Appendix C

BBAM Field Data Sheets

Site value:
Transect plot data sheet

(Start a new sheet for each vegetation zone)

BioBanking
Biodiversity Banking and Offsets Scheme

CMA area	CMA subregion	Recorder	Date
Hunter		IM	19.7.17.

Proposal ID	Proposal name	Zone ID
SY17060	Metford HI	(1) LHSG1F -.

Vegetation formation KF_CH5A Dry Sclerophyll Forests (shrub/grass sub-formation)

Vegetation class Hunter-Macleay Dry Sclerophyll Forests

(PCT) **Vegetation type** Spotted gum - red ironbarke - grey gum shrub-grass open forest of the lower hunter. (PCT 1592).

Condition (low or ~~mod~~/good) Medium **Zone descriptor** (optional) **Geographic/habitat features** (tick after printing step 2 of Credit Calculator) ☐

Coordinates (GPS datum GDA94: _____)

Transect / plot number	1	2	3	4	5	6	7	8	9	10
Easting	369036	369179								
Northing	6374371	6374387								
Zone AMG	56	56								

Transect 10 points along 50-m transect (see transect tally table for % foliage cover variables)

Native over-storey cover (%)	52	66								
Native mid-storey cover (%)	65	45								
Native ground cover (grasses) (%)	0.78	0.78								
Native ground cover (shrubs) (%)	0.3	0.1								
Native ground cover (other) (%)	0.74	0.74								
Exotic plant cover	0.22	0.12								

Larger sampling area

Native plant species richness [1]	36	38								
Number of trees with hollows [2]	0	0								
Over-storey regeneration [3]	1	0.75								
Total length of fallen logs (m) [2]	3	5								

Comments/additional conservation values (riparian areas, special features, geology, etc.):

[1] 20 x 20 m plot [2] 20 x 50 m plot [3] whole zone

Site value:
Transect tally table

BioBanking
Biodiversity Banking and Offsets Scheme

CMA area	CMA subregion	Recorder	Date
Hunter		IM	~~26.6.17~~ 27.6.17.

Proposal ID	Proposal name	Zone ID
2017.085	Metford H1	C.mac-~~Efb~~ DSF ~~Fhw~~ (LHSG1F - Mod-Good-Good)

Vegetation formation	
Vegetation class	
Vegetation type	

Condition (low or mod/good)	Zone descriptor (optional)	Geographic/habitat features (tick after printing step 2 of Credit Calculator)
~~good~~ (sub) medium	1	☐

(SW enr.)

Transect number METHIRL1	Number of hits (tally)	%
Native over-storey cover (%)	50 50 50 50 60 60 50 50 50 50	52
Native mid-storey cover (%)	60 70 60 60 60 70 80 70 60 60	65
Native ground cover (grasses) (%)	1111 ~~THL~~ 111 1111 ~~THL~~ 11 1111 ~~THL~~ 1111 11	0.78
Native ground cover (shrubs) (%)	1 11 1 — — 111 1 11 11 111	0.3
Native ground cover (other) (%)	1111 1111 11 ~~THL~~ ~~THL~~ 111 111 111 1111 1111	0.74
Exotic plant cover (%)	— — — ~~THL~~ ~~THL~~ 1 — — — —	0.22

central portion of (SW remnant)

Transect number METHIRL2	Number of hits (tally)	%
Native over-storey cover (%)	60 60 50 50 50 60 60 60 60 60	66
Native mid-storey cover (%)	40 50 50 40 40 50 30 40 50 60	45
Native ground cover (grasses) (%)	111 ~~THL~~ 1111 111 ~~THL~~ ~~THL~~ 11 111 ~~THL~~ 1111	0.78
Native ground cover (shrubs) (%)	1 — 1 — 1 — — — — 11	0.1
Native ground cover (other) (%)	~~THL~~ 11 111 ~~THL~~ 1111 1111 ~~THL~~ ~~THL~~ 111 11	0.74
Exotic plant cover (%)	1 — 11 — 11 — 1 — — —	0.12

Transect number_____	Number of hits (tally)	%
Native over-storey cover (%)		
Native mid-storey cover (%)		
Native ground cover (grasses) (%)		
Native ground cover (shrub) (%)		
Native ground cover (other) (%)		
Exotic plant cover (%)		

Transect number_____	Number of hits (tally)	%
Native over-storey cover (%)		
Native mid-storey cover (%)		
Native ground cover grasses (%)		
Native ground cover shrubs (%)		
Native ground cover other (%)		
Exotic plant cover (%)		

METHI PL 1 - Garmin. SW enr site. - clay (moist).

Transect plot worksheet

Full species IDs are not required for BioBanking, but may be useful for identification of correct vegetation type and for monitoring and audit purposes.

BioBanking
Biodiversity Banking and Offsets Scheme

Site type: Development / BioBank **Proposal ID:** Metford **Date:** 27.6.17. **Recorder(s):** IM

Vegetation type: C. maculata - E. ~~crebra~~ fibrosa DSF shrubby (o/o, abund). **AMG Zone** MGA 56 **Easting/Northing:** 369036; 6374371 **Photos:**

Native over-storey species list At 10 points along the 50-m transect	Regeneration (√) (zone)	**Native mid-storey species list** (>1m to <over-storey) At 10 points along the 50-m transect	**Native ground cover (grasses) species list** (ground stratum <1m) At 50 points along the 50-m transect	**Native ground cover (shrubs) species list** (ground stratum <1m) At 50 points along the 50-m transect	**Native ground cover (other) species list** (ground stratum <1m) At 50 points along the 50-m transect	**Exotic plants species list** At 50 points along the 50-m transect	**Fallen logs** (min. 10 cm diameter x 50 cm long) (20 x 50m plot)
Corymbia maculata (50,22)	✓	Bursaria spinosa (80, 500+)	Entolasia stricta (80, 1000+)	Leucopogon juniperinus (3,20)	Pratia purpurascens (10, 500+)	Lantana camara. (5, 10)	
Euc crebra (2,6)	✓	Acacia falcata (10,25)	Themeda australis (5,500+)	Micrantheum ericoides* (3)	Glycine clandestina (1,6)	Senecio madagascariensis (1,4)	
~~Bursaria spinosa~~		Ozothamnus diosmifolius (5, 7)	Eragrostis elongata (2) 300+	Glochidion ferdinandi (1,1) (young sap).	Lomandra multiflora (2,20)	Olea europaea ssp. cuspidata (1,1)	
Euc fibrosa (30,5)	✓	Notelaea venosa (1,2)	Aristida ramosa (1,10)		~~Poa~~ (2,30)	Asparagus. aethiopicus (1,2)	
		Alphitonia excelsa (2,1)	Aristida vagans (3,100+)		Dianella revoluta (1,2)		
		Dillwynia retorta (2,4)	Microlaena stipoides (5, 500+)		Geitonoplesium cymosum. (1,2)		
		Kunzea pricoides (2,4)	Panicum simile (1,5)		Arthropodium (1,4) (proliferus)	Caesia parv.	-check: basal leaves only.
		~~Panicum sp.~~ (1,3)			Opercularia sp. (1,3) diphylla		
		Daviesia sp. (1,2)			Goodenia heterophylla (1,2)		
		Acacia elongata (1,1) - juv.			~~Lomandra gracilis~~		
					Cheilanthes sieberi. (1,30)		
					Lomandra filiformis (1,4)		
					Laxmannia gracilis (1,2)		
					Lepidosperma laterale. (2,4)		
					Brunoniella pumilio (1,1)		
					Ptilothrix deusta (10, 200+)		
Total number of species = ~~28~~ 40		Total no of species =	Total no of species =	Total no of species =	Total no of species =	Total no of species = 4	Total (m) = 3
Foliage cover (%) =		Foliage cover (%) =	Foliage cover (%) =	Foliage cover (%) =	Foliage cover (%) =	Foliage cover (%) =	Benchmark (m) =

Benchmark value (%FC) =
Average crown diameter =
Average foliage cover (%) =
Number of trees =
Sample area = 0.04 ha.

Whole zone
Number of trees with hollows = 0
Sample area = 0.1 ha.
Benchmark value =

SITE AND OTHER NOTES: * check. - regrowth stand (older + younger regrowth). good cond. 1 patch Lantana. Mod - Good - ~~Good~~ Medium

NB: Transects / plots should be placed randomly with the minimum number required for the zone in accordance with Table 4 of the Operational Manual.

Field data sheets for BioBanking : Biobank site proposal package February 2009

Species legend - (cover ; abundance) = (X, Y)

checked by IM. ✓

Veg Structure

Trees	Height.	PFC
	to 15m	60
Small trees (+juv)	to 7m	15
shrubs.	to 4m	70

Transect plot worksheet

METHIPLZ — central southern portion site — 30m east of creekline on higher ground.

BioBanking
Biodiversity Banking and Offsets Scheme

Full species IDs are not required for BioBanking, but may be useful for identification of correct vegetation type and for monitoring and audit purposes.

Site type: Development / BioBank **Proposal ID:** ______ **Date:** 27.6.17. **Recorder(s):** IH.

Vegetation type: C. mac – E. fibrosa – E. punc. DSF (shrubby) **AMG Zone** MGA 56. (%, abund). **Easting/Northing:** 369179; 6374381 **Photos:** ______

Native over-storey species list At 10 points along the 50-m transect	Regen-eration (√) (zone)	Native mid-storey species list (>1m to <over-storey) At 10 points along the 50-m transect	Native ground cover (grasses) species list (ground stratum <1m) At 50 points along the 50-m transect	Native ground cover (shrubs) species list (ground stratum <1m) At 50 points along the 50-m transect	Native ground cover (other) species list (ground stratum <1m) At 50 points along the 50-m transect	Exotic plants species list At 50 points along the 50-m transect	Fallen logs (min. 10 cm diameter x 50 cm long) (20 x 50m plot)
E. crebra (,)	X	Bursaria spinosa (80,500+)	Entolasia stricta (60,1000+)	Leucopogon juniperinus (2,5)	Pratia purpurascens (30,1000+)	Lantana camara (3,5)	
E. punctata (30,12)	✓	Callistemon linearis (2,5)	Microlaena stipoides (60,1000+)	~~Goodenia hederacea~~ (1,1)	Cheilanthes sieberi (5,100+)		
C. maculata (20,6)	✓	Acacia falcata (5,7)	Aristida vagans (20,300+)	Glochidion ferdinandi (1,3)	Lomandra multiflora (5,20+)		
E. fibrosa (30,6)	✓	Acacia elongata (1,2)	Echinopogon (tuft) ? (1,3) (tuft looks like caesp)	Platylobium (seedling) (1,1)	~~Lomandra gracilis~~ (2,50)		
		Pittosporum undulatum (2,3)			Ptilothrix deusta (3,50)		
		Ozothamnus diosmifolius (1,2)			Lomandra longifolia (5,100+)		
		Notelaea venosa sp (1,1)			Hardenbergia violacea (1,20)		
		Dillwynia retorta (1,2)			Lomandra filiformis (2,10)		
		Alphitonia excelsa (1,1)			Dianella revoluta (2,20) – glaucous, maroon base.		
		Kunzea ericoides (1,2)			Opercularia sp. (seedling) (1,2) (prob. diphylla)		
					Pseuderanthemum variabile purple underside (1,3)		
					Goodenia bellidifolia (seedling) (1,1)		
					Goodenia hederacea (1,1)		
					Glycine clandestina (1,4)		
					Parsonsia straminea (1,3)		
					Pandorea pandorana (1,2)		
					Lepidosperma laterale (1,2)		
		Total no of species =	Total no of species =	Total no of species =	Total no of species =	Total no of species =	Total (m) = 5
		Foliage cover (%) =	Foliage cover (%) =	Foliage cover (%) =	Foliage cover (%) =	Foliage cover (%) =	Benchmark (m) =

Total number of species = 39
Foliage cover (%) =
Benchmark value (%FC) =
Average crown diameter =
Average foliage cover (%) =
Number of trees =
Sample area = 0.04

Whole zone
Number of trees with hollows = 0
Sample area = 0.1 ha.
Benchmark value =

SITE AND OTHER NOTES: * check by IH ☑ young regrowth above creekline. moist clays. W–NW facing. 0–5° slope. low relief. no outcropping.

NB: Transects / plots should be placed randomly with the minimum number required for the zone in accordance with Table 4 of the Operational Manual.

Mod-Good- ~~Good~~ Medium

(cover, abundance) = (x, y).

Site value:
Transect plot data sheet

(Start a new sheet for each vegetation zone)

BioBanking
Biodiversity Banking and Offsets Scheme

CMA area	CMA subregion	Recorder	Date
Hunter		IM	18.7.17.

Proposal ID	Proposal name	Zone ID
SY17060		(2) LHSGIF

Vegetation formation: EF- C11SA Dry Sclerophyll Forests (shrub/grass sub-formation)

Vegetation class: Hunter-Macleay Dry Sclerophyll Forests

Vegetation type: Spotted Gum- Red Ironbark - Grey Gum shrub-grass open forest of the lower hunter (PCT 1592).

Condition (low or mod/good)	Zone descriptor (optional)	Geographic/habitat features (tick after printing step 2 of Credit Calculator)
Poor	LHSGIF - (2)	☐

Coordinates (GPS datum GDA94: _____)

Transect / plot number	#PL3	#PL4	3 (PL5)	4 (PL6)	5	6	7	8	9	10
Easting	369716	369519	369172	369143						
Northing	6374292	6374286	6374522	6374366						
Zone AMG	56	56	56	56						

Transect 10 points along 50-m transect (see transect tally table for % foliage cover variables)

Native over-storey cover (%)	56	53	46	24						
Native mid-storey cover (%)	40	60	54	0.08						
Native ground cover (grasses) (%)	0.8	0.48	0.54	0.1						
Native ground cover (shrubs) (%)	0	0.4	0.04	0.02						
Native ground cover (other) (%)	0.44	0.6	0.4	0.06						
Exotic plant cover	0.82	0.6	0.52	0.78						

Larger sampling area

Native plant species richness [1]	~~21~~	~~23~~	29	11						
Number of trees with hollows [2]	0	0	0	1						
Over-storey regeneration [3]	1	0.66	1	0						
Total length of fallen logs (m) [2]	2.	0	0	2						

Comments/additional conservation values (riparian areas, special features, geology, etc.):

weed infested PCT.

[1] 20 x 20 m plot [2] 20 x 50 m plot [3] whole zone

Site value:
Transect tally table

BioBanking
Biodiversity Banking and Offsets Scheme

CMA area	CMA subregion	Recorder	Date
Hunter		IM	13.7.17.

Proposal ID	Proposal name	Zone ID
SY17066	Metford brickworks - hospital.	2 (LHSG1F - Mod-Good-Poor)

Vegetation formation

Vegetation class

Vegetation type

Condition (low or mod/good): Poor

Zone descriptor (optional): LHSG1F (2)

Geographic/habitat features (tick after printing step 2 of Credit Calculator)

Transect number METHIPL3	Number of hits (tally)	%
Native over-storey cover (%)	50 60 60 60 50 50 60 60 60 50	56
Native mid-storey cover (%)	30 40 50 40 40 30 40 30 50 50	40
Native ground cover (grasses) (%)	4 3 4 2 5 2 7 3 4 4	0.8
Native ground cover (shrubs) (%)	0 →	0
Native ground cover (other) (%)	2 2 3 1 1 - 4 3 2 3	0.44
Exotic plant cover (%)	5 4 4 3 5 5 2 4 5 4	0.82

Transect number METHIPL4	Number of hits (tally)	%
Native over-storey cover (%)	50 50 50 60 60 50 50 50 50 60	53
Native mid-storey cover (%)	60 60 60 70 70 70 50 50 50 60	60
Native ground cover (grasses) (%)	3 2 2 2 - 4 3 2 3 2	0.48
Native ground cover (shrubs) (%)	- - - - - - - 1 2 2	0.1
Native ground cover (other) (%)	3 2 3 3 2 2 2 4 4 3	0.6
Exotic plant cover (%)	3 4 1 3 5 2 2 3 5 3	0.6

secondary accessed area (SW remnant)

Transect number METHIPL5	Number of hits (tally)	%
Native over-storey cover (%)	50 50 40 40 40 50 50 50 50 40	46
Native mid-storey cover (%)	50 60 60 50 50 60 60 60 40 50	54
Native ground cover (grasses) (%)	6 3 2 4 2 1 3 2 3 4	0.54
Native ground cover (shrub) (%)	- - - 1 - - - - 1 -	0.04
Native ground cover (other) (%)	2 3 2 1 - 3 - 4 3 2	0.4
Exotic plant cover (%)	3 2 - - 2 2 3 4 4 4	0.52

SW remnant ephemeral creekline.

Transect number METHIPL6	Number of hits (tally)	%
Native over-storey cover (%)	20 20 30 30 30 20 20 30 20 20	24
Native mid-storey cover (%)	2 - - - - 1 - - 1 -	0.08
Native ground cover grasses (%)	- - - 1 3 - - - - -	0.1
Native ground cover shrubs (%)	- - - - - - - - 1 -	0.02
Native ground cover other (%)	- 1 - - - 1 - 1 - -	0.06
Exotic plant cover (%)	5 6 4 3 4 2 4 4 3 4 4	0.78

synoum (sapl.)

METHIPL3

Transect plot worksheet

Full species IDs are not required for BioBanking, but may be useful for identification of correct vegetation type and for monitoring and audit purposes.

BioBanking
Biodiversity Banking and Offsets Scheme

Site type: Development / BioBank **Proposal ID:** _____ **Date:** 13.7.17. **Recorder(s):** IM.

Vegetation type: Cmaculata-E.punctata DSF. (heavy disturbance). **AMG Zone** MGA 56 GDA94 **Easting/Northing:** 369716 E, 6374292 (SE corsite). **Photos:** _____

Native over-storey species list At 10 points along the 50-m transect	Regeneration (√) (zone)	**Native mid-storey species list** (>1m to <over-storey) At 10 points along the 50-m transect	**Native ground cover (grasses) species list** (ground stratum <1m) At 50 points along the 50-m transect	**Native ground cover (shrubs) species list** (ground stratum <1m) At 50 points along the 50-m transect	**Native ground cover (other) species list** (ground stratum <1m) At 50 points along the 50-m transect	**Exotic plants species list** At 50 points along the 50-m transect	**Fallen logs** (min. 10 cm diameter x 50 cm long) (20 x 50m plot)
C. maculata (60,1p	✓	Bursaria spinosa (10, 20)	Themeda australis (3, 30)		Maesdenia sp.	Lantana camara (60, 100+cl.)	
E. punctata (30,3)	✓	Glochidion ferdinandi (1,3)	Aristida vagans (1,30)		Pratia purpurascens (1,50)		
(x canaliculata-check)		Acacia parvipinnula (1,3)	Entolasia stricta (3, 200+)		Lomandra multiflora (1,10)		
		~~Amyema sp.~~	Microlaena stipoides (2, 100+)		Parsonsia straminea (30, 500+stems)		
		Pitt undulatum (1,2)			Lomandra filiformis fo brachy (1,20)		
		Ozothamnus diosmifolius (1,2)			Desmodium (1,2)		
		Dendrophthoe vitellina (1,1) - mistletoe.			Vernonia cinerea (1,1)		
					Brunoniella pumilio (1,2)		
					Pandorea pandorana (1,3)		
					Veronica plebeia (1,2)		

Total number of species = 20						
Foliage cover (%) =						
Benchmark value (%FC) =						
Average crown diameter =						
Average foliage cover (%) =						
Number of trees =						
Sample area = 0.04 ha.						
Whole zone						
Number of trees with hollows = 0						
Sample area =						
Benchmark value = 0.1 ha.	Total no of species =	Total no of species =	Total no of species =	Total no of species =	Total no of species =	Total (m) = 2
	Foliage cover (%) =	Foliage cover (%) =	Foliage cover (%) =	Foliage cover (%) =	Foliage cover (%) =	Benchmark (m) =

SITE AND OTHER NOTES: heavily Lantana infested ~50%. Mod-Good-Poor DSF veg zone 2. Silty clay/clayey silt. - poor species richness - <5° slope (flat).

NB: Transects / plots should be placed randomly with the minimum number required for the zone in accordance with Table 4 of the Operational Manual.

	% cover	height
Trees	60	10-12m
Shrubs	80	3m
Ground	80	1m.

checked by IM ☑

METHI~~??~~ PL4

Transect plot worksheet

BioBanking
Biodiversity Banking and Offsets Scheme

Full species IDs are not required for BioBanking, but may be useful for identification of correct vegetation type and for monitoring and audit purposes.

Site type: Development / BioBank (circled) **Proposal ID:** ______ **Date:** 13.7.17 **Recorder(s):** IM.

Vegetation type: C.maculata - E.fibrosa - E.globoidea DSF (heavy exotic infested) **AMG Zone** MGA56 GDA94. **Easting/Northing:** 369519; 6374286 elev 36m. **Photos:** ______

Native over-storey species list At 10 points along the 50-m transect	Regeneration (√) (zone)	Native mid-storey species list (>1m to <over-storey) At 10 points along the 50-m transect	Native ground cover (grasses) species list (ground stratum <1m) At 50 points along the 50-m transect	Native ground cover (shrubs) species list (ground stratum <1m) At 50 points along the 50-m transect	Native ground cover (other) species list (ground stratum <1m) At 50 points along the 50-m transect	Exotic plants species list At 50 points along the 50-m transect	Fallen logs (min. 10 cm diameter x 50 cm long) (20 x 50m plot)
C. maculata (50,	18) ✓	Pitt und. (3, 3)	Entolasis stricta (5, 200+)	Glochidion ferd (sap)	(1, 1)	Lantana camara (70, 200+cl.)	
E. fibrosa (10,	2) ✓	~~Bursaria spinosa~~	Themeda australis (2, 30)	Acacia parv (sap)	(1, 2)	Asparagus aethiopicus (5, 100+cl.)	
E. globoidea (3,	1)	~~Dianella~~	Aristida vagans (?, 30)				
			Microlaena stipoides (?, 30)		Pratia purp. (1, 100+)		
			Echinopogon caesp. (10)	(1, 2)	Caesia (parv.?) (1, 30) - basal leaves only.		
					Lomandra fil congesta (5, 100+)		
		Daviesia ulicifolia (2, 6)			Lomandra multiflora (1, 5) ← check after feeth.		
		Bursaria spinosa (10, 20)				Ligustrum sinense (2, 5)	
		Pandorea pandorana (1, 2)				~~[illegible]~~	
						~~Asparagus aethiopicus~~	
					Veronica plebeia (1, 3)		
					Lomandra fil. fil. (1, 6)		
					Dian. reve. (1, 6)		
					Juncus usitatus (1, 7)		
					Hardenbergia violacea (1, 3)		
					Viola odorata (1, 3) →		

Total number of species = 26 Foliage cover (%) = Benchmark value (%FC) = Average crown diameter = Average foliage cover (%) = Number of trees = Sample area = 0.04 ha. **Whole zone** Number of trees with hollows = 0 Sample area = 0.1 ha Benchmark value =	Total no of species = Foliage cover (%) =	Total no of species = Foliage cover (%) =	Total no of species = Foliage cover (%) =	Total no of species = Foliage cover (%) =	Total no of species = Foliage cover (%) =	Total (m) = 0 Benchmark (m) =

SITE AND OTHER NOTES: - heavy Lantana infestation in m/s. > 50%. species richness poor. (Mod-Good-Poor. (veg zone 2).

Structure -

NB: Transects / plots should be placed randomly with the minimum number required for the zone in accordance with Table 4 of the Operational Manual.

Trees	60%	12m
Shrubs	70%	4m
Ground	60%	1m.

checked by IM ☑

METHI PL5 - Area proposed for secondary access road.

Transect plot worksheet

Full species IDs are not required for BioBanking, but may be useful for identification of correct vegetation type and for monitoring and audit purposes.

BioBanking
Biodiversity Banking and Offsets Scheme

Site type: Development / BioBank **Proposal ID:** _____ **Date:** 13.7.17 **Recorder(s):** IM

Vegetation type: C. maculata - E. punctata DSF. **AMG Zone** MGA56 GDA94 **Easting/Northing:** 369172; 6374522 elev 23m. **Photos:** _____

Native over-storey species list At 10 points along the 50-m transect	Regeneration (√) (zone)	**Native mid-storey species list** (>1m to <over-storey) At 10 points along the 50-m transect	**Native ground cover (grasses) species list** (ground stratum <1m) At 50 points along the 50-m transect	**Native ground cover (shrubs) species list** (ground stratum <1m) At 50 points along the 50-m transect	**Native ground cover (other) species list** (ground stratum <1m) At 50 points along the 50-m transect	**Exotic plants species list** At 50 points along the 50-m transect	**Fallen logs** (min. 10 cm diameter x 50 cm long) (20 x 50m plot)
C. maculata (40, 14) ✓		B. sphosa (60, 100+)	Entolasia stricta (10, 300+)			Lantana camara (20, 100 cl.+)	
E. punctata (10, 3) ✓		Leucopogon juniperinus (1, 3)		Elachidium ferd. (spp) (1, 3)			
X can.		Acacia elongata (5, 20)	Aristida ramosa (2, 50+)		Pratia purp. (1, 10+)		
		Rift. und. (5, 20)	Themeda australis (2, 30)		Lomandra multiflora (1, 10)		
		Acacia parv (2, 4) (1, 3)	Imperata cylindrica (3, 100+)			Lily? (10) (3, 50+) → new seedlings	
		Dillwynia retorta (3, 30)	Microlaena stipoides (1, 30)			Ligustrum sinense (2, 20)	
		Parsonsia stigmisa	Fragrostis elongata (1, 8)		(1, 8)		
		Alloca. lit. (1, 2)	Panicum elongata s. mile. (1, 4)		Cheilanthes sieberi	vine (per PL4) (2, 20)	
					Pandorea pand (1, 5)		
					Goodenia hederacea (1, 6)		
					Hardenbergia violacea (1, 4)		
					Lomandra ~~filiformis~~ longifolia (3, 20+)		
					Selaginella uliginosa (1, 2)		
					Juncus ~~sp.~~ (1, 2)		
					Opercularia diphylla (1, 3)		
					Dianella rev. (1, 8)		
Total number of species = 33							
Foliage cover (%) =							
Benchmark value (%FC) =							
Average crown diameter =							
Average foliage cover (%) =							
Number of trees =							
Sample area = 0.04 ha.							
Whole zone							
Number of trees with hollows = 0							
Sample area = 0.1 ha.							
Benchmark value =		Total no of species =	Total no of species =	Total no of species =	Total no of species =	Total no of species =	Total (m) = 0
		Foliage cover (%) =	Foliage cover (%) =	Foliage cover (%) =	Foliage cover (%) =	Foliage cover (%) =	Benchmark (m) =

SITE AND OTHER NOTES: - appears to be on dumped fill material. Lantana > 50%. Moderate - Good - Poor.
- dense Lantana, Bursaria.

NB: Transects / plots should be placed randomly with the minimum number required for the zone in accordance with Table 4 of the Operational Manual.

IM checked ☑

METHI PLb — creekline plot

Transect plot worksheet

Full species IDs are not required for BioBanking, but may be useful for ~~identification of correct~~ vegetation type and for monitoring and audit purposes.

![BioBanking — Biodiversity Banking and Offsets Scheme]

BioBanking
Biodiversity Banking and Offsets Scheme

Site type: Development / BioBank
Proposal ID: Mars Park
Date: ~~19.4.17~~ 13.7.17
Recorder(s): ~~[illegible]~~ IM.

Vegetation type: ~~(Derived Grassland) Disturbed.~~ E. fibrosa - E. punc. - C.mac MSF. (exotic u/s).
AMG Zone 56. GDA94.
Easting/Northing: 369143; 6374366
Photos:

Native over-storey species list At 10 points along the 50-m transect	Regen-eration (√) (zone)	Native mid-storey species list (>1m to <over-storey) At 10 points along the 50-m transect	Native ground cover (grasses) species list (ground stratum <1m) At 50 points along the 50-m transect	Native ground cover (shrubs) species list (ground stratum <1m) At 50 points along the 50-m transect	Native ground cover (other) species list (ground stratum <1m) At 50 points along the 50-m transect	Exotic plants species list At 50 points along the 50-m transect	Fallen logs (min. 10 cm diameter x 50 cm long) (20 x 50m plot)
E. fibrosa (20,4)	-	~~[illegible]~~	~~Microlaena stipoides~~			~~Setaria gracilis~~	
(xcap) E. punctata (5,2)	-		Entolasia stricta (1,20)				
C. maculata (20,2)	-	~~Glochidion fe~~	Oplismenus imbecillis -?	no flower. large leaf (1,30)		Ligustrum sinense -	dom. M/S (30,200+)
				Syzygium glandulosum (sap) (1,1)		Senna pendula (1D) -	" " (5,10)
		Glochidion ferdinandi (2,2)					
		~~Camphor laurel~~				Ehrharta erecta (2,20)	
		Breynia oblongifolia (1,1)				Olea europaea (2,2)	
					Pandorea pandorana (1,2)		
						fish (chive-like) (1D)	(1,3)
						Camphor laurel -	dom. M/S (10,7)
						Lantana camara*	(10,10)
						Jacaranda (1,1)	
						Ochna serrulata (1,1)	
					Cayratia clematidea (1,2)		
					Oxalis sp. (1D) (1,2)	— seed/l. prob. perennial	
		Total no of species =	Total no of species =	Total no of species =	Total no of species =	Total no of species =	Total (m) = 2
		Foliage cover (%) =	Foliage cover (%) =	Foliage cover (%) =	Foliage cover (%) =	Foliage cover (%) =	Benchmark (m) =

Total number of species = 20
Foliage cover (%) =
Benchmark value (%FC) =
Average crown diameter =
Average foliage cover (%) =
Number of trees =
Sample area = 0.04ha

Whole zone
Number of trees with hollows = 1
Sample area =
Benchmark value = 0.1ha

SITE AND OTHER NOTES:
Mod - Good - Poor.
- sewage/stormwater drain.
- 8m wide broad shallow depression with gentle banks
- [illegible] defined bed in places; standing water in places.
- silty clay/clayey silt.
- flat.

NB: Transects / plots should be placed randomly with the minimum number required for the zone in accordance with Table 4 of the Operational Manual.

u/s dominated by L. sinense, Senna, Camphor, Lantana.

IM checked ☑

- veg zone 2 (Mod-Good - Poor).

Site value:
Transect tally table

BioBanking
Biodiversity Banking and Offsets Scheme

CMA area	CMA subregion	Recorder	Date
Hunter		IM	12.7.17.

Proposal ID	Proposal name	Zone ID
Metford H1	H1 Hospital.	(3) – Acacia regrowth/plantings*

LHSCIF regrowth ?

Vegetation formation	
Vegetation class	
Vegetation type	

Condition (low or mod/good)	Zone descriptor (optional)	Geographic/habitat features (tick after printing step 2 of Credit Calculator)
*	T8A.	

Transect number METHIREHAB1	Number of hits (tally)	%
Native over-storey cover (%)	0 0 0 5 5 0 0 0 0 5	1.5
Native mid-storey cover (%)	30 30 40 40 40 50 40 40 40 30	38
Native ground cover (grasses) (%)	IIII IIII IIII IIII III IIII IIII IIII III IIII	0.86
Native ground cover (shrubs) (%)	0 →	0
Native ground cover (other) (%)	II III I – IIII II II III II –	0.38
Exotic plant cover (%)	IIII IIII III IIII II III IIII IIII II III	0.72

Transect number METHIREHAB2	Number of hits (tally)	%
Native over-storey cover (%)	5 10 10 10 5 0 0 0 0 0	4
Native mid-storey cover (%)	10 20 10 10 20 10 10 20 10 20	14
Native ground cover (grasses) (%)	I II – – – III – II – II	0.2
Native ground cover (shrubs) (%)	0 →	0
Native ground cover (other) (%)	II II II III I – II III – IIII	0.42
Exotic plant cover (%)	III IIII III IIII II III – III III III	0.62

Transect number_____	Number of hits (tally)	%
Native over-storey cover (%)		
Native mid-storey cover (%)		
Native ground cover (grasses) (%)		
Native ground cover (shrub) (%)		
Native ground cover (other) (%)		
Exotic plant cover (%)		

Transect number_____	Number of hits (tally)	%
Native over-storey cover (%)		
Native mid-storey cover (%)		
Native ground cover grasses (%)		
Native ground cover shrubs (%)		
Native ground cover other (%)		
Exotic plant cover (%)		

* some regrowth areas do support young E. tereti. trees to 5m height.

METHI REHAB 1

Transect plot worksheet

Full species IDs are not required for BioBanking, but may be useful for identification of correct vegetation type and for monitoring and audit purposes.

BioBanking
Biodiversity Banking and Offsets Scheme

Site type: Development / BioBank **Proposal ID:** Retford #1 **Date:** 12.7.2017 **Recorder(s):** IM

Vegetation type: shrub plantings / acacia regrowth. **AMG Zone** 55A 56 GDA 94 **Easting/Northing:** 369484; 6374502 **Photos:**

Native over-storey species list At 10 points along the 50-m transect 2	Regeneration (√) (zone)	**Native mid-storey species list** (>1m to <over-storey) At 10 points along the 50-m transect	**Native ground cover (grasses) species list** (ground stratum <1m) At 50 points along the 50-m transect	**Native ground cover (shrubs) species list** (ground stratum <1m) At 50 points along the 50-m transect	**Native ground cover (other) species list** (ground stratum <1m) At 50 points along the 50-m transect	**Exotic plants species list** At 50 points along the 50-m transect	**Fallen logs** (min. 10 cm diameter x 50 cm long) (20 x 50m plot)
Casuarina glauca (6)	(6)	Acacia elongata (70, 100+)	~~Paspalum distichum~~ 3pts (70, 100+)		Dianella revoluta	Andropogon virginicus (2, 20)	
euc sapling (ID)	(1, 1)	Acacia parvipinna (1,3)	Eragrostis sp. (ID)		Centella asiatica (3, 20)	Plantago lanceolata (20, 50+)	
seedling		Melaleuca armillaris (1,2)	Sporobolus ~~sp.~~ virginicus (2, 50+)		Lomandra longifolia (2,2)	Lantana camara (5, 20)	
		Acacia falcata (3,5)	Themeda australis (1, 4)		Cheilanthes sieberi (2,50) (1,150)	Senecio madagascariensis (5, 100+)	
		Bursaria spinosa (2,6)	Poa sp. (2, 10) - no shead.		Hydrocotyle peduncularis	Verbena bonariensis (2, 30)	
			Poa sp. - no shead (2, 20) prob. annua.		Bacopa monnieri? (ID) (1, 10)	Setaria parviflora (1, 30)	
			Cynodon dactylon (70, 100)			Bidens pilosa (1, 20)	
			Eragrostis elongata (1, 3)		Digella revoluta (1, 6)	~~Axonopus fissifolius~~ 3pts (5, 100+)	
						basal rosette - toothed. Silybum?	(1, 10)
						Paspalum dilatatum (1, 5)	
						~~Cynodon dactylon~~ (3, 50)	
						Melilotus repens. (2, 20)	
						~~Sida rhombifolia~~ (1, 4)	
						Asteraceae sp.? (ID)	
Total number of species =							
Foliage cover (%) =							
Benchmark value (%FC) =							
Average crown diameter =							
Average foliage cover (%) =							
Number of trees =							
Sample area =							
Whole zone							
Number of trees with hollows =							
Sample area =		Total no of species =	Total no of species =	Total no of species =	Total no of species =	Total no of species =	Total (m) =
Benchmark value =		Foliage cover (%) =	Foliage cover (%) =	Foliage cover (%) =	Foliage cover (%) =	Foliage cover (%) =	Benchmark (m) =

SITE AND OTHER NOTES: natives planted - C. glauca prob. naturally recruited. low condition SGIF? Exotic groundcover. low lying area. - silty mud/muddy silt.

NB: Transects / plots should be placed randomly with the minimum number required for the zone in accordance with Table 4 of the Operational Manual.

Transect plot worksheet

METREHAB2

Full species IDs are not required for BioBanking, but may be useful for identification of ~~correct vegetation~~ type and for monitoring and audit purposes.

BioBanking
Biodiversity Banking and Offsets Scheme

Site type: Development / BioBank (circled) **Proposal ID:** Metford Hi **Date:** 12.7.17. **Recorder(s):** IM.

Vegetation type: Rehab plantings (~~E. ter. reg. woodland~~) (Acacia regrowth) **AMG Zone** MGA56 GDA94 **Easting/Northing:** 369619; 6374392 **Photos:**

Native over-storey species list At 10 points along the 50-m transect	Regen-eration (√) (zone)	Native mid-storey species list (>1m to <over-storey) At 10 points along the 50-m transect	Native ground cover (grasses) species list (ground stratum <1m) At 50 points along the 50-m transect	Native ground cover (shrubs) species list (ground stratum <1m) At 50 points along the 50-m transect	Native ground cover (other) species list (ground stratum <1m) At 50 points along the 50-m transect	Exotic plants species list At 50 points along the 50-m transect	Fallen logs (min. 10 cm diameter x 50 cm long) (20 x 50m plot)
E. tereticornis (5, 10)		Bursaria spinosa (10, 20)		~~Sida rhombifolia~~ (2, 20) -		Centaurium erythraea (10, 20 cl.)	
(young trees) sapl.		Acacia parvula sp. (light yellow flowers) (10, 20)		Abutilon sp. (10)		Paspalum urvillei (1, 2)	
		Ozothamnus diosmifolius (2, 6)			Centella asiatica (2, 100+)		
		Acacia filata (2, 4)			Hydrocotyle peduncularis (10) (2, 200+) - check pedunc.		
			Themeda australis (2, 50)		Dichondra repens (1, 50+)		
			Axonopus fissifolius (1, 20)				
		Leucopogon juniperinus √ (1, 4)	Cynodon dactylon (10, 300+)			Plantago lanceolata (1, 5)	
			Imperata cylindrica var major (1, 10)		Blechnum ambiguum		
		Glochidion ferdinandi (3, 4)			~~[illegible]~~ (1, 2) - edge drainage channel		
		Acacia elongata (3, 6)		Pimelea linifolia (1, 3)			
		Pultenaea villosa (1, 2)			Cheilanthes sieberi (1, 20)		
						Verbena bonariensis (1, 5)	
Total number of species =					Oxalis perennans (1, 10)	Senecio madagascariensis (1, 10)	
Foliage cover (%) =					Pratia purpurascens (1, 30)	[illegible] (2, 30)	
Benchmark value (%FC) =					Goodenia bellidifolia (1, [illegible])	Paspalum dilatatum (1, 2)	
Average crown diameter =					Glycine clandestina (1, 3)		
Average foliage cover (%) =					Dianella revoluta (1, 6)		
Number of trees =					Hardenbergia violacea (1, 2)		
Sample area =					Lomandra longifolia (1, 3)		
Whole zone Number of trees with hollows =					Einadia hastata (2, 2 cl.)		
Sample area =		Total no of species =	Total no of species =	Total no of species =	Total no of species =	Total no of species =	Total (m) =
Benchmark value =		Foliage cover (%) =	Foliage cover (%) =	Foliage cover (%) =	Foliage cover (%) =	Foliage cover (%) =	Benchmark (m) =

SITE AND OTHER NOTES: brickpit floor

NB: Transects / plots should be placed randomly with the minimum number required for the zone in accordance with Table 4 of the Operational Manual.

	% PFC	Height (m)
Trees	5-10	to 7m
shrubs	50	to 3m
ground	[illegible]	to 1m

Site value:
Transect tally table

BioBanking
Biodiversity Banking and Offsets Scheme

CMA area	CMA subregion	Recorder	Date
Hunter		JM.	12.7.17.

Proposal ID	Proposal name	Zone ID
Metford H1	H1 Hospital SS1	(4) freshwater wetland ponds

Vegetation formation

Vegetation class

Vegetation type

Condition (low or mod/good) **Zone descriptor** (optional) **Geographic/habitat features** (tick after printing step 2 of Credit Calculator)

METHPOND1

Transect number ~~WETLAND~~	Number of hits (tally)	%
Native over-storey cover (%)	10 0 0 0 0 0 0 0 0 0	1
Native mid-storey cover (%)	0 →	0
Native ground cover (grasses) (%)	II II I - - I - III II III	0.28
Native ground cover (shrubs) (%)	0 →	0
Native ground cover (other) (%)	IIII IIII IIII IIII IIII IIII IIII III IIII IIII	0.88
Exotic plant cover (%)	~~IIII IIII IIII IIII IIII IIII~~ III I - - - - - - - - -	0.1

Transect number METHPOND2	Number of hits (tally)	%
Native over-storey cover (%)	10 0 →	1
Native mid-storey cover (%)	0 →	0
Native ground cover (grasses) (%)	0 III II IIII I 0 →	0.2
Native ground cover (shrubs) (%)	0 →	0
Native ground cover (other) (%)	IIII IIII IIII IIII III IIII IIII IIII IIII IIII	0.9
Exotic plant cover (%)	II I - I - II - - - I	0.14

Transect number_____	Number of hits (tally)	%
Native over-storey cover (%)		
Native mid-storey cover (%)		
Native ground cover (grasses) (%)		
Native ground cover (shrub) (%)		
Native ground cover (other) (%)		
Exotic plant cover (%)		

Transect number_____	Number of hits (tally)	%
Native over-storey cover (%)		
Native mid-storey cover (%)		
Native ground cover grasses (%)		
Native ground cover shrubs (%)		
Native ground cover other (%)		
Exotic plant cover (%)		

Transect plot worksheet

METPOND 1

Full species IDs are not required for BioBanking, but may be useful for identification of correct vegetation type and for monitoring and audit purposes.

BioBanking
Biodiversity Banking and Offsets Scheme

Site type: (Development) / BioBank **Proposal ID:** Hetford H1 **Date:** 12.7.17 **Recorder(s):** IM-

Vegetation type: Typha orientalis reedland **AMG Zone** MGA 56 GDA 94 **Easting/Northing:** 369481; 6374466 **Photos:**

Native over-storey species list At 10 points along the 50-m transect	Regen-eration (√) (zone)	**Native mid-storey species list** (>1m to <over-storey) At 10 points along the 50-m transect	**Native ground cover (grasses) species list** (ground stratum <1m) At 50 points along the 50-m transect	**Native ground cover (shrubs) species list** (ground stratum <1m) At 50 points along the 50-m transect	**Native ground cover (other) species list** (ground stratum <1m) At 50 points along the 50-m transect	**Exotic plants species list** At 50 points along the 50-m transect	**Fallen logs** (min. 10 cm diameter x 50 cm long) (20 x 50m plot)
C. gleuca (3, 50)			Cynodon dactylon (10, 500+)		Typha orientalis (80, 1000+)		
					Juncus usitatus (fringes of pond) (20, 300+)		
					Phyllodium pulchellum (5, 50+)		
					Baumea articulata (10, 200)		
					Persicaria stigosa (1, 2)		
						Andropogon virginicus (20, 200+)	
Total number of species =							
Foliage cover (%) =							
Benchmark value (%FC) =							
Average crown diameter =							
Average foliage cover (%) =							
Number of trees =							
Sample area = 0.04 ha.							
Whole zone							
Number of trees with hollows = 0							
Sample area = 0.1 ha.							
Benchmark value =		Total no of species =	Total no of species =	Total no of species =	Total no of species =	Total no of species =	Total (m) =
		Foliage cover (%) =	Foliage cover (%) =	Foliage cover (%) =	Foliage cover (%) =	Foliage cover (%) =	Benchmark (m) =

SITE AND OTHER NOTES: - pond formed from brickpit floor landform + access tracks. ← water depth 10cm → 0.1m.

NB: Transects / plots should be placed randomly with the minimum number required for the zone in accordance with Table 4 of the Operational Manual.

METH POND 2

Transect plot worksheet

Full species IDs are not required for BioBanking, but may be useful for identification of correct vegetation type and for monitoring and audit purposes.

BioBanking
Biodiversity Banking and Offsets Scheme

Site type: Development / BioBank (circled) **Proposal ID:** Metford H1 **Date:** 12.7.17 **Recorder(s):** IM

Vegetation type: B. articulata - Eleocharis sp. sedgeland **AMG Zone** MGA 56 GDA94 **Easting/Northing:** 369579; 6374403 **Photos:**

Native over-storey species list At 10 points along the 50-m transect	Regen-eration (√) (zone)	Native mid-storey species list (>1m to <over-storey) At 10 points along the 50-m transect	Native ground cover (grasses) species list (ground stratum <1m) At 50 points along the 50-m transect	Native ground cover (shrubs) species list (ground stratum <1m) At 50 points along the 50-m transect	Native ground cover (other) species list (ground stratum <1m) At 50 points along the 50-m transect	Exotic plants species list At 50 points along the 50-m transect	Fallen logs (min. 10 cm diameter x 50 cm long) (20 x 50m plot)
C. glauca (1,2)			Cynodon dactylon (3,50+)		~~M. quinquenervia~~		
E. teretifolia (1,1)							
				M. quinquenervia (sapl.) (1,1)			
					Baumea articulata (30,500+)		
					Juncus usitatus (5, 50)		
					Cyperus eragrostis (2, 20)		
					Eleocharis ~~sp.~~ equisetina (50, 1000+)		
					Phyllodum lanuginosum (1,3)		
						Andropogon virginicus (1,3) ← check ID.	
Total number of species = Foliage cover (%) = Benchmark value (%FC) = Average crown diameter = Average foliage cover (%) = Number of trees = Sample area = 0.04 ha. **Whole zone** Number of trees with hollows = Sample area = 0.1 ha. Benchmark value =						Juncus (acutus) (kraussii) (1,2)	
		Total no of species = Foliage cover (%) =	Total no of species = Foliage cover (%) =	Total no of species = Foliage cover (%) =	Total no of species = Foliage cover (%) =	Total no of species = Foliage cover (%) =	Total (m) = Benchmark (m) =

SITE AND OTHER NOTES: pond created from brickpit floor landform + track construction. Water depth variable 5cm ⇒ 0.75m. Crinia sig. calling. No Litoria calling.

NB: Transects / plots should be placed randomly with the minimum number required for the zone in accordance with Table 4 of the Operational Manual.

Appendix D

Lower Hunter Spotted Gum Ironbark Forest (LHSGIF) Community Profile and BBAM Plot Data

Appendix B
Lower Hunter Spotted Gum Ironbark Forest Vegetation Community Profile
(as recorded on HI Metford site in June/July 2017)

LHSGIF remnant (moderate/good-medium) condition class on Lot 7314

LHSGIF remnant (moderate/good-poor) condition class on Lot 7314 (>50% cover of Lantana in midstorey)

Occurrence - This community was recorded on siltstone/mudstone-derived clays along the western and southern boundaries of Lot 7314. The community supported a mixed aged cohort of younger and older regrowth with occasional older remnant trees.

Community Equivalencies –. Spotted Gum - Red Ironbark - Grey Gum shrub - grass open forest of the Lower Hunter (PCT ID 1592)

Conservation Status – Analagous to the Lower Hunter Spotted Gum-Ironbark Forest of the Sydney Basin EEC (BC Act).

Floristics and Vegetative Structure

Stratum	% Cover Range	Height Range (m)	Floristics
Trees	40-60	8-15	*Corymbia maculata, Eucalyptus fibrosa, Eucalyptus globoidea, Eucalyptus punctata* x *canaliculata, Eucalyptus crebra*
Small Trees	10-20	4-7	Mod/good – medium ecotype – *Alphitonia excelsa* South-western remnant creekline in mod/good (poor) condition moist LHSGIF ecotype - *Glochidion ferdinandi, Ligustrum sinense*, Camphora cinnamomum*, Ligustrum lucidum*, Pittosporum undulatum, Senna pendula* var *glabrata**
Shrubs	40-70	1-4	*Bursaria spinosa, Acacia parvipinnula, Acacia elongata, Acacia falcata, Notelaea venosa, Callistemon linearis, Kunzea ericoides, Dillwynia retorta, Ozothamnus diosmifolius, Daviesia ulicifolia, Lantana camara**(>50% Lantana cover in mod/good-poor ecotype), *Ochna serrulata**
Groundcover (grasses, forbs, graminoids, ferns, subshrubs)	90	<1.2	*Dianella revoluta, Microlaena stipoides, Themeda australis, Echinopogon caespitosus, Hardenbergia violacea, Imperata cylindrica* var *major, Entolasia stricta, Lomandra multiflora* subsp *multiflora, Aristida vagans, Panicum simile, Aristida ramosa, Pratia purpurascens, Cheilanthes sieberi, Lomandra filiformis, Laxmannia gracilis, Lepidosperma laterale, Caesia parviflora, Opercularia diphylla, Goodenia hederacea, Brunoniella pumilio, Ptilothrix deusta, Eragrostis elaongata, Panicum simile, Leucopogon juniperinus, Micrantheum ericoides, Veronica plebeia, Vernonia cinerea, Desmodium brachypodum*
All strata (climbers, mistletoe in tree canopy only)			*Parsonsia straminea, Pandorea pandorana, Glycine clandestina, Eustrephus latifolius, Geitonoplesium cymosum, Dendrophthoe vittelina*

Table B-1 **Floristic List for Biobank Assessment, Lot 7314 DP July 2017 (6 LHSGIF plots)**
Note: cell values are presented as %cover and (abundance) as per BBAM (2014)

Class/Family	Scientific Name	Biobank Plot Data					
		PL1	PL2	PL3	PL4	PL5	PL6
CLASS LYCOPSIDA (Clubmosses and Quillworts)							
SELAGINELLACEAE	*Selaginella uliginosa*					*1(2)*	
CLASS FILICOPSIDA (Ferns)							
PTERIDACEAE	*Cheilanthes sieberi*	1(30)	*5(100+)*			*1(8)*	
CLASS MAGNOLIOPSIDA (Flowering Plants)							
Subclass Magnoliidae (Dicotyledons)							
ACANTHACEAE	*Brunoniella pumilio*	1(1)		1(2)			
	Pseuderanthemum variabile		1(3)				
ANTHERICACEAE	*Caesia (parviflora?)* – no repr. material	1(4)			1(30)		
	Laxmannia gracilis	1(2)					
APIACEAE	*Parsonsia straminea*		*1(3)*	*30(500+)*		*3(30)*	
ASPARAGACEAE	*Asparagus aethiopicus**	*1(2)*			*5(100+)*		
ASTERACEAE	*Ozothamnus diosmifolius*	*5(7)*	*1(2)*	*1(2)*			
	*Senecio madagascariensis**	*1(4)*					
	Vernonia cinerea			*1(1)*			
BIGNONIACEAE	*Pandorea pandorana*		1(2)	1(3)	1(2)	1(5)	1(2)
	*Jacaranda mimosifolia**						1(1)

CASUARINACEAE	*Allocasuarina littoralis*					1(2)	
ERICACEAE: Styphelioideae	*Leucopogon juniperinus*	3(20)	2(5)			1(3)	
FABACEAE: Caesalpinioideae	*Senna pendula* var. *glabrata**						5(10)
FABACEAE: Faboideae	*Desmodium brachypodum*			1(2)			
	Daviesia ulicifolia	1(2)			2(6)		
	Dillwynia retorta	2(4)	1(2)			1(3)	
	Glycine clandestina	1(6)	1(4)				
	Hardenbergia violacea		1(20)		1(3)	1(4)	
	Platylobium formosum? - seedling		1(1)				
FABACEAE: Mimosoideae	*Acacia elongata*	1(1)	1(2)			5(20)	
	Acacia parvipinnula			1(3)	1(2)	2(4)	
	Acacia falcata	10(25)	5(7)				
GOODENIACEAE	*Goodenia bellidifolia* subsp *bellidifolia*		1(1) - seedling				
	Goodenia hederacea	1(2)	1(1)			1(6)	
LAURACEAE	*Cinnamomum camphora**						10(7)
LOBELIACEAE	*Pratia purpurascens*	*10(500)*	*30(1000+)*	*1(50)*	*1(100+)*	*1(100)*	
LORANTHACEAE	*Dendrophthoe vittelina*			*1(1)*			
LUZURIAGACEAE	*Geitonoplesium cymosum*	*1(2)*					
MELIACEAE	*Synoum glandulosum*						*1(1)*

MYRTACEAE	*Eucalyptus punctata x canaliculata*		*30(12)*	*20(3)*	*10(3)*		*5(2)*
	Eucalyptus fibrosa	*30(5)*	*30(6)*	*10(2)*			*20(4)*
	Eucalyptus crebra	*5(6)*	*3(1)*				
	Eucalyptus globoidea			*3(1)*			
	Corymbia maculata	*50(22)*	*20(6)*	*60(10)*	*50(18)*	*40(14)*	*20(2)*
	Callistemon linearis		2(5)				
	Kunzea ericoides	2(4)	1(2)				
OCHNACEAE	*Ochna serrulata*						1(1)
OLEACEAE	*Olea europaea* subsp. *cuspidata*	1(1)					2(2)
	*Ligustrum sinense**				2(5)	2(20)	30(200+)
	Notelaea venosa	1(2)	1(1)				
OXALIDACEAE	*Oxalis perennans*						1(2)
PHYLLANTHACEAE	*Breynia oblongifolia*						1(1)
	Glochidion ferdinandi var. *ferdinandi*	1(1)	1(2)	1(3)	1(1)	1(3)	2(2)
PICRODENDRACEAE	*Micrantheum ericoides*	1(3)					
PITTOSPORACEAE	*Pittosporum undulatum*		2(3)	1(2)	3(3)	5(20)	
	Bursaria spinosa	80(500+)	80(500+)	10(20)	10(20)	60(100+)	
PLANTAGINACEAE	*Veronica plebeia*			1(2)	1(3)		
RHAMNACEAE	*Alphitonia excelsa*	2(1)	1(1)				

	Opercularia diphylla	1(3)	1(2)			1(3)	
VERBENACEAE	*Lantana camara**	5(10)		60(100+)	70(200+)	20(100+)	10(10)
VIOLACEAE	*Viola odorata**				1(3)		
VITACEAE	*Cayratia clematidea*						1(2)
CLASS MAGNOLIOPSIDA (Flowering Plants)							
Subclass Liliidae (Monocotyledons)							
CYPERACEAE	*Lepidosperma laterale*	2(4)	1(2)				
	Ptilothrix deusta	10(200+)	3(50)				
JUNCACEAE	*Juncus usitatus*				1(7)	1(2)	
LOMANDRACEAE	*Lomandra multiflora* subsp *multiflora*	2(20)	2(20+)	1(10)	1(5)	1(10)	
	Lomandra longifolia subsp *longifolia*		5(100+)			3(20+)	
	Lomandra filiformis subsp *coriacea*				5(100+)		
	Lomandra filiformis subsp *filiformis*	1(4)	2(10)	1(20)	1(6)		
PHORMIACEAE	*Dianella revoluta*	2(30)	2(20)		1(6)	1(8)	
POACEAE	*Aristida ramosa*	1(10)				2(50+)	
	Aristida vagans	3(100+)	20(300+)	1(30)	2(30)		
	Echinopogon (caespitosus?) – no seedhead		1(3)		1(2)		
	Entolasia stricta	80(1000+)	60(1000+)	3(200+)	5(200+)	10(300+)	1(20)
	Eragrostis elongata	2(30+)				1(8)	

	*Erharta erecta**						2(20)
	Imperata cylindrica var. *major*					3(100+)	
	Microlaena stipoides	5(500+)	60(1000+)	2(100+)	2(30)	1(30)	
	Oplismenus imbecillis						1(30)
	Panicum simile	1(5)				1(4)	
	Themeda australis	5(50+)		3(30)	2(30)	2(30)	

Table B-2 **Floristic List for Biobank Assessment, Lot 7314 DP July 2017 (4 plots in stormwater ponds and Acacia plantings)**
Note: cell values are presented as %cover and (abundance) as per BBAM (2014)

Class/Family	Scientific Name	Biobank Plot Data			
		Rehab1	Rehab2	Pond1	Pond2
CLASS FILICOPSIDA (Ferns)					
BLECHNACEAE	*Blechnum ambiguum*		*1(2)* – edge drainage channel		
PTERIDACEAE	*Cheilanthes sieberi*	*2(50)*	*1(20)*		
CLASS MAGNOLIOPSIDA (Flowering Plants)					
Subclass Magnoliidae (Dicotyledons)					
APIACEAE	*Centella asiatica*	*3(200)*	*2(100+)*		
ARALIACEAE	*Hydrocotyle sibthorpioides*	*1(50)*	*2(200+)*		
ASTERACEAE	*Ozothamnus diosmifolius*		*2(6)*		
	*Senecio madagascariensis**	*5(100+)*	*1(10)*		
	Bidens pilosa	*1(20)*			
	*Silybum marianum? (*seedlings*)*	*1(10)*			
	Taraxacum officinale		*2(30)*		
CASUARINACEAE	*Casuarina glauca*			2(5)	1(2)
CHENOPODIACEAE	*Einadia hastata*		2(2 clumps)		
CONVOLVULACEAE	*Dichondra repens*		1(50+)		

ERICACEAE: Styphelioideae	*Leucopogon juniperinus*		1(4)		
	Glycine clandestina		1(3)		
	Hardenbergia violacea		1(2)		
	Pultenaea villosa		1(2)		
FABACEAE: Mimosoideae	*Acacia elongata*	70(100+)	3(6)		
	Acacia parvipinnula	1(3)			
	Acacia falcata	3(5)	2(4)		
GOODENIACEAE	*Goodenia bellidifolia* subsp *bellidifolia*		1(10)		
LOBELIACEAE	*Pratia purpurascens*		*1(30)*		
MALVACEAE	*Abutilon sp?. (*seedlings*)*	*1(10)*	*2(20)*		
MYRTACEAE	*Eucalyptus tereticornis*	*5(10)*			*1(1)*
	Melaleuca armillaris	1(2)			
	Melaleuca quinquenervia				1(1) - sapling
OXALIDACEAE	*Oxalis perennans*		1(10)		
PITTOSPORACEAE	*Bursaria spinosa*	2(6)	10(20)		
PLANTAGINACEAE	*Bacopa monnieri?* (seedlings*)*	1(10)			
	*Plantago lanceolata**	20(500+)	1(5)		
THYMELAEACEAE	*Pimelea linifolia*	1(3)			
VERBENACEAE	*Lantana camara**	5(20)	10(20 clumps/thickets)		

	*Verbena bonariensis**	2(30)	1(5)		
CLASS MAGNOLIOPSIDA (Flowering Plants)					
Subclass Liliidae (Monocotyledons)					
CYPERACEAE	*Baumea articulata*			10(200)	30(500+)
	Eleocharis equisetina				50(1000+)
	Cyperus eragrostis				2(20)
JUNCACEAE	*Juncus usitatus*			20(300+)	5(50)
	*Juncus acutus**				1(2)
LOMANDRACEAE	*Lomandra longifolia* subsp *longifolia*	2(20)	1(3)		
PHILYDRACEAE	*Philydrum lanuginosum*			5(50+)	1(3)
PHORMIACEAE	*Dianella revoluta*	1(6)	1(6)		
POACEAE	*Andropogon virginicus**	2(20)		20(200+) – edge of pond	1(3)
	*Axonopus fissifolius**	5(100+)	1(20)		
	*Cynodon dactylon**	70(100)	10(300+)	10(500+) – edge of pond	3(50+)
	Eragrostis elongata	1(3)			
	Imperata cylindrica var. *major*		1(10)		
	*Melinus repens**	2(20)			
	*Paspalum dilatatum**	1(5)	1(2)		
	*Paspalum urvillei**		1(2)		

	Poa sp. (no seedhead)	2(10)			
	Poa sp. (no seedhead – tuft looks like annua)	2(20)			
	*Setaria parviflora**	1(30)			
	Sporobolus creber	2(50)			
	Themeda australis	1(4)	2(50)		
POLYGONACEAE	*Persicaria strigosa*			1(2)	
TYPHACEAE	*Typha orientalis*			80(1000+)	

Appendix E
Biobank Credit Report

Biodiversity credit report

This report identifies the number and type of biodiversity credits required for a major project.

Date of report: 7/03/2018 Time: 9:17:34AM Calculator version: v4.0

Major Project details

Proposal ID:	0081/2017/4573MP
Proposal name:	New Maitland Hospital
Proposal address:	Metford Road Metford NSW 2323
Proponent name:	Health Infrastructure
Proponent address:	Level 14, 77 Pacific Highway North Sydney NSW 2060
Proponent phone:	02 9978 5402
Assessor name:	Isaac Mamott
Assessor address:	1/262 Sailors Bay Road Northbridge NSW 2063
Assessor phone:	9967 9505
Assessor accreditation:	0081

Summary of ecosystem credits required

Plant Community type	Area (ha)	Credits created
Spotted Gum - Red Ironbark - Grey Gum shrub - grass open forest of the Lower Hunter	2.45	82.63
Total	2.45	83

Credit profiles

1. Spotted Gum - Red Ironbark - Grey Gum shrub - grass open forest of the Lower Hunter, (HU806)

Number of ecosystem credits created 83

IBRA sub-region Hunter

Offset options - Plant Community types	Offset options - IBRA sub-regions
Spotted Gum - Red Ironbark - Grey Gum shrub - grass open forest of the Lower Hunter, (HU806) Melaleuca decora low forest of the central Hunter Valley, Sydney Basin Bioregion, (HU564) Slaty Red Gum grassy woodland on hinterland foothills of the southern North Coast, (HU619) Grey Ironbark - Broad-leaved Mahogany - Forest Red Gum shrubby open forest on Coastal Lowlands of the Central Coast, (HU802) Spotted Gum - Broad-leaved Mahogany - Grey Gum grass - shrub open forest on Coastal Lowlands of the Central Coast, (HU803) Spotted Gum - Broad-leaved Mahogany - Red Ironbark shrubby open forest, (HU804) Red Ironbark - Spotted Gum - Prickly-leaved Paperbark shrubby open forest of the Lower Hunter, (HU807) Spotted Gum - Red Ironbark - Narrow-leaved Ironbark - Grey Box shrub-grass open forest of the lower Hunter, (HU814) Spotted Gum - Narrow-leaved Ironbark-Red Ironbark shrub - grass open forest of the central and lower Hunter, (HU815) Spotted Gum - Narrow-leaved Ironbark shrub - grass open forest of the central and lower Hunter, (HU816) Grey Box - Grey Gum - Rough-barked Apple - Blakely's Red Gum grassy open forest of the central Hunter, (HU822)	Hunter and any IBRA subregion that adjoins the IBRA subregion in which the development occurs

Summary of species credits required

Common name	Scientific name	Extent of impact Ha or individuals	Number of species credits created
Squirrel Glider	Petaurus norfolcensis	1.27	28
Little Lorikeet	Glossopsitta pusilla	1.27	23
Little Bentwing-bat	Miniopterus australis	1.27	17
Eastern Bentwing-bat	Miniopterus schreibersii subsp. oceanensis	1.27	17
Greater Broad-nosed Bat	Scoteanax rueppellii	1.27	28
Southern Myotis	Myotis macropus	1.27	28
Grey-headed Flying-fox	Pteropus poliocephalus	1.27	14

Appendix F
Likelihood of Occurrence Table

APPENDIX C

Likelihood of Occurrence/Subject Species Table

Table Legend

V = Vulnerable
E = Endangered
Y = Yes
N = No
F = Foraging habitat
B = Breeding/roosting/denning habitat
R1 = recorded on HI and former CSR site GHD (2012)
R2 = recorded on HI and former CSR site by General Flora and Fauna (2014)

Scientific Name	Common Name	TSC Act	EPBC Act	total # individuals recorded; # recorded locations (within 20km Bionet search radius of subject site)	Habitat Requirements	Potential Habitat Present on Subject Site (Y/N) (F/B)	Subject Species for Current Proposal (Y/N)
Litoria aurea	Green and Golden Bell Frog	E	V	31;7	Inhabits marshes, dams and stream-sides, particularly those containing bullrushes (*Typha* spp.) or spikerushes (*Eleocharis* spp.). Optimum habitat includes water-bodies that are unshaded, free of predatory fish such as Plague Minnow (*Gambusia holbrooki*), have a grassy area nearby and diurnal sheltering sites available. The species is active by day and usually breeds in summer when conditions are warm and wet. Preyed upon by various wading birds and snakes. Not recorded on subject site or greater metford triangle remnant based on targeted searches by General Flora and Fauna (2014). General Flora and Fauna concluded that the presence of Gambusia in the man-made ponds on the subject site would likely preclude the presence of the species on the site. No updated targeted surveys for the species has been undertaken for the current proposal (the 2014 surveys are considered to be still relevant for the purposes of assessing the current proposal).	Y	N
Anseranas semipalmata	Magpie Goose	V	-	4;2	Mainly found in shallow wetlands (less than 1 m deep) with dense growth of rushes or sedges. Equally at home in aquatic or terrestrial habitats; often seen walking and grazing on land; feeds on grasses, bulbs and rhizomes. Activities are centred on wetlands, mainly those on floodplains of rivers and large shallow wetlands formed by run-off; breeding can occur in both summer and winter dominated rainfall areas and is strongly influenced by water level; most breeding now occurs in monsoonal areas; nests are formed in trees over deep water; breeding is unlikely in south-eastern NSW. Often seen in trios or flocks on shallow wetlands, dry ephemeral swamps, wet grasslands and floodplains; roosts in tall vegetation. Man made ponds on the subject site are considered potential habitat for the species although the expansive Tenambit wetlands to the north of the site (as well as	Y	Y

					additional ephemeral and semi permanent lower Hunter River floodplain wetlands between Maitland east to Seaham and Beresfield) are expected to be more extensively used by the species on an opportunistic basis. Not recorded in the greater metford triangle by GHD (2012) nor General Flora and Fauna (2014).		
Oxyura australis	Blue-billed Duck	V	-	15;6	The Blue-billed Duck prefers deep water in large permanent wetlands and swamps with dense aquatic vegetation. The species is completely aquatic, swimming low in the water along the edge of dense cover. It will fly if disturbed, but prefers to dive if approached. Blue-billed Ducks will feed by day far from the shore, particularly if dense cover is available in the central parts of the wetland. They feed on the bottom of swamps eating seeds, buds, stems, leaves, fruit and small aquatic insects such as the larvae of midges, caddisflies and dragonflies. Blue-billed Ducks are partly migratory, with short-distance movements between breeding swamps and overwintering lakes with some long-distance dispersal to breed during spring and early summer. Blue-billed Ducks usually nest solitarily in Cumbungi over deep water between September and February. They will also nest in trampled vegetation in Lignum, sedges or Spike-rushes, where a bowl-shaped nest is constructed. Young birds disperse in April-May from their breeding swamps in inland NSW to non-breeding areas on the Murray River system and coastal lakes. Man made ponds on the subject site are considered potential habitat for the species although the expansive Tenambit wetlands to the north of the site (as well as additional ephemeral and semi permanent lower Hunter River floodplain wetlands between Maitland east to Seaham and Beresfield) are expected to be more extensively used by the species on an opportunistic basis. Not recorded in the greater metford triangle by GHD (2012) nor General Flora and Fauna (2014).	Y	Y
Stictonetta naevosa	Freckled Duck	V	-	78;5	Prefers permanent freshwater swamps and creeks with heavy growth of Cumbungi, Lignum or Tea-tree. During drier times they move from ephemeral breeding swamps to more permanent waters such as lakes, reservoirs, farm dams and sewage ponds. Generally rest in dense	N	N

					cover during the day, usually in deep water. Feed at dawn and dusk and at night on algae, seeds and vegetative parts of aquatic grasses and sedges and small invertebrates. Nesting usually occurs between October and December but can take place at other times when conditions are favourable. Nests are usually located in dense vegetation at or near water level. Man made ponds on the subject site are considered potential habitat for the species although the expansive Tenambit wetlands to the north of the site (as well as additional ephemeral and semi permanent lower Hunter River floodplain wetlands between Maitland east to Seaham and Beresfield) are expected to be more extensively used by the species on an opportunistic basis. Not recorded in the greater metford triangle by GHD (2012) nor General Flora and Fauna (2014).		
Ptilinopus regina	Rose crowned Fruit Dove	V	-	1;1	Rose-crowned Fruit-doves occur mainly in sub-tropical and dry rainforest and occasionally in moist eucalypt forest and swamp forest, where fruit is plentiful. They are shy pigeons, not easy to see amongst the foliage, and are more often heard than seen. They feed entirely on fruit from vines, shrubs, large trees and palms, and are thought to be locally nomadic as they follow the ripening of fruits. Some populations are migratory in response to food availability - numbers in north-east NSW increase during spring and summer then decline in April or May. Not recorded in the greater metford triangle by GHD (2012) nor General Flora and Fauna (2014).	N	N
Ephippiorhynchus asiaticus	Black necked Stork	E	-	43;33	Floodplain wetlands (swamps, billabongs, watercourses and dams) of the major coastal rivers are the key habitat in NSW for the Black-necked Stork. Secondary habitat includes minor floodplains, coastal sandplain wetlands and estuaries. Storks usually forage in water 5-30cm deep for vertebrate and invertebrate prey. Eels regularly contribute the greatest biomass to their diet, but they feed on a wide variety of animals, including other fish, frogs and invertebrates (such as beetles, grasshoppers, crickets and crayfish). Black-necked Storks build large nests high in tall trees close to water. Trees usually provide clear observation of the surroundings and are at low elevation (reflecting the floodplain habitat).	Y	Y

					In NSW, breeding activity occurs May - January; incubation May - October; nestlings July - January; fledging from September. Man made ponds on the subject site are considered potential habitat for the species although the expansive Tenambit wetlands to the north of the site (as well as additional ephemeral and semi permanent lower Hunter River floodplain wetlands between Maitland east to Seaham and Beresfield) are expected to be more extensively used by the species on an opportunistic basis. Not recorded in the greater metford triangle by GHD (2012) nor General Flora and Fauna (2014).		
Ixobrychus flavicollis	Black Bittern	V	-	1;1	Inhabits both terrestrial and estuarine wetlands, generally in areas of permanent water and dense vegetation. Where permanent water is present, the species may occur in flooded grassland, forest, woodland, rainforest and mangroves. Feeds on frogs, reptiles, fish and invertebrates, including snails, dragonflies, shrimps and crayfish, with most feeding done at dusk and at night. During the day, roosts in trees or on the ground amongst dense reeds. Generally solitary, but occurs in pairs during the breeding season, from December to March. Like other bitterns, but unlike most herons, nesting is solitary. Nests, built in spring, are located on a branch overhanging water and consist of a bed of sticks and reeds on a base of larger sticks. Man made ponds on the subject site are considered potential habitat for the species although the expansive Tenambit wetlands to the north of the site (as well as additional ephemeral and semi permanent lower Hunter River floodplain wetlands between Maitland east to Seaham and Beresfield) are expected to be more extensively used by the species on an opportunistic basis. Not recorded in the greater metford triangle by GHD (2012) nor General Flora and Fauna (2014).	Y	Y
Circus assimilis	Spotted Harrier	V	-	1;1	Occurs in grassy open woodland including *Acacia* and mallee remnants, inland riparian woodland, grassland and shrub steppe. It is found most commonly in native grassland, but also occurs in agricultural land, foraging over open habitats including edges of inland wetlands.	N	N

					Not recorded in the greater metford triangle by GHD (2012) nor General Flora and Fauna (2014).		
Haliaeetus leucogaster	White-bellied Sea-eagle	V	-	27;15	Habitats are characterised by the presence of large areas of open water including larger rivers, swamps, lakes, and the sea. Occurs at sites near the sea or sea-shore, such as around bays and inlets, beaches, reefs, lagoons, estuaries and mangroves; and at, or in the vicinity of freshwater swamps, lakes, reservoirs, billabongs and saltmarsh. Terrestrial habitats include coastal dunes, tidal flats, grassland, heathland, woodland, and forest (including rainforest). Breeding habitat consists of mature tall open forest, open forest, tall woodland, and swamp sclerophyll forest close to foraging habitat. Nest trees are typically large emergent eucalypts and often have emergent dead branches or large dead trees nearby which are used as 'guard roosts'. Nests are large structures built from sticks and lined with leaves or grass. Feed mainly on fish and freshwater turtles, but also waterbirds, reptiles, mammals and carrion. Not recorded in the greater metford triangle by GHD (2012) nor General Flora and Fauna (2014).	Y (F,B)	Y
Hamirostra melanosternon	Black breasted Buzzard	V	-	1;1	Lives in a range of inland habitats, especially along timbered watercourses which is the preferred breeding habitat. Also hunts over grasslands and sparsely timbered woodlands. Not recorded in the greater metford triangle by GHD (2012) nor General Flora and Fauna (2014). Preferred habitat not present on subject site.	N	N
Hieraaetus morphnoides	Little Eagle	V	-	2;2	Occupies open eucalypt forest, woodland or open woodland. Sheoak or *Acacia* woodlands and riparian woodlands of interior NSW are also used. Nests in tall living trees within a remnant patch, where pairs build a large stick nest in winter. Lays two or three eggs during spring, and young fledge in early summer. Preys on birds, reptiles and mammals, occasionally adding large insects and carrion. Not recorded in the greater metford triangle by GHD (2012) nor General Flora and Fauna (2014). Potential habitat is present on subject site.	Y (F,B)	Y

Lophoictinia isura	Square tailed Kite	V	-	1;1	Found in a variety of timbered habitats including dry woodlands and open forests. Shows a particular preference for timbered watercourses. Is a specialist hunter of passerines, especially honeyeaters, and most particularly nestlings, and insects in the tree canopy, picking most prey items from the outer foliage. Appears to occupy large hunting ranges of more than 100km^2. Breeding is from July to February, with nest sites generally located along or near watercourses, in a fork or on large horizontal limbs. Not recorded in the greater metford triangle by GHD (2012) nor General Flora and Fauna (2014). Potential habitat is present on subject site.	Y (F,B)	Y
Pandion cristatus	Eastern Osprey	V	-	7;3	Favour coastal areas, especially the mouths of large rivers, lagoons and lakes. Feed on fish over clear, open water. Breed from July to September in NSW. Nests are made high up in dead trees or in dead crowns of live trees, usually within one kilometre of the sea. Not recorded in the greater metford triangle by GHD (2012) nor General Flora and Fauna (2014). Potential foraging habitat is present on subject site.	Y (F)	Y
Callocephalon fimbriatum	Gang-gang Cockatoo	V	-	9;2	In spring and summer, generally found in tall mountain forests and woodlands, particularly in heavily timbered and mature wet sclerophyll forests. In autumn and winter, the species often moves to lower altitudes in drier more open eucalypt forests and woodlands, particularly box-gum and box-ironbark assemblages, or in dry forest in coastal areas and often found in urban areas. Favours old growth forest and woodland attributes for nesting and roosting. Nests are located in hollows that are 10 cm in diameter or larger and at least 9 m above the ground in eucalypts. Not recorded in the greater metford triangle by GHD (2012) nor General Flora and Fauna (2014). Potential foraging habitat is present on subject site.	Y (F,R)	Y
Calyptorhynchus lathami	Glossy Black-Cockatoo	V	-	1;1	Inhabits open forest and woodlands of the coast and the Great Dividing Range where stands of sheoak occur. Black Sheoak (*Allocasuarina littoralis*) and Forest Sheoak (*A. torulosa*) are important foods. Dependent on large	Y (F,B)	Y

					hollow-bearing eucalypts for nest sites. A single egg is laid between March and May. Not recorded in the greater metford triangle by GHD (2012) nor General Flora and Fauna (2014). Limited potential foraging and breeding habitat is present on subject site.		
Glossopsitta pusilla	Little Lorikeet	V	-	45;10	Forages primarily in the canopy of open *Eucalyptus* forest and woodland, yet also finds food in *Angophora, Melaleuca* and other tree species. Riparian habitats are particularly used, due to higher soil fertility and hence greater productivity. Isolated flowering trees in open country, e.g. paddocks, roadside remnants and urban trees also help sustain viable populations of the species. Feeds mostly on nectar and pollen, occasionally on native fruits such as mistletoe, and only rarely in orchards. Gregarious, travelling and feeding in small flocks (<10), though often with other lorikeets. Roosts in treetops, often distant from feeding areas. Nests in proximity to feeding areas if possible, most typically selecting hollows in the limb or trunk of smooth-barked Eucalypts. Recorded by General Flora and Fauna (2014) within the south-western LHSGIF remnant on Lot 7314.	Y (F.B)	Y
Lathamus discolour	Swift Parrot	E	CE	1;1	Breeds in Tasmania during spring and summer, migrating in the autumn and winter months to south-eastern Australia from Victoria and the eastern parts of South Australia to south-east Queensland. In NSW mostly occurs on the coast and south west slopes. Migrates to the Australian south-east mainland between March and October. On the mainland they occur in areas where eucalypts are flowering profusely or where there are abundant lerp (from sap-sucking bugs) infestations. Favoured feed trees include winter flowering species such as Swamp Mahogany *Eucalyptus robusta*, Spotted Gum *Corymbia maculata*, Red Bloodwood *C. gummifera*, Mugga Ironbark *E. sideroxylon*, and White Box *E. albens*. Commonly used lerp infested trees include Inland Grey Box *E. microcarpa*, Grey Box *E. moluccana* and Blackbutt *E. pilularis*. Not recorded in the greater metford triangle by GHD (2012) nor General Flora and Fauna (2014). Potential overwintering foraging habitat is present on subject site (Spotted Gum is a co-dominant canopy species).	Y(F)	Y

Neophema pulchella	Turquoise Parrot	V	-	9;3	Lives on the edges of eucalypt woodland adjoining clearings, timbered ridges and creeks in farmland. Usually seen in pairs or small, possibly family, groups and have also been reported in flocks of up to thirty individuals. Prefers to feed in the shade of a tree and spends most of the day on the ground searching for the seeds or grasses and herbaceous plants, or browsing on vegetable matter. Forages quietly and may be quite tolerant of disturbance. However, if flushed it will fly to a nearby tree and then return to the ground to browse as soon as the danger has passed. Nests in tree hollows, logs or posts, from August to December. It lays four or five white, rounded eggs on a nest of decayed wood dust. Not recorded in the greater metford triangle by GHD (2012) nor General Flora and Fauna (2014). Potential marginal foraging and breeding habitat is present on subject site.	Y(F,B)	Y
Ninox connivens	Barking Owl	V	-	3;3	Inhabits woodland and open forest, including fragmented remnants and partly cleared farmland. It is flexible in its habitat use, and hunting can extend in to closed forest and more open areas. Sometimes able to successfully breed along timbered watercourses in heavily cleared habitats (e.g. western NSW) due to the higher density of prey on these fertile soils. Roost in shaded portions of tree canopies, including tall midstorey trees with dense foliage (eg. *Acacia* and *Casuarina* species). During nesting season, the male perches in a nearby tree overlooking the hollow entrance. Preferentially hunts small arboreal mammals such as Squirrel Gliders and Ringtail Possums, but when loss of tree hollows decreases these prey populations the owl becomes more reliant on birds, invertebrates and terrestrial mammals such as rodents and rabbits. Can catch bats and moths on the wing, but typically hunts by sallying from a tall perch. Requires very large permanent territories in most habitats due to sparse prey densities. Monogamous pairs hunt over as much as 6000 hectares, with 2000 hectares being more typical in NSW habitats. Two or three eggs are laid in hollows of large, old trees. Not recorded in the greater metford triangle by GHD (2012) nor General Flora and Fauna (2014). Potential foraging and breeding habitat is present on subject site.	Y(F,B)	Y

Ninox strenua	Powerful Owl	V	-	11;11	The Powerful Owl inhabits a range of vegetation types, from woodland and open sclerophyll forest to tall open wet forest and rainforest. The Powerful Owl requires large tracts of forest or woodland habitat but can occur in fragmented landscapes as well. The species breeds and hunts in open or closed sclerophyll forest or woodlands and occasionally hunts in open habitats. It roosts by day in dense vegetation comprising species such as Turpentine *Syncarpia glomulifera*, Black She-oak *Allocasuarina littoralis*, Blackwood *Acacia melanoxylon*, Rough-barked Apple *Angophora floribunda*, Cherry Ballart *Exocarpus cupressiformis* and a number of eucalypt species. The main prey items are medium-sized arboreal marsupials, particularly the Greater Glider, Common Ringtail Possum and Sugar Glider. Pairs of Powerful Owls demonstrate high fidelity to a large territory, the size of which varies with habitat quality and thus prey densities. In good habitats a mere 400 can support a pair; where hollow trees and prey have been depleted the owls need up to 4000 ha. Powerful Owls nest in large tree hollows (at least 0.5 m deep), in large eucalypts (diameter at breast height of 80-240 cm) that are at least 150 years old. While the female and young are in the nest hollow the male Powerful Owl roosts nearby (10-200 m) guarding them, often choosing a dense "grove" of trees that provide concealment from other birds that harass him. Powerful Owls are monogamous and mate for life. Nesting occurs from late autumn to mid-winter. Not recorded in the greater metford triangle by GHD (2012) nor General Flora and Fauna (2014). Potential foraging habitat is present on subject site.	Y (F)	Y
Tyto novaehollandiae	Masked Owl	V	-	9;9	Lives in dry eucalypt forests and woodlands from sea level to 1100 m. A forest owl, but often hunts along the edges of forests, including roadsides. The typical diet consists of tree-dwelling and ground mammals, especially rats. Pairs have a large home-range of 500 to 1000 hectares. Roosts and breeds in moist eucalypt forested gullies, using large tree hollows or sometimes caves for nesting. Not recorded in the greater metford triangle by GHD (2012) nor General Flora and Fauna (2014). Potential foraging habitat is present on subject site.	Y (F)	Y
Tyto tenebricosa	Sooty Owl	V	-	1;1	Occurs in rainforest, including dry rainforest, subtropical and warm temperate rainforest, as well as moist	N	N

					eucalypt forests. Roosts by day in the hollow of a tall forest tree or in heavy vegetation; hunts by night for small ground mammals or tree-dwelling mammals such as the Common Ringtail Possum (*Pseudocheirus peregrinus*) or Sugar Glider (*Petaurus breviceps*). Nests in very large tree-hollows. Not recorded in the greater metford triangle by GHD (2012) nor General Flora and Fauna (2014). Potential foraging habitat is present on subject site.		
Chthonicola sagittata	Speckled Warbler	V	-	5;6	The Speckled Warbler lives in a wide range of *Eucalyptus* dominated communities that have a grassy understorey, often on rocky ridges or in gullies. Typical habitat would include scattered native tussock grasses, a sparse shrub layer, some eucalypt regrowth and an open canopy. Large, relatively undisturbed remnants are required for the species to persist in an area. The diet consists of seeds and insects, with most foraging taking place on the ground around tussocks and under bushes and trees. Pairs are sedentary and occupy a breeding territory of about ten hectares, with a slightly larger home-range when not breeding. The rounded, domed, roughly built nest of dry grass and strips of bark is located in a slight hollow in the ground or the base of a low dense plant, often among fallen branches and other litter. Not recorded in the greater metford triangle by GHD (2012) nor General Flora and Fauna (2014). Prefers lightly wooded gullies which are not present on subject site. Low likelihood of occurrence based on absence of preferred habitat.	N	N
Melithreptus gularis gularis	Black chinned Honeyeater (eastern subspecies)	V	-	3;3	In NSW it is widespread, with records from the tablelands and western slopes of the Great Dividing Range to the north-west and central-west plains and the Riverina. It is rarely recorded east of the Great Dividing Range, although regularly observed from the Richmond and Clarence River areas. It has also been recorded at a few scattered sites in the Hunter, Central Coast and Illawarra regions, though it is very rare in the latter. Occupies mostly upper levels of drier open forests or woodlands dominated by box and ironbark eucalypts, especially Mugga Ironbark (*Eucalyptus sideroxylon*), White Box (*E. albens*), Inland Grey Box (*E. microcarpa*), Yellow Box (*E. melliodora*), Blakely's Red Gum (*E. blakelyi*) and Forest Red Gum (*E. tereticornis*). Also inhabits open forests of smooth-barked gums,	N	N

					stringybarks, ironbarks, river she-oaks (nesting habitat) and tea-trees. Not recorded in the greater metford triangle by GHD (2012) nor General Flora and Fauna (2014). Low likelihood of occurrence based on absence of preferred habitat.		
Pomatostomus temporalis temporalis	Grey crowned Babbler (eastern subspecies)	V	-	170;56	In NSW, the eastern sub-species occurs on the western slopes of the Great Dividing Range, and on the western plains reaching as far as Louth and Balranald. It also occurs in woodlands in the Hunter Valley and in several locations on the north coast of NSW. Inhabits open Box-Gum Woodlands on the slopes, and Box-Cypress-pine and open Box Woodlands on alluvial plains. Woodlands on fertile soils in coastal regions. Build and maintain several conspicuous, dome-shaped stick nests about the size of a football. A nest is used as a dormitory for roosting each night. Nests are usually located in shrubs or sapling eucalypts, although they may be built in the outermost leaves of low branches of large eucalypts. Not recorded in the greater metford triangle by GHD (2012) nor General Flora and Fauna (2014). Potential foraging and breeding habitat is present on subject site.	Y(F,B)	Y
Daphoenositta chrysoptera	Varied Sittella	V	-	25;12	Inhabits eucalypt forests and woodlands, especially those containing rough-barked species and mature smooth-barked gums with dead branches, mallee and *Acacia* woodland. -Feeds on arthropods gleaned from crevices in rough or decorticating bark, dead branches, standing dead trees and small branches and twigs in the tree canopy. Builds a cup-shaped nest of plant fibres and cobwebs in an upright tree fork high in the living tree canopy, and often re-uses the same fork or tree in successive years. Not recorded in the greater metford triangle by GHD (2012) nor General Flora and Fauna (2014). Potential foraging and breeding habitat is present on subject site.	Y (F,B)	Y
Artamus cyanopterus cyanopterus	Dusky Woodswallow	V	-	5;5	Primarily inhabit dry, open eucalypt forests and woodlands, including mallee associations, with an open or sparse understorey of eucalypt saplings, acacias and other shrubs, and ground-cover of grasses or sedges and fallen woody debris. It has also been recorded in shrublands, heathlands and very occasionally in moist forest or rainforest. Also found in farmland, usually at the edges of forest or woodland. Nest is an open, cup-shape, made of twigs, grass, fibrous rootlets and occasionally casuarina needles, and may be lined with	Y (F)	Y

					grass, rootlets or infrequently horsehair, occasionally unlined. Nest sites vary greatly, but generally occur in shrubs or low trees, living or dead, horizontal or upright forks in branches, spouts, hollow stumps or logs, behind loose bark or in a hollow in the top of a wooden fence post. Most breeding activity occurs on the western slopes of the Great Dividing Range. Not recorded in the greater metford triangle by GHD (2012) nor General Flora and Fauna (2014). Potential foraging habitat is present on subject site.		
Petroica boodang	Scarlet Robin	V	-	3;3	The Scarlet Robin is primarily a resident in forests and woodlands, but some adults and young birds disperse to more open habitats after breeding. In autumn and winter many Scarlet Robins live in open grassy woodlands, and grasslands or grazed paddocks with scattered trees. Birds forage from low perches, fence-posts or on the ground, from where they pounce on small insects and other invertebrates which are taken from the ground, or off tree trunks and logs; they sometimes forage in the shrub or canopy layer. Scarlet Robin pairs defend a breeding territory and mainly breed between the months of July and January; they may raise two or three broods in each season. This species' nest is an open cup made of plant fibres and cobwebs and is built in the fork of tree usually more than 2 metres above the ground; nests are often found in a dead branch in a live tree, or in a dead tree or shrub. Not recorded in the greater metford triangle by GHD (2012) nor General Flora and Fauna (2014). Potential foraging and breeding habitat is present on subject site.	Y (F,B)	Y
Dasyurus maculatus	Spotted-tailed Quoll	V	E	2;2	Recorded across a range of habitat types, including rainforest, open forest, woodland, coastal heath and inland riparian forest, from the sub-alpine zone to the coastline. Individual animals use hollow-bearing trees, fallen logs, small caves, rock outcrops and rocky-cliff faces as den sites. Mostly nocturnal, although will hunt during the day; spends most of the time on the ground, although also an excellent climber and will hunt possums and gliders in tree hollows and prey on roosting birds. Use communal 'latrine sites', often on flat rocks among boulder fields, rocky cliff-faces or along rocky stream beds or banks. A generalist predator with a preference for medium-sized mammals. Consumes a variety of prey, including gliders, possums, small wallabies, rats, birds, bandicoots, rabbits, reptiles and insects. Also eats carrion and takes domestic fowl. Females occupy home	Y (F,B)	Y

					ranges up to about 750 hectares and males up to 3500 hectares. Are known to traverse their home ranges along densely vegetated creeklines. Not recorded in the greater metford triangle by GHD (2012) nor General Flora and Fauna (2014). Potential foraging and breeding habitat is present on subject site.		
Phascolarctos cinereus	Koala	V	V	10;10	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. Generally solitary, but have complex social hierarchies based on a dominant male with a territory overlapping several females and sub-ordinate males on the periphery. Females breed at two years of age and produce one young per year. Not recorded in the greater metford triangle by GHD (2012) nor General Flora and Fauna (2014). Potential limited foraging habitat is present on subject site. No known Koala populations in the lower Hunter valley.	Y (F, B) – potential feed trees onsite include planted *E.tereticornis* and possibly *E.punctata* x *E.canaliculata*	N
Petaurus norfolcensis	Squirrel Glider	V	-	63;53	Inhabits mature or old growth Box, Box-Ironbark woodlands and River Red Gum forest west of the Great Dividing Range and a variety of coastal forest vegetation types. Prefers mixed species stands with a shrub or Acacia midstorey. Lives in family groups of a single adult male one or more adult females and offspring. Requires abundant tree hollows for refuge and nest sites. Diet varies seasonally and consists of *Acacia* gum, eucalypt sap, nectar, honeydew and manna, with invertebrates and pollen providing protein. Recorded by General Flora and Fauna (2014) in the south-western LHSGIF remnant on Lot 7314.	Y (R2,F,B)	Y
Phascogale tapoatafa	Brush-tailed Phascogale	V	-	6;12	Prefers dry sclerophyll open forest with sparse groundcover of herbs, grasses, shrubs or leaf litter. Also inhabit heath, swamps, rainforest and wet sclerophyll forest. Agile climber foraging preferentially in rough barked trees of 25 cm DBH or greater. Feeds mostly on arthropods but will also eat other invertebrates, nectar and sometimes small vertebrates.	Y (F,B)	Y

					Females have exclusive territories of approximately 20 - 40 ha, while males have overlapping territories often greater than 100 ha. Nest and shelter in tree hollows with entrances 2.5 - 4 cm wide and use many different hollows over a short time span. Mating occurs May - July; males die soon after the mating season whereas females can live for up to three years but generally only produce one litter.		
Pteropus poliocephalus	Grey-headed Flying-fox	V	V	1624;45	Occur in subtropical and temperate rainforests, tall sclerophyll forests and woodlands, heaths and swamps as well as urban gardens and cultivated fruit crops. Roosting camps are generally located within 20 km of a regular food source and are commonly found in gullies, close to water, in vegetation with a dense canopy. Individual camps may have tens of thousands of animals and are used for mating, and for giving birth and rearing young. Can travel up to 50 km from the camp to forage; commuting distances are more often <20 km. Feed on the nectar and pollen of native trees, in particular *Eucalyptus, Melaleuca* and *Banksia*, and fruits of rainforest trees and vines. Also forages in cultivated gardens and fruit crops. Recorded by General Flora and Fauna (2014) just outside the south-eastern corner of the greater metford triangle. Potential foraging habitat for the species occurs (LHSGIF habitat) within Lot 7314. Species was also recorded by GHD (2012) flying over the greater metford triangle site.	Y (R2,F)	Y
Saccolaimus flaviventris	Yellow bellied Sheathtail-bat	V	-	8;8	Roosts singly or in groups of up to six, in tree hollows and buildings. When foraging for insects, flies high and fast over the forest canopy, but lower in more open country. Forages in most habitats across its very wide range, with and without trees; appears to defend an aerial territory. Breeding has been recorded from December to mid-March, when a single young is born. Seasonal movements are unknown; there is speculation about a migration to southern Australia in late summer and autumn. Not recorded on Lot 7314 or in the greater metford triangle by GHD (2012) nor General Flora and Fauna (2014). Potential foraging and roosting habitat is present on subject site.	Y(F,B)	Y
Mormopterus norfolkensis	Eastern Freetail-bat	V	-	70;70	Occur in dry sclerophyll forest, woodland, swamp forests and mangrove forests east of the Great Dividing Range. Roosts mainly in tree hollows but will also roost under	Y (F,B)	Y

					bark or in man-made structures. Usually solitary but also recorded roosting communally, probably insectivorous. Not recorded on Lot 7314 or in the greater metford triangle by GHD (2012) nor General Flora and Fauna (2014). Potential foraging and roosting habitat is present on subject site.		
Chalinolobus dwyeri	Large eared Pied Bat	V	V	6;6	Roosts in caves (near their entrances), crevices in cliffs, old mine workings and in the disused, bottle-shaped mud nests of the Fairy Martin (*Petrochelidon ariel*), frequenting low to mid-elevation dry open forest and woodland close to these features. Females have been recorded raising young in maternity roosts (c. 20-40 females) from November through to January in roof domes in sandstone caves and overhangs. They remain loyal to the same cave over many years. Found in well-timbered areas containing gullies. This species probably forages for small, flying insects below the forest canopy. Likely to hibernate through the coolest months. It is uncertain whether mating occurs early in winter or in spring. Not recorded on Lot 7314 or in the greater metford triangle by GHD (2012) nor General Flora and Fauna (2014). Preferred foraging and roosting habitat is not present on subject site.	N	N
Falsistrellus tasmaniensis	Eastern False Pipistrelle	V	-	31;31	Prefers moist habitats, with trees taller than 20 m. Generally roosts in eucalypt hollows, but has also been found under loose bark on trees or in buildings. Hunts beetles, moths, weevils and other flying insects above or just below the tree canopy. Hibernates in winter. Females are pregnant in late spring to early summer. Possible recording by GHD (2012) on the greater metford triangle site (no precise location record available). GHD (2012) noted the record comprised a 'Species Group' record which may have been a recorded call from the Greater Broad nosed Bat and Eastern Broad nosed bat. The call was not strong enough to make a confident determination amongst the 3 species in this group.	Y (R1,F,B)	Y
Miniopterus australis	Little Bent-wing Bat	V	-	101;101	Moist eucalypt forest, rainforest, vine thicket, wet and dry sclerophyll forest, Melaleuca swamps, dense coastal forests and banksia scrub. Generally found in well-timbered areas. Little Bentwing-bats roost in caves, tunnels, tree hollows, abandoned mines, stormwater	Y(R1,R2,F,B)	Y

					drains, culverts, bridges and sometimes buildings during the day, and at night forage for small insects beneath the canopy of densely vegetated habitats. They often share roosting sites with the Common Bentwing-bat and, in winter, the two species may form mixed clusters. In NSW the largest maternity colony is in close association with a large maternity colony of Eastern Bentwing-bats (*Miniopterus schreibersii*) and appears to depend on the large colony to provide the high temperatures needed to rear its young. Maternity colonies form in spring and birthing occurs in early summer. Males and juveniles disperse in summer. Only five nursery sites /maternity colonies are known in Australia. The species was recorded by GHD (2012) on the greater metford triangle site (no precise location given) and by General Flora and Fauna (2014) in Hunter Lowland Redgum Woodland to the east of Lot 7314 on the greater metford triangle site just south of the northern boundary line.		
Miniopterus schreibersii oceanensis	Eastern Bentwing-bat	V	-	59;59	Caves are the primary roosting habitat, but also use derelict mines, storm-water tunnels, buildings and other man-made structures. Form discrete populations centred on a maternity cave that is used annually in spring and summer for the birth and rearing of young. Maternity caves have very specific temperature and humidity regimes. At other times of the year, populations disperse within about 300 km range of maternity caves. Cold caves are used for hibernation in southern Australia. Breeding or roosting colonies can number from 100 to 150,000 individuals. Hunts in forested areas, catching moths and other flying insects above the tree tops. Recorded by General Flora and Fauna (2014) foraging over man made ponds just outside Lot 7314 and in the far south-eastern corner of the greater metford triangle in LHSGIF habitat. Also included as a 'Species Group' record (with *Vespadelus sp*.) by GHD (2012).	Y (R1,R2,F)	Y
Myotis macropus	Southern Myotis	V	-	75;30	Generally roost in groups of 10 - 15 close to water in caves, mine shafts, hollow-bearing trees, storm water channels, buildings, under bridges and in dense foliage. Forage over streams and pools catching insects and small fish by raking their feet across the water surface.	Y(R2,F,B)	Y

					Recorded by General Flora and Fauna (2014) foraging over man made ponds just outside Lot 7314.		
Vespadelus troughtoni	Eastern Cave Bat	V	-	19;19	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. Possible recording by GHD (2012) on the greater metford triangle site (no precise location record available). GHD (2012) noted the record comprised a 'Species Group' record which may have been a recorded call from the Little Forest Bat and Eastern Forest Bat. The call was not strong enough to make a confident determination amongst the 3 species in this 'group'.	Y(R1,F)	Y
Scoteanax rueppellii	Greater Broad-nosed Bat	V	-	9;9	Utilises a variety of habitats from woodland through to moist and dry eucalypt forest and rainforest, though it is most commonly found in tall wet forest. Although this species usually roosts in tree hollows, it has also been found in buildings. Forages after sunset, flying slowly and directly along creek and river corridors at an altitude of 3 - 6 m. Open woodland habitat and dry open forest suits the direct flight of this species as it searches for beetles and other large, slow-flying insects; this species has been known to eat other bat species. Little is known of its reproductive cycle, however a single young is born in January; prior to birth, females congregate at maternity sites located in suitable trees, where they appear to exclude males during the birth and raising of the single young. Recorded by General Flora and Fauna (2014) foraging over man made ponds just outside Lot 7314 and in the far south-eastern corner of the greater metford triangle in LHSGIF habitat. Also included as a 'Species Group' record with the Eastern Broad nosed Bat and Eastern False Pipistrelle by GHD (2012).	Y (R1,R2,F)	Y
Pseudomys novaehollandiae	New Holland Mouse	-	V	5;5	Known to inhabit open heathlands, woodlands and forests with a heathland understorey and vegetated sand dunes. It is a social animal, living predominantly in burrows shared with other individuals. Distribution is patchy in time and space, with peaks in abundance	N	N

					during early to mid stages of vegetation succession typically induced by fire. Not recorded by GHD (2012) nor General Flora and Fauna (2014). Preferred habitat not present on subject site.		
Tetratheca juncea	Black-eyed Susan	V	V	299;18	The majority of populations occur on low nutrient soils associated with the Awaba Soil Landscape. While some studies show the species has a preference for cooler southerly aspects, it has been found on slopes with a variety of aspects. It generally prefers well-drained sites below 200m elevation and annual rainfall between 1000 - 1200mm. The preferred substrates are sandy skeletal soil on sandstone, sandy-loam soils, low nutrients; and clayey soil from conglomerates, pH neutral. It usually spreads via underground stems which can be up to 50 cm long. Consequently, individual plants may be difficult to identify. It also reproduces sexually but this requires insect pollination. Large populations of this species are particularly important. Not recorded on the greater metford triangle by General Flora and Fauna (2014).	Y (possible but low likelihood given absence of preferred habitats)	N
Acacia bynoeana	Bynoe's Wattle	E	V	44;19	Occurs in heath or dry sclerophyll forest on sandy soils. Seems to prefer open, sometimes slightly disturbed sites such as trail margins, edges of roadside spoil mounds and in recently burnt patches. Associated overstorey species include Red Bloodwood, Scribbly Gum, Parramatta Red Gum, Saw Banksia and Narrow-leaved Apple. The author has recorded this species along transmission line easements and tracks/roadsides, rarely in intact interior forested habitats. Not recorded by GHD (2012) nor by General Flora and Fauna (2014). Preferred habitats not present on subject site.	Y (possible but low likelihood given absence of preferred habitats)	N
Maundia triglochinoides		V	-	3;3	Grows in swamps, lagoons, dams, channels, creeks or shallow freshwater wetlands 30 - 60 cm deep on heavy clay, low nutrients. Flowering occurs during warmer months. Associated with wetland species e.g. *Triglochin procerum*. Probably wind pollinated. Diaspore is the seed and root tubers, which are probably dispersed by water. Spreads vegetatively, with tufts of leaves arising along rhizome. Populations expand following flood events and	N	N

					contract to more permanent wetlands in times of low rainfall. Flowers November-January. Not recorded onsite by GHD (2012) nor General Flora and Fauna (2014).		
Callistemon linearifolius	Netted Bottle brush	V	-	108;13	Grows in dry sclerophyll forest on the coast and adjacent ranges. Flowers spring – summer. The author has typically recorded this species in swamp forest habitats on the lower North Coast. Not recorded onsite by GHD (2012) nor General Flora and Fauna (2014). Preferred habitats not present on subject site.	N	N
Eucalyptus glaucina	Slaty Red Gum	V	V	1;1	Grows in grassy woodland and dry eucalypt forest. Grows on deep, moderately fertile and well-watered soils. The author has recorded this species in floodplain/swamp habitats with which it is strongly associated with. Not recorded onsite by GHD (2012) nor General Flora and Fauna (2014). Preferred habitats not present on subject site.	N	N
Eucalyptus parramattensis subsp decadens	-	V	V	1034;167	There are two separate meta-populations of *E. parramattensis* subsp. *decadens*. The Kurri Kurri meta-population is bordered by Cessnock—Kurri Kurri in the north and Mulbring—Abedare in the south. Large aggregations of the subspecies are located in the Tomalpin area. The Tomago Sandbeds meta-population is bounded by Salt Ash and Tanilba Bay in the north and Williamtown and Tomago in the south. Generally occupies deep, low-nutrient sands, often those subject to periodic inundation or where water tables are relatively high. It occurs in dry sclerophyll woodland with dry heath understorey. It also occurs as an emergent in dry or wet heathland. Often where this species occurs, it is a community dominant. Not recorded onsite by GHD (2012) nor General Flora and Fauna (2014). Preferred habitats not present on subject site.	N	N
Rutidosus heterogama	-	V	V	-	Grows in heath on sandy soils, and has been recorded along disturbed roadsides. Hunter population centered on Cessnock-Kurry Kurri area. Not recorded onsite by GHD (2012) nor General Flora and Fauna (2014). Preferred habitats not present on	N	N

					subject site. Author is not aware of any known populations of the species in the Maitland/Metford locality.		
Syzygium paniculatum	Magenta Lilly Pilly	E	V	1;1	On the central coast Magenta Lilly Pilly occurs on gravels, sands, silts and clays in riverside gallery rainforests and remnant littoral rainforest communities. A commonly planted species. Not recorded onsite by GHD (2012) nor General Flora and Fauna (2014). Preferred habitats not present on subject site.	N	N
Grevillea parviflora subsp parviflora	Small flower Grevillea	V	V	2108; 44	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. Soil landscapes include Lucas Heights or Berkshire Park. 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 occupied include *Corymbia maculata - Angophora costata* open forest in the Dooralong area, in Sydney Sandstone Ridgetop Woodland at Wedderburn and in Cooks River / Castlereagh Ironbark Forest at Kemps Creek. Not recorded onsite by GHD (2012) nor General Flora and Fauna (2014) nor by **pitt&sherry** as part of the July 2017 biobank assessment.	Y	N

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