

APPENDIX 4

BIODIVERSITY CREDIT REPORTS



BAM Vegetation Zones Report

Proposal Details

Assessment Id	Assessment name	BAM data last updated *
00009322/BAAS17045/19/00009323	Notional Greenwich	04/01/2019
Assessor Name	Report Created	BAM Data version *
Elizabeth Ashby	16/01/2019	6
Assessor Number	* Disclaimer: BAM data last updated may indicate either complete or partial update of the BAM calculator database. BAM calculator database may not be completely aligned with Bionet.	
BAAS17045		

Vegetation Zones

#	Name	PCT	Condition	Area	Minimum number of plots	Management zones
1	1776_VZ1_Low	1776-Smooth-barked Apple - Red Bloodwood open forest on enriched sandstone slopes around Sydney and the Central Coast	VZ1_Low	0.44	1	



BAM Vegetation Zones Report

2	684_VZ2_VL_Lands caped	684-Blackbutt - Narrow-leaved White Mahogany shrubby tall open forest of coastal ranges, northern Sydney Basin Bioregion	VZ2_VL_Landscaped	0.87	1
---	---------------------------	---	-------------------	------	---

BAM Predicted Species Report

Proposal Details

Assessment Id	Proposal Name	BAM data last updated *
00009322/BAAS17045/19/00009323	Notional Greenwich	04/01/2019
Assessor Name	Report Created	BAM Data version *
Elizabeth Ashby	16/01/2019	6
Assessor Number	* Disclaimer: BAM data last updated may indicate either complete or partial update of the BAM calculator database. BAM calculator database may not be completely aligned with Bionet.	
BAAS17045		

Threatened species reliably predicted to utilise the site. No surveys are required for these species. Ecosystem credits apply to these species.

Common Name	Scientific Name	Vegetation Types(s)
Eastern Bentwing-bat	Miniopterus schreibersii oceanensis	1776-Smooth-barked Apple - Red Bloodwood open forest on enriched sandstone slopes around Sydney and the Central Coast
		684-Blackbutt - Narrow-leaved White Mahogany shrubby tall open forest of coastal ranges, northern Sydney Basin Bioregion
Eastern Freetail-bat	Mormopterus norfolkensis	1776-Smooth-barked Apple - Red Bloodwood open forest on enriched sandstone slopes around Sydney and the Central Coast
		684-Blackbutt - Narrow-leaved White Mahogany shrubby tall open forest of coastal ranges, northern Sydney Basin Bioregion
Glossy Black-Cockatoo	Calyptorhynchus lathami	1776-Smooth-barked Apple - Red Bloodwood open forest on enriched sandstone slopes around Sydney and the Central Coast
		684-Blackbutt - Narrow-leaved White Mahogany shrubby tall open forest of coastal ranges, northern Sydney Basin Bioregion
Grey-headed Flying-fox	Pteropus poliocephalus	1776-Smooth-barked Apple - Red Bloodwood open forest on enriched sandstone slopes around Sydney and the Central Coast
		684-Blackbutt - Narrow-leaved White Mahogany shrubby tall open forest of coastal ranges, northern Sydney Basin Bioregion

BAM Predicted Species Report

Little Bentwing-bat	Minopterus australis	1776-Smooth-barked Apple - Red Bloodwood open forest on enriched sandstone slopes around Sydney and the Central Coast
		684-Blackbutt - Narrow-leaved White Mahogany shrubby tall open forest of coastal ranges, northern Sydney Basin Bioregion
Little Lorikeet	Glossopsitta pusilla	1776-Smooth-barked Apple - Red Bloodwood open forest on enriched sandstone slopes around Sydney and the Central Coast
		684-Blackbutt - Narrow-leaved White Mahogany shrubby tall open forest of coastal ranges, northern Sydney Basin Bioregion

Threatened species not within the area of these PCT's

Common Name	Scientific Name	Vegetation Types(s)
Eastern Osprey	Pandion cristatus	1776-Smooth-barked Apple - Red Bloodwood open forest on enriched sandstone slopes around Sydney and the Central Coast
Koala	Phascolarctos cinereus	1776-Smooth-barked Apple - Red Bloodwood open forest on enriched sandstone slopes around Sydney and the Central Coast
		684-Blackbutt - Narrow-leaved White Mahogany shrubby tall open forest of coastal ranges, northern Sydney Basin Bioregion
Regent Honeyeater	Anthochaera phrygia	1776-Smooth-barked Apple - Red Bloodwood open forest on enriched sandstone slopes around Sydney and the Central Coast
		684-Blackbutt - Narrow-leaved White Mahogany shrubby tall open forest of coastal ranges, northern Sydney Basin Bioregion
Scarlet Robin	Petroica boodang	1776-Smooth-barked Apple - Red Bloodwood open forest on enriched sandstone slopes around Sydney and the Central Coast
Spotted-tailed Quoll	Dasyurus maculatus	1776-Smooth-barked Apple - Red Bloodwood open forest on enriched sandstone slopes around Sydney and the Central Coast
		684-Blackbutt - Narrow-leaved White Mahogany shrubby tall open forest of coastal ranges, northern Sydney Basin Bioregion



BAM Predicted Species Report

Swift Parrot	Lathamus discolor	1776-Smooth-barked Apple - Red Bloodwood open forest on enriched sandstone slopes around Sydney and the Central Coast 684-Blackbutt - Narrow-leaved White Mahogany shrubby tall open forest of coastal ranges, northern Sydney Basin Bioregion
White-bellied Sea-Eagle	Haliaeetus leucogaster	1776-Smooth-barked Apple - Red Bloodwood open forest on enriched sandstone slopes around Sydney and the Central Coast

Proposal Details

Assessment Id 00009322/BAAS17045/19/0000932 3	Proposal Name Notional Greenwich	BAM data last updated * 04/01/2019
Assessor Name Elizabeth Ashby	Report Created 16/01/2019	BAM Data version * 6
Assessor Number BAAS17045	* Disclaimer: BAM data last updated may indicate either complete or partial update of the BAM calculator database. BAM calculator database may not be completely aligned with Bionet.	

List of Species Requiring Survey

Name	Presence	Survey Months												
<i>Myotis macropus</i> Southern Myotis	No (surveyed)	<table border="1"> <tr> <td>Jan</td><td>Feb</td><td>Mar</td><td>Apr</td><td>May</td><td>Jun</td> </tr> <tr> <td>Jul</td><td>Aug</td><td>Sep</td><td>Oct</td><td>Nov</td><td>Dec</td> </tr> </table>	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Jan	Feb	Mar	Apr	May	Jun									
Jul	Aug	Sep	Oct	Nov	Dec									
<i>Chalinolobus dwyeri</i> Large-eared Pied Bat	Yes (surveyed)	<table border="1"> <tr> <td>Jan</td><td>Feb</td><td>Mar</td><td>Apr</td><td>May</td><td>Jun</td> </tr> <tr> <td>Jul</td><td>Aug</td><td>Sep</td><td>Oct</td><td>Nov</td><td>Dec</td> </tr> </table>	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Jan	Feb	Mar	Apr	May	Jun									
Jul	Aug	Sep	Oct	Nov	Dec									

List of Species Not On Site

Name
<i>Ancistrachne maidenii</i> Ancistrachne maidenii
<i>Caladenia tessellata</i> Thick Lip Spider Orchid
<i>Callistemon linearifolius</i> Netted Bottle Brush
<i>Calyptorhynchus lathami</i> Glossy Black-Cockatoo
<i>Hibbertia puberula</i> Hibbertia puberula
<i>Darwinia peduncularis</i> Darwinia peduncularis
<i>Lathamus discolor</i> Swift Parrot
<i>Miniopterus australis</i> Little Bentwing-bat
<i>Miniopterus schreibersii oceanensis</i> Eastern Bentwing-bat
<i>Mixophyes iteratus</i> Giant Barred Frog
<i>Pandion cristatus</i> Eastern Osprey

BAM Candidate Species Report

Petaurus norfolcensis Squirrel Glider

Phascolarctos cinereus Koala

Pimelea curviflora var. curviflora Pimelea curviflora var. curviflora

Pteropus poliocephalus Grey-headed Flying-fox

Anthochaera phrygia Regent Honeyeater

Hibbertia spanantha Julian's Hibbertia

Haliaeetus leucogaster White-bellied Sea-Eagle

Cryptostylis hunteriana Leafless Tongue Orchid

Litoria aurea Green and Golden Bell Frog

Litoria brevipalmata Green-thighed Frog

Melaleuca groveana Grove's Paperbark

Tetratheca glandulosa Tetratheca glandulosa



BAM Biodiversity Credit Report (Like for like)

Proposal Details

Assessment Id	Proposal Name	BAM data last updated *
00009322/BAAS17045/19/00009323	Notional Greenwich	04/01/2019
Assessor Name	Assessor Number	BAM Data version *
Elizabeth Ashby	BAAS17045	6
Proponent Names	Report Created	* Disclaimer: BAM data last updated may indicate either complete or partial update of the BAM calculator database. BAM calculator database may not be completely aligned with Bionet.
	16/01/2019	

Candidate Serious and Irreversible Impacts

Nil

Nil

Additional Information for Approval

PCTs With Customized Benchmarks

No Changes

Predicted Threatened Species Not On Site



BAM Biodiversity Credit Report (Like for like)

Name
Dasyurus maculatus / Spotted-tailed Quoll
Lathamus discolor / Swift Parrot
Pandion cristatus / Eastern Osprey
Phascolarctos cinereus / Koala
Anthochaera phrygia / Regent Honeyeater
Petroica boodang / Scarlet Robin
Haliaeetus leucogaster / White-bellied Sea-Eagle

Ecosystem Credit Summary

PCT	TEC	Area	Credits
1776-Smooth-barked Apple - Red Bloodwood open forest on enriched sandstone slopes around Sydney and the Central Coast	Not a TEC	0.4	7.00
684-Blackbutt - Narrow-leaved White Mahogany shrubby tall open forest of coastal ranges, northern Sydney Basin Bioregion	Not a TEC	0.9	0.00

Credit classes for	Like-for-like options			
684	Any PCT in the below Class	And in any of below trading groups	Containing HBT	In the below IBRA subregions



BAM Biodiversity Credit Report (Like for like)

	North Coast Wet Sclerophyll Forests (including PCT's 487, 613, 661, 684, 686, 692, 693, 694, 695, 699, 747, 748, 752, 812, 1073, 1208, 1217, 1222, 1237, 1244, 1245, 1257, 1259, 1260, 1261, 1265, 1266, 1282, 1284, 1285, 1504, 1561, 1562, 1563, 1566, 1567, 1568, 1569, 1572, 1573, 1575, 1579, 1841, 1843, 1915)	North Coast Wet Sclerophyll Forests - < 50% cleared group (including Tier 7 or higher).	Yes	Pittwater,Cumberland, Sydney Cataract, Wyong and Yengo. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
Credit classes for 1776	Like-for-like options			
	Any PCT in the below Class	And in any of below trading groups	Containing HBT	In the below IBRA subregions
	Sydney Coastal Dry Sclerophyll Forests (including PCT's 1138, 1253, 1625, 1636, 1638, 1776, 1778, 1782, 1786)	Sydney Coastal Dry Sclerophyll Forests - ≥ 50% - < 70% cleared group (including Tier 6 or higher).	Yes	Pittwater,Cumberland, Sydney Cataract, Wyong and Yengo. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.



BAM Biodiversity Credit Report (Like for like)

Species Credit Summary

Species	Area	Credits
Chalinolobus dwyeri / Large-eared Pied Bat	0.4	11.00

Chalinolobus dwyeri / Large-eared Pied Bat	1776_VZ1_Low	Like-for-like options	
		Only the below Spp	In the below IBRA subregions
		Chalinolobus dwyeri /Large-eared Pied Bat	Any in NSW



BAM Credit Summary Report

Proposal Details

Assessment Id	Proposal Name	BAM data last updated *
00009322/BAAS17045/19/00009323	Notional Greenwich	04/01/2019
Assessor Name	Report Created	BAM Data version *
Elizabeth Ashby	16/01/2019	6
Assessor Number	* Disclaimer: BAM data last updated may indicate either complete or partial update of the BAM calculator database. BAM calculator database may not be completely aligned with Bionet.	
BAAS17045		

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

Zone	Vegetation zone name	Vegetation integrity loss / gain	Area (ha)	Constant	Species sensitivity to gain class (for BRW)	Biodiversity risk weighting	Candidate SAI	Ecosystem credits
Blackbutt - Narrow-leaved White Mahogany shrubby tall open forest of coastal ranges, northern Sydney Basin Bioregion								
2	684_VZ2_VL_Land scaped	14.1	0.9	0.25	High Sensitivity to Potential Gain	1.50		0
							Subtotal	0



BAM Credit Summary Report

Smooth-barked Apple - Red Bloodwood open forest on enriched sandstone slopes around Sydney and the Central Coast							
1	1776_VZ1_Low	34.7	0.4	0.25	High Sensitivity to Potential Gain	1.75	7
						Subtotal	7
						Total	7

Species credits for threatened species

Vegetation zone name	Habitat condition (HC)	Area (ha) / individual (HL)	Constant	Biodiversity risk weighting	Candidate SAll	Species credits	
<i>Chalinolobus dwyeri</i> / Large-eared Pied Bat (Fauna)							
1776_VZ1_Low	34.7	0.44	0.25	3	True	11	
						Subtotal	11



Biodiversity payment summary report

Assessment Id	Payment data version	Revision number	Report created
00009322/BAAS17045/19/000093 23	41	2	16/01/2019

PCT list

Include	PCT common name	Credits
Yes	1776 - Smooth-barked Apple - Red Bloodwood open forest on enriched sandstone slopes around Sydney and the Central Coast	7
Yes	684 - Blackbutt - Narrow-leaved White Mahogany shrubby tall open forest of coastal ranges, northern Sydney Basin Bioregion	0

Species list

Include	Species	Credits
Yes	<i>Chalinolobus dwyeri</i> (Large-eared Pied Bat)	11

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

IBRA sub region	PCT common name	Baseline price	Dynamic coefficient	Market coefficient	Risk premium	Administrative cost	Methodology adjustment factor	Price per credit	No. of ecosystem credits	Final credits price
Pittwater	1776 - Smooth-barked Apple - Red Bloodwood open forest on enriched sandstone slopes around Sydney and the Central Coast Warning: This PCT has NO trades recorded	\$2,602.71			33.10%	\$20.00	1.0000	\$3,484.21	7	\$24,389.45



Biodiversity payment summary report

Pittwater	684 - Blackbutt - Narrow-leaved White Mahogany shrubby tall open forest of coastal ranges, northern Sydney Basin Bioregion Warning: This PCT has NO trades recorded in Pittwater	\$2,602.71		33.10%	\$20.00	1.0000	\$3,484.21	0	\$0.00
Subtotal (excl. GST)									\$24,389.45
GST									\$2,438.94
Total ecosystem credits (incl. GST)									\$26,828.40

Species credits for threatened species

Species profile ID	Species	Threat status	Price per credit	Risk premium	Administrative cost	No. of species credits	Final credits price
10157	Chalinolobus dwyeri (Large-eared Pied Bat)	Vulnerable	\$816.33	24.8700%	\$20.00	11	\$11,432.86
Subtotal (excl. GST)							\$11,432.86
GST							\$1,143.29
Total species credits (incl. GST)							\$12,576.15



Biodiversity payment summary report

Grand total	\$39,404.55
-------------	--------------------



BAM Biodiversity Credit Report (Variations)

Proposal Details

Assessment Id	Proposal Name	BAM data last updated *
00009322/BAAS17045/19/00009323	Notional Greenwich	04/01/2019
Assessor Name	Assessor Number	BAM Data version *
Elizabeth Ashby	BAAS17045	6
Proponent Name(s)	Report Created	
	16/01/2019	

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

Candidate Serious and Irreversible Impacts

Nil

Nil

Additional Information for Approval

PCTs With Customized Benchmarks

No Changes

Predicted Threatened Species Not On Site



BAM Biodiversity Credit Report (Variations)

Name
Dasyurus maculatus / Spotted-tailed Quoll
Lathamus discolor / Swift Parrot
Pandion cristatus / Eastern Osprey
Phascolarctos cinereus / Koala
Anthochaera phrygia / Regent Honeyeater
Petroica boodang / Scarlet Robin
Haliaeetus leucogaster / White-bellied Sea-Eagle

Ecosystem Credit Summary

PCT	TEC	Area	Credits
684-Blackbutt - Narrow-leaved White Mahogany shrubby tall open forest of coastal ranges, northern Sydney Basin Bioregion	Not a TEC	0.9	0.00
1776-Smooth-barked Apple - Red Bloodwood open forest on enriched sandstone slopes around Sydney and the Central Coast	Not a TEC	0.4	7.00

Credit classes for 684	Like-for-like options			
	Any PCT in the below Class	And in any of below trading groups	Containing HBT	In the below IBRA subregions

BAM Biodiversity Credit Report (Variations)

	North Coast Wet Sclerophyll Forests (including PCT's 487, 613, 661, 684, 686, 692, 693, 694, 695, 699, 747, 748, 752, 812, 1073, 1208, 1217, 1222, 1237, 1244, 1245, 1257, 1259, 1260, 1261, 1265, 1266, 1282, 1284, 1285, 1504, 1561, 1562, 1563, 1566, 1567, 1568, 1569, 1572, 1573, 1575, 1579, 1841, 1843, 1915)	North Coast Wet Sclerophyll Forests - < 50% cleared group (including Tier 7 or higher).	Yes	Pittwater, Cumberland, Sydney Cataract, Wyong and Yengo. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
	Variation options			
	Any PCT in the below Formation	And in any of below trading groups	Containing HBT	In the below IBRA regions/subregions
	Wet Sclerophyll Forests (Shrubby sub-formation)	Tier 7 or higher	Yes (including artificial)	IBRA Region: Sydney Basin, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
Credit classes for 1776	Like-for-like options			
	Any PCT in the below Class	And in any of below trading groups	Containing HBT	In the below IBRA subregions



BAM Biodiversity Credit Report (Variations)

Sydney Coastal Dry Sclerophyll Forests (including PCT's 1138, 1253, 1625, 1636, 1638, 1776, 1778, 1782, 1786)	Sydney Coastal Dry Sclerophyll Forests - $\geq 50\%$ - $< 70\%$ cleared group (including Tier 6 or higher).	Yes	Pittwater, Cumberland, Sydney Cataract, Wyong and Yengo. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
Variation options			
Any PCT in the below Formation	And in any of below trading groups	Containing HBT	In the below IBRA regions/subregions
Dry Sclerophyll Forests (Shrubby sub-formation)	Tier 6 or higher	Yes (including artificial)	IBRA Region: Sydney Basin, or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

Species Credit Summary

Species	Area	Credits
Chalinolobus dwyeri / Large-eared Pied Bat	0.4	11.00

Chalinolobus dwyeri / Large-eared Pied Bat	1776_VZ1_Low	Like-for-like options	
		Only the below Spp	In the below IBRA subregions
		Chalinolobus dwyeri /Large-eared Pied Bat	Any in NSW
		Variation options	



BAM Biodiversity Credit Report (Variations)

		Any Spp in the below Kingdom	Any species with same or higher category of listing under Part 4 of teh BC Act showb below	In the below IBRA subregions
		Fauna	Vulnerable	Pittwater,Cumberland, Sydney Cataract, Wyong and Yengo. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.