



W.A. LIMESTONE

EPBC 2010/5649: MILLAR ROAD CLEARING VEGETATION TO ALLOW QUARRYING

ANNUAL COMPLIANCE REPORT 2019

WA LIMESTONE
Lot 2170, Millar Road
Baldivis

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INTRODUCTION

The project site is a limestone and sand quarry that has been operating since 1983. At present mining occurs ahead of land filling by the City of Rockingham, who is the registered proprietor of Location 2170 Millar Road, Baldivis, Western Australia. WA Limestone currently has a twenty five year agreement (expiry 2029) with the City of Rockingham for the extraction of material from the site.

In September 2010 PMR Quarries Pty Ltd, trading as WA Limestone, lodged a referral to the Department of the Environment and Energy (DoEE) for the clearing of 22 hectares of native vegetation, to allow for sand and limestone quarrying at 2170 Millar Road, Baldivis. The quarry has operated continuously for 36 years and the purpose of the referral was to enable the continuation of activities, to extract the remaining sand and limestone resource from the site.

The referral was assessed as a controlled action in accordance with Part 9 of the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) and was granted conditional approval dated 2 May 2013, by the then Department of Sustainability, Environment, Water, Population and Communities.

This approval is subject to conditions specified by the DoEE, as outlined in the approval document EPBC 2010/5649.

As a requirement under these conditions the Tamworth Hill Swamp Reserve Revegetation Plan (THSRRP) has been prepared, approved by DoEE, and is being managed and implemented by the City of Rockingham. While EPBC 2010/5649 was issued to WA Limestone as the organisation that undertook the clearing on Location 2170 Millar Road, the City of Rockingham is the landowner and ultimately the beneficiary of this clearing. The Tamworth Hill Swamp Reserve Revegetation Project is therefore managed by the City, with no involvement from WA Limestone.

The City's annual report on the implementation of the THSRRP, '*Tamworth Hill Swamp Revegetation Report 2018/2019*', is attached as Appendix 1. This report indicates that the results of a revegetation assessment undertaken by the City in spring 2018 shows variations in plant survival rates across the designated revegetation areas at the Reserve. WA Limestone has advised the City of Rockingham following the release of this information that the THSRRP should be revised accordingly.

This compliance report is based on the 2018/2019 annual reporting period for EPBC 2010/5649, and has been prepared to meet the reporting requirements of Condition 8 of EPBC 2010/5649.

Table 1: Compliance Audit of EPBC Approval 2010/5649 Conditions - 2018/2019

Condition No.	Condition	Status	Evidence
1	The person taking the action must ensure that the vegetation clearing does not exceed 22 hectares and is contained within the area specified in the map at Figure 1 of Appendix A: project area.	N/A	There was no clearing of vegetation during the reporting period.
2	<p>To mitigate potential impacts to Black Cockatoos, within six (6) months of the commencement of construction, the person taking the action must prepare and submit a Tamworth Hill Swamp Reserve Revegetation Plan (THSRRP) for the Minister's approval, that identifies the measures to minimise the impacts of the action on Black Cockatoos. The THSRRP must detail the following:</p> <ol style="list-style-type: none"> i. measures to establish the equivalent of at least 12 ha of habitat known to be primary feeding plants for Black Cockatoos within the Tamworth Hill Swamp Reserve (THSR), through landscape planting; ii. the revegetation methods to be undertaken within revegetation zones defined in Appendix A Figure 2; iii. measures to ensure that seedlings being planted are free of Dieback, (<i>phytophthora cinnamomi</i>); iv. timeframes and survival targets proposed for plantings; v. feral animal and weed controls measures to be implemented; vi. fencing to be undertaken; vii. contingency measures if targets are not met; viii. the monitoring and survey measures to be utilised, including timing schedules and reporting requirements; ix. roles and responsibilities of contractors, staff and the person taking the action, x. prior to, during and following any rehabilitation and revegetation works undertaken within the THSR area, and; xi. how the WA DEC, CoR, or other conservation organisation(s), have been consulted in the preparation of the THSRRP. <p>If the Minister approves the THSRRP then the THSRRP must be implemented.</p>	<p>The THSRRP has been approved and is being managed and implemented by City of Rockingham (CoR).</p> <p>The CoR's '<i>Tamworth Hill Swamp Revegetation Report 2018/2019</i>' indicates that there are variations in plant survival rates across the designated revegetation areas at the Tamworth Hill Swamp Reserve.</p> <p>WA Limestone has advised the City of Rockingham that the THSRRP should be revised.</p>	<ul style="list-style-type: none"> • The Tamworth Hill Swamp Reserve Revegetation Plan (THSRRP) was submitted by the City of Rockingham for the Minister's approval. The plan identified measures to minimise impacts on Black Cockatoos and fulfilled the points outlined in condition 2. As the landowner of Lot 2170 Millar Road, the CoR, is committed to rehabilitating and protecting the THSRR, and undertaking the requirements of Condition 2. • The THSRRP was reviewed by officers of the Approvals Monitoring Section from the Dept of the Environment with approval granted 26 November 2013. • The THSRRP is available on WA Limestone's public website: http://www.walimestone.com/about-wa-limestone/environment/ • The CoR's '<i>Tamworth Hill Swamp Revegetation Report 2018/2019</i>' is attached as Appendix 1.

Condition No.	Condition	Status	Evidence
3	Prior to commencement of construction the person taking the action must provide the department with written agreement from the CoR that the Tamworth Hill Swamp Reserve (THSR) revegetation areas are shown at Appendix A Figure 2 will be retained in perpetuity under its existing conservation reserve status.	Condition closed	CoR letter sent to the department 7 May 2013.
4	To offset the loss of 22ha of Black Cockatoo foraging habitat and the loss of 93 potential breeding trees, the person taking the action must within 12 months of the commencement of construction, provide funding of \$65,000 to WA DEC for the acquisition, and to assist in the ongoing maintenance of, a 65ha area of freehold land in the Gingin area (offset area). The land being ceded to WA DEC, under irrevocable long term protection must contain Banksia woodland that is in equivalent or better condition than the Banksia woodland that is in 'average' condition within the project area. Within 4 weeks of the funding being provided to WA DEC, the person taking the action must provide written evidence to the department of the payment.	Condition closed	The funding of \$65,000 for the acquisition and maintenance of an offset area was paid 2014.
5	Within 12 months of the commencement of construction, the person taking the action must provide to the department a description and map clearly defining the location and boundaries of the offset area, as specified in Condition 4, which must be accompanied with the offset attributes.	Condition closed - Construction commenced more than 12 months ago	A payment of \$65,000 funding was paid to the Department of Environment and Conservation to contribute to an accumulation of offset funds towards the protection of land in Gingin. Contact the Land Tenure Project Officer, Alex Errington at DoPaW for further details.
6	To mitigate potential impacts to Black Cockatoo habitat adjacent to the Project Area, the person taking the action must ensure that the following measures is carried out to limit the occurrence of Dieback (<i>Phytophthora cinnamomi</i>) on site. i. All vehicles being used during construction of the quarry that have come from a Dieback affected area must be washed down prior to entering the project area in accordance with WA DEC management of Dieback in extractive industries guidelines.	Condition closed – Construction of the quarry complete	<ul style="list-style-type: none"> Vehicles used during construction of the quarry are unlikely to enter into a dieback affected area, as WA Limestone operates on low risk sites and have no affected sites that are dieback affected. If dieback was found to occur, measures would be used in accordance with WA DWER Management of Dieback in extractive industries guidelines.
7	Within 30 days after the commencement of construction, the person taking the action must advise the department in writing of the actual date of commencement.	Condition closed	Letter sent to the department 20 November 2013.

Condition No.	Condition	Status	Evidence
8	<p>Within three months of every 12 month anniversary of the commencement of construction, the person taking the action must publish a report on their website addressing compliance with each of the conditions of this approval, including implementation of any management plans as specified in the conditions. The reports must remain on the website for at least five (5) years. Documentary evidence providing proof of the date of publication and non-compliance with any of the conditions of this approval must be provided to the department at the same time as the compliance report is published.</p>	<p>Compliant - completed for the 2018/2019 reporting period.</p>	<ul style="list-style-type: none"> This document is a report addressing compliance with the conditions of EPBC Approval 2010/5649 and is available WA Limestone's website from June 2018. http://www.walimestone.com/about-wa-limestone/environment/ The Tamworth Hill Swamp Reserve Revegetation Plan (THSRRP) required by the conditions of EPBC Approval 2010/5649 and is available of the website. http://www.walimestone.com/about-wa-limestone/environment/ <p>A report against the implementation of the THSRRP is included below as Appendix 1.</p>
9	<p>If the person taking the action wishes to carry out any activity otherwise than in accordance with the Tamworth Hill Swamp Reserve Revegetation Plan (THSRRP) as specified in the conditions, the person taking the action must submit to the department for the Minister's written approval a revised version of that THSRRP. The varied activity shall not commence until the Minister has approved the varied THSRRP in writing. The Minister will not approve a varied THSRRP unless the revised THSRRP would result in an equivalent or improved environmental outcome over time. If the Minister approves the revised THSRRP that THSRRP must be implemented in place of the THSRRP originally approved.</p>	<p>WA Limestone has advised the City of Rockingham that the THSRRP should be revised.</p>	<p>N/A</p>
10	<p>If the Minister believes that it is necessary or convenient for the better protection of Listed Threatened Species and Communities to do so, the Minister may request that the person taking the action make specified revisions to the Tamworth Hill Swamp Reserve Revegetation Plan (THSRRP) specified in the conditions and submit the revised THSRRP for the Ministers written approval. The person taking the action must comply with any such request. The revised approved THSRRP must be implemented. Unless the Minister has approved the revised THSRRP then the person taking the action must continue to implement the THSRRP originally approved, as specified in the conditions.</p>	<p>Not applicable during the reporting period.</p>	<p>N/A</p>

Condition No.	Condition	Status	Evidence
11	If, at any time after five years from the date of this approval, the person taking the action has not substantially commenced the action, then the person taking the action must not substantially commence the action without the written agreement of the Minister.	Condition closed	Department notified that action had commenced on 20 November 2013.
12	Unless otherwise agreed to in writing by the Minister, the person taking the action must publish the Tamworth Hill Swamp Reserve Revegetation Plan (THSRRP) referred to in these conditions of approval on their website. The THSRRP must be published on the website within 1 month of being approved.	Condition closed	THSRRP available on WA Limestone's website: http://www.walimestone.com/about-wa-limestone/environment/

Appendix 1.

Tamworth Hill Swamp Revegetation Report 2018/2019 (City of Rockingham)

Tamworth Hill Swamp Revegetation Project Report 2018/2019

1. Introduction

This revegetation project was undertaken to meet the approval requirements for the WA Limestone EPBC Approval for sand and limestone extraction near Millar Road in Baldvis. Revegetation strategies were adopted from the Tamworth Hill Swamp Reserve Revegetation Plan (THSRRP) Coterra Environment (2013) where appropriate.

2. Environmental Approval Conditions

The Following requirements were specified within the environmental offset conditions:

- 12 ha of habitat known to be primary feeding plants for Black Cockatoos through landscape planting. Primary feeding plants were identified as “Any Banksia sp. and any plants identified in a search of the WA DEC’s Plants for Carnaby’s Search Tool (at <http://www.dec.wa.gov.au/content/view/5983/1556>), or other plants approved in writing by the Australian Government Department administering the *Environment Protection and Biodiversity Conservation Act 1999*”.
- Measures to ensure that seedlings planted are free of dieback *Phytophthora cinnamomi*;
- Ensure specified timeframes and targets are met; and
- Monitoring is undertaken;

3. Revegetation Strategy

The focus of the revegetation strategy is to protect and enhance areas of existing native vegetation and to rehabilitate 12 ha of degraded areas around Tamworth Hill Swamp.



3.1 Revegetation Zones

Revegetation works have been carried out at the reserve since 2015 in quantities shown below in Table 2. Revegetation areas have been maintained through regular weed control and greenstock maintenance (removal of tree guards from plants that have outgrown them). An assessment of revegetation success was carried out by consultants (Emerge Associates) in 2018 to inform further requirements for additional planting. There was no planting in 2018 in anticipation of receiving survey results.

Figure 1 below illustrates areas of revegetation works. Species used in revegetation are plants known to be primary feeding plants for Black Cockatoos or recommended in the THSRRP and are listed in Table 2.

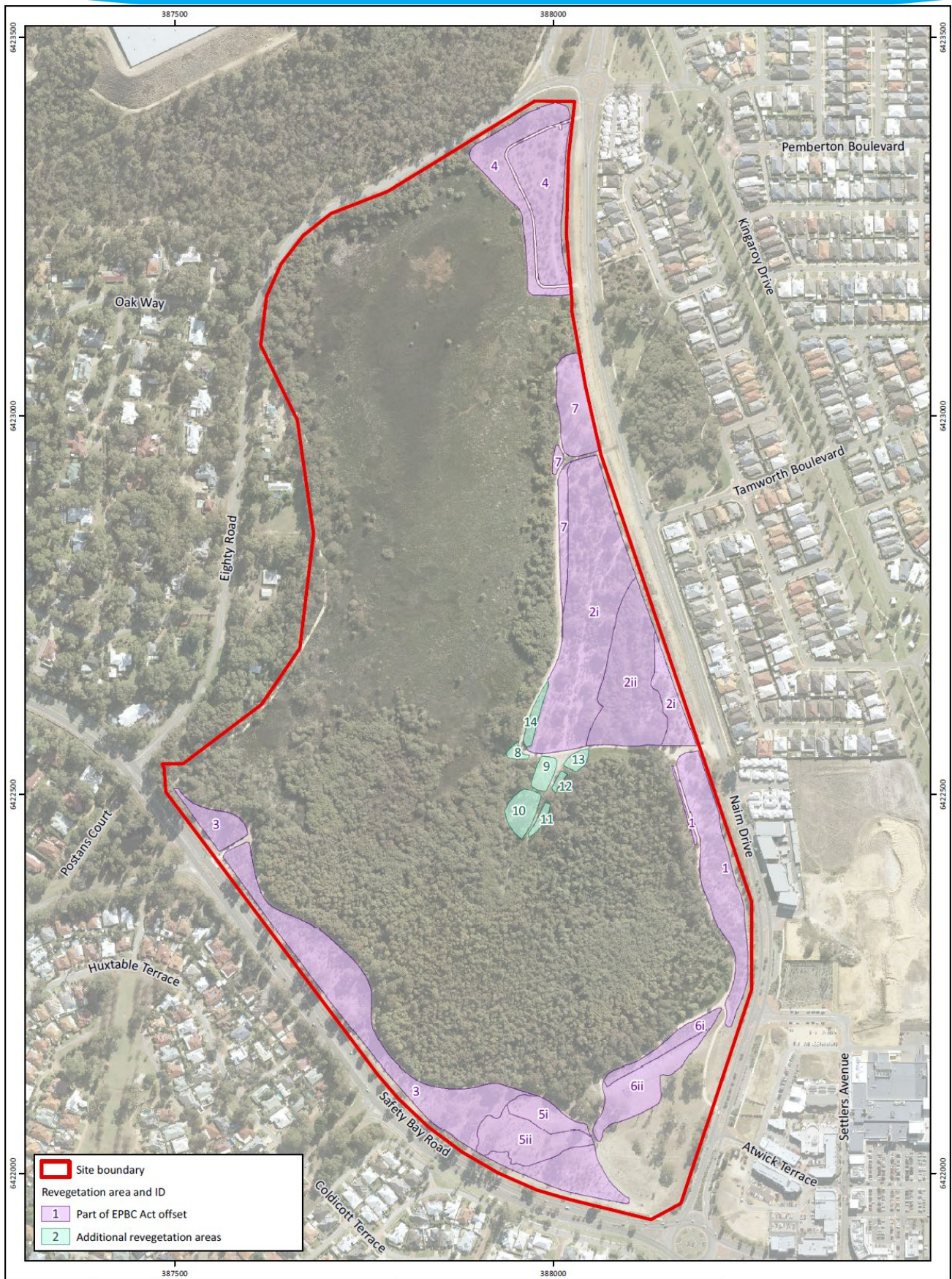


Figure 1: Revegetation Areas

Project: Environmental Assessment Report
 Tamworth Hill Swamp Reserve
Client: City of Rockingham

Plan Number:
 EP18-105(02)-F13a
Drawn: RAO
Date: 10/01/2019
Checked: TAA
Approved: TAA
Date: 10/01/2019



0 50 100 150
 Metres
Scale: 1:6,500@A4
 GDA 1994 MGA Zone 50



While Emerge Associates makes every attempt to ensure the accuracy and completeness of data, Emerge accepts no responsibility for externally sourced data used



3.2 Weed control

Regular weed control throughout the offset revegetation areas as well as the greater site is undertaken year round. A range of priority weed species are targeted with manual, mechanical and chemical control methods as required. Hand weeding of exotic plants growing within tree guards is carried out to avoid competition with the tubestock seedlings. Further herbicide treatments are applied across the revegetation areas to control weeds and reduce quantity of weed seed within the soil seedbank.

3.3 Feral animal control

The City of Rockingham's feral animal control program continued this financial year with a round in spring 2018 and another in autumn 2019. The program is focused on the integrated control of feral rabbits, cats and foxes, in accordance with control measures recommended for use in urban environments by the Department of Agriculture and Food and the Department of Parks and Wildlife. The program is coordinated by the City of Rockingham and is undertaken by a licenced feral animal control contractor.

3.4 Access

Access paths throughout the reserve have been upgraded with crushed limestone. This will assist to rationalise pedestrian access and prevent trampling of vegetation. Limestone also aids in reducing the spread of dieback *Phytophthora cinnamomi*.

Fences with pedestrian gates are maintained to rationalise access and recreation within the reserve. Clear pathways are designated to assist in avoiding trampling of vegetation. The perimeter fences also assist in preventing unauthorised vehicle access.

4. Monitoring

4.1 Revegetation condition

City of Rockingham commissioned environmental consultants to undertake an environmental assessment in spring 2018, including a detailed assessment of the environmental offset revegetation areas as defined in the Revegetation Plan (2013). Data from their assessment can be seen below in Table 1 and Figure 2. Contributing factors that may have led to differences in success rates include seasonal variations in weather, local soil conditions within different parts of the reserve, genetic variance (vigour) in plants.

Revegetation area ID	Area (ha)	Plant type/s	Vegetation Structure
RA1	1.14	Mature shrubs, juvenile trees and semi-mature trees	Low forest/open woodland/open shrubland
RA2i	3.00	Mature shrubs and semi-mature trees	Woodland over shrubland/open shrubland
RA2ii	0.38	Mature herbs, shrubs and trees	Closed forest
RA3	3.79	Mature shrubs, juvenile trees and semi-mature trees	Woodland over shrubland/open shrubland
RA4	1.74	Mature shrubs and juvenile trees	Open woodland over shrubland/open shrubland
RA5i	0.29	None - bare	N/A



RA5ii	0.62	Juvenile (tubestock) with tree guards	Too immature to classify
RA6i	0.25	Mature shrubs and juvenile (tubestock) with tree guards	Shrubland
RA6ii	0.61	Juvenile (tubestock) with tree guards	Too immature to classify
RA7	0.77	Juvenile (tubestock) with tree guards	Too immature to classify

Table 1: Vegetation data within revegetation areas

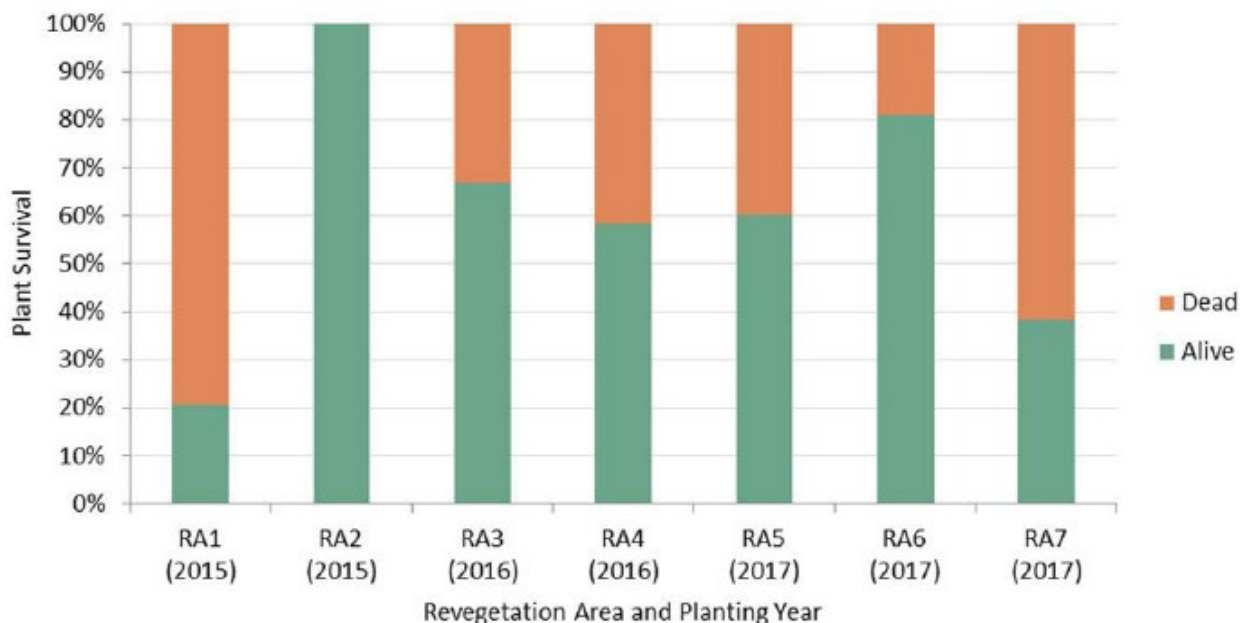


Figure 2: Proportion of plant survival for each revegetation area

4.2 Photo monitoring points

Photo points were set up to monitor revegetation success using a permanent marker such as a stake or star-picket at the point from where the photo was taken. Photos were taken prior to the commencement of any rehabilitation works and then annually at the site to document revegetation progress and evaluate success. Locations of photo monitoring points installed at Tamworth Hill Swamp are shown in Figure 3 and Figure 4 below.

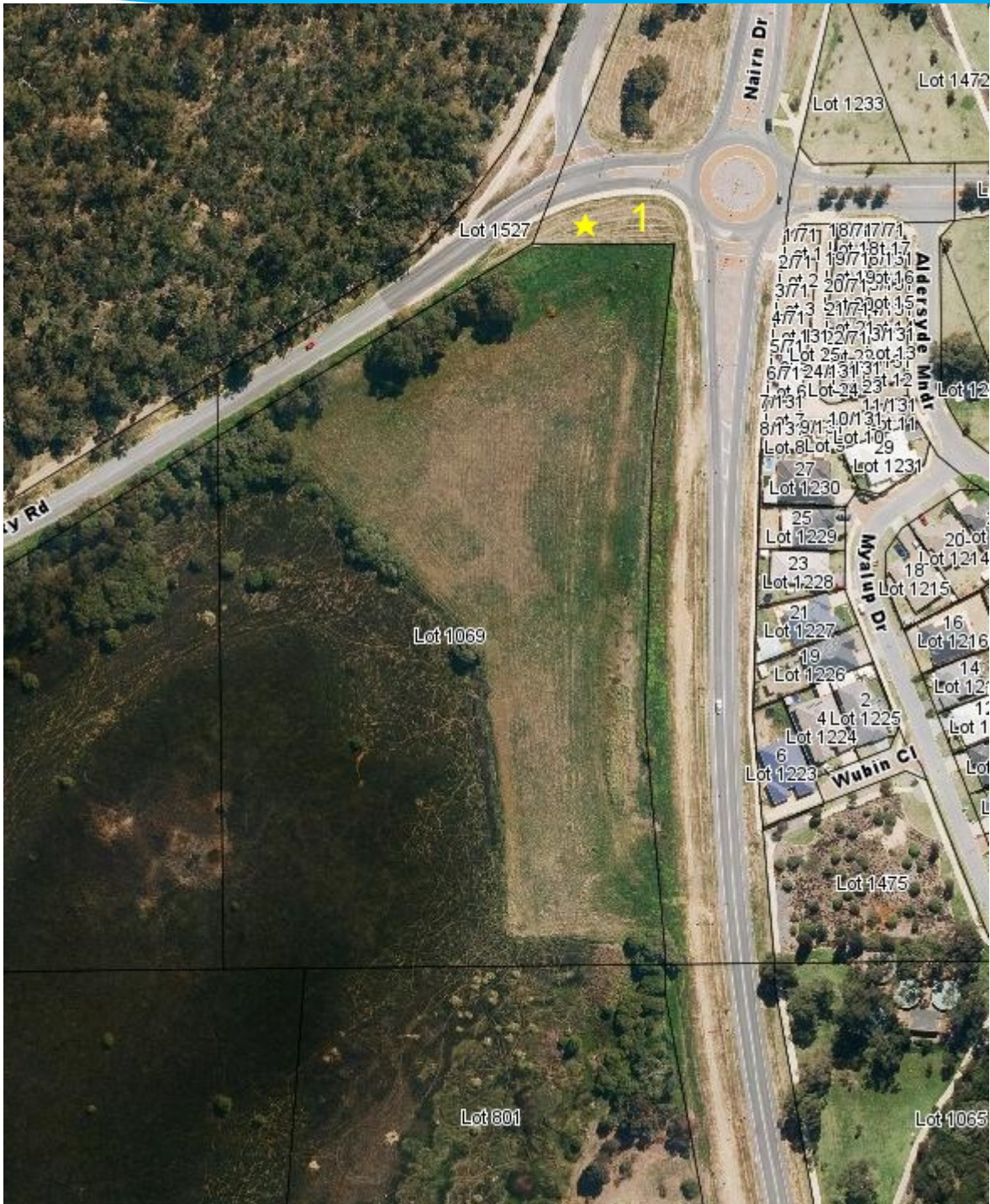


Figure 3: Location photo monitoring point 1

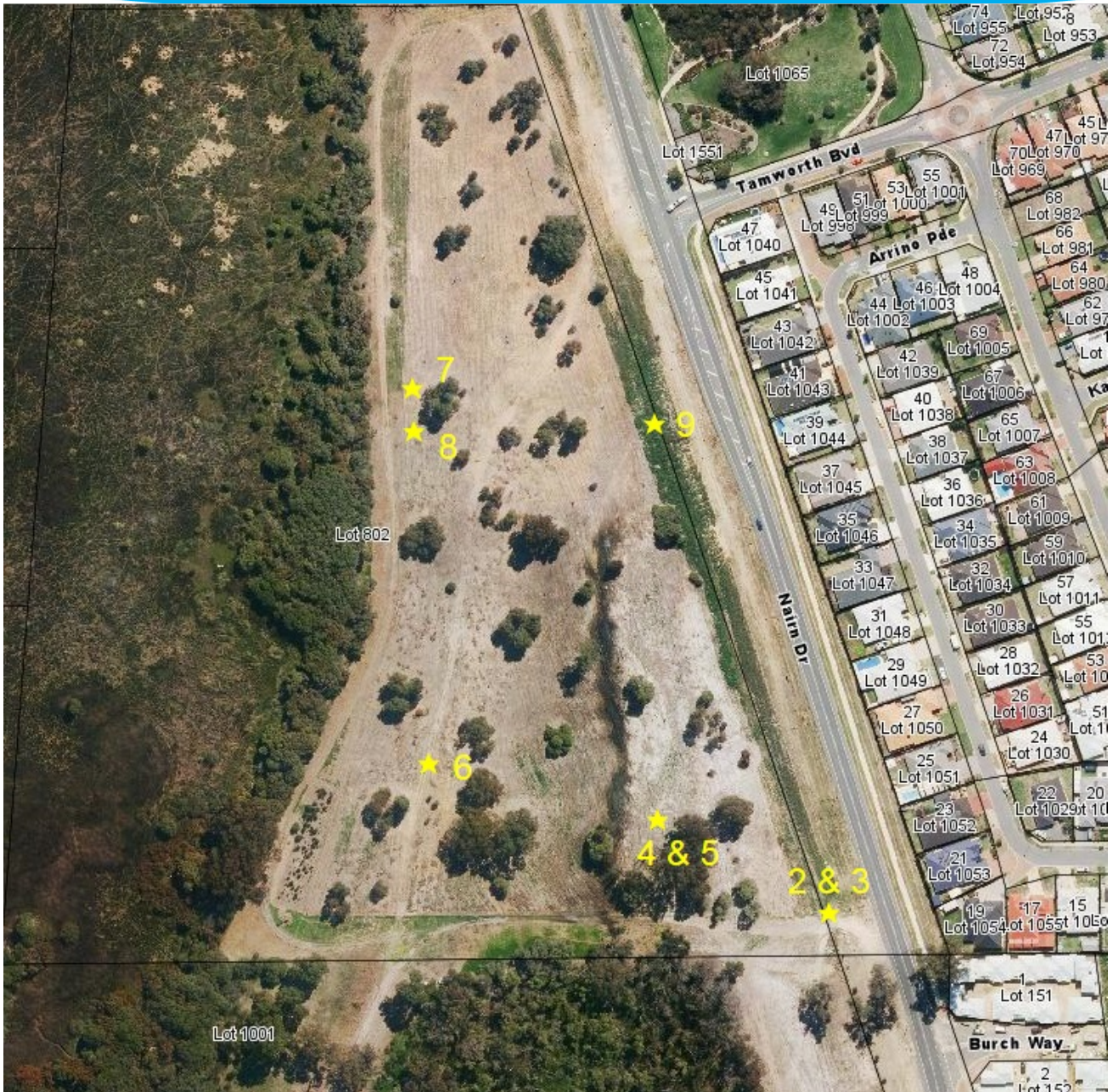


Figure 4: Location of photo monitoring points 2 - 9

Table 1: Annual photo monitoring points Tamworth Hill Swamp Revegetation

Photo Point No	Planting Zone (from THSR P)	Easting (GDA 94)	Northing (GDA 94)	Photo Autumn 2017	Photo Autumn 2018	Photo Summer 2019
1	5	387981	6423422			
2	2	388195	6422565			






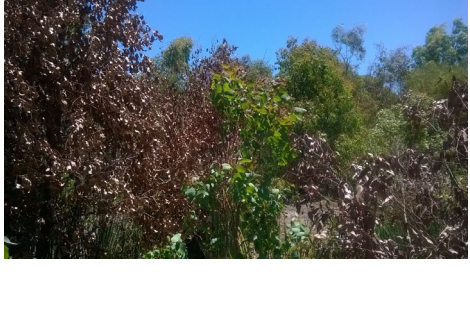
Photo Point No	Planting Zone (from THSR P)	Easting (GDA 94)	Northing (GDA 94)	Photo Autumn 2017	Photo Autumn 2018	Photo Summer 2019
3	2	388195	6422565			
4	2	388122	6422605			


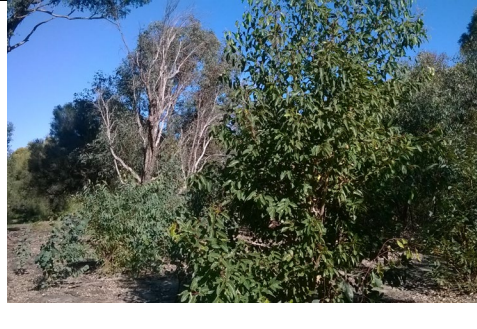







Photo Point No	Planting Zone (from THSR P)	Easting (GDA 94)	Northing (GDA 94)	Photo Autumn 2017	Photo Autumn 2018	Photo Summer 2019
5	2	388125	6422605			
6	2	388025	6422629			
7	2	388016	6422793			







Photo Point No	Planting Zone (from THSR P)	Easting (GDA 94)	Northing (GDA 94)	Photo Autumn 2017	Photo Autumn 2018	Photo Summer 2019
8	2	388019	6422769			
9	2	388120	6422774			

Table 2: Revegetation Species List Tamworth Hill Swamp

Species Name	Identified as Foraging species for Black Cockatoo*	Identified in the Tamworth Hill Swamp Reserve Revegetation Plan (Coterra Environment 2013)	RA1 (2015)	RA2(i&ii) (2015)	RA3 (2016)	RA4 (2016)	RA5 & RA6 (2017)	RA7 (2017)	Total Number Planted
			Number tube stock	Number tube stock	Number tube stock	Number tube stock	Number tube stock	Number tube stock	
<i>Acacia huegellii</i>	-	-	360						360
<i>Acacia pulchella</i>	-	X	504		1200	320			2024
<i>Acacia saligna</i>	X	X	504	894	520	400	400	200	2918
<i>Acacia sessilis</i>		-	252						252
<i>Allocasuarina fraseriana</i>	X	-	252		560	240	400		1452
<i>Allocasuarina humilis</i>	X	-	189		560	240	400		1389
<i>Banksia attenuata</i>	X	-	320	400	1000	160	400	280	2560
<i>Banksia grandis</i>	X	-	320	400	1520	160	400	240	3040
<i>Banksia ilicifolia</i>	X	-	480		1000	160	400		2040
<i>Banksia littoralis</i>	X	-			1200	160	400	160	1360
<i>Banksia menziesii</i>	X	-	320	400	1000	160	400	120	2400

<i>Banksia sessilis</i>	X	-	480	400	1040	160	600	400	3080
<i>Baumea articulata</i>	X	X	1216						1216
<i>Baumea juncea</i>	-	X	1114						1114
<i>Baumea preissii</i>	-	X	600						600
<i>Calothamnus quadrifidus</i>	-	-	560						560
<i>Casuarina obesa</i>	X	-	300				400		300
<i>Centella asiatica</i>	X	-	580	300					880
<i>Corymbia calophylla</i>	X	X	863	657	680	160	400	40	2800
<i>Eucalyptus gomphocephala</i>	X	X	600	520	480	160	400	40	2200
<i>Eucalyptus marginata</i>	X	-	794	592	720	160	400	40	2706
<i>Eucalyptus rudis</i>	X	X	740	500	640		400	40	2320
<i>Gahnia trifida</i>	-	X	216	560	1320	400			2496
<i>Hakea lissocarpha</i>	X	-			1000		600	240	1000
<i>Hakea prostrata</i>	X	-	960	280	1000	160	600	720	3720
<i>Hakea ruscifolia</i>	X			400	1000	160	600	440	1560
<i>Hakea trifurcata</i>	X	-	920	400	1000	160	600	440	3520
<i>Hakea varia</i>	X	-	440	520	1000	160	600	440	3160
<i>Hardenbergia comptoniana</i>	-	-	400						400
<i>Jacksonia furcellata</i>	X	-	400	400	800	160	600	480	2840
<i>Juncus subsecundus</i>	-	-	400						400
<i>Leptospermum erubescens</i>	-	Wetland area	315						315
<i>Lobelia alata</i>	-	-	440						440
<i>Melaleuca laterita</i>	-	-	630						630
<i>Melaleuca raphiophylla</i>	-	X	2312		680	240			3232
<i>Melaleuca teretifolia</i>	-	X	400	480	1000	240			2120

<i>Melaleuca trichophylla</i>	-	-	819					819
<i>Spyridium globulosum</i>		X			600	400		1000
<i>Xanthorrhoea preissii</i>	X	-			480		600	640
			20000	8103	22000	4720	10000	4960
								65703

* Identified on DPaW list of plants for Carnabys Black Cockatoo, WAM Museum Website