description of the location and nature of any existing observable defects, including a photographic record.

### **34. Construction Management Plan**

The contractor engaged to undertake the construction works shall provide a Construction Management Plan (CMP) or Integrated Project Management Plan (IPMP) to Council, a minimum of seven days prior to commencing any works.

The Plan shall be submitted to the City Projects Department at the following email address [projectmanagementpat@lakemac.nsw.gov.au](mailto:projectmanagementpat@lakemac.nsw.gov.au).

The Plan shall be set out the construction approach for the works and should seek to minimise disruption to the local community.

As a minimum, the CMP must address the following areas:

Health and Safety

- a) Public safety, amenity and site security;
- b) Traffic Control and Management;
- c) Pedestrian management;
- d) Construction hours;
- e) Noise control;
- f) Contractor vehicle parking;
- g) Locating existing utilities and services;
- h) Health and Safety requirements.

## Environment

- a) Air quality management;
- b) Erosion and sediment control- base information, monitoring and management;
- c) Waste management;
- d) Material stockpiling;
- e) Vegetation management;
- f) No go zones;
- g) Heritage management (if applicable).

## Quality

- a) Submission of current insurance certificates;
- b) Work method description;
- c) Construction equipment to be used;
- d) Inspection and testing requirements;
- e) CCTV survey of pipework;
- f) Earthworks methodologies;
- g) Haulage routes;
- h) Retaining structure construction methodologies;
- i) Concrete jointing methodologies;
- j) Subsoil drainage installation methodologies;
- k) Stormwater drainage infrastructure installation methodologies;
- l) Stormwater Quality Improvement Device installation methodologies;
- m) Road construction methodologies;
- n) Accessways and footway construction methodologies;
- o) Landscaping installation methodologies;
- p) Utility and services installation methodologies
- q) Construction and installation methodologies of other structures not otherwise covered above.

All works on site shall be undertaken in accordance with the Plan. Upon receipt of the CMP/IPMP Council is not approving the document or works proposed in the document. The contractor is responsible for any area where the Plan fails to comply with Councils Engineering Construction Guidelines, standards and all other applicable legislation

### **35. Notification to Neighbours**

Written notification shall be provided to landowners and residents who live adjacent to the proposed development or who may be impacted by the proposed works. The notification shall be provided a minimum of seven days prior to commencement of works. The notification shall include the expected date of commencement of works and a brief description of the works.

### **36. Haulage Routes**

The Applicant shall submit to Council, in writing, details of the proposed haulage routes to be used during construction works. These details shall be submitted a minimum of seven days before the commencement of haulage operations. No haulage operations shall take place prior to the approval of the routes by Council. The haulage routes shall not be varied without the approval of Council.

The Applicant shall maintain and restore the haulage route roads, as near as possible, to their original condition.

### **37. Notice of Commencement of Works**

Construction works shall not commence until a meeting between the contractor and a representative of the Council or Certifying Authority has taken place on site.

In accordance with Section 6.12 of the *Environmental Planning and Assessment Act* the Council or Certifying Authority shall be given at least two days notice in writing prior to such meeting taking place.

The notice shall also include the names of the contractor undertaking construction and the developer's supervising officer.

### **38. Ausgrid Requirements**

Ausgrid's requirements for the installation of an electricity service to the development shall be identified. All of Ausgrid's requirements shall be satisfied.

### **Conditions to be satisfied during demolition and construction works**

The person having the benefit of the consent shall comply with each of the following conditions during demolition and construction works.

### **39. Hollow Bearing Tree Removal**

A qualified ecologist or wildlife carer shall supervise removal of any hollow bearing trees to ensure mitigation against any native animal welfare issues.

Removal of trees with habitat hollows shall be undertaken in either March, April, October, November to minimise impact to threatened species that could breed and or hibernate within hollows on site.

Trees with habitat hollows shall be removed at least 24 hours after other vegetation approved for removal to encourage any residing fauna to relocate.

Any hollow-bearing trees shall be felled in one to two metre sections, beginning at the top of the crown. Lengths cut from the trees shall be in a manner that shall preserve the hollows with each section inspected and appropriately treated to minimise impact to fauna.

Forest Owl High Priority Trees identified in the *Report on Additional Threatened Forest Owl Surveys & Assessment For DA/1284/2013 Myall Road Cardiff* (Conacher Consulting, 2017), that are to be removed, are to be clearly marked and inspected prior to removal. An owl specialist is to be engaged to advise of the best approach for tree removal should a large forest owl be detected residing in the high priority tree during these pre-clearance inspections. Advice provided by the owl specialist is to be forwarded to and approved by Councils Development Planner Flora Fauna prior to removal, this approved advice is then to be implemented during the removal of these high priority trees.

Written confirmation shall be provided to Council's Development Planner Flora and Fauna confirming compliance with this condition and species detected during hollow bearing tree removal.

#### **40. Erosion and Sediment Control Plan**

Sediment and Erosion Control works shall be carried out in accordance with the approved Erosion and Sediment Control Plan and no work shall commence until the erosion and sediment control works specified in the plan are in place and their placement has been approved by the Certifying Authority.

#### **41. Erosion Controls**

All works and requirements identified in the approved Erosion and Sediment Control Plan shall be installed as part of the initial construction works in the first stage of the development. The erosion and sediment control works shall be maintained and a detailed record of the erosion and sediment controls on the site shall be updated during construction works. The record shall be updated on a daily basis and shall as a minimum contain details on the conditions of the controls and all maintenance and cleaning undertaken.

The record shall be available for inspection by the Certifying Authority during normal working hours.

Minor additional works shall be approved by the Certifying Authority during construction works.

#### **42. Erosion Control Sign**

Council's standard Erosion Control Sign as detailed in *Standard Drawing No. 3403/1* shall be supplied and erected on site. The sign shall be erected in a prominent location near the entrance to the development prior to the commencement of earthworks.

#### **43. Preservation of Trees**

All reasonable measures shall be taken to protect trees and other vegetation on the site and on adjoining lands from damage during construction. Trees and vegetation shall only be removed from those areas identified in the approved Subdivision Works Certificate. An application shall be made to Council in accordance with Clause 5.9 of *Lake Macquarie Local Environmental Plan 2014* for the removal of any other trees.

Tree and vegetation protection measures shall include but not be limited to: -

- a) clearly marking trees to remain
- b) avoiding compaction of ground around trees to remain
- c) clearly delineating the area of disturbance, and keeping all vehicles, construction materials and refuse within that area
- d) limiting the number of access points

#### **44. Salvage of Trees and Shrubs**

Prior to land clearing, the development shall facilitate the recovery and reuse of native vegetation suitable for the revegetation of disturbed areas on the site, where practical.

Trees and shrubs which are felled shall be salvaged for re-use, either in log form, or as a woodchip mulch for erosion control and/or site rehabilitation. Non-salvageable material such as roots and stumps shall be disposed of in an approved manner.

#### **45. Grassing and Revegetation**

All areas of the site disturbed by works shall be revegetated to prevent erosion. All areas shall be revegetated as soon as practical, and no later than the times specified in Landcom's – *Managing Urban Stormwater documents (2004)*.

Kikuyu grass shall not be used in areas adjoining native bushland or in drainage lines or channels.

Opportunities to recover and re-use plants to be impacted are also to be pursued as agreed with Council.

#### **46. Noise Control**

All possible steps shall be taken to silence construction equipment and the operating noise level of plant and equipment shall not give rise to "offensive noise" as defined by the *Protection of the Environment Operations Act 1997*.

The operating noise level of machinery, plant and equipment during construction site operations shall comply with Chapter 171 of the *NSW EPA's Noise Control Manual*.

Construction operations shall be confined between the hours of 7.00am to 6.00pm Monday to Friday and 8.00am to 1.00pm Saturday. If construction operations are inaudible within occupied residential properties then the work period shall be extended on Saturdays to 7.00am to 1.00pm. No construction work shall take place on Sundays or Public Holidays.

Should it be necessary to use mechanical rock breakers or conduct blasting then these operations shall be confined between the hours of 9.00am and 3.30pm Monday to Friday (excluding any Public Holiday).

#### Noise Level Restrictions

- a) Construction period of four weeks and under: -

The L10 level measured over a period of not less than 15 minutes when the construction site is in operation shall not exceed the background level by more than 20dB(A).

- b) Construction period greater than four weeks: -

The L10 level measured over a period of not less than 15 minutes when the construction site is in operation shall not exceed the background level by more than 10dB(A).

#### **47. Installation of Service Pipes**

All public utility service pipes, mains and conduits shall be installed in all new roads and existing roads, (where work is required in existing roads), as part of the construction works associated with the subdivision.

Conduits to cater for the installation of natural gas services shall be installed to service each lot in conjunction with road and drainage works.

#### **48. Traffic Control Standards**

For the duration of work being carried out as part of this development, the Applicant shall ensure that traffic control is undertaken in accordance with the requirements of *Australian Standards AS 1742 - Manual Uniform Traffic Control Services – Parts 1, 2 and 3*.

#### **49. Street Lighting**

Street lighting shall be provided for the development to the satisfaction of Ausgrid and in accordance with the road classification. The road classification shall be determined by Council and Ausgrid.

The street lighting shall include the upgrading of the lighting of the intersection of any new roads with existing roads.

**50. Compliance with the Geotechnical Report**

All recommendations contained in the Geotechnical Reports No. 49427.02 prepared by Douglas Partners dated October 2011 that relate to construction inspections and testing shall be completed and recorded.

**51. Earthworks Standards**

All earthworks shall be undertaken in accordance with the standards specified in Table 5.1 of *Australian Standard AS 3798 - 2007 Guidelines on Earthworks for Commercial and Residential Developments*.

The inspection and testing of fill shall be at the responsibility level set out below, as defined in Section 8 of *AS 3798-2007*.

<b>Fill Area</b>	<b>Responsibility Level</b>
Water retaining embankments	1
Road embankments (greater than 2m high)	1
Road embankments (less than 2m high)	2*
Residential allotments	1
Industrial/Commercial allotments	1

\* Level 1 may be used if desired by the applicant.

**52. Fauna Movement Structures**

Structures such as glider poles and/or rope bridges shall be provided to link patches of habitat within the biodiversity offset area. Structures shall be provided to provide fauna connectivity over proposed Road 3/Gillian Crescent extension unless otherwise agreed with the BCT and Councils Development Planner Flora Fauna. Input from a squirrel glider expert shall be obtained and included in the design, placement and to confirm the number and type of these structures.

The installations must be designed in consultation with the BCT and Councils Development Planner Flora Fauna and with consideration to site constraints including power lines and traffic/public safety requirements, have regard to any requirement of the Council, and be certified by a practicing structural engineer. Fauna movement structures shall be installed within three months of vegetation clearing commencing, and maintained in perpetuity.

**53. Contaminated Land Remediation and Validation**

The site shall be remediated in accordance with the approved Remediation Action Plan (RAP).



#### **54. Retention of Trees and Native Vegetation**

All reasonable measures shall be undertaken to protect native vegetation on, and adjoining the site, that shall be retained from damage during construction. Such measures shall include, but not be limited to:

- a) maintaining exclusion fencing around vegetation that adjoins the construction area to minimise damage to vegetation that shall be retained;
- b) prohibiting compaction and the placement of fill within five metres of trees and native vegetation that shall be retained;
- c) keeping all vehicles, construction materials and refuse within areas approved for buildings, structures, access ways and car parks;
- d) limiting the number of access points;
- e) salvaging useable trees and shrubs which are felled for re-use, either in log form, or as woodchip mulch for erosion control and/or site rehabilitation. Non-salvageable material such as roots and stumps shall only be disposed of at an approved site;
- f) notifying all contractors, sub-contractors, and personnel of vegetation protection requirements of this condition.

A separate application shall be made to Council in accordance with the guidelines referenced above for the removal of any other trees or native vegetation. This includes application for the removal of any understorey vegetation or the stripping of ground cover vegetation that is outside those areas approved for construction.

#### **55. Excavation – Non-Indigenous Relics**

The person having the benefit of the consent shall notify any contractors and persons involved in undertaking subsurface disturbance works, that it is an offence under Section 156 of the *Heritage Act 1977* to disturb or excavate land on which a person has discovered or exposed a relic unless disturbance or excavation is subject of an approved Excavation Permit.

Should any relics be discovered, all excavations or disturbance to the area shall cease immediately and the Heritage Council of NSW shall be notified in accordance with Section 146 of the *Heritage Act 1977*.

All necessary approvals shall be obtained from the Heritage Council of NSW and copies provided to Council prior to works recommencing.

#### **56. Aboriginal Heritage**

The person having the benefit of the consent shall notify any contractors and persons involved in undertaking subsurface disturbance works, that it is an offence under Section 86 of the *National Parks and Wildlife Act 1974* to harm or desecrate an Aboriginal object unless that harm or desecration is subject of an approved Aboriginal Heritage Impact Permit (AHIP).

Should any objects be discovered, all excavations or disturbance to the area shall cease immediately and the Department of Premier and Cabinet - Heritage NSW shall be notified.

All necessary approvals shall be obtained from the Department of Premier and Cabinet - Heritage NSW and copies provided to Council prior to works recommencing.

#### **Conditions to be satisfied prior to the issue of a Subdivision Certificate**

The person having the benefit of the consent shall comply with each of the following conditions prior to the issue of a Subdivision Certificate.

#### **57. Landscaping Works**

All landscaping works shall be completed in accordance with the approved Landscape Plan. Correspondence shall be provided from a recognised landscaping professional, that confirms that the landscaping works have been completed in accordance with the approved plan.

All landscaping works shall be maintained for a period of 24 months.

The person having the benefit of the consent shall lodge a cash bond or Bank Guarantee with Council. The bond or guarantee shall be to the value determined in accordance with the *Subdivision Bonds and Guarantees Policy* and shall have regard to the value of the capital of the landscaping works and two years maintenance (the value of the bank guarantee or bond shall be determined in consultation with Council).

The monies shall be released 24 months after planting and when Council is satisfied that the landscaping has established.

#### **58. Landscaping Covenant**

A restriction on the land in accordance with s88B of the *Conveyancing Act 1919* shall be placed on the northern boundary of lots 67 and 68 requiring a five metre wide landscaping buffer. The buffer shall be planted and maintained on the lots upon development of the lots. The landscaping shall provide for screening of the development on those lots when viewed from Myall Road in accordance with the recommendations of the Visual Impact Assessment by PAA Design dated January 2013. The Council shall be the authority empowered to release, vary or modify the instrument. The instrument shall be submitted with the subdivision certificate.

#### **59. Gross Pollutant Trap**

All works associated with the Gross Pollutant Trap shall be completed in accordance with the approved design. Prior to the handover of any Gross Pollutant Traps (GPT) to Council, the GPT shall be inspected and maintained in Council's presence as a means of providing Council's maintenance personnel with an induction on the maintenance requirements of the device.

**60. Water Quality Control Facilities**

A bond or bank guarantee shall be submitted to Council for the outstanding works on the Water Quality Control Facility and for two years maintenance of the facility. The bank guarantee shall be released no less than two years after the completion of the facility and establishment of landscaping.

Prior to the release of the bank guarantee a handover inspection checklist (see *SQID Guidelines*) shall be submitted to Council and all landscaping shall be established in accordance with the approved plan to Council's satisfaction.

**61. Service of Public Utilities**

A letter of compliance from each service authority and service company shall be submitted to Council prior to the issue of a Subdivision Certificate. The letters shall confirm that the relevant service is available to all lots.

If the development is located within an area where NBN services are available, a letter of compliance from the NBN shall be required for all subdivisions.

If reticulated gas is not available for connection, communication with the local gas authority that confirms this is the case shall be provided to Council.

Note: Applications for two lot or dual occupancy subdivisions shall not require letters of compliance to be submitted to Council from Ausgrid or Telstra.

**62. Dilapidation Survey Report**

A final dilapidation survey report shall be prepared at the completion of the works to ascertain if any structural or cosmetic damage has occurred to the properties or infrastructure specified in the earlier report. A copy of the report shall be submitted to Council prior to the issue of the Subdivision Certificate.

Any damage identified in the dilapidation survey report shall be repaired prior to the issue of the Subdivision Certificate.

**63. Disposal of Stormwater to a Watercourse or Council Easement**

An easement for drainage shall be created over all stormwater works that impact on a private property. The easement shall identify the properties benefitted and burdened. Council shall be a party benefitted if the stormwater system carries any stormwater from a public area. Council shall be identified as the party that can release, vary or modify the easement.

The easement shall be created prior to, or at the time of registration of the Final Plan of Subdivision.

**64. Interallotment Drainage (Engineering Plans)**

An easement for drainage shall be created over all interallotment drainage pipelines. The easement shall identify the properties benefitted and burdened.

Council shall be identified as the party that can release, vary or modify the easement.

The easement shall be created prior to, or at the time of registration of the Final Plan of Subdivision.

**65. Provision of Council Easements**

Easements for drainage shall be created in favour of Council at the locations:

- a) shown on an approved copy of the Subdivision Works Certificate plans; or
- b) indicated in red on an approved copy of the Subdivision Works Certificate plans; and
- c) over any stormwater pipeline that carries stormwater from a public area.

The easement shall have a minimum width of three metres or the width of the 100 year flow path, whichever is greater. The easement shall benefit Council.

Council shall be identified as the party that can release, vary or modify the easement.

The easement shall be created prior to, or at the time of registration of the Final Plan of Subdivision.

**66. Dedication of Roads**

The final Plan of Subdivision shall make provision for the proposed new roads to be dedicated to Council. The dedication shall take place at no cost to Council.

All public roads that are to be dedicated shall be fully constructed in accordance with the standards identified in this consent.

**67. Intersection Operational**

The intersection works at Myall Road and Gynea Drive shall be installed and be operational prior to the release of any Subdivision Certificate that creates any residential lots within the development.

**68. Density Restriction**

1. The maximum number of dwellings permitted on Lot 67 and 68 is 14.
2. The maximum number of dwellings permitted on Lot 69 is to be no more than 25.

**69. Fix Damage Caused by Construction Work**

Any damage or injury to a public road, utility services, street trees, stormwater drainage or associated infrastructure caused as a consequence of the development works shall be repaired as close as possible to its original condition.

It is the developer's responsibility to prove that damage was pre-existing or not caused by the development works.

**70. Works as Executed Plan**

An electronic copy of the Works as Executed Plans, certified by the Consulting Civil Engineer or Registered Surveyor supervising the works shall be supplied to Council.

Where applicable a Registered Surveyor's Certificate certifying that all pipes have been laid within the easements shown on the Final Plan of Subdivision shall also be submitted.

The Works as Executed Plan shall, in addition to construction details, show limits and depths of filling, locations of service conduits and street names.

**71. Erection of Street Signs**

New street name signs shall be supplied and erected in accordance with the requirements of Council's standard design requirements. All private roads shall be clearly signposted to indicate that they are private roads and not public roads.

**72. Easement for Support**

An easement for support shall be created on the Final Plan of Subdivision submitted to Council for all fill embankments that extend into lots if the side slopes are steeper than one in three and such embankments are in excess of one metre in height.

**73. Submit Road Names for Approval**

Proposed new road names shall be submitted to Council for approval.

Council cannot release the Subdivision Certificate unless the proposed public roads have been named in accordance with Clause 162 of the *Roads Act 1993*. The Roads Act requires that the Geographical Names Board be given at least one month's notice of the proposed names.

**74. Bushfire Safety Authority from Rural Fire Service**

All the requirements contained in the Bushfire Safety Authority issued by the NSW Rural Fire Service shall be completed and incorporated into the Final Plan of Subdivision and 88B Instrument for the subdivision.

A copy of the RFS approval is attached to this consent.

Specifically:

- A. At the issue of a subdivision certificate that area of the Southern Precinct consisting of the 66 residential allotments and the 2 superlots for future single or medium density housing, must be established and managed as an inner protection area (IPA) in accordance with the requirements of Appendix 4 of Planning for Bush Fire Protection 2019. When establishing and maintaining an IPA the following requirements apply:
- a. tree canopy cover should be less than 15% at maturity;
  - b. trees at maturity should not touch or overhang the building;
  - c. lower limbs should be removed up to a height of 2m above the ground;
  - d. tree canopies should be separated by 2 to 5m;
  - e. preference should be given to smooth barked and evergreen trees;
  - f. large discontinuities or gaps in vegetation should be provided to slow down or break the progress of fire towards buildings;
  - g. shrubs should not be located under trees;
  - h. shrubs should not form more than 10% ground cover; and
  - i. clumps of shrubs should be separated from exposed windows and doors by a distance of at least twice the height of the vegetation.
  - j. grass should be kept mown (as a guide grass should be kept to no more than 100mm in height);
  - k. leaves and vegetation debris should be removed.
- B. A 10 metre asset protection zone (APZ) must be applied to all proposed perimeter Lots fronting the bush fire hazard (ie Lots 1, 7, 8, 9, 14 – 17, 24 – 27, 34 – 37, 42 – 45, 50 – 53 and 59 – 66). The APZ must be managed as an inner protection area (IPA) in accordance with the requirements of Appendix 4 of Planning for Bush Fire Protection 2019. A restriction on the land use, in accordance with section 88B of the Conveyancing Act 1919, shall be placed on these lots requiring the provision and maintenance of the 10 metre APZ / front boundary setback and prohibits the construction of buildings other than class 10 structures within the APZ. The Council shall be the authority empowered to release, vary or modify the instrument.
- C. A 29 metre asset protection zone (APZ) must be applied to the western boundary of lot 68. A restriction on the land use, in accordance with section 88B of the Conveyancing Act 1919, shall be placed on lot 68 requiring the provision and maintenance of the 29 metre APZ / boundary setback and prohibits the construction of buildings other than class 10 structures within the APZ. The Council shall be the authority empowered to release, vary or modify the instrument

## **75. Dedication of Road Widening**

The final Plan of Subdivision shall make provision for the dedication of the land along the southern side of Myall Road to accommodate the existing road and footpath area of Myall Road along with any land required for the construction of the proposed roundabout.

The dedication shall take place at no cost to Council. This is to include dedication of land shown as “10m wide landscape buffer” on the PAA Design lot layout as road widening.

**76. Earthworks Standards**

A report prepared by a suitably experienced Geotechnical Consultant shall be submitted that certifies that all earthworks and filling have been completed in accordance with the requirements of Australian Standard *AS 3798-2007 Guidelines on Earthworks for Commercial and Residential Developments*. The report shall contain a plan showing the location, depth and classification of all filling in relation to the proposed new lot boundaries.

**77. Site Classification of Lots**

A suitably experienced Geotechnical Consultant shall determine the site classification of each proposed lot in accordance with *AS 2870-2011* (as revised). A report setting out the site classifications for each lot shall be provided to Council.

**78. Final Plan Submission**

An application for a Subdivision Certificate accompanied by an original copy of the Final Plan of Subdivision and Deposited Plan Administration Sheet shall be submitted to Council. The location of all buildings and/or other permanent improvements shall be indicated on one additional plan.

When all conditions of the Development Consent have been satisfied the Subdivision Certificate may be issued.

**79. House Numbering**

A minimum of four weeks prior to lodgement of the Subdivision Certificate with Council, the person having the benefit of the consent shall provide a draft Final Plan of Subdivision to Council's Land Information section by email to [enar@lakemac.nsw.gov.au](mailto:enar@lakemac.nsw.gov.au). Council shall then provide house numbering for the lots within the subdivision for inclusion on the Survey Plan in accordance with Clause 60 of the *Surveying and Spatial Information Regulation 2012*.

**80. Restriction on Keeping of Domestic Animals**

A restriction shall be placed on the title of the residential and future development lots to the effect that the keeping of domestic cats on the properties is to be prohibited.

**81. 88B Instrument**

An instrument under Section 88B of the *Conveyancing Act* shall be submitted to Council. The 88B Instrument shall set out terms of easements and/or restrictions as to user as may be required by conditions of this consent. Council shall be the party empowered to release, vary or modify those (and only those) easements and/or restrictions required by conditions of this development consent.

**82. Compliance Certificate for Works**

All construction works required for the subdivision shall be completed and a Compliance Certificate shall be obtained for these works. The Compliance Certificate shall certify that all construction works and associated development have been constructed in accordance with this Development Consent, the Subdivision Works Certificate and all other standards specified in this consent.

**83. Section 50 Certificate**

A certificate of compliance under Section 50 of the *Hunter Water Act 1991* for this development shall be submitted to Council.

Advice: Council does not forward notification of the subdivision approval to the Hunter Water Corporation. It is the responsibility of the person having the benefit of the consent to make all pertinent arrangements with the Hunter Water Corporation.

**84. Subsidence Advisory NSW Concurrence**

The development shall be undertaken in strict compliance with the approval granted by Subsidence Advisory NSW. A copy of the approval is attached to this consent.

**85. Ausgrid Easements**

Ausgrid's requirements for the provision of easements and sites for electricity infrastructure shall be identified and complied with.

The location of easements and sites for electricity infrastructure shall be identified on the Final Plan of Subdivision and associated Section 88B Instrument.

A letter of concurrence from Ausgrid shall be provided to confirm that all necessary electrical infrastructure has been supplied and is operational.

**86. Application for Subdivision Certificate**

An application for a Subdivision Certificate shall be submitted to Council. The following fee shall apply for the Subdivision Certificate application.

<b>Subdivision Certificate</b>	<b>\$155.00/lot</b>	Plus <b>\$80</b>	(inc GST)
	(min fee \$430.00)	Archival Fee	

Applications for this certificate shall be lodged on the approved application form and be accompanied by the appropriate fee.

The above fees are current for the **2020/2021 financial year** and are subject to change each financial year without notice. Confirmation of the relevant fee shall be obtained from Council prior to the lodgement of any application.



## **87. Contaminated Land Remediation and Validation**

A suitably qualified and experienced Contaminated Land Consultant shall validate the site has been remediated. Validation shall be provided in accordance with the *Guidelines for Consultants Reporting on Contaminated Sites* (NSW Office of Environment and Heritage 2011). The validation report shall include a clear statement the consultant considers the site to be suitable for the approved use.

Note: Certification from the person who carried out remediation works shall be provided to Council in accordance with the requirements of Clause 18 of *State Environmental Planning Policy No 55 - Remediation of Land*.

### **Right of Appeal**

If you are dissatisfied with this decision (including a determination on a review under Section 8.2), Division 8.3 of the Environmental Planning and Assessment Act 1979 gives you the right to appeal to the Land and Environment Court.

Note: The Environmental Planning and Assessment Act 1979 does not give a right of appeal to an objector who is dissatisfied with the determination of the Council to grant consent to a development application, unless the application is for designated development (including designated development that is integrated development) either unconditionally or subject to conditions.

### **Right of Review**

Section 8.2 and 8.3 of the Environmental Planning and Assessment Act 1979 provides the applicant may request the Council to review the determination.

Note: A request to review the determination of a development application pursuant to Section 8.2 and 8.3 of the Environmental Planning and Assessment Act 1979 can only be undertaken where the consent authority is Council, other than:

- a) A determination to issue or refuse to issue a complying development certificate, or
- b) A determination in respect of designated development, or
- c) A determination made by the Council under Division 4 in respect of an application by the Crown.

### **Planning Assessment Commission**

The Planning Assessment Commission has not conducted a public hearing in respect of this application.

Should you require further information, please contact the undersigned on 4921 0455 or by e-mail on [dpavitt@lakemac.nsw.gov.au](mailto:dpavitt@lakemac.nsw.gov.au).

Yours faithfully



David Pavitt  
**Chief Development Engineer**  
**Development Assessment and Certification**

## **Appendix G – Significant Impact Assessment for *Rhodamnia rubescens***



# AEP

ECOLOGY | OFFSETS | BUSHFIRE | ARBORICULTURE

**Our Ref:** 3043.02  
**Date:** 8 February 2023  
**To:** Landcom Holding

Attention Alexander Seal  
Via Email Aseal@landcom.nsw.gov.au

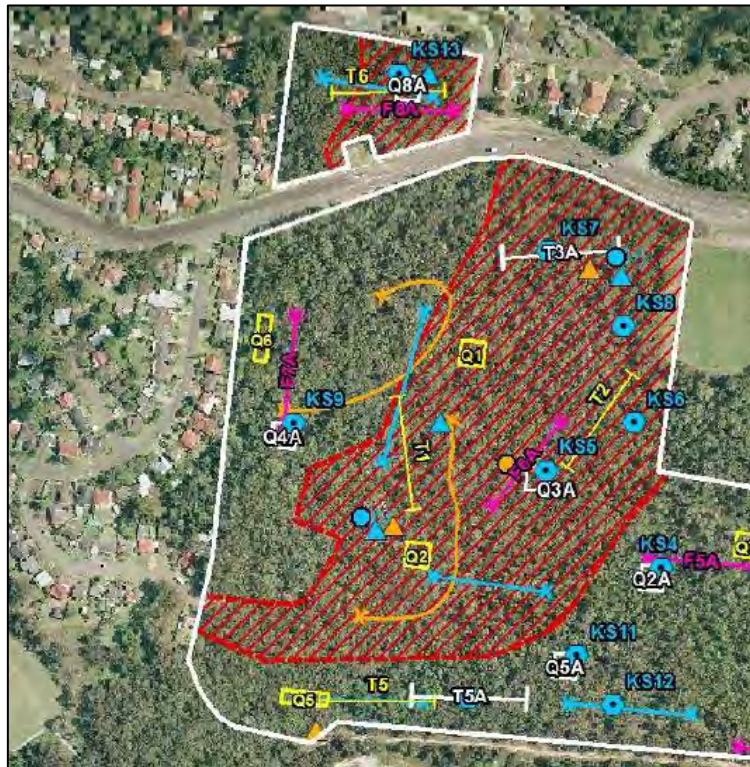
Dear Alex,

**RE: TARGETED RHODAMNIA RUBESCENS SURVEY**  
**82, 69, 9A Myall Road residential Subdivision, Hillsborough NSW**

As requested, Anderson Environment & Planning (AEP) herewith provide a Significant Impact Assessment relating to targeted *Rhodamnia rubescens* survey within the proposed residential development at 82, 69, 9A Myall Road, Hillsborough NSW (the Subject Site).

AEP was commissioned by Landcom Holding (the client) to undertake an EPBC Significant Impact Assessment for the critically endangered species *Rhodamnia rubescens* which has previously been recorded within the Study Area as identified within *Biodiversity Assessment Report – Myall Road Hillsborough (Ref:2080F) Conacher Environmental Group*. One individual *Rhodamnia rubescens* was identified within the Study Area within quadrat 6 of their floristic survey efforts in 2013 (refer to **Figure 1**).

The species was listed as critically endangered as of 11 December 2020, as such targeted surveys were not conducted at the time the BDAR was drafted in 2013 as the species was not listed as threatened. Therefore, taking the precautionary approach AEP conducted targeted surveys within the Subject Site and within an approximate 50m buffer into the proposed Stewardship Site Lands adjoining the Subject Site, to confirm presence or absence of this species on site.



**Figure 1 – Conacher Environmental Group (2013) survey effort, *Rhodamnia rubescens* recorded within quadrat 6 outside of the Development Site.**

AEP attended the Subject Site on the 31 January 2023 to undertake targeted flora transects for the following species;

- *Rhodamnia rubescens* (Scrub Turpentine),

With the addition of;

- *Rhodomyrtus psidioides* (Native Guava), and
- *Persicaria elatior* (Tall Knotweed).

*R. psidioides* was additionally surveyed for within the development footprint due to listing as Critically Endangered effective from 12 December 2020. *P. elatior* was included in these surveys due to its listing as Vulnerable and its listing in the *EPBC Act Protected Matters Report* (2023).

Parallel Transects were undertaken by two Ecologists as per *NSW Guide to Surveying Threatened Plants* (DPIE 2020) within the development footprint and targeted searches were undertaken within a 50m buffer by AEP when surveying the BSSAR lands. All areas of habitat were surveyed with transects averaging 10m width in the Subject Site at a pace of approx. 1km/hr to allow for identification. Survey effort has been outlined in **Figure 2**.

Targeted survey efforts concluded that the species were not present within the Subject Site and they were not detected within the 50m buffer adjoining the Subject Site. It is also reiterated here that the previously identified individual record of *Rhodamnia rubescens* was located outside of the 50m buffer and that it is unlikely for indirect impacts from the proposed development to impact this species.

In relation to the history of this species, according to the Threatened Species Scientific Committee's *Conservation Advice – Rhodamnia rubescens* (2020); the broader population of this species across Australia, has reduced by more than 80%. The primary reason for this has been associated with the mortality from infections and high susceptibility to *Austropuccinia psidii* (Mrytle Rust) in both mature

individuals and seedlings. *A. psidii* infection has negatively affected *R. rubescens* across the species entire range. As such, it is highly likely that any population that once occurred within the site has likely been impacted by Myrtle Rust and the population decreased over time since the spread of Myrtle Rust through the population. Considering no individuals were located within the Subject Site, nor have they been identified within the 50m buffer within adjoining lands and no other individuals have been detected within the broader Stewardship Site lands it is unlikely that the proposed development is going to impact the individual. Further to this, approval of the adjoining lands into a Stewardship Site will allow for management practices to be implemented that may facilitate growth in the remaining population within the Stewardship Site.

Considering no species were detected within the Subject Site it is unlikely that a Significant Impact is likely to occur to this species, however, as a precautionary approach an EPBC significant impact assessment has been undertaken in **Table 1** to demonstrate that consideration has been applied to potential impacts to the species.





**Table 1 – Scrub Turpentine (*Rhodamnia rubescens*) – Significant Impact Assessment**

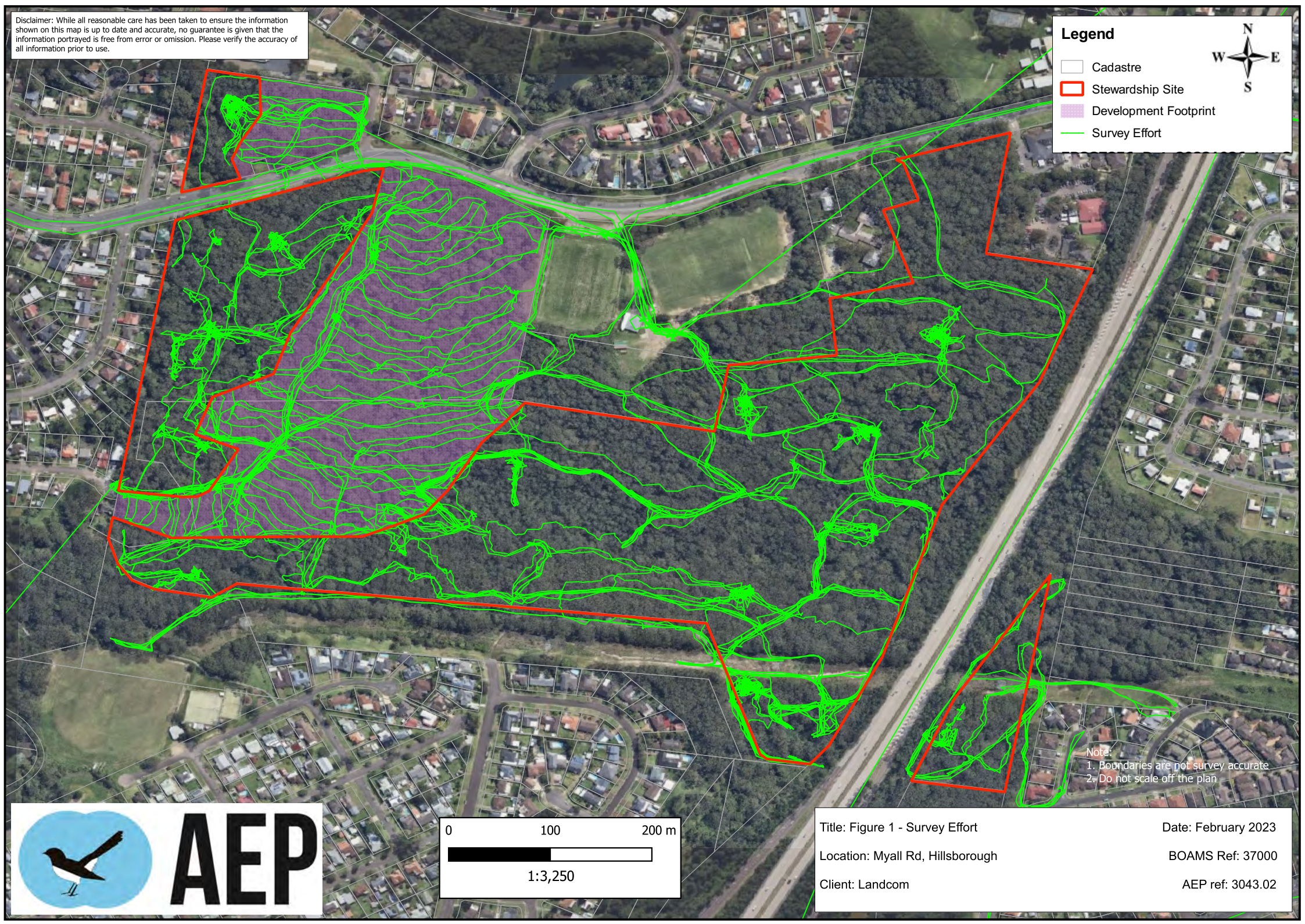

Species	Significant Impact Criteria - An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will	Assessment
<i>Rhodamnia rubescens</i> (Scrub Turpentine)	Lead to a long-term decrease in the size of a population	One (1) individual of <i>Rhodamnia rubescens</i> was identified within the Study Area in 2013. Targeted field surveys within the Subject Site and 50m buffer adjoining the Subject Site did not detect the species. As there are unlikely to be impacts to this species considering the findings from the surveys, it is not anticipated that the proposal will impact this species, nor will it lead to a long-term decrease in the size of a population.
	Reduce the area of occupancy of the species	As above, the species has not been detected within the Subject Site and the proposal is unlikely to reduce the area of occupancy for this species.
	Fragment an existing population into two or more populations	As above, the species has not been detected within the Subject Site and the proposal is unlikely to fragment an existing population into two or more populations
	Adversely affect habitat critical to the survival of a species	As above, the species has not been detected within the Subject Site and the proposal is unlikely to affect habitat critical to the survival of the species.
	Disrupt the breeding cycle of a population	As above, the species has not been detected within the Subject Site and the proposal is unlikely to disrupt the breeding cycle of a population
	Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	As above, the species has not been detected within the Subject Site and the proposal is unlikely to modify, destroy, remove, isolate or decrease

Species	Significant Impact Criteria - An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will	Assessment
		the availability or quality of habitat to the extent that the species is likely to decline
	Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	As a result of the implementation of the BSSAR lands, management practices including targeted weed management, hygiene protocols and bushfire management will be implemented to manage the movement of invasive species that are harmful to the critically endangered species becoming established in the endangered or critically endangered species' habitat.
	Introduce disease that may cause the species to decline, or	As above
	Interfere with the recovery of the species	As discussed above there is potential for the implementation of management practices associated with the implementation of the BSSAR lands may contribute to the recovery of the species.
	<b>Overall Impact</b>	It is concluded that it is unlikely for the proposal to impact the species and implementation of the BSSAR will ensure that remnant vegetation where the one individual has been detected will be managed to reduce weeds, improve burn regimes and limit the movement of invasive species such as Myrtle Rust into the area. These practices may be critical to improving the population on site and assisting in the recovery of the species.
	<b>EPBC Act Referral Required</b>	Not Required

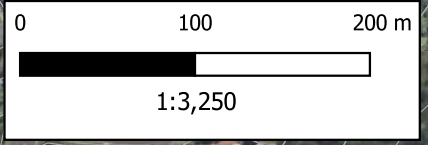
Disclaimer: While all reasonable care has been taken to ensure the information shown on this map is up to date and accurate, no guarantee is given that the information portrayed is free from error or omission. Please verify the accuracy of all information prior to use.

**Legend**

-  Cadastre
-  Stewardship Site
-  Development Footprint
-  Survey Effort



Note:  
1. Boundaries are not survey accurate  
2. Do not scale off the plan



Title: Figure 1 - Survey Effort  
Location: Myall Rd, Hillsborough  
Client: Landcom  
Date: February 2023  
BOAMS Ref: 37000  
AEP ref: 3043.02

**Conclusion**

No *Rhodamnia rubescens* was observed within the development footprint on 31 January 2023 or within the BSSAR lands.

We trust that the information contained satisfies the requirements for survey of *Rhodamnia rubescens*. Should you require any further details or clarification, please do not hesitate to contact myself on 0428 296 470 or Simon Purcell (AEP Senior Ecologist / Works Coordinator– 0405 165 721).



Yours faithfully,

**ANDERSON ENVIRONMENT & PLANNING**

**KELLY DRYSDALE**

**ECOLOGY PROJECT MANAGER**