



**W.A. LIMESTONE**

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

**ANNUAL COMPLIANCE REPORT  
2020**

**WA LIMESTONE**  
Lot 2170, Millar Road  
Baldivis

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13 June 2019

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## Document Control

Reference	Status	Date	Prepared	Authorised
	Rev A	05/06/2014	Caroline Scally	Roger Stephens
	Rev B	08/06/2015	Caroline Scally	Roger Stephens
	Rev C	08/06/2016	Caroline Scally	Roger Stephens
	Rev D	12/06/2017	Renae Srdarev	Roger Stephens
	Rev E	1/06/2018	Peter Male	Roger Stephens
	Rev F	13/6/2019	Peter Male	Roger Stephens
	Rev G	4/06/2020	Rena Koufakis	Roger Stephens

## 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.

An agreement has been made between the City of Rockingham and WA Limestone (not yet formalised) regarding the transfer of EPBC 2010/5649 to the City of Rockingham, as WA Limestone was not involved in the clearing or rehabilitation of the Tamworth Hill Swamp.

The City's annual report on the implementation of the THSRRP, '*Tamworth Hill Swamp Revegetation Report 2019/2020*', is attached as Appendix 1. This report indicates that the results of a revegetation assessment undertaken by the City in spring 2018 showed 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.

Additional planting of 2,280 plants was conducted during 2019 and rehabilitation quadrats were surveyed by the City of Rockingham in autumn 2020 for weed coverage, native species coverage and native species stem density. The City of Rockingham is commencing infill planting of each revegetation area to achieve performance targets during 2020/2021, commencing with RA2i in June 2020 for the planting of 10,000 plants.

This compliance report is based on the 2019/2020 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 - 2019/2020**

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"> <li>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;</li> <li>ii. the revegetation methods to be undertaken within revegetation zones defined in Appendix A Figure 2;</li> <li>iii. measures to ensure that seedlings being planted are free of Dieback, (<i>Phytophthora cinnamomi</i>);</li> <li>iv. timeframes and survival targets proposed for plantings;</li> <li>v. feral animal and weed controls measures to be implemented;</li> <li>vi. fencing to be undertaken;</li> <li>vii. contingency measures if targets are not met;</li> <li>viii. the monitoring and survey measures to be utilised, including timing schedules and reporting requirements;</li> <li>ix. roles and responsibilities of contractors, staff and the person taking the action,</li> <li>x. prior to, during and following any rehabilitation and revegetation works undertaken within the THSR area, and;</li> <li>xi. how the WA DEC, CoR, or other conservation organisation(s), have been consulted in the preparation of the THSRRP.</li> </ol> <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 2019/2020</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"> <li>• 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.</li> <li>• The THSRRP was reviewed by officers of the Approvals Monitoring Section from the Dept of the Environment with approval granted 26 November 2013.</li> <li>• The THSRRP is available on WA Limestone's public website: <a href="http://www.walimestone.com/about-wa-limestone/environment/">http://www.walimestone.com/about-wa-limestone/environment/</a></li> <li>• The CoR's '<i>Tamworth Hill Swamp Revegetation Report 2019/2020</i>' is attached as Appendix 1.</li> </ul>

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"> <li>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.</li> <li>If dieback was found to occur, measures would be used in accordance with WA DWER Management of Dieback in extractive industries guidelines.</li> </ul>
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 2019/2020 reporting period.</p>	<ul style="list-style-type: none"> <li>This document is a report addressing compliance with the conditions of EPBC Approval 2010/5649 and is available WA Limestone's website from June 2020. <a href="http://www.walimestone.com/about-wa-limestone/environment/">http://www.walimestone.com/about-wa-limestone/environment/</a></li> <li>The Tamworth Hill Swamp Reserve Revegetation Plan (THSRRP) required by the conditions of EPBC Approval 2010/5649 and is available of the website. <a href="http://www.walimestone.com/about-wa-limestone/environment/">http://www.walimestone.com/about-wa-limestone/environment/</a></li> </ul> <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: <a href="http://www.walimestone.com/about-wa-limestone/environment/">http://www.walimestone.com/about-wa-limestone/environment/</a>

## **Appendix 1.**

### **Tamworth Hill Swamp Revegetation Report 2019/2020 (City of Rockingham)**



# Tamworth Hill Swamp Revegetation Project Report 2019/2020

## 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 1. Revegetation areas have been maintained through regular weed control and greenstock maintenance (removal of tree guards from plants that have outgrown them). An environmental assessment of revegetation success was carried out by Emerge Associates in 2018 to inform further rehabilitation requirements. Revegetation was assessed against performance criteria set in the THSRRP. Results from the assessment are shown in Table 2. Revegetation areas have been recorded as either meeting performance criteria or “in progress”.

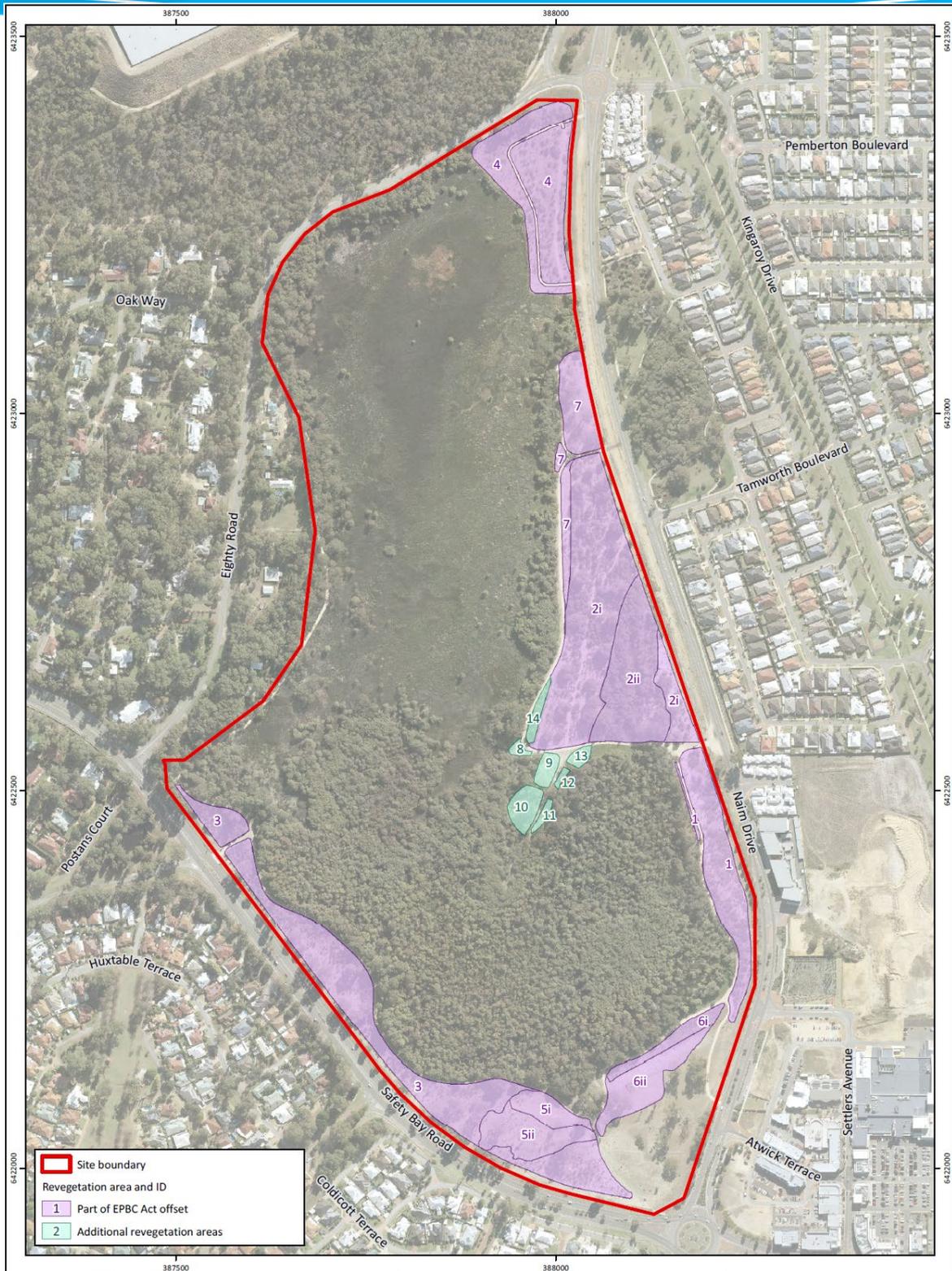
There was no planting in 2018 in anticipation of receiving survey results. Major rehabilitation resumed in winter 2019, with further planting of 10,000 seedlings scheduled for winter 2020. Species used in revegetation are plants known to be primary feeding plants for Black Cockatoos or recommended in the THSRRP and Emerge Associates’ Tamworth Hill Swamp Environmental Assessment.

Table 1 – Yearly quantity of seedlings planted per revegetation area at the reserve

Revegetation zone	2015	2016	2017	2018	2019	Total
RA1	8103				434	<b>8537</b>
RA2	20000				788	<b>20788</b>
RA3		22000				<b>22000</b>
RA4		4720				<b>4720</b>
RA5			5000		560	<b>5560</b>
RA6			5000			<b>5000</b>
RA7			4960			<b>4960</b>
RA8			100		60	<b>160</b>
RA9			100		60	<b>160</b>
RA10			100		60	<b>160</b>
RA11					118	<b>118</b>
RA12					100	<b>100</b>
RA13					100	<b>100</b>
<b>Total</b>	<b>28103</b>	<b>26720</b>	<b>15260</b>	<b>0</b>	<b>2280</b>	<b>72463</b>

Table 2: 2018 revegetation assessment results against performance targets

Revegetation Area	Performance target (Coterra Environment 2013a)		
	≥1 plant/m2	≥75% of revegetation species list	≤20% weed cover
RA1	x	x	✓
RA2i	x	x	x
RA2ii	✓	✓	x
RA3	x	✓	x
RA4	x	✓	x
RA5	x	✓	x
RA6	x	✓	x
RA7	x	✓	x

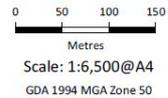


**Figure 1: Revegetation Areas**

**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



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

Figure 1: Revegetation areas at Tamworth Hill Swamp, numbered in relation to the order in which they were planted.

### 3.2 Weed control

Regular weed control throughout the revegetation areas, as well as the greater site is undertaken throughout the year. 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 seedlings. Further herbicide treatments are applied across the revegetation areas, and remnant native vegetation 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. 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. No signs of foxes or rabbits were recorded by the contractor at the reserve.

### 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. No damage or breach of fencing was recorded this financial year.

## 4. Monitoring

### 4.1 Revegetation condition

Monitoring quadrats have been established across the revegetation areas and marked by GPS as shown in Table 3. Locations of quadrats were originally nominated by Emerge Associates in their 2018 assessment at random on a 10m x 10m overlay grid across the reserve. Each quadrat was marked at its northwest corner by a metal picket.

Quadrats were surveyed by City of Rockingham during autumn 2020 for weed coverage, native species coverage (Table 3) and native species stem density (Table 4). Comparative results are included from the 2018 environmental assessment. Photographs from the northwest corner of the monitoring quadrats can be seen in Table 5.

Total weed coverage reduced across the site from an average of 20.9% to an average of 4.4%. All revegetation areas, on average, currently meet the performance criteria for less than 20% weed coverage. It should be noted Total coverage of native species increased across the site from an average of 46.7% to an average of 62.3%. The performance criteria for stem density of native plants is  $\geq 1$  plant/m<sup>2</sup>. In 2018, only one area (RA2ii) had met this requirement, with the others requiring further infill planting to achieve target density. The 2020 survey recorded slightly lower average densities in most of the revegetation areas. Natural attrition of plants have resulted in a small number of losses. Minor losses are typical of natural area revegetation and will be replaced with subsequent infill planting.

Table 3: Monitoring quadrat survey with comparison between 2018 consultant survey and 2020 City of Rockingham survey

Quadrat	easting	northing	Weed species coverage		Native species total coverage	
			2018	2020	2018	2020
R1a*	388240	6422250	1%	0% (↓1%)	52%	75% (↑23%)
R1b	388220	6422380	20%	5% (↓15%)	40%	70% (↑30%)
R1c*	388190	6422510	0.1%	0% (↓0.1%)	60%	75% (↑15%)
R2a	387990	6422600	0.1%	10% (↓9.9%)	60.1%	85% (↑24.9%)
R2b	388080	6422660	5%	5% (- 0%)	100%	95% (↓5%)
R2c*	388050	6422830	30%	<1% (↓>29%)	35%	90% (↑55%)
R3a*	387550	6422460	5%	1% (↓4%)	60%	80% (↑20%)
R3b	387700	6422270	50%	1% (↓49%)	40%	60% (↑20%)
R3c	388040	6422000	10%	10% (- 0%)	60%	80% (↑20%)
R4a	387990	6423210	15%	1% (↓14%)	51%	60% (↑9%)
R4b*	387980	6423300	80%	5% (↓75%)	50%	80% (↑30%)
R4c	387920	6423330	30%	15% (↓15%)	35%	50% (↑15%)
R5a	387920	6422050	60%	1% (↓59%)	25%	60% (↑35%)
R5b*	387960	6422080	10%	1% (↓9%)	30%	<1% (↓>29%)
R5c	387990	6422050	40%	<1% (↓>39%)	30.5%	25% (↓5.5%)
R6a	388100	6422090	25%	<1% (↓>24%)	70%	20% (↓50%)
R6b	388130	6422150	20%	2% (↓18%)	50%	80% (↑30%)
R6c	388170	6422190	5%	30% (↑25%)	35%	97% (↑62%)
R7a	388010	6422870	5%	<1% (↓>4%)	37.5%	40% (↑2.5%)
R7b	388020	6423000	2%	0% (↓2%)	34%	60% (↑26%)
R7c	388030	6423050	25%	1% (↓24%)	25.1%	25% (↓0.1%)

\* denotes where the NW marker was absent and a new NW marker was installed

Table 4: Average density of native plants per revegetation area for 2018 and 2020

Revegetation area	Average density per m2	
	2018	2020
RA1	0.15	0.12 (↓0.03%)
RA2i	0.2	0.21 (↓0.01%)
RA2ii	1.65	>1*
RA3	0.39	0.33 (↓0.03%)
RA4	0.16	0.12 (↓0.04%)
RA5	0.19	0.15 (↓0.04%)
RA6	0.58	0.77 (↑0.19)
RA7	0.14	0.13 (↓0.01%)

\*density of plants made area impenetrable and prevented access for measuring a 10mx10m quadrat

Table 5: Photographs of monitoring quadrats, autumn 2020

<p><b>Quadrat R1a</b></p> <p>388240mE 6422250mN</p>	
<p><b>Quadrat R1b</b></p> <p>388220mE 6422380mN</p>	
<p><b>Quadrat R1c</b></p> <p>388190mE 6422510mN</p>	
<p><b>Quadrat R2a</b></p> <p>387990mE 6422600mN</p>	

**Quadrat R2b**

388080mE  
6422660mN



**Quadrat R2c**

388050mE  
6422830mN



**Quadrat R3a**

387550mE  
6422460mN



**Quadrat R3b**

387700mE  
6422270mN



**Quadrat R3c**

388040mE  
6422000mN



**Quadrat R4a**

387990mE  
6423210mN



**Quadrat R4b**

387980mE  
6423300mN



**Quadrat R4c**

387920mE  
6423330mN





**Quadrat R5a**

387920mE  
6422050mN



**Quadrat R5b**

387960mE  
6422080mN



**Quadrat R5c**

387990mE  
6422050mN



**Quadrat R6a**

388100mE  
6422090mN



**Quadrat R6b**

388130mE  
6422150mN



**Quadrat R6c**

388170mE  
6422190mN



**Quadrat R7a**

388010mE  
6422870mN



**Quadrat R7b**

388020mE  
6423000mN



**Quadrat R7c**

388030mE  
6423050mN



The 2018 environmental assessment showed the revegetation areas were in progress to achieving the THSRRP performance targets. The autumn 2020 quadrat assessment shows, on average, all revegetation areas currently meet the performance criteria for weed coverage. While native plant densities are not yet met, the overall average for native species coverage across the quadrats is 62%, and has increased from the 2018 survey. Though some quadrats contain predominantly overstorey species only.

City of Rockingham is commencing infill planting of each revegetation area to achieve performance targets. RA2i is scheduled for installation of 10,000 plants in June 2020.